

SimFQT

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1 SimFQT Documentation

1.1 Getting Started

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- [Installation](#)
- [Linking with SimFQT](#)
- [Users Guide](#)
- [Tutorials](#)
- [Copyright and License](#)
- [Make a Difference](#)
- [Make a new release](#)
- [People](#)

1.2 SimFQT at SourceForge

- [Project page](#)
- [Download SimFQT](#)
- [Open a ticket for a bug or feature](#)
- [Mailing lists](#)
- [Forums](#)
 - [Discuss about Development issues](#)
 - [Ask for Help](#)
 - [Discuss SimFQT](#)

1.3 SimFQT Development

- [Git Repository](#) (Subversion is deprecated)
- [Coding Rules](#)
- [Documentation Rules](#)
- [Test Rules](#)

1.4 External Libraries

- [Boost](#) (C++ STL extensions)
- [Python](#)
- [MySQL client](#)
- [SOI](#) (C++ DB API)

1.5 Support SimFQT

1.6 About SimFQT

SimFQT is a C++ project of airline pricing classes and functions, mainly targeting simulation purposes. [N](#) SimFQT makes an extensive use of existing open-source libraries for increased functionality, speed and accuracy. In particular [Boost](#) (C++ *STL Extensions*) library is used.

The SimFQT project originates from the department of Operational Research and Innovation at [Amadeus](#), Sophia Antipolis, France. SimFQT is released under the terms of the [GNU Lesser General Public License](#) (LGPLv2.1) for you to enjoy.

SimFQT should work on [GNU/Linux](#), [Sun Solaris](#), Microsoft Windows (with [Cygwin](#), [MinGW/MSYS](#), or [Microsoft Visual C++ .NET](#)) and [Mac OS X](#) operating systems.

Note:

(N) - The SimFQT library is **NOT** intended, in any way, to be used by airlines for production systems. If you want to report issue, bug or feature request, or if you just want to give feedback, have a look on the right-hand side of this page for the preferred reporting methods. In any case, please do not contact Amadeus directly for any matter related to SimFQT.

2 People

2.1 Project Admins (and Developers)

- Gabrielle Sabatier <gsabatier@users.sourceforge.net> ([N](#))
- Denis Arnaud <denis_arnaud@users.sourceforge.net> ([N](#))
- Anh Quan Nguyen <quannaus@users.sourceforge.net> ([N](#))

2.2 Retired Developers

- Mehdi Ayouni <mehdi.ayouni@gmail.com>
- Son Nguyen Kim <snguyenkim@users.sourceforge.net> ([N](#))

2.3 Contributors

- Emmanuel Bastien <ebastien@users.sourceforge.net> ([N](#))

2.4 Distribution Maintainers

- **Fedora/RedHat**: Denis Arnaud <denis_arnaud@users.sourceforge.net> (N)
- **Debian**: Emmanuel Bastien <ebastien@users.sourceforge.net> (N)

Note:

(N) - **Amadeus** employees.

3 Coding Rules

In the following sections we describe the naming conventions which are used for files, classes, structures, local variables, and global variables.

3.1 Default Naming Rules for Variables

Variables names follow Java naming conventions. Examples:

- `lNumberOfPassengers`
- `lSeatAvailability`

3.2 Default Naming Rules for Functions

Function names follow Java naming conventions. Example:

- `int myFunctionName (const int& a, int b)`

3.3 Default Naming Rules for Classes and Structures

Each new word in a class or structure name should always start with a capital letter and the words should be separated with an under-score. Abbreviations are written with capital letters. Examples:

- `MyClassName`
- `MyStructName`

3.4 Default Naming Rules for Files

Files are named after the C++ class names.

Source files are named using `.cpp` suffix, whereas header files end with `.hpp` extension. Examples:

- `FlightDate.hpp`
- `SegmentDate.cpp`

3.5 Default Functionality of Classes

All classes that are configured by input parameters should include:

- default empty constructor
- one or more additional constructor(s) that takes input parameters and initializes the class instance
- setup function, preferably named `'setup'` or `'set_parameters'`

Explicit destructor functions are not required, unless they are needed. It shall not be possible to use any of the other member functions unless the class has been properly initiated with the input parameters.

4 Copyright and License

4.1 GNU LESSER GENERAL PUBLIC LICENSE

4.1.1 Version 2.1, February 1999

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51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts
as the successor of the GNU Library Public License, version 2, hence
the version number 2.1.]

4.2 Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

4.3 TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

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A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

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"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

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(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

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Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

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3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

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This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

- b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.
- c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

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14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

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4.3.2 END OF TERMS AND CONDITIONS

4.4 How to Apply These Terms to Your New Programs

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or
modify it under the terms of the GNU Lesser General Public
License as published by the Free Software Foundation; either
version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU
Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public
License along with this library; if not, write to the Free Software
Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
```

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the
library 'Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice
```

That's all there is to it!

Source

5 Documentation Rules

5.1 General Rules

All classes in SimFQT should be properly documented with Doxygen comments in include (.hpp) files. Source (.cpp) files should be documented according to a normal standard for well documented C++ code.

An example of how the interface of a class shall be documented in SimFQT is shown here:

```
/*!
 * \brief Brief description of MyClass here
 *
 * Detailed description of MyClass here. With example code if needed.
 */
```

```

class MyClass {
public:
    //! Default constructor
    MyClass(void) { setup_done = false; }

    /*!
     * \brief Constructor that initializes the class with parameters
     *
     * Detailed description of the constructor here if needed
     *
     * \param[in] param1 Description of \a param1 here
     * \param[in] param2 Description of \a param2 here
     */
    MyClass(TYPE1 param1, TYPE2 param2) { setup(param1, param2); }

    /*!
     * \brief Setup function for MyClass
     *
     * Detailed description of the setup function here if needed
     *
     * \param[in] param1 Description of \a param1 here
     * \param[in] param2 Description of \a param2 here
     */
    void setup(TYPE1 param1, TYPE2 param2);

    /*!
     * \brief Brief description of memberFunction1
     *
     * Detailed description of memberFunction1 here if needed
     *
     * \param[in]      param1 Description of \a param1 here
     * \param[in]      param2 Description of \a param2 here
     * \param[in,out] param3 Description of \a param3 here
     * \return Description of the return value here
     */
    TYPE4 memberFunction1(TYPE1 param1, TYPE2 param2, TYPE3 &param3);

private:

    bool _setupDone;          /*!< Variable that checks if the class is properly
                               initialized with parameters */
    TYPE1 _privateVariable1; /*!< Short description of _privateVariable1 here
    TYPE2 _privateVariable2; /*!< Short description of _privateVariable2 here
};

```

5.2 File Header

All files should start with the following header, which include Doxygen's \file, \brief and \author tags, \$Date\$ and \$Revisions\$ CVS tags, and a common copyright note:

```

/*!
 * \file
 * \brief Brief description of the file here
 * \author Names of the authors who contributed to this code
 * \date Date
 *
 * Detailed description of the file here if needed.
 *
 * -----
 *
 * SimFQT - C++ Standard Airline IT Object Library
 *
 * Copyright (C) 2009-2010 (\see authors file for a list of contributors)
 *
 * \see copyright file for license information

```

```
*  
* -----  
*/
```

5.3 Grouping Various Parts

All functions must be added to a Doxygen group in order to appear in the documentation. The following code example defines the group 'my_group':

```
/*!  
 * \defgroup my_group Brief description of the group here  
 *  
 * Detailed description of the group here  
 */
```

The following example shows how to document the function `myFunction` and how to add it to the group `my_group`:

```
/*!  
 * \brief Brief description of myFunction here  
 * \ingroup my_group  
 *  
 * Detailed description of myFunction here  
 *  
 * \param[in] param1 Description of \a param1 here  
 * \param[in] param2 Description of \a param2 here  
 * \return Description of the return value here  
 */  
TYPE3 myFunction(TYPE1 param1, TYPE2 &param2);
```

6 Main features

A short list of the main features of SimFQT is given below sorted in different categories. Many more features and functions exist and for these we refer to the reference documentation.

6.1 Fare calculation

- Calculation of fare from statistics on tickets/coupons

6.2 Fare rule engine

- Fare rules: storage, engine, management

6.3 Fare retrieval

- Retrieval of fares for specific booking requests or product assesment

6.4 Other features

- CSV input file parsing
- Memory handling

7 Make a Difference

Do not ask what SimFQT can do for you. Ask what you can do for SimFQT.

You can help us to develop the SimFQT library. There are always a lot of things you can do:

- Start using SimFQT
- Tell your friends about SimFQT and help them to get started using it
- If you find a bug, report it to us. Without your help we can never hope to produce a bug free code.
- Help us to improve the documentation by providing information about documentation bugs
- Answer support requests in the SimFQT discussion forums on SourceForge. If you know the answer to a question, help others to overcome their SimFQT problems.
- Help us to improve our algorithms. If you know of a better way (e.g., that is faster or requires less memory) to implement some of our algorithms, then let us know.
- Help to port SimFQT to new platforms. If you manage to compile SimFQT on a new platform, then tell how you did it.
- Send us your code. If you have a good SimFQT compatible code, which you can release under the LGPL, and you think it should be included in SimFQT, then send it to the community.
- Become an SimFQT developer. Send us an e-mail and tell what you can do for SimFQT.

8 Make a new release

8.1 Introduction

This document describes briefly the recommended procedure of releasing a new version of SimFQT using a Linux development machine and the SourceForge project site.

The following steps are required to make a release of the distribution package.

8.2 Initialisation

Clone locally the full [Git project](#):

```
cd ~
mkdir -p dev/sim
cd ~/dev/sim
git clone git://simfqt.git.sourceforge.net/gitroot/simfqt/simfqt simfqtgit
cd simfqtgit
git checkout trunk
```

8.3 Release branch maintenance

Switch to the release branch, on your local clone, and merge the latest updates from the trunk. Decide about the new version to be released.

```
cd ~/dev/sim/simfqtgit
git checkout releases
git merge trunk
```

Update the version in the various build system files, replacing the old version numbers by the correct ones:

```
vi CMakeLists.txt
vi autogen.sh
vi README
```

Update the version, add some news in the NEWS file, add a change-log in the ChangeLog file and in the RPM specification files:

```
vi NEWS
vi ChangeLog
vi simfqt.spec
```

8.4 Commit and publish the release branch

Commit the new release:

```
cd ~/dev/sim/simfqtgit
git add -A
git commit -m "[Release 0.5.0] Release of the 0.5.0 version of SimFQT."
git push
```

8.5 Create distribution packages

Create the distribution packages using the following command:

```
cd ~/dev/sim/simfqtgit
git checkout releases
rm -rf build && mkdir -p build
cd build
export INSTALL_BASEDIR=/home/user/dev/deliveries
export LIBSUFFIX_4_CMAKE="-DLIB_SUFFIX=64"
cmake -DCMAKE_INSTALL_PREFIX=${INSTALL_BASEDIR}/simfqt-0.5.0 \
  -DWITH_STDAIR_PREFIX=${INSTALL_BASEDIR}/stdair-stable \
  -DWITH_AIRAC_PREFIX=${INSTALL_BASEDIR}/airrac-stable \
  -DWITH_AIRAC_PREFIX=${INSTALL_BASEDIR}/airrac-stable \
  -DWITH_RMOL_PREFIX=${INSTALL_BASEDIR}/rmol-stable \
  -DWITH_RMOL_PREFIX=${INSTALL_BASEDIR}/airinv-stable \
  -DWITH_RMOL_PREFIX=${INSTALL_BASEDIR}/simfqt-stable \
  -DCMAKE_BUILD_TYPE:String=Debug -DINSTALL_DOC:BOOL=ON \
  ${LIBSUFFIX_4_CMAKE} ..
make check && make dist
make install
```

This will configure, compile and check the package. The output packages will be named, for instance, `simfqt-0.5.0.tar.gz` and `simfqt-0.5.0.tar.bz2`.

8.6 Upload the HTML documentation to SourceForge

In order to update the Web site files, either:

- **synchronise them with rsync and SSH:** Upload the just generated HTML (and PDF) documentation onto the **SourceForge Web site**.

```
cd ~/dev/sim/simfqtgit/build
git checkout releases
rsync -aiv ${INSTALL_BASEDIR}/simfqt-0.5.0/share/doc/simfqt-0.5.0/html/ \
  your_sf_user,simfqt@web.sourceforge.net:htdocs/
```

where `-ai` options mean:

- `-a`: archive/mirror mode; equals `-rlptgoD` (no `-H`, `-A`, `-X`)
- `-v`: increase verbosity
- `-i`: output a change-summary for all updates
- Note the trailing slashes (/) at the end of both the source and target directories. It means that the content of the source directory (`doc/html`), rather than the directory itself, has to be copied into the content of the target directory.

- or use the [SourceForge Shell service](#).

8.7 Generate the RPM packages

Optionally, generate the RPM package (for instance, for [Fedora/RedHat](#)):

```
cd ~/dev/sim/simfqtgit/build
git checkout releases
make dist
```

To perform this step, `rpm-build`, `rpmlint` and `rpmdevtools` have to be available on the system.

```
cp ../simfqt.spec ~/dev/packages/SPECS \
  && cp simfqt-0.5.0.tar.bz2 ~/dev/packages/SOURCES
cd ~/dev/packages/SPECS
rpmbuild -ba simfqt.spec
cd ~/dev/packages
rpmlint -i SPECS/simfqt.spec SRPMS/simfqt-0.5.0-1.fc16.src.rpm \
  RPMS/noarch/simfqt-* RPMS/i686/simfqt-*
```

8.8 Update distributed change log

Update the `NEWS` and `ChangeLog` files with appropriate information, including what has changed since the previous release. Then commit and push the changes into the [SimFQT's Git repository](#).

8.9 Create the binary package, including the documentation

Create the binary package, which includes HTML and PDF documentation, using the following command:

```
cd ~/dev/sim/simfqtgit/build
git checkout releases
make package
```

The output binary package will be named, for instance, `simfqt-0.5.0-Linux.tar.bz2`. That package contains both the HTML and PDF documentation. The binary package contains also the executables and shared libraries, as well as C++ header files, but all of those do not interest us for now.

8.10 Upload the files to SourceForge

Upload the distribution and documentation packages to the SourceForge server. Check [SourceForge help page on uploading software](#).

8.11 Make a new post

- submit a new entry in the [SourceForge project-related news feed](#)
- make a new post on the [SourceForge hosted WordPress blog](#)
- and update, if necessary, [Trac tickets](#).

8.12 Send an email on the announcement mailing-list

Finally, you should send an announcement to simfqt-announce@lists.sourceforge.net (see <https://lists.sourceforge.net/lists/listinfo/simfqt-announce> for the archives)

9 Installation

9.1 Table of Contents

- [Fedora/RedHat Linux distributions](#)
- [SimFQT Requirements](#)
- [Basic Installation](#)
- [Compilers and Options](#)
- [Compiling For Multiple Architectures](#)
- [Installation Names](#)
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- [Particular systems](#)
- [Specifying the System Type](#)
- [Sharing Defaults](#)
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- [‘cmake’ Invocation](#)

9.2 Fedora/RedHat Linux distributions

Note that on [Fedora/RedHat](#) Linux distributions, RPM packages are available and can be installed with your usual package manager. For instance:

```
yum -y install simfqt-devel simfqt-doc
```

RPM packages can also be available on the [SourceForge download site](#).

9.3 SimFQT Requirements

SimFQT should compile without errors or warnings on most GNU/Linux systems, on UNIX systems like Solaris SunOS, and on POSIX based environments for Microsoft Windows like Cygwin or MinGW with MSYS. It can be also built on Microsoft Windows NT/2000/XP/Vista/7 using Microsoft's Visual C++ .NET, but our support for this compiler is limited. For GNU/Linux, SunOS, Cygwin and MinGW we assume that you have at least the following GNU software installed on your computer:

- GNU Autotools:
 - `autoconf`,
 - `automake`,
 - `libtool`,
 - `make`, version 3.72.1 or later (check version with `'make --version'`)
- `GCC` - GNU C++ Compiler (g++), version 4.3.x or later (check version with `'gcc --version'`)
- `Boost` - C++ STL extensions, version 1.35 or later (check version with `'grep "define BOOST_LIB_VERSION" /usr/include/boost/version.hpp'`)
- `MySQL` - Database client libraries, version 5.0 or later (check version with `'mysql --version'`)
- `SOCI` - C++ database client library wrapper, version 3.0.0 or later (check version with `'soci-config --version'`)

Optionally, you might need a few additional programs: `Doxygen`, `LaTeX`, `Dvips` and `Ghostscript`, to generate the HTML and PDF documentation.

We strongly recommend that you use recent stable releases of the GCC, if possible. We do not actively work on supporting older versions of the GCC, and they may therefore (without prior notice) become unsupported in future releases of SimFQT.

9.4 Basic Installation

Briefly, the shell commands `./cmake .. && make install` should configure, build, and install this package. The following more-detailed instructions are generic; see the `'README'` file for instructions specific to this package. Some packages provide this `'INSTALL'` file but do not implement all of the features documented below. The lack of an optional feature in a given package is not necessarily a bug. More recommendations for GNU packages can be found in the info page corresponding to "Makefile Conventions: (standards)Makefile Conventions".

The `'cmake'` shell script attempts to guess correct values for various system-dependent variables used during compilation. It uses those values to create a `'Makefile'` in each directory of the package. It may also create one or more `'.h'` files containing system-dependent definitions. Finally, it creates a `'CMakeCache.txt'` cache file that you can refer to in the future to recreate the current configuration, and a file `'CMakeFiles'` containing compiler output (useful mainly for debugging `'cmake'`).

It can also use an optional file (typically called `'config.cache'` and enabled with `'--cache-file=config.cache'` or simply `'-C'`) that saves the results of its tests to speed up reconfiguring. Caching is disabled by default to prevent problems with accidental use of stale cache files.

If you need to do unusual things to compile the package, please try to figure out how `'configure'` could check whether to do them, and mail diffs or instructions to the address given in the `'README'` so they can be considered for the next release. If you are using the cache, and at some point `'config.cache'` contains results you don't want to keep, you may remove or edit it.

The file `'CMakeLists.txt'` is used to create the `'Makefile'` files.

The simplest way to compile this package is:

1. `'cd'` to the directory containing the package's source code and type `'./cmake .'` to configure the package for your system. Running `'cmake'` is generally fast. While running, it prints some messages telling which features it is checking for.
2. Type `'make'` to compile the package.
3. Optionally, type `'make check'` to run any self-tests that come with the package, generally using the just-built uninstalled binaries.
4. Type `'make install'` to install the programs and any data files and documentation. When installing into a prefix owned by root, it is recommended that the package be configured and built as a regular user, and only the `'make install'` phase executed with root privileges.
5. You can remove the program binaries and object files from the source code directory by typing `'make clean'`. To also remove the files that `'configure'` created (so you can compile the package for a different kind of computer), type `'make distclean'`. There is also a `'make maintainer-clean'` target, but that is intended mainly for the package's developers. If you use it, you may have to get all sorts of other programs in order to regenerate files that came with the distribution.
6. Often, you can also type `'make uninstall'` to remove the installed files again. In practice, not all packages have tested that uninstallation works correctly, even though it is required by the GNU Coding Standards.

9.5 Compilers and Options

Some systems require unusual options for compilation or linking that the `'cmake'` script does not know about. Run `'./cmake --help'` for details on some of the pertinent environment variables.

You can give `'cmake'` initial values for configuration parameters by setting variables in the command line or in the environment. Here is an example:

```
./cmake CC=c99 CFLAGS=-g LIBS=-lposix
```

See also:

[Defining Variables](#) for more details.

9.6 Compiling For Multiple Architectures

You can compile the package for more than one kind of computer at the same time, by placing the object files for each architecture in their own directory. To do this, you can use GNU `'make'`. `'cd'` to the directory where you want the object files and executables to go and

run the 'configure' script. 'configure' automatically checks for the source code in the directory that 'configure' is in and in '..'. This is known as a "VPATH" build.

With a non-GNU 'make', it is safer to compile the package for one architecture at a time in the source code directory. After you have installed the package for one architecture, use 'make distclean' before reconfiguring for another architecture.

On MacOS X 10.5 and later systems, you can create libraries and executables that work on multiple system types--known as "fat" or "universal" binaries--by specifying multiple '-arch' options to the compiler but only a single '-arch' option to the preprocessor. Like this:

```
./configure CC="gcc -arch i386 -arch x86_64 -arch ppc -arch ppc64" \
           CXX="g++ -arch i386 -arch x86_64 -arch ppc -arch ppc64" \
           CPP="gcc -E" CXXCPP="g++ -E"
```

This is not guaranteed to produce working output in all cases, you may have to build one architecture at a time and combine the results using the 'lipo' tool if you have problems.

9.7 Installation Names

By default, 'make install' installs the package's commands under '/usr/local/bin', include files under '/usr/local/include', etc. You can specify an installation prefix other than '/usr/local' by giving 'configure' the option '--prefix=PREFIX', where PREFIX must be an absolute file name.

You can specify separate installation prefixes for architecture-specific files and architecture-independent files. If you pass the option '--exec-prefix=PREFIX' to 'configure', the package uses PREFIX as the prefix for installing programs and libraries. Documentation and other data files still use the regular prefix.

In addition, if you use an unusual directory layout you can give options like '--bindir=DIR' to specify different values for particular kinds of files. Run 'configure --help' for a list of the directories you can set and what kinds of files go in them. In general, the default for these options is expressed in terms of '\${prefix}', so that specifying just '--prefix' will affect all of the other directory specifications that were not explicitly provided.

The most portable way to affect installation locations is to pass the correct locations to 'configure'; however, many packages provide one or both of the following shortcuts of passing variable assignments to the 'make install' command line to change installation locations without having to reconfigure or recompile.

The first method involves providing an override variable for each affected directory. For example, 'make install prefix=/alternate/directory' will choose an alternate location for all directory configuration variables that were expressed in terms of '\${prefix}'. Any directories that were specified during 'configure',

but not in terms of `'${prefix}'`, must each be overridden at install time for the entire installation to be relocated. The approach of makefile variable overrides for each directory variable is required by the GNU Coding Standards, and ideally causes no recompilation. However, some platforms have known limitations with the semantics of shared libraries that end up requiring recompilation when using this method, particularly noticeable in packages that use GNU Libtool.

The second method involves providing the `'DESTDIR'` variable. For example, `'make install DESTDIR=/alternate/directory'` will prepend `'/alternate/directory'` before all installation names. The approach of `'DESTDIR'` overrides is not required by the GNU Coding Standards, and does not work on platforms that have drive letters. On the other hand, it does better at avoiding recompilation issues, and works well even when some directory options were not specified in terms of `'${prefix}'` at `'configure'` time.

9.8 Optional Features

If the package supports it, you can cause programs to be installed with an extra prefix or suffix on their names by giving `'cmake'` the option `'--program-prefix=PREFIX'` or `'--program-suffix=SUFFIX'`.

Some packages pay attention to `'--enable-FEATURE'` options to `'configure'`, where `FEATURE` indicates an optional part of the package. They may also pay attention to `'--with-PACKAGE'` options, where `PACKAGE` is something like `'gnu-as'` or `'x'` (for the X Window System). The `'README'` should mention any `'--enable-'` and `'--with-'` options that the package recognizes.

For packages that use the X Window System, `'configure'` can usually find the X include and library files automatically, but if it doesn't, you can use the `'configure'` options `'--x-includes=DIR'` and `'--x-libraries=DIR'` to specify their locations.

Some packages offer the ability to configure how verbose the execution of `'make'` will be. For these packages, running `'./configure --enable-silent-rules'` sets the default to minimal output, which can be overridden with `'make V=1'`; while running `'./configure --disable-silent-rules'` sets the default to verbose, which can be overridden with `'make V=0'`.

9.9 Particular systems

On HP-UX, the default C compiler is not ANSI C compatible. If GNU CC is not installed, it is recommended to use the following options in order to use an ANSI C compiler:

```
./configure CC="cc -Ae -D_XOPEN_SOURCE=500"
```

and if that doesn't work, install pre-built binaries of GCC for HP-UX.

On OSF/1 a.k.a. Tru64, some versions of the default C compiler cannot parse its `'<wchar.h>'` header file. The option `'-nodtk'` can be used as

a workaround. If GNU CC is not installed, it is therefore recommended to try

```
./configure CC="cc"
```

and if that doesn't work, try

```
./configure CC="cc -nodtk"
```

On Solaris, don't put `/usr/ucb` early in your `PATH`. This directory contains several dysfunctional programs; working variants of these programs are available in `/usr/bin`. So, if you need `/usr/ucb` in your `PATH`, put it `_after_` `/usr/bin`.

On Haiku, software installed for all users goes in `/boot/common`, not `/usr/local`. It is recommended to use the following options:

```
./cmake -DCMAKE_INSTALL_PREFIX=/boot/common
```

9.10 Specifying the System Type

There may be some features `'configure'` cannot figure out automatically, but needs to determine by the type of machine the package will run on. Usually, assuming the package is built to be run on the `_same_` architectures, `'configure'` can figure that out, but if it prints a message saying it cannot guess the machine type, give it the `'--build=TYPE'` option. TYPE can either be a short name for the system type, such as `'sun4'`, or a canonical name which has the form CPU-COMPANY-SYSTEM

where SYSTEM can have one of these forms:

- OS
- KERNEL-OS

See the file `'config.sub'` for the possible values of each field. If `'config.sub'` isn't included in this package, then this package doesn't need to know the machine type.

If you are `_building_` compiler tools for cross-compiling, you should use the option `'--target=TYPE'` to select the type of system they will produce code for.

If you want to `_use_` a cross compiler, that generates code for a platform different from the build platform, you should specify the `"host"` platform (i.e., that on which the generated programs will eventually be run) with `'--host=TYPE'`.

9.11 Sharing Defaults

If you want to set default values for `'configure'` scripts to share, you can create a site shell script called `'config.site'` that gives

default values for variables like `'CC'`, `'cache_file'`, and `'prefix'`. `'configure'` looks for `'PREFIX/share/config.site'` if it exists, then `'PREFIX/etc/config.site'` if it exists. Or, you can set the `'CONFIG_SITE'` environment variable to the location of the site script. A warning: not all `'configure'` scripts look for a site script.

9.12 Defining Variables

Variables not defined in a site shell script can be set in the environment passed to `'configure'`. However, some packages may run `'configure'` again during the build, and the customized values of these variables may be lost. In order to avoid this problem, you should set them in the `'configure'` command line, using `'VAR=value'`. For example:

```
./configure CC=/usr/local2/bin/gcc
```

causes the specified `'gcc'` to be used as the C compiler (unless it is overridden in the site shell script).

Unfortunately, this technique does not work for `'CONFIG_SHELL'` due to an Autoconf bug. Until the bug is fixed you can use this workaround:

```
CONFIG_SHELL=/bin/bash /bin/bash ./configure CONFIG_SHELL=/bin/bash
```

9.13 'cmake' Invocation

`'cmake'` recognizes the following options to control how it operates.

- `'--help'`, `'-h'` print a summary of all of the options to `'cmake'`, and exit.
- `'--help=short'`, `'--help=recursive'` print a summary of the options unique to this package's `'configure'`, and exit. The `'short'` variant lists options used only in the top level, while the `'recursive'` variant lists options also present in any nested packages.
- `'--version'`, `'-V'` print the version of Autoconf used to generate the `'configure'` script, and exit.
- `'--cache-file=FILE'` enable the cache: use and save the results of the tests in `FILE`, traditionally `'config.cache'`. `FILE` defaults to `'/dev/null'` to disable caching.
- `'--config-cache'`, `'-C'` alias for `'--cache-file=config.cache'`.
- `'--quiet'`, `'--silent'`, `'-q'` do not print messages saying which checks are being made. To suppress all normal output, redirect it to `'/dev/null'` (any error messages will still be shown).
- `'--srcdir=DIR'` look for the package's source code in directory `DIR`. Usually `'configure'` can determine that directory automatically.
- `'--prefix=DIR'` use `DIR` as the installation prefix.

See also:

[Installation Names](#) for more details, including other options available for fine-tuning the installation locations.

- '--no-create', '-n' run the configure checks, but stop before creating any output files.

'cmake' also accepts some other, not widely useful, options. Run 'cmake' --help' for more details.

The 'cmake' script produces an output like this:

```
-- Requires Git without specifying any version
cmake -DCMAKE_INSTALL_PREFIX=/home/user/dev/deliveries/simfqt-0.5.0 \
  -DWITH_STDAIR_PREFIX=/home/user/dev/deliveries/stdair-stable \
  -DLIB_SUFFIX=64 -DCMAKE_BUILD_TYPE:String=Debug -DINSTALL_DOC:BOOL=ON ..
-- Current Git revision name: 0e31d63879056d26f01eb09757d232d247c42164 trunk
-- Requires Boost-1.41
-- Found Boost version: 1.44.0
-- Requires Readline without specifying any version
-- Found Readline version: 6.1
-- Requires MySQL without specifying any version
-- Using mysql-config: /usr/bin/mysql_config
-- Found MySQL version: 5.1.56
-- Requires SOCI-3.0
-- Using soci-config: /usr/bin/soci-config
-- SOCI headers are buried
-- Found SOCI with MySQL back-end support version: 3.0.0
-- Requires StdAir-0.35
-- Found StdAir version: 99.99.99
-- Requires Doxygen without specifying any version
-- Found Doxygen version: 1.7.4
-- Had to set the linker language for 'simfqtlib' to CXX
-- Test 'FQTestSuite' to be built with 'FQTestSuite.cpp'
--
-- =====
-- -----
-- ---      Project Information      ---
-- -----
-- PROJECT_NAME ..... : simfqt
-- PACKAGE_PRETTY_NAME ..... : SimFQT
-- PACKAGE ..... : simfqt
-- PACKAGE_NAME ..... : SIMFQT
-- PACKAGE_BRIEF ..... : C++ Simulated Fare Quote System Library
-- PACKAGE_VERSION ..... : 99.99.99
-- GENERIC_LIB_VERSION ..... : 99.99.99
-- GENERIC_LIB_SOVERSION ..... : 99.99
--
-- -----
-- ---      Build Configuration      ---
-- -----
-- Modules to build ..... : simfqt
-- Libraries to build/install ..... : simfqtlib
-- Binaries to build/install ..... : simfqt;fareQuote
-- Modules to test ..... : simfqt
-- Binaries to test ..... : FQTestSuite
--
-- * Module ..... : simfqt
-- + Layers to build ..... : .;basic;bom;factory;command;service
-- + Dependencies on other layers :
-- + Libraries to build/install . : simfqtlib
-- + Executables to build/install : simfqt;fareQuote
-- + Tests to perform ..... : FQTestSuite
--
-- BUILD_SHARED_LIBS ..... : ON
```

```

-- CMAKE_BUILD_TYPE ..... : Debug
-- * CMAKE_C_FLAGS ..... :
-- * CMAKE_CXX_FLAGS ..... : -Wall -Werror
-- * BUILD_FLAGS ..... :
-- * COMPILE_FLAGS ..... :
-- CMAKE_MODULE_PATH ..... : /home/localoriuser/dev/sim/simfqt/simfqtgit/config/
-- CMAKE_INSTALL_PREFIX ..... : /home/localoriuser/dev/deliveries/simfqt-99.99.99
--
-- * Doxygen:
--   - DOXYGEN_VERSION ..... : 1.7.4
--   - DOXYGEN_EXECUTABLE ..... : /usr/bin/doxygen
--   - DOXYGEN_DOT_EXECUTABLE ..... : DOXYGEN_DOT_EXECUTABLE-NOTFOUND
--   - DOXYGEN_DOT_PATH ..... :
--
-- -----
-- --- Installation Configuration ---
-- -----
-- INSTALL_LIB_DIR ..... : /home/localoriuser/dev/deliveries/simfqt-99.99.99/lib
-- INSTALL_BIN_DIR ..... : /home/localoriuser/dev/deliveries/simfqt-99.99.99/bin
-- INSTALL_INCLUDE_DIR ..... : /home/localoriuser/dev/deliveries/simfqt-99.99.99/include
-- INSTALL_DATA_DIR ..... : /home/localoriuser/dev/deliveries/simfqt-99.99.99/share
-- INSTALL_SAMPLE_DIR ..... : /home/localoriuser/dev/deliveries/simfqt-99.99.99/share/simfqt/sampl
-- INSTALL_DOC ..... : ON
--
-- -----
-- --- Packaging Configuration ---
-- -----
-- CPACK_PACKAGE_CONTACT ..... : Denis Arnaud <denis_arnaud - at - users dot sourceforge dot net>
-- CPACK_PACKAGE_VENDOR ..... : Denis Arnaud
-- CPACK_PACKAGE_VERSION ..... : 99.99.99
-- CPACK_PACKAGE_DESCRIPTION_FILE . : /home/localoriuser/dev/sim/simfqt/simfqtgit/README
-- CPACK_RESOURCE_FILE_LICENSE .... : /home/localoriuser/dev/sim/simfqt/simfqtgit/COPYING
-- CPACK_GENERATOR ..... : TBZ2
-- CPACK_DEBIAN_PACKAGE_DEPENDS ... :
-- CPACK_SOURCE_GENERATOR ..... : TBZ2;TGZ
-- CPACK_SOURCE_PACKAGE_FILE_NAME . : simfqt-99.99.99
--
-- -----
-- --- External libraries ---
-- -----
--
-- * Boost:
--   - Boost_VERSION ..... : 104400
--   - Boost_LIB_VERSION ..... : 1_44
--   - Boost_HUMAN_VERSION ..... : 1.44.0
--   - Boost_INCLUDE_DIRS ..... : /usr/include
--   - Boost required components .. : program_options;date_time;iostreams;serialization;filesystem;unit_te
--   - Boost required libraries ... : optimized;/usr/lib/libboost_iostreams-mt.so;debug;/usr/lib/libboost_
--
-- * Readline:
--   - READLINE_VERSION ..... : 6.1
--   - READLINE_INCLUDE_DIR ..... : /usr/include
--   - READLINE_LIBRARY ..... : /usr/lib/libreadline.so
--
-- * MySQL:
--   - MYSQL_VERSION ..... : 5.1.56
--   - MYSQL_INCLUDE_DIR ..... : /usr/include/mysql
--   - MYSQL_LIBRARIES ..... : /usr/lib/mysql/libmysqlclient_r.so
--
-- * SOCI:
--   - SOCI_VERSION ..... : 3.0.0
--   - SOCI_INCLUDE_DIR ..... : /usr/include/soci
--   - SOCIMYSQL_INCLUDE_DIR ..... : /usr/include/soci
--   - SOCI_LIBRARIES ..... : /usr/lib/libsoci_core.so
--   - SOCIMYSQL_LIBRARIES ..... : /usr/lib/libsoci_mysql.so
--
-- * StdAir:

```

```
-- - STDAIR_VERSION ..... : 99.99.99
-- - STDAIR_BINARY_DIRS ..... : /home/localoriuser/dev/deliveries/stdair-0.3.0/bin
-- - STDAIR_EXECUTABLES ..... : stdair
-- - STDAIR_LIBRARY_DIRS ..... : /home/localoriuser/dev/deliveries/stdair-0.3.0/lib
-- - STDAIR_LIBRARIES ..... : stdairlib;stdairuicllib
-- - STDAIR_INCLUDE_DIRS ..... : /home/localoriuser/dev/deliveries/stdair-0.3.0/include
-- - STDAIR_SAMPLE_DIR ..... : /home/localoriuser/dev/deliveries/stdair-0.3.0/share/stdair/samples
--
-- Change a value with: cmake -D<Variable>=<Value>
-- =====
--
-- Configuring done
-- Generating done
-- Build files have been written to: /home/localoriuser/dev/sim/simfqt/simfqtgit/build
```

It is recommended that you check if your library has been compiled and linked properly and works as expected. To do so, you should execute the testing process 'make check'. As a result, you should obtain a similar report:

```
[ 0%] Built target hdr_cfg_simfqt
[ 90%] Built target simfqtlib
[100%] Built target FQTTTestSuitetst
Test project /home/localoriuser/dev/sim/simfqt/simfqtgit/build/test/simfqt
Start 1: FQTTTestSuitetst
1/1 Test #1: FQTTTestSuitetst ..... Passed    0.43 sec

100% tests passed, 0 tests failed out of 1

Total Test time (real) = 0.47 sec
[100%] Built target check_simfqtst
[100%] Built target check
```

Check if all the executed tests PASSED. If not, please contact us by filling a [bug-report](#).

Finally, you should install the compiled and linked library, include files and (optionally) HTML and PDF documentation by typing:

```
make install
```

Depending on the PREFIX settings during configuration, you might need the root (administrator) access to perform this step.

Eventually, you might invoke the following command

```
make clean
```

to remove all files created during compilation process, or even

```
cd ~/dev/sim/simfqtgit
rm -rf build && mkdir build
cd build
```

to remove everything.

10 Linking with SimFQT

10.1 Table of Contents

- [Introduction](#)
- [Dependencies](#)
- [Using the pkg-config command](#)
- [Using the simfqt-config script](#)
- [M4 macro for the GNU Autotools](#)
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10.2 Introduction

There are two convenient methods of linking your programs with the SimFQT library. The first one employs the `'pkg-config'` command (see <http://pkgconfig.freedesktop.org/>), whereas the second one uses `'simfqt-config'` script. These methods are shortly described below.

10.3 Dependencies

The SimFQT library depends on several other C++ components.

10.3.1 StdAir

Among them, as for now, only StdAir has been packaged. The support for StdAir is taken in charge by a dedicated M4 macro file (namely, `'stdair.m4'`), from the configuration script (generated thanks to `'configure.ac'`).

10.4 Using the pkg-config command

`'pkg-config'` is a helper tool used when compiling applications and libraries. It helps you insert the correct compiler and linker options. The syntax of the `'pkg-config'` is as follows:

```
pkg-config <options> <library_name>
```

For instance, assuming that you need to compile an SimFQT based program `'my_prog.cpp'`, you should use the following command:

```
g++ `pkg-config --cflags simfqt` -o my_prog my_prog.cpp \  
`pkg-config --libs simfqt`
```

For more information see the `'pkg-config'` man pages.

10.5 Using the simfqt-config script

SimFQT provides a shell script called `'simfqt-config'`, which is installed by default in `'$prefix/bin'` (`'/usr/local/bin'`) directory. It can be used to simplify compilation and linking of SimFQT based programs. The usage of this script is quite similar to the usage of the `'pkg-config'` command.

Assuming that you need to compile the program `'my_prog.cpp'` you can now do that with the following command:

```
g++ 'simfqt-config --cflags' -o my_prog my_prog.cpp 'simfqt-config --libs'
```

A list of `'simfqt-config'` options can be obtained by typing:

```
simfqt-config --help
```

If the `'simfqt-config'` command is not found by your shell, you should add its location `'$prefix/bin'` to the `PATH` environment variable, e.g.:

```
export PATH=/usr/local/bin:$PATH
```

10.6 M4 macro for the GNU Autotools

A M4 macro file is delivered with SimFQT, namely `'simfqt.m4'`, which can be found in, e.g., `'/usr/share/aclocal'`. When used by a `'configure'` script, thanks to the `'AM_PATH_SIMFQT'` macro (specified in the M4 macro file), the following Makefile variables are then defined:

- `'SIMFQT_VERSION'` (e.g., defined to 0.2.0)
- `'SIMFQT_CFLAGS'` (e.g., defined to `'-I${prefix}/include'`)
- `'SIMFQT_LIBS'` (e.g., defined to `'-L${prefix}/lib -lsimfqt'`)

10.7 Using SimFQT with dynamic linking

When using static linking some of the library routines in SimFQT are copied into your executable program. This can lead to unnecessary large executables. To avoid having too large executable files you may use dynamic linking instead. Dynamic linking means that the actual linking is performed when the program is executed. This requires that the system is able to locate the shared SimFQT library file during your program execution. If you install the SimFQT library using a non-standard prefix, the `'LD_LIBRARY_PATH'` environment variable might be used to inform the linker of the dynamic library location, e.g.:

```
export LD_LIBRARY_PATH=<SimFQT installation prefix>/lib:$LD_LIBRARY_PATH
```

11 Test Rules

This section describes rules how the functionality of the SimFQT library should be verified. In the `'tests'` subdirectory test files are provided. All functionality should be tested using these test files.

11.1 The Test File

Each new SimFQT module/class should be accompanied with a test file. The test file is an implementation in C++ that tests the functionality of a function/class or a group of functions/classes called modules. The test file should test relevant parameter settings and input/output relations to guarantee correct functionality of the corresponding classes/functions. The test files should be maintained using version control and updated whenever new functionality is added to the SimFQT library.

The test file should print relevant data to a standard output that can be used to verify the functionality. All relevant parameter settings should be tested.

The test file should be placed in the 'tests' subdirectory and should have a name ending with '__test.cpp'.

11.2 The Reference File

Consider a test file named 'module_test.cpp'. A reference file named 'module_test.ref' should accompany the test file. The reference file contains a reference printout of the standard output generated when running the test program. The reference file should be maintained using version control and updated according to the test file.

11.3 Testing SimFQT Library

One can compile and execute all test programs from 'tests' subdirectory by typing

```
% make check
```

after successful compilation of the SimFQT library.

12 Users Guide

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 - [Build the SimFQT project](#)
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- Instantiate the default booking request
 - Instantiate the default travel solution list
 - Fare Quoting a list of travel solution
- Error Messages
 - Fare input file not found
 - Fare input file can not be parsed
 - Error Messages for missing fare rules

12.2 Introduction

The `SimFQT` library contains classes for fare rule management. This document does not cover all the aspects of the `SimFQT` library. It does however explain the most important things you need to know in order to start using `SimFQT`.

12.3 Get Started

12.3.1 Get the `SimFQT` library

Clone locally the full [Git project](#):

```
cd ~
mkdir -p dev/sim
cd ~/dev/sim
git clone git://simfqt.git.sourceforge.net/gitroot/simfqt/simfqt simfqtgit
cd simfqtgit
git checkout trunk
```

12.3.2 Build the `SimFQT` project

Link with `StdAir`, create the distribution package (say, 0.5.0) and compile using the following commands:

```
cd ~/dev/sim/simfqtgit
rm -rf build && mkdir -p build
cd build
cmake -DCMAKE_INSTALL_PREFIX=~/dev/deliveries/simfqt-0.5.0 \
-DWITH_STDAIR_PREFIX=~/dev/deliveries/stdair-stable \
-DCMAKE_BUILD_TYPE:STRING=Debug -DINSTALL_DOC:BOOL=ON ..
make
```

12.3.3 Run the Tests

After building the `SimFQT` project, the following commands run the tests:

```
cd ~/dev/sim/simfqtgit
cd build
make check
```

As a result, you should obtain a similar report:

```
[ 0%] Built target hdr_cfg_simfqt
[ 90%] Built target simfqtlib
[100%] Built target FQTTestSuitetst
```

```
Test project /home/localoriuser/dev/sim/simfqt/simfqtgit/build/test/simfqt
  Start 1: FQTTTestSuitetst
1/1 Test #1: FQTTTestSuitetst ..... Passed    0.15 sec

100% tests passed, 0 tests failed out of 1

Total Test time (real) = 0.16 sec
[100%] Built target check_simfqtst
[100%] Built target check
```

12.3.4 Install the SimFQT Project (Binaries, Documentation)

After the step [Build the SimFQT project](#), to install the library and its header files, type:

```
cd ~/dev/sim/simfqtgit
cd build
make install
```

You can check that the executables and other required files have been copied into the given final directory:

```
cd ~/dev/deliveries/simfqt-0.5.0
```

To generate the SimFQT project documentation, the commands are:

```
cd ~/dev/sim/simfqtgit
cd build
make doc
```

The SimFQT project documentation is available in the following formats: HTML, LaTeX. Those documents are available in a subdirectory:

```
cd ~/dev/sim/simfqtgit
cd build
cd doc
```

12.4 Input file of SimFQT Project

The fare input file structure should look like the following sample:

```
\textcolor{comment}{// Fares: fare ID; OriginCity; DestinationCity; TripType; DateRangeStart; DateRangeEnd; DepartureTimeRangeStart; DepartureTimeRangeEnd; POS; CabinCode; Channel; AdvancePurchase; SaturdayNight; ChangeFees; NonRefundable; MinimumStay; Price; nb Segments}
\textcolor{comment}{// Segment: AirlineCode; Class; }
1; SIN; BKK; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; SIN; Y; IN; 7; T; T; T; 3; 150.0; SQ; Y;
2; SIN; BKK; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; BKK; Y; IN; 7; T; T; T; 3; 150.0; SQ; Y;
3; SIN; HND; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; SIN; Y; IN; 7; T; T; T; 3; 150.0; SQ; Y;
4; SIN; HND; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; HND; Y; IN; 7; T; T; T; 3; 150.0; SQ; Y;
5; SIN; HND; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; ROW; Y; IN; 7; T; T; T; 3; 150.0; SQ; Y;
6; SIN; BKK; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; SIN; Y; IF; 7; T; T; T; 3; 150.0; SQ; Y;
7; SIN; BKK; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; BKK; Y; IF; 7; T; T; T; 3; 150.0; SQ; Y;
```

```

8; SIN; HND; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; SIN; Y; IF; 7; T; T; T; 3;
    150.0; SQ; Y;
9; SIN; HND; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; HND; Y; IF; 7; T; T; T; 3;
    150.0; SQ; Y;
10; SIN; HND; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; ROW; Y; IF; 7; T; T; T; 3
    ; 150.0; SQ; Y;

```

Each line represents a fare rule (see [SIMFQT::FareRuleStruct](#)), i.e., each line tells us the price a customer will be asked according to a lot of criteria such as:

- the origin and destination of his travel (for instance from Singapour to Bangkok in the first fare rule).
- the type of his travel, i.e. one-way "OW" or round trip "RT".
- the date and time he is willing to travel (each fare rule has a date range and a time range of validity).
- the place where he is buying the ticket, i.e. the point of sale.
- his preferred cabin.
- the channel of the booking described by a two letters code: direct(D)/indirect(I) and on-line(N)/offline(F).
- the date when he wants to buy the ticket, i.e. the advanced purchase required in number of days.
- the saturday night stay option, i.e. is he staying a saturday night between his inbound trip and his outbound one? "T" stands for true and "F" stands for false.
- the change fees option, i.e. are there fees to change his ticket? "T" stands for true and "F" stands for false.
- the refundable criterion, i.e. is the ticket refundable? "T" stands for true and "F" stands for false.
- the number of days he is willing to stay at the destination location (each fare rule has a minimum stay requirement in number of days).

Some fare input examples (including the example above named fare01.csv) are given in the `stdair::samples` directory.

12.5 The fare quoting BOM Tree

The Fare Quoting Business Object Model (BOM) tree is a structure permitting to store all the [SIMFQT::FareRuleStruct](#) objects of the simulation. That is why, the BOM tree is built parsing the fare file containing all the fare rules (as described in the previous section [Input file of SimFQT Project](#)). For convenience and first use of SimFQT (the input fare file building can be long and heavy), SimFQT API enables to build a small default BOM tree.

12.5.1 Build of the fare quoting BOM tree

First, a BOM root object (i.e., a root for all the classes in the project) is instantiated by the `stdair::STDAIR_ServiceContext` context object, when the `stdair::STDAIR_Service` is itself instantiated, that is to say during the instantiation of the `simfqt::SIMFQT_Service` object. The corresponding type (class) `stdair::BomRoot` is defined in the `StdAir` library.

Then, the BOM root can be either constructed thanks to the `simfqt::SIMFQT_Service::buildSampleBom()` method:

```
\textcolor{keywordtype}{void} buildSampleBom();
```

or can be constructed using the fare dump file described above thanks to the `simfqt::SIMFQT_Service::parseAndLoad (const stdair::Filename_T&) method`:

```
\textcolor{keywordtype}{void} parseAndLoad (\textcolor{keyword}{const} FareFilePath& iFareFilename);
```

12.5.2 Display of the fare quoting BOM tree

The fare quoting BOM tree can be displayed as done in the `batches::simfqt.cpp` program:

When the default bom tree is used (`-b` option of the main program `simfqt.cpp`), the fare quoting BOM tree display should look like:

```
=====
BomRoot:  -- ROOT  --
=====
+++++
AirportPair: LHR, SYD
+++++
-----
DatePeriod: [2011-Jan-15/2011-Dec-30]
-----
*****
PosChannel: LHR,DN
*****
-----
TimePeriod: 00:00:00-23:00:00
-----
-----
Fare-Features: RT  -- 0-1-1-1-0
-----
-----
AirlineClassList: BA Y
-----
```

Here the fare quoting BOM tree is just composed of one fare rule.

12.5.3 Structure of the fare quoting BOM tree

As one can guess looking at the BOM tree display above, the tree is constructed as follow:

- At the top of the tree, we find a `stdair::BomRoot` object (i.e., a root for all the classes in the project).
- Just under the root, at the first level, we find `stdair::AirportPair` objects (i.e., all the possible combinations of origin-destination). In the instance above, the only combination possible is from London to Sydney.
- At the next level, under a particular `stdair::AirportPair`, we find all the date periods of the fare rules applicable for this origin-destination.
- Then, under a particular `stdair::DatePeriod`, we find all the possible combinations of point-of-sale and channel applicable.

- Under a particular `stdair::PosChannel` object, we have the corresponding `stdair::TimePeriod` objects.
- At the next-to-last level, we have `stdair::FareFeatures` objects, that is to say the trip type, the advanced purchase and stay duration required, ...
- Finally we find the code of the airline publishing the current fare rule and the applicable class code.

12.6 The fare quoting procedure

The project SimFQT aims at fare quoting a list of `travel solutions` corresponding to a `booking request`. The fare quoter looks for all the fare rules matching a travel solution: when a fare rule matches, it creates a `fare option` object and adds this object to the current travel solution.

A few steps:

- [Instantiate the default booking request](#)
- [Instantiate the default travel solution list](#)
- [Fare Quoting a list of travel solution](#)

12.6.1 Instantiate the default booking request

A default booking request can be built using the `simfqt::SIMFQT_Service::buildBookingRequest` method:

```
stdair::BookingRequestStruct buildBookingRequest(\textcolor{keyword}{const} \textcolor{keywordtype}{bo
```

12.6.2 Instantiate the default travel solution list

In the following sample, a list of travel solutions is given as input/output parameter of the `simfqt::SIMFQT_Service::buildSampleTravelSolutions` method:

```
\textcolor{keywordtype}{void} buildSampleTravelSolutions (stdair::TravelSolutionList\&);
```

12.6.3 Fare Quoting a list of travel solution

Once a booking request, its corresponding list of travel solutions and the fare Quote BOM tree are constructed, the main function of the module can be called:

```
\textcolor{keywordtype}{void} quotePrices (\textcolor{keyword}{const} stdair::BookingRequestStruct&,
stdair::TravelSolutionList\&);
```

For each travel solution of the list, the applicable fare rules are picked from the BOM tree (information such as the trip type or the booking request date are only contained into the booking request, that is why we need this object too).

Each chosen fare rule enables to create a fare option structure which is finally stored into the travel solution.

12.7 Error Messages

This section lists the fatal errors you may encounter when using SimFQT:

- [Fare input file not found](#)
- [Fare input file can not be parsed](#)
- [Error Messages for missing fare rules](#)

12.7.1 Fare input file not found

In this case, the output error message will be similar to:

```
terminate called after throwing an instance of 'SIMFQT::FareInputFileNotFoundException'
  what(): The fare input file '~/<YourFileName>.csv' does not exist or can not be read
Aborted
```

You can check:

- the given path to your input file is correct.
- the specified file name <YourFileName> is correct.
- the file permission settings: is the file "readable"?

12.7.2 Fare input file can not be parsed

This error message means that your input file has been opened but has not been fully read.

```
terminate called after throwing an instance of 'SIMFQT::FareFileParsingFailedException'
  what(): Parsing of fare input file: ~/<YourFileName>.csv failed
Aborted
```

Your input file structure is somehow incorrect. See the tutorial section [How to build a fare input file?](#).

12.7.3 Error Messages for missing fare rules

If you obtain one of the error messages below and you are currently using your own input file, that means it has been fully read. However, at least one fare rule is missing to complete the fare quote.

- If your error message is about a missing airport pair, you should obtain a similar report:

```
terminate called after throwing an instance of 'SIMFQT::AirportPairNotFoundException'
  what(): No available fare rule for the Origin-Destination pair: xxx, xxx
Aborted
```

You need to be sure that all your travel solutions have at least one corresponding origin-destination fare rule. It seems you should add one origin-destination (i.e., xxx, xxx) fare rule into your input file.

- If your error message is about a missing fare rule for a flight date, you should obtain a similar report:

```
terminate called after throwing an instance of 'SIMFQT::FlightDateNotFoundException'
  what(): No available fare rule for the flight date x, xxxx-xxx-xx and to the Origin-Destination pair
Aborted
```

You need to be sure that all your travel solutions have at least one corresponding fare rule: same origin-destination and valid date range. It seems you should add/change a fare rule with the Origin-Destination pair: xxx, xxx: its date range must include the flight date xxxx-xxx-xx.

- If your error message is about a missing fare rule for a point-of sale and/or channel, you should obtain a similar report:

```
terminate called after throwing an instance of 'SIMFQT::PosOrChannelNotFoundException'
  what(): No available fare rule for the point of sale xxx, the channel xx, the flight date x, xxxx-
Aborted
```

You need to be sure that all your travel solutions have at least one corresponding fare rule: same origin-destination, valid date range, same point-of-sale and same channel. It seems you should add/change a fare rule to have the same combination as given in the output error message: "the point of sale xxx, the channel xx, the flight date x, xxxx-xxx-xx and the Origin-Destination pair: xxx, xxx".

- If your error message is about a missing fare rule for a flight time, you should obtain a similar report:

```
terminate called after throwing an instance of 'SIMFQT::FlightTimeNotFoundException'
  what(): No available fare rule corresponding to 'xx; x, xxxx-xxx-xx; xxx, xxx; xx:xx' (parsed key
Aborted
```

You need to be sure that all your travel solutions have at least one corresponding fare rule: same origin-destination, valid date range, same point-of-sale, same channel and valid time range. Add/change a fare rule if necessary.

- If your error message is about a missing fare rule for some features, you should obtain a similar report:

```
terminate called after throwing an instance of 'SIMFQT::FeaturesNotFoundException'
  what(): No available fare rule corresponding to a trip type xx, to a stay duration of x, to a requ
Aborted
```

You need to be sure that all your travel solutions have at least one corresponding fare rule: same origin-destination, valid date range, same point-of-sale, same channel, valid time range and valid features. The features are:

- the trip type. Maybe you need both "OW" (One-Way) and "RT" (Round-trip) fare rules?
- the minimum stay duration. You can try "0" for this parameter to include all the possible stay durations.
- the advance purchase. You can try "0" for this parameter to include all the booking requests up to departure date.

- If your error message is about a missing fare rule for an airline, you should obtain a similar report:

```
terminate called after throwing an instance of 'SIMFQT::AirlineNotFoundException'
  what(): No available fare rule corresponding to 'xx; x, xxxx-xxx-xx; xxx, xxx; xx:xx' (parsed key
Aborted
```

At least one of your fare rules is correct except that the fare into question must be defined by the airline operating (see the first two letters of the parsed key in the error message to know which airline is operating).

13 Supported Systems

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13.2 Introduction

This page is intended to provide a list of SimFQT supported systems, i.e. the systems on which configuration, installation and testing process of the SimFQT library has been successful. Results are grouped based on minor release number. Therefore, only the latest tests for bug-fix releases are included. Besides, the information on this page is divided into sections dependent on the operating system.

Where necessary, some extra information is given for each tested configuration, e.g. external libraries installed, configuration commands used, etc.

If you manage to compile, install and test the SimFQT library on a system not mentioned below, please let us know, so we could update this database.

13.3 SimFQT 3.10.x

13.3.1 Linux Systems

13.3.1.1 Fedora Core 4 with ATLAS

- **Platform:** Intel Pentium 4

- **Operating System:** Fedora Core 4 (x86)
- **Compiler:** g++ (GCC) 4.0.2 20051125
- **SimFQT release:** 3.10.0
- **External Libraries:** From FC4 distribution:

```
- fftw3.i386-3.0.1-3
- fftw3-devel.i386-3.0.1-3
- atlas-sse2.i386-3.6.0-8.fc4
- atlas-sse2-devel.i386-3.6.0-8.fc4
- blas.i386-3.0-35.fc4
- lapack.i386-3.0-35.fc4
```

- **Tests Status:** All tests PASSED
- **Comments:** SimFQT configured with:

```
% CXXFLAGS="-O3 -pipe -march=pentium4" ./configure
```

- **Date:** March 7, 2006
- **Tester:** Tony Ottosson

13.3.1.2 Gentoo Linux with ACML

- **Platform:** AMD Sempron 3000+
- **Operating System:** Gentoo Linux 2006.0 (x86 arch)
- **Compiler(s):** g++ (GCC) 3.4.5
- **SimFQT release:** 3.10.1
- **External Libraries:** Compiled and installed from portage tree:

```
- sci-libs/acml-3.0.0
```

- **Tests Status:** All tests PASSED
- **Comments:** BLAS and LAPACK libs set by using the following system commands:

```
% eselect blas set ACML
% eselect lapack set ACML
```

SimFQT configured with:

```
% export CPPFLAGS="-I/usr/include/acml"
% ./configure --with-blas="-lblas"
```

- **Date:** March 31, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.1.3 Gentoo Linux with ATLAS

- **Platform:** Intel Pentium M Centrino
- **Operating System:** Gentoo Linux 2006.0 (x86)
- **Compiler:** g++ (GCC) 3.4.5
- **SimFQT release:** 3.10.1
- **External Libraries:** Compiled and installed from portage tree:
 - sci-libs/fftw-3.1
 - sci-libs/blas-atlas-3.6.0-r1
 - sci-libs/lapack-atlas-3.6.0
- **Tests Status:** All tests PASSED
- **Comments:** BLAS and LAPACK libs set by using the following system commands:

```
% eselect blas set ATLAS
% eselect lapack set ATLAS
```

SimFQT configured with:

```
% ./configure --with-blas="-lblas"
```

- **Date:** March 31, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.1.4 Gentoo Linux with MKL

- **Platform:** Intel Pentium M Centrino
- **Operating System:** Gentoo Linux 2006.0 (x86 arch)
- **Compiler:** g++ (GCC) 3.4.5
- **SimFQT release:** 3.10.0
- **External Libraries:** Intel Math Kernel Library (MKL) 8.0.1 installed manually in the following directory: /opt/intel/mkl/8.0.1
- **Tests Status:** All tests PASSED
- **Comments:** SimFQT configured using the following commands:

```
% export LDFLAGS="-L/opt/intel/mkl/8.0.1/lib/32"
% export CPPFLAGS="-I/opt/intel/mkl/8.0.1/include"
% ./configure
```

- **Date:** February 28, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.1.5 Gentoo Linux with NetLib's BLAS and LAPACK

- **Platform:** Intel Pentium M Centrino
- **Operating System:** Gentoo Linux 2006.0 (x86)
- **Compiler:** g++ (GCC) 3.4.5
- **SimFQT release:** 3.10.1
- **External Libraries:** Compiled and installed from portage tree:
 - sci-libs/fftw-3.1
 - sci-libs/blas-reference-19940131-r2
 - sci-libs/cblas-reference-20030223
 - sci-libs/lapack-reference-3.0-r2
- **Tests Status:** All tests PASSED
- **Comments:** BLAS and LAPACK libs set by using the following system commands:

```
% blas-config reference
% lapack-config reference
```

SimFQT configured with:

```
% ./configure --with-blas="-lblas"
```

- **Date:** March 31, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.1.6 Red Hat Enterprise Linux with SimFQT External

- **Platform:** Intel Pentium 4
- **Operating System:** Red Hat Enterprise Linux AS release 4 (Nahant Update 2)
- **Compiler:** g++ (GCC) 3.4.4 20050721 (Red Hat 3.4.4-2)
- **SimFQT release:** 3.10.0
- **External Libraries:** BLAS, CBLAS, LAPACK and FFTW libraries from SimFQT External 2.1.1 package
- **Tests Status:** All tests PASSED
- **Date:** March 7, 2006
- **Tester:** Erik G. Larsson

13.3.1.7 SUSE Linux 10.0 with NetLib's BLAS and LAPACK

- **Platform:** Intel Pentium 4 CPU 3.20GHz (64-bit)
- **Operating System:** SUSE Linux 10.0 (x86_64)
- **Compiler(s):** g++ (GCC) 4.0.2
- **SimFQT release:** 3.10.0
- **External Libraries:** BLAS, LAPACK and FFTW libraries installed from OpenSuse 10.0 RPM repository:

```
- blas-3.0-926
- lapack-3.0-926
- fftw3-3.0.1-114
- fftw3-threads-3.0.1-114
- fftw3-devel-3.0.1-114
```

- **Tests Status:** All tests PASSED
- **Comments:** SimFQT configured with:

```
% export CXXFLAGS="-m64 -march=nocona -O3 -pipe"
% ./configure --with-lapack="/usr/lib64/liblapack.so.3"
```

- **Date:** March 1, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.1.8 SUSE Linux 10.0 with MKL

- **Platform:** Intel Pentium 4 CPU 3.20GHz (64-bit)
- **Operating System:** SUSE Linux 10.0 (x86_64)
- **Compiler(s):** g++ (GCC) 4.0.2
- **SimFQT release:** 3.10.0
- **External Libraries:** Intel Math Kernel Library (MKL) 8.0.1 installed manually in the following directory: /opt/intel/mkl/8.0.1

- **Tests Status:** All tests PASSED
- **Comments:** SimFQT configured with:

```
% export CXXFLAGS="-m64 -march=nocona -O3 -pipe"
% export LDFLAGS="-L/opt/intel/mkl/8.0.1/lib/em64t"
% export CPPFLAGS="-I/opt/intel/mkl/8.0.1/include"
% ./configure
```

- **Date:** March 1, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.2 Windows Systems

13.3.2.1 Microsoft Windows XP with Cygwin

- **Platform:** AMD Sempron 3000+
- **Operating System:** Microsoft Windows XP SP2, Cygwin 1.5.19-4
- **Compiler(s):** g++ (GCC) 3.4.4 (cygming special)
- **SimFQT release:** 3.10.1
- **External Libraries:** Installed from Cygwin's repository:
 - fftw-3.0.1-2
 - fftw-dev-3.0.1-1
 - lapack-3.0-4
- **Tests Status:** All tests PASSED
- **Comments:** Only static library can be built. SimFQT configured with:

```
% ./configure
```
- **Date:** March 31, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.2.2 Microsoft Windows XP with Cygwin and ATLAS

- **Platform:** AMD Sempron 3000+
- **Operating System:** Microsoft Windows XP SP2, Cygwin 1.5.19-4
- **Compiler(s):** g++ (GCC) 3.4.4 (cygming special)
- **SimFQT release:** 3.10.1
- **External Libraries:** Installed from Cygwin's repository:
 - fftw-3.0.1-2
 - fftw-dev-3.0.1-1ATLAS BLAS and LAPACK libraries from SimFQT External 2.1.1 package configured using:

```
% ./configure --enable-atlas --disable-fftw
```
- **Tests Status:** All tests PASSED
- **Comments:** Only static library can be built. SimFQT configured with:

```
% export LDFLAGS="-L/usr/local/lib"
% ./configure
```
- **Date:** March 31, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.2.3 Microsoft Windows XP with Cygwin and ACML

- **Platform:** AMD Sempron 3000+
- **Operating System:** Microsoft Windows XP SP2, Cygwin 1.5.19-4
- **Compiler(s):** g++ (GCC) 3.4.4 (cygming special)
- **SimFQT release:** 3.10.2
- **External Libraries:** ACML version 3.1.0 (acml3.1.0-32-win32-g77.exe) installed into a default directory, i.e. "c:\Program Files\AMD\acml3.1.0"
- **Tests Status:** All tests PASSED
- **Comments:** Only static library can be built. SimFQT configured with:

```
% export LDFLAGS="-L/cygdrive/c/Progra~1/AMD/acml3.1.0/gnu32/lib"
% export CPPFLAGS="-I/cygdrive/c/Progra~1/AMD/acml3.1.0/gnu32/include"
% ./configure --enable-debug
```

- **Date:** May 15, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.2.4 Microsoft Windows XP with MinGW, MSYS and ACML

- **Platform:** AMD Sempron 3000+
- **Operating System:** Microsoft Windows XP SP2, MinGW 5.0.2, MSYS 1.0.10
- **Compiler(s):** g++ (GCC) 3.4.4 (mingw special)
- **SimFQT release:** 3.10.2
- **External Libraries:** ACML version 3.1.0 (acml3.1.0-32-win32-g77.exe) installed into a default directory, i.e. "c:\Program Files\AMD\acml3.1.0"
- **Tests Status:** All tests PASSED
- **Comments:** Only static library can be built. SimFQT configured with:

```
% export LDFLAGS="-L/c/Progra~1/AMD/acml3.1.0/gnu32/lib"
% export CPPFLAGS="-I/c/Progra~1/AMD/acml3.1.0/gnu32/include"
% ./configure --enable-debug
```

- **Date:** May 15, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.2.5 Microsoft Windows XP with MinGW, MSYS and SimFQT External

- **Platform:** AMD Sempron 3000+
- **Operating System:** Microsoft Windows XP SP2, MinGW 5.0.2, MSYS 1.0.10
- **Compiler(s):** g++ (GCC) 3.4.4 (mingw special)
- **SimFQT release:** 3.10.5
- **External Libraries:** BLAS, CBLAS, LAPACK and FFTW libraries from SimFQT External 2.2.0 package
- **Tests Status:** All tests PASSED
- **Comments:** Only static library can be built. SimFQT configured with:

```
% export LDFLAGS="-L/usr/local/lib"
% export CPPFLAGS="-I/usr/local/include"
% export CXXFLAGS="-Wall -O3 -march=athlon-tbird -pipe"
% ./configure --disable-html-doc
```

- **Date:** August 11, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.2.6 Microsoft Windows XP with MS Visual C++ and Intel MKL

- **Platform:** AMD Sempron 3000+
- **Operating System:** Microsoft Windows XP SP2
- **Compiler(s):** Microsoft Visual C++ 2005 .NET
- **SimFQT release:** 3.10.5
- **External Libraries:** Intel Math Kernel Library (MKL) 8.1 installed manually in the following directory: "C:\Program Files\Intel\MKL\8.1"
- **Tests Status:** Not fully tested. Some SimFQT based programs compiled and run with success.
- **Comments:** Only static library can be built. SimFQT built by opening the "win32\simfqt.vcproj" project file in MSVC++ and executing "Build -> Build Solution" command from menu.
- **Date:** August 11, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.3 Unix Systems

13.3.3.1 SunOS 5.9 with SimFQT External

- **Platform:** SUNW, Sun-Blade-100 (SPARC)
- **Operating System:** SunOS 5.9 Generic_112233-10
- **Compiler(s):** g++ (GCC) 3.4.5

- **SimFQT release:** 3.10.2
- **External Libraries:** BLAS, CBLAS, LAPACK and FFTW libraries from SimFQT External 2.1.1 package. The following configuration command has been used:

```
% export CFLAGS="-mcpu=ultrasparc -O2 -pipe -funroll-all-loops"  
% ./configure
```

- **Tests Status:** All tests PASSED
- **Comments:** SimFQT configured with:

```
% export LDFLAGS="-L/usr/local/lib"  
% export CPPFLAGS="-I/usr/local/include"  
% export CXXFLAGS="-mcpu=ultrasparc -O2 -pipe"  
% ./configure --enable-debug
```

- **Date:** May 15, 2006
- **Tester:** Adam Piatyszek (ediap)

14 SimFQT Supported Systems (Previous Releases)

14.1 SimFQT 3.9.1

14.2 SimFQT 3.9.0

14.3 SimFQT 3.8.1

15 Tutorials

15.1 Table of Contents

- [Preparing the SimFQT Project for Development](#)
- [Your first fareQuote](#)
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 - [Result of the Batch Program](#)
- [Fare quoting with an input file](#)
 - [How to build a fare input file?](#)
 - [Building the BOM tree with an input file](#)
 - [Result of the Batch Program](#)

15.2 Preparing the SimFQT Project for Development

The source code for these examples can be found in the `batches` and `test/simfqt` directories. They are compiled along with the rest of the SimFQT project. See the [Users Guide](#) for more details on how to build the SimFQT project.

15.3 Your first fareQuote

15.3.1 Summary of the different steps

All the steps below can be found in the same order in the batch `simfqt.cpp` program.

First, we instantiate the `simfqtService` object:

```
std::ofstream logOutputFile;
\textcolor{keyword}{const} stdair::BasLogParams lLogParams (stdair::LOG::DEBUG, logOutputFile);
\hyperlink{classSIMFQT_1_1SIMFQT__Service}{SIMFQT::SIMFQT_Service} simfqtService (lLogParams);
```

Then, we construct a default sample list of travel solutions and a default booking request (as mentioned in [Instantiate the default booking request](#) and [Instantiate the default travel solution list](#) parts):

```
stdair::TravelSolutionList\__T& ioInteractiveTravelSolutionList,
\textcolor{keyword}{return} ioBookingRequestStruct;
```

For basic use, the default BOM tree can be built using:

```
simfqtService.buildSampleBom();
```

The main step is the fare quoting (see [The fare quoting procedure](#)):

```
simfqtService.quotePrices (lInteractiveBookingRequest,
```

15.3.2 Result of the Batch Program

When the `simfqt.cpp` program is run (with the `-b` option), the log output file should look like:

```
[D]../../../../simfqt/batches/simfqt.cpp:186: Welcome to Simfqt
[D]../../../../simfqt/batches/simfqt.cpp:212: Travel solutions:
  [0] [0] BA, 9, 2011-06-10, LHR, SYD, 21:45 --- ---
[D]../../../../simfqt/command/FareQuoter.cpp:519: Segment path: BA; 9, 2011-06-10; L
      HR, SYD; 21:45. A corresponding fare option \textcolor{keyword}{for} the \textcolor{stringliteration}{Y}; 450 EUR; conditions: 1 1 1
[D]../../../../simfqt/service/SIMFQT__Service.cpp:352: Fare Quote retrieving: 0.00140
      3 - SIMFQT__ServiceContext -- Owns StdAir service: 1
[D]../../../../simfqt/batches/simfqt.cpp:214: BOM tree:
=====
BomRoot:  -- ROOT --
=====
+++++
AirportPair: LHR, SYD
+++++
-----
DatePeriod: [2011-Jan-15/2011-Dec-30]
-----
*****
PosChannel: LHR,DN
*****
-----
TimePeriod: 00:00:00-23:00:00
-----
-----
Fare-Features: RT -- 0-1-1-1-0
```

```

-----
-----
AirlineClassList: BA Y
-----

[D]../../../../simfqt/batches/simfqt.cpp:219: Travel solutions:
  [0] [0] BA, 9, 2011-06-10, LHR, SYD, 21:45 --- Y, 450, 1 1 1 ---

```

What is interesting is to compare the travel solution list (here reduced to a single travel solution) displayed before:

```
[0] [0] BA, 9, 2011-06-10, LHR, SYD, 21:45 --- ---
```

and after the fare quoting:

```
[0] [0] BA, 9, 2011-06-10, LHR, SYD, 21:45 --- Y, 450, 1 1 1 ---
```

Between the two groups of dashes, we can see that a fare option structure has been added by the fare quoter: the price is 450 EUR for the Y class, the ticket is refundable but there are exchange fees and the customer must stay over on Saturday night.

Let's return to our default BOM tree display: the only fare rule stored was a match for the travel solution into consideration (same origin airport, same destination airport, flight date included in the fare rule date range, same airline "BA", ...).

By looking at the fare rule trip type "RT", we can guess we face a round trip fare: that means the price given in the default bom tree construction in `stdair::CmdBomManager.hpp` has been divided by 2 because we are considering either an inbound trip or an outbound one.

15.4 Fare quoting with an input file

15.4.1 How to build a fare input file?

The objective here is to build a fare input file to fare quote the default travel solution list built using:

```
stdair::TravelSolutionList _T& ioInteractiveTravelSolutionList,
```

This travel solution list, reduced to a singleton, can be displayed as done before:

```
[0] [0] BA, 9, 2011-06-10, LHR, SYD, 21:45 --- ---
```

We deduce:

- we need a fare rule whose origin-destination couple is "LHR, SYD".
- the date range must include the date "2011-06-10".
- the time range must include the time "21:45".
- the airline operating is "BA", so it must be the airline pricing.

We can deduce a part of our fare rule file :

```
\textcolor{comment}{// Fares: fare ID; OriginCity; DestinationCity; TripType; DateRangeStart; DateRangeEnd; DepartureTimeRangeStart; DepartureTimeRangeEnd; POS; CabinCode; Channel; AdvancePurchase; SaturdayNight; ChangeFees; NonRefundable; MinimumStay; Price; nb Segments}
\textcolor{comment}{// Segment: AirlineCode; Class; }
1; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; ???; ?; ??; ?; ?; ?; ?; ?;
    ???; BA; ?;
```

We have no information about stay duration and advance purchase (such information are contained into the booking request): so let us put "0" to embrace all the requests possible.

No information for the point-of-sale and the channel too: let us consider all the channels ("IN", "DN", "IF" and "DF") and all the points of sale (the origin "LHR", the destination "SYD" and the rest-of-the-world "ROW") existing. To access this information, we could look into the default booking request.

The input file is now:

```
\textcolor{comment}{// Fares: fare ID; OriginCity; DestinationCity; TripType; DateRangeStart; DateRangeEnd; DepartureTimeRangeStart; DepartureTimeRangeEnd; POS; CabinCode; Channel; AdvancePurchase; SaturdayNight; ChangeFees; NonRefundable; MinimumStay; Price; nb Segments}
\textcolor{comment}{// Segment: AirlineCode; Class; }
1; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; ?; IN; 0; ?; ?; ?; 0;
    ???; BA; ?;
2; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; ?; IF; 0; ?; ?; ?; 0;
    ???; BA; ?;
3; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; ?; DN; 0; ?; ?; ?; 0;
    ???; BA; ?;
4; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; ?; DF; 0; ?; ?; ?; 0;
    ???; BA; ?;
5; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; ?; IN; 0; ?; ?; ?; 0;
    ???; BA; ?;
6; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; ?; IF; 0; ?; ?; ?; 0;
    ???; BA; ?;
7; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; ?; DN; 0; ?; ?; ?; 0;
    ???; BA; ?;
8; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; ?; DF; 0; ?; ?; ?; 0;
    ???; BA; ?;
9; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; ?; IN; 0; ?; ?; ?; 0;
    ???; BA; ?;
10; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; ?; IF; 0; ?; ?; ?; 0;
    ; ???; BA; ?;
11; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; ?; DN; 0; ?; ?; ?; 0;
    ; ???; BA; ?;
12; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; ?; DF; 0; ?; ?; ?; 0;
    ; ???; BA; ?;
```

Let us say we have just the Economy cabin "Y" and British Airways prices ticket for class "Y".

No information about the trip type, so we duplicate all the fare rules for both type: one-way "OW" and round-trip "RT" (to access this information, we could look to the default booking request).

The fare options are all set to a default value "T" (meaning true) and the fare values are chosen to be all distinct.

We obtain:

```
\textcolor{comment}{// Fares: fare ID; OriginCity; DestinationCity; TripType; DateRangeStart; DateRangeEnd; DepartureTimeRangeStart; DepartureTimeRangeEnd; POS; CabinCode; Channel; AdvancePurchase; SaturdayNight; ChangeFees; NonRefundable; MinimumStay; Price; nb Segments}
\textcolor{comment}{// Segment: AirlineCode; Class; }
1; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; IN; 0; T; T; T; 0;
    50; BA; Y;
```

```

2; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; IF; 0; T; T; T; 0;
   150; BA; Y;
3; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; DN; 0; T; T; T; 0;
   250; BA; Y;
4; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; DF; 0; T; T; T; 0;
   350; BA; Y;
5; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; IN; 0; T; T; T; 0;
   450; BA; Y;
6; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; IF; 0; T; T; T; 0;
   550; BA; Y;
7; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; DN; 0; T; T; T; 0;
   650; BA; Y;
8; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; DF; 0; T; T; T; 0;
   750; BA; Y;
9; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; IN; 0; T; T; T; 0;
   850; BA; Y;
10; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; IF; 0; T; T; T; 0;
    950; BA; Y;
11; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; DN; 0; T; T; T; 0;
    1050; BA; Y;
12; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; DF; 0; T; T; T; 0;
    1150; BA; Y;
13; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; IN; 0; T; T; T; 0;
    90; BA; Y;
14; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; IF; 0; T; T; T; 0;
    190; BA; Y;
15; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; DN; 0; T; T; T; 0;
    290; BA; Y;
16; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; DF; 0; T; T; T; 0;
    390; BA; Y;
17; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; IN; 0; T; T; T; 0;
    490; BA; Y;
18; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; IF; 0; T; T; T; 0;
    590; BA; Y;
19; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; DN; 0; T; T; T; 0;
    690; BA; Y;
20; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; DF; 0; T; T; T; 0;
    790; BA; Y;
21; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; IN; 0; T; T; T; 0;
    890; BA; Y;
22; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; IF; 0; T; T; T; 0;
    990; BA; Y;
23; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; DN; 0; T; T; T; 0;
    1090; BA; Y;
24; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; DF; 0; T; T; T; 0;
    1190; BA; Y;

```

15.4.2 Building the BOM tree with an input file

The steps are the same as before [Summary of the different steps](#) except the bom tree must be built using the fare input file :

15.4.3 Result of the Batch Program

When the `simfqt.cpp` program is run with the `-f` option linking with the file built just above:

```
~/simfqt -f ~/<YourFileName>.csv
```

the last lines of the log output should look like:

```
[D]~/simfqtgit/simfqt/batches/simfqt.cpp:223: Travel solutions:
[0] [0] BA, 9, 2011-06-10, LHR, SYD, 21:45 --- Y, 145, 1 1 1 ---
```

We have just one fare option added to the travel solution. We can deduce from the price value 145 that the fare quoter used the fare rule number 15 to price the travel solution. We have an inbound or outbound trip of a round trip: the total price 290 has been divided by 2.

16 Command-Line Test to Demonstrate How To Test the SimFQT Project

```
*/
// ////////////////////////////////////////
// Import section
// ////////////////////////////////////////
// STL
#include <sstream>
#include <fstream>
#include <string>
// Boost Unit Test Framework (UTF)
#define BOOST_TEST_DYN_LINK
#define BOOST_TEST_MAIN
#define BOOST_TEST_MODULE FQTTestSuite
#include <boost/test/unit_test.hpp>
// StdAir
#include <stdair/basic/BasLogParams.hpp>
#include <stdair/basic/BasDBParams.hpp>
#include <stdair/basic/BasFileMgr.hpp>
#include <stdair/service/Logger.hpp>
#include <stdair/bom/TravelSolutionStruct.hpp>
#include <stdair/bom/BookingRequestStruct.hpp>
// SimFQT
#include <simfqt/SIMFQT_Service.hpp>
#include <simfqt/config/simfqt-paths.hpp>

namespace boost_utf = boost::unit_test;

struct UnitTestConfig {
    UnitTestConfig() {
        static std::ofstream _test_log ("FQTTestSuite_utfresults.xml");
        boost_utf::unit_test_log.set_stream (_test_log);
        boost_utf::unit_test_log.set_format (boost_utf::XML);
        boost_utf::unit_test_log.set_threshold_level (boost_utf::log_test_units);
        //boost_utf::unit_test_log.set_threshold_level (boost_utf::log_successful_test);
    }

    ~UnitTestConfig() {
    }
};

// ////////////////////////////////////////
void testFareQuoterHelper (const unsigned short iTestFlag,
                          const stdair::Filename_T iFareInputFilename,
                          const bool isBuiltin) {

    // Output log File
    std::ostringstream oStr;
    oStr << "FQTTestSuite_" << iTestFlag << ".log";
    const stdair::Filename_T lLogFilename (oStr.str());

    // Set the log parameters
    std::ofstream logOutputFile;
    // Open and clean the log outputfile
```

```

logOutputFile.open (lLogFilename.c_str());
logOutputFile.clear();

// Initialise the SimFQT service object
const stdair::BasLogParams lLogParams (stdair::LOG::DEBUG,
                                       logOutputFile);

// Initialise the Simfqt service object
SIMFQT::SIMFQT_Service simfqtService (lLogParams);

// Check whether or not a (CSV) input file should be read
if (isBuiltin == true) {

    // Build the default sample BOM tree (filled with fares) for Simfqt
    simfqtService.buildSampleBom();

} else {

    // Build the BOM tree from parsing the fare input file
    SIMFQT::FareFilePath lFareFilePath (iFareInputFilename);
    simfqtService.parseAndLoad (lFareFilePath);
}

// Build a sample list of travel solutions and a booking request.
stdair::TravelSolutionList_T lTravelSolutionList;
simfqtService.buildSampleTravelSolutions (lTravelSolutionList);
stdair::BookingRequestStruct lBookingRequest =
    simfqtService.buildBookingRequest();

// Try to fareQuote the sample list of travel solutions
simfqtService.quotePrices (lBookingRequest, lTravelSolutionList);

// Close the log file
logOutputFile.close();
}

// //////////// Main: Unit Test Suite ////////////

// Set the UTF configuration (re-direct the output to a specific file)
BOOST_GLOBAL_FIXTURE (UnitTestFixture);

// Start the test suite
BOOST_AUTO_TEST_SUITE (master_test_suite)

BOOST_AUTO_TEST_CASE (simfqt_simple_pricing_test) {

    // Input file name
    const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fare01.csv");

    // State whether the BOM tree should be built-in or parsed from an input file
    const bool isBuiltin = false;

    // Try to fareQuote the sample default list of travel solutions
    BOOST_CHECK_NO_THROW (testFareQuoterHelper (0, lFareInputFilename, isBuiltin));
}

BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_01) {

    // Input file name
    const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError01.csv");

    // State whether the BOM tree should be built-in or parsed from an input file

```

```
const bool isBuiltin = false;

// Try to fareQuote the sample default list of travel solutions
BOOST_CHECK_THROW (testFareQuoterHelper (1, lFareInputFilename, isBuiltin),
                   SIMFQT::AirportPairNotFoundException);
}

BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_02) {

    // Input file name
    const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError02.cs
v");

    // State whether the BOM tree should be built-in or parsed from an input file
    const bool isBuiltin = false;

    // Try to fareQuote the sample default list of travel solutions
    BOOST_CHECK_THROW (testFareQuoterHelper (2, lFareInputFilename, isBuiltin),
                       SIMFQT::PosOrChannelNotFoundException);
}

BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_03) {

    // Input file name
    const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError03.cs
v");

    // State whether the BOM tree should be built-in or parsed from an input file
    const bool isBuiltin = false;

    // Try to fareQuote the sample default list of travel solutions
    BOOST_CHECK_THROW (testFareQuoterHelper (3, lFareInputFilename, isBuiltin),
                       SIMFQT::FlightDateNotFoundException);
}

BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_04) {

    // Input file name
    const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError04.cs
v");

    // State whether the BOM tree should be built-in or parsed from an input file
    const bool isBuiltin = false;

    // Try to fareQuote the sample default list of travel solutions
    BOOST_CHECK_THROW (testFareQuoterHelper (4, lFareInputFilename, isBuiltin),
                       SIMFQT::FlightTimeNotFoundException);
}

BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_05) {

    // Input file name
    const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError05.cs
v");

    // State whether the BOM tree should be built-in or parsed from an input file
    const bool isBuiltin = false;

    // Try to fareQuote the sample default list of travel solutions
    BOOST_CHECK_THROW (testFareQuoterHelper (5, lFareInputFilename, isBuiltin),
                       SIMFQT::FeaturesNotFoundException);
}

BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_06) {

    // Input file name
    const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError06.cs
```

```

        v");

    // State whether the BOM tree should be built-in or parsed from an input file
    const bool isBuiltin = false;

    // Try to fareQuote the sample default list of travel solutions
    BOOST_CHECK_THROW (testFareQuoterHelper (6, lFareInputFilename, isBuiltin),
        SIMFQT::AirlineNotFoundException);
}

BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_07) {

    // Input file name
    const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError07.cs
        v");

    // State whether the BOM tree should be built-in or parsed from an input file
    const bool isBuiltin = false;

    // Try to fareQuote the sample default list of travel solutions
    BOOST_CHECK_THROW (testFareQuoterHelper (7, lFareInputFilename, isBuiltin),
        SIMFQT::FareFileParsingFailedException);
}

BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_08) {

    // Input file name
    const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/missingFile.cs
        v");

    // State whether the BOM tree should be built-in or parsed from an input file
    const bool isBuiltin = false;

    // Try to fareQuote the sample default list of travel solutions
    BOOST_CHECK_THROW (testFareQuoterHelper (8, lFareInputFilename, isBuiltin),
        SIMFQT::FareInputFileNotFoundException);
}

BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_09) {

    // Input file name
    const stdair::Filename_T lEmptyInputFilename (STDAIR_SAMPLE_DIR "/ ");

    // State whether the BOM tree should be built-in or parsed from an input file
    const bool isBuiltin = true;

    // Try to fareQuote the sample default list of travel solutions
    BOOST_CHECK_NO_THROW (testFareQuoterHelper (9, lEmptyInputFilename, isBuiltin));
}

// End the test suite
BOOST_AUTO_TEST_SUITE_END()

/*!
```

17 Directory Hierarchy

17.1 Directories

This directory hierarchy is sorted roughly, but not completely, alphabetically:

simfqt	60
basic	58
batches	59
bom	59
command	59
factory	59
service	59
ui	60
cmdline	59
test	60
simfqt	60

18 Namespace Index

18.1 Namespace List

Here is a list of all namespaces with brief descriptions:

SIMFQT	60
SIMFQT::FareParserHelper	62
stdair (Forward declarations)	64

19 Class Index

19.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

```
std::basic_fstream< char >
std::basic_fstream< wchar_t >
std::basic_ifstream< char >
std::basic_ifstream< wchar_t >
std::basic_ios< char >
std::basic_ios< wchar_t >
std::basic_iostream< char >
std::basic_iostream< wchar_t >
std::basic_istream< char >
std::basic_istream< wchar_t >
std::basic_istreamstream< char >
std::basic_istreamstream< wchar_t >
std::basic_ofstream< char >
```

std::basic_ofstream< wchar_t >	
std::basic_ostream< char >	
std::basic_ostream< wchar_t >	
std::basic_ostringstream< char >	
std::basic_ostringstream< wchar_t >	
std::basic_string< char >	
std::basic_string< wchar_t >	
std::basic_stringstream< char >	
std::basic_stringstream< wchar_t >	
CmdAbstract	65
SIMFQT::FareParser	71
SIMFQT::FareRuleFileParser	73
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22 Directory Documentation

22.1 simfqt/basic/ Directory Reference

Files

- file [BasConst.cpp](#)
- file [BasConst_General.hpp](#)
- file [BasConst_SIMFQT_Service.hpp](#)

22.2 simfqt/batches/ Directory Reference

Files

- file [simfqt_parseFareRules.cpp](#)

22.3 simfqt/bom/ Directory Reference

Files

- file [FareRuleStruct.cpp](#)
- file [FareRuleStruct.hpp](#)

22.4 simfqt/ui/cmdline/ Directory Reference

Files

- file [simfqt.cpp](#)

22.5 simfqt/command/ Directory Reference

Files

- file [FareParser.cpp](#)
- file [FareParser.hpp](#)
- file [FareParserHelper.cpp](#)
- file [FareParserHelper.hpp](#)
- file [FareQuoter.cpp](#)
- file [FareQuoter.hpp](#)
- file [FareRuleGenerator.cpp](#)
- file [FareRuleGenerator.hpp](#)

22.6 simfqt/factory/ Directory Reference

Files

- file [FacSimfqtServiceContext.cpp](#)
- file [FacSimfqtServiceContext.hpp](#)

22.7 simfqt/service/ Directory Reference

Files

- file [SIMFQT_Service.cpp](#)
- file [SIMFQT_ServiceContext.cpp](#)
- file [SIMFQT_ServiceContext.hpp](#)

22.8 test/simfqt/ Directory Reference

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- file [FQTTestSuite.cpp](#)

22.9 simfqt/ Directory Reference

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- directory [basic](#)
- directory [batches](#)
- directory [bom](#)
- directory [command](#)
- directory [factory](#)
- directory [service](#)
- directory [ui](#)

Files

- file [SIMFQT_Service.hpp](#)
- file [SIMFQT_Types.hpp](#)

22.10 test/ Directory Reference

Directories

- directory [simfqt](#)

22.11 simfqt/ui/ Directory Reference

Directories

- directory [cmdline](#)

23 Namespace Documentation

23.1 SIMFQT Namespace Reference

Namespaces

- namespace [FareParserHelper](#)

Classes

- struct [FareRuleStruct](#)
- class [FareParser](#)
- class [FareRuleFileParser](#)
- class [FareQuoter](#)
Command wrapping the pricing request process.
- class [FareRuleGenerator](#)
- class [FacSimfqtServiceContext](#)
Factory for the service context.
- class [SIMFQT_ServiceContext](#)
Class holding the context of the SimFQT services.
- class [SIMFQT_Service](#)
Interface for the [SIMFQT](#) Services.
- class [FareFileParsingFailedException](#)
- class [AirportPairNotFoundException](#)
- class [PosOrChannelNotFoundException](#)
- class [FlightDateNotFoundException](#)
- class [FlightTimeNotFoundException](#)
- class [FeaturesNotFoundException](#)
- class [AirlineNotFoundException](#)
- class [FareInputFileNotFoundException](#)
- class [QuotingException](#)
- class [FareFilePath](#)

Typedefs

- typedef unsigned int [FareQuoteID_T](#)
- typedef boost::shared_ptr< [SIMFQT_Service](#) > [SIMFQT_ServicePtr_T](#)

Variables

- const std::string [DEFAULT_FARE_QUOTER_ID](#) = "IATA"

23.1.1 Typedef Documentation

23.1.1.1 typedef unsigned int SIMFQT::FareQuoteID_T

ID for the Fare Quote system.

Definition at line 143 of file [SIMFQT_Types.hpp](#).

23.1.1.2 typedef boost::shared_ptr<SIMFQT_Service> SIMFQT::SIMFQT_ServicePtr_T

(Smart) Pointer on the SimFQT service handler.

Definition at line 148 of file [SIMFQT_Types.hpp](#).

23.1.2 Variable Documentation

23.1.2.1 `const std::string SIMFQT::DEFAULT_FARE_QUOTER_ID = "IATA"`

Default ID for the [SIMFQT_Service](#).

Definition at line 10 of file [BasConst.cpp](#).

23.2 SIMFQT::FareParserHelper Namespace Reference

Classes

- struct [FareRuleParser](#)
- struct [ParserSemanticAction](#)
- struct [storeFareId](#)
- struct [storeOrigin](#)
- struct [storeDestination](#)
- struct [storeTripType](#)
- struct [storeDateRangeStart](#)
- struct [storeDateRangeEnd](#)
- struct [storeStartRangeTime](#)
- struct [storeEndRangeTime](#)
- struct [storePOS](#)
- struct [storeCabinCode](#)
- struct [storeChannel](#)
- struct [storeAdvancePurchase](#)
- struct [storeSaturdayStay](#)
- struct [storeChangeFees](#)
- struct [storeNonRefundable](#)
- struct [storeMinimumStay](#)
- struct [storeFare](#)
- struct [storeAirlineCode](#)
- struct [storeClass](#)
- struct [doEndFare](#)

Variables

- `stdair::int1_p_t` [int1_p](#)
- `stdair::uint2_p_t` [uint2_p](#)
- `stdair::uint4_p_t` [uint4_p](#)
- `stdair::uint1_4_p_t` [uint1_4_p](#)
- `stdair::hour_p_t` [hour_p](#)
- `stdair::minute_p_t` [minute_p](#)
- `stdair::second_p_t` [second_p](#)
- `stdair::year_p_t` [year_p](#)
- `stdair::month_p_t` [month_p](#)
- `stdair::day_p_t` [day_p](#)

23.2.1 Variable Documentation

23.2.1.1 `stdair::int1_p_t SIMFQT::FareParserHelper::int1_p`

Namespaces. 1-digit-integer parser

Definition at line 447 of file [FareParserHelper.cpp](#).

23.2.1.2 `stdair::uint2_p_t SIMFQT::FareParserHelper::uint2_p`

2-digit-integer parser

Definition at line 450 of file [FareParserHelper.cpp](#).

23.2.1.3 `stdair::uint4_p_t SIMFQT::FareParserHelper::uint4_p`

4-digit-integer parser

Definition at line 453 of file [FareParserHelper.cpp](#).

23.2.1.4 `stdair::uint1_4_p_t SIMFQT::FareParserHelper::uint1_4_p`

Up-to-4-digit-integer parser

Definition at line 456 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

23.2.1.5 `stdair::hour_p_t SIMFQT::FareParserHelper::hour_p`

Time element parsers.

Definition at line 459 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

23.2.1.6 `stdair::minute_p_t SIMFQT::FareParserHelper::minute_p`

Definition at line 460 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

23.2.1.7 `stdair::second_p_t SIMFQT::FareParserHelper::second_p`

Definition at line 461 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

23.2.1.8 `stdair::year_p_t SIMFQT::FareParserHelper::year_p`

Date element parsers.

Definition at line 464 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

23.2.1.9 stdair::month_p_t SIMFQT::FareParserHelper::month_p

Definition at line 465 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

23.2.1.10 stdair::day_p_t SIMFQT::FareParserHelper::day_p

Definition at line 466 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

23.3 stdair Namespace Reference

Forward declarations.

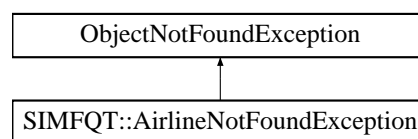
23.3.1 Detailed Description

Forward declarations.

24 Class Documentation

24.1 SIMFQT::AirlineNotFoundException Class Reference

`#include <simfqt/SIMFQT_Types.hpp>`
Inheritance diagram for SIMFQT::AirlineNotFoundException::



Public Member Functions

- [AirlineNotFoundException](#) (const std::string &iWhat)

24.1.1 Detailed Description

The airline can not be found.

Definition at line 99 of file [SIMFQT_Types.hpp](#).

24.1.2 Constructor & Destructor Documentation

24.1.2.1 SIMFQT::AirlineNotFoundException::AirlineNotFoundException (const std::string & *iWhat*) [inline]

Constructor.

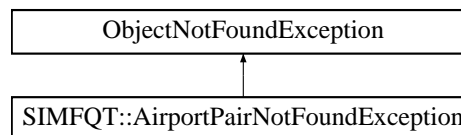
Definition at line 104 of file [SIMFQT_Types.hpp](#).

The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.2 SIMFQT::AirportPairNotFoundException Class Reference

#include <simfqt/SIMFQT_Types.hpp> Inheritance diagram for SIMFQT::AirportPairNotFoundException::



Public Member Functions

- [AirportPairNotFoundException](#) (const std::string &iWhat)

24.2.1 Detailed Description

The given airport pair can not be found.

Definition at line 39 of file [SIMFQT_Types.hpp](#).

24.2.2 Constructor & Destructor Documentation

24.2.2.1 SIMFQT::AirportPairNotFoundException::AirportPairNotFoundException (const std::string & *iWhat*) [inline]

Constructor.

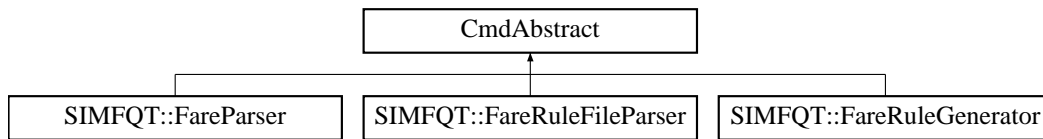
Definition at line 44 of file [SIMFQT_Types.hpp](#).

The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.3 CmdAbstract Class Reference

Inheritance diagram for CmdAbstract::

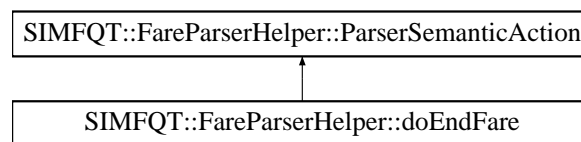


The documentation for this class was generated from the following files:

- [simfqt/command/FareRuleGenerator.hpp](#)
- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParser.hpp](#)

24.4 SIMFQT::FareParserHelper::doEndFare Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>`Inheritance diagram for SIMFQT::FareParserHelper::doEndFare::



Public Member Functions

- [doEndFare](#) (stdair::BomRoot &, [FareRuleStruct](#) &)
- void [operator\(\)](#) (boost::spirit::qi::unused_type, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- stdair::BomRoot & [_bomRoot](#)
- [FareRuleStruct](#) & [_fareRule](#)

24.4.1 Detailed Description

Mark the end of the fare-rule parsing.

Definition at line 230 of file [FareParserHelper.hpp](#).

24.4.2 Constructor & Destructor Documentation

24.4.2.1 SIMFQT::FareParserHelper::doEndFare::doEndFare (stdair::BomRoot & *ioBomRoot*, FareRuleStruct & *ioFareRule*)

Actor Constructor.

Definition at line 420 of file [FareParserHelper.cpp](#).

24.4.3 Member Function Documentation

24.4.3.1 `void SIMFQT::FareParserHelper::doEndFare::operator() (boost::spirit::qi::unused_type, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const`

Actor Function (functor).

Definition at line 427 of file [FareParserHelper.cpp](#).

References [_bomRoot](#), [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::describe\(\)](#).

24.4.4 Member Data Documentation

24.4.4.1 `stdair::BomRoot& SIMFQT::FareParserHelper::doEndFare::_bomRoot`

Actor Specific Context.

Definition at line 238 of file [FareParserHelper.hpp](#).

Referenced by [operator\(\)](#).

24.4.4.2 `FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule`
[**inherited**]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

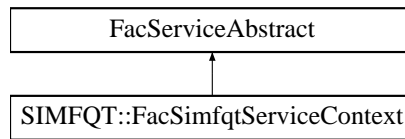
Referenced by [operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), and [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.5 FacServiceAbstract Class Reference

Inheritance diagram for FacServiceAbstract::



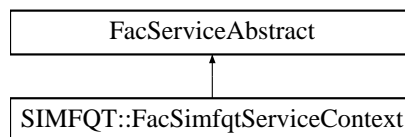
The documentation for this class was generated from the following file:

- [simfqt/factory/FacSimfqtServiceContext.hpp](#)

24.6 SIMFQT::FacSimfqtServiceContext Class Reference

Factory for the service context.

`#include <simfqt/factory/FacSimfqtServiceContext.hpp>`Inheritance diagram for SIMFQT::FacSimfqtServiceContext::



Public Member Functions

- [~FacSimfqtServiceContext \(\)](#)
- [SIMFQT_ServiceContext & create \(\)](#)

Static Public Member Functions

- static [FacSimfqtServiceContext & instance \(\)](#)

Protected Member Functions

- [FacSimfqtServiceContext \(\)](#)

24.6.1 Detailed Description

Factory for the service context.

Definition at line 22 of file [FacSimfqtServiceContext.hpp](#).

24.6.2 Constructor & Destructor Documentation

24.6.2.1 SIMFQT::FacSimfqtServiceContext::~~FacSimfqtServiceContext ()

Destructor.

The Destruction put the `_instance` to NULL in order to be clean for the next [FacSimfqtServiceContext::instance\(\)](#).

Definition at line 17 of file [FacSimfqtServiceContext.cpp](#).

24.6.2.2 SIMFQT::FacSimfqtServiceContext::FacSimfqtServiceContext () [`inline`, `protected`]

Default Constructor.

This constructor is protected in order to ensure the singleton pattern.

Definition at line 57 of file [FacSimfqtServiceContext.hpp](#).

Referenced by [instance\(\)](#).

24.6.3 Member Function Documentation

24.6.3.1 FacSimfqtServiceContext & SIMFQT::FacSimfqtServiceContext::instance () [`static`]

Provide the unique instance.

The singleton is instantiated when first used.

Returns:

FacServiceContext&

Definition at line 22 of file [FacSimfqtServiceContext.cpp](#).

References [FacSimfqtServiceContext\(\)](#).

24.6.3.2 SIMFQT_ServiceContext & SIMFQT::FacSimfqtServiceContext::create ()

Create a new ServiceContext object.

This new object is added to the list of instantiated objects.

Returns:

ServiceContext& The newly created object.

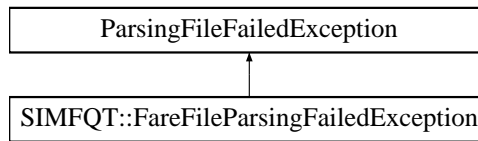
Definition at line 34 of file [FacSimfqtServiceContext.cpp](#).

The documentation for this class was generated from the following files:

- [simfqt/factory/FacSimfqtServiceContext.hpp](#)
- [simfqt/factory/FacSimfqtServiceContext.cpp](#)

24.7 SIMFQT::FareFileParsingFailedException Class Reference

`#include <simfqt/SIMFQT_Types.hpp>` Inheritance diagram for SIMFQT::FareFileParsingFailedException::



Public Member Functions

- [FareFileParsingFailedException](#) (const std::string &iWhat)

24.7.1 Detailed Description

The fare input file can not be parsed.

Definition at line 26 of file [SIMFQT_Types.hpp](#).

24.7.2 Constructor & Destructor Documentation

24.7.2.1 SIMFQT::FareFileParsingFailedException::FareFileParsingFailedException (const std::string &iWhat) [inline]

Constructor.

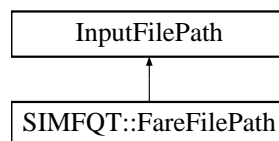
Definition at line 32 of file [SIMFQT_Types.hpp](#).

The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.8 SIMFQT::FareFilePath Class Reference

`#include <simfqt/SIMFQT_Types.hpp>`Inheritance diagram for SIMFQT::FareFilePath::



Public Member Functions

- [FareFilePath](#) (const stdair::Filename_T &iFilename)

24.8.1 Detailed Description

Fare input file.

Definition at line 130 of file [SIMFQT_Types.hpp](#).

24.8.2 Constructor & Destructor Documentation

24.8.2.1 SIMFQT::FareFilePath::FareFilePath (const std::string &iFilename) [inline, explicit]

Constructor.

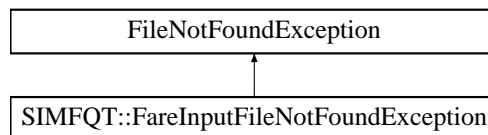
Definition at line 135 of file [SIMFQT_Types.hpp](#).

The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.9 SIMFQT::FareInputFileNotFoundException Class Reference

#include <simfqt/SIMFQT_Types.hpp> Inheritance diagram for SIMFQT::FareInputFileNotFoundException:



Public Member Functions

- [FareInputFileNotFoundException](#) (const std::string &iWhat)

24.9.1 Detailed Description

The fare input file can not be found.

Definition at line 111 of file [SIMFQT_Types.hpp](#).

24.9.2 Constructor & Destructor Documentation

24.9.2.1 SIMFQT::FareInputFileNotFoundException::FareInputFileNotFoundException (const std::string &iWhat) [inline]

Constructor.

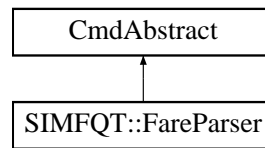
Definition at line 116 of file [SIMFQT_Types.hpp](#).

The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.10 SIMFQT::FareParser Class Reference

#include <simfqt/command/FareParser.hpp> Inheritance diagram for SIMFQT::FareParser:



Static Public Member Functions

- static void [fareRuleGeneration](#) (const [FareFilePath](#) &, [stdair::BomRoot](#) &)

24.10.1 Detailed Description

Class wrapping the parser entry point.

Definition at line 23 of file [FareParser.hpp](#).

24.10.2 Member Function Documentation

24.10.2.1 void SIMFQT::FareParser::fareRuleGeneration (const FareFilePath & *iFareFilename*, [stdair::BomRoot](#) & *ioBomRoot*) [static]

Parses the CSV file describing the fares for the simulator, and generates the fare bom tree accordingly.

Parameters:

- const [FareFilePath](#)&** The file-name of the CSV-formatted fare input file.
- [stdair::BomRoot](#)&** Root of the BOM tree.

Definition at line 17 of file [FareParser.cpp](#).

References [SIMFQT::FareRuleFileParser::generateFareRules\(\)](#).

Referenced by [SIMFQT::SIMFQT_Service::parseAndLoad\(\)](#).

The documentation for this class was generated from the following files:

- [simfqt/command/FareParser.hpp](#)
- [simfqt/command/FareParser.cpp](#)

24.11 SIMFQT::FareQuoter Class Reference

Command wrapping the pricing request process.

```
#include <simfqt/command/FareQuoter.hpp>
```

Friends

- class [SIMFQT_Service](#)

24.11.1 Detailed Description

Command wrapping the pricing request process.

Definition at line 29 of file [FareQuoter.hpp](#).

24.11.2 Friends And Related Function Documentation

24.11.2.1 friend class SIMFQT_Service [friend]

Friend classes: only the SimFQT service may access to the methods of that command class.

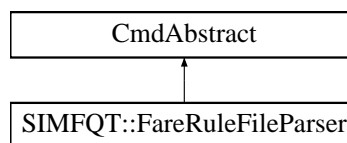
Definition at line 32 of file [FareQuoter.hpp](#).

The documentation for this class was generated from the following files:

- [simfqt/command/FareQuoter.hpp](#)
- [simfqt/command/FareQuoter.cpp](#)

24.12 SIMFQT::FareRuleFileParser Class Reference

`#include <simfqt/command/FareParserHelper.hpp>`Inheritance diagram for SIMFQT::FareRuleFileParser::



Public Member Functions

- [FareRuleFileParser](#) (stdair::BomRoot &ioBomRoot, const stdair::Filename_T &iFilename)
- void [generateFareRules](#) ()

24.12.1 Detailed Description

Class wrapping the initialisation and entry point of the parser.

The seemingly redundancy is used to force the instantiation of the actual parser, which is a templatised Boost Spirit grammar. Hence, the actual parser is instantiated within that class object code.

Definition at line 254 of file [FareParserHelper.hpp](#).

24.12.2 Constructor & Destructor Documentation

24.12.2.1 SIMFQT::FareRuleFileParser::FareRuleFileParser (stdair::BomRoot & ioBomRoot, const stdair::Filename_T & iFilename)

Constructor.

Definition at line 645 of file [FareParserHelper.cpp](#).

24.12.3 Member Function Documentation

24.12.3.1 void SIMFQT::FareRuleFileParser::generateFareRules ()

Parse the input file and generate the fare rules.

Definition at line 667 of file [FareParserHelper.cpp](#).

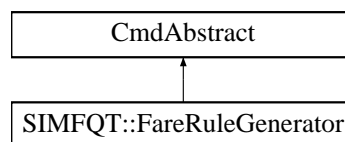
Referenced by [SIMFQT::FareParser::fareRuleGeneration\(\)](#).

The documentation for this class was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.13 SIMFQT::FareRuleGenerator Class Reference

`#include <simfqt/command/FareRuleGenerator.hpp>`Inheritance diagram for SIMFQT::FareRuleGenerator::



Friends

- class [FareFileParser](#)
- struct [FareParserHelper::doEndFare](#)
- class [FareParser](#)

24.13.1 Detailed Description

Class handling the generation / instantiation of the Fare BOM.

Definition at line 33 of file [FareRuleGenerator.hpp](#).

24.13.2 Friends And Related Function Documentation

24.13.2.1 friend class FareFileParser [friend]

Definition at line 38 of file [FareRuleGenerator.hpp](#).

24.13.2.2 friend struct FareParserHelper::doEndFare [friend]

Definition at line 39 of file [FareRuleGenerator.hpp](#).

24.13.2.3 friend class FareParser [friend]

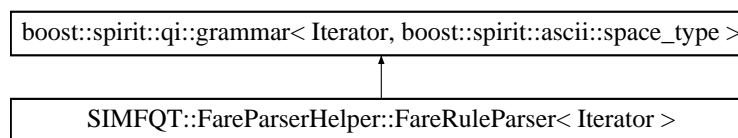
Definition at line 40 of file [FareRuleGenerator.hpp](#).

The documentation for this class was generated from the following files:

- [simfqt/command/FareRuleGenerator.hpp](#)
- [simfqt/command/FareRuleGenerator.cpp](#)

24.14 SIMFQT::FareParserHelper::FareRuleParser< Iterator > Struct Template Reference

Inheritance diagram for SIMFQT::FareParserHelper::FareRuleParser< Iterator >::



Public Member Functions

- [FareRuleParser](#) (stdair::BomRoot &ioBomRoot, [FareRuleStruct](#) &iofareRule)

Public Attributes

- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [start](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [comments](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [fare_rule](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [fare_rule_end](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [fare_key](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [fare_id](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [origin](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [destination](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [tripType](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [dateRangeStart](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [dateRangeEnd](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [date](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [timeRangeStart](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [timeRangeEnd](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [time](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [point_of_sale](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [cabinCode](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [channel](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [advancePurchase](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [saturdayStay](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [changeFees](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [nonRefundable](#)

- [boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > minimumStay](#)
- [boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > fare](#)
- [boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > segment](#)
- [stdair::BomRoot & _bomRoot](#)
- [FareRuleStruct & _fareRule](#)

24.14.1 Detailed Description

template<typename Iterator> struct SIMFQT::FareParserHelper::FareRuleParser< Iterator >

Fare: fareID; OriginCity; DestinationCity; DateRangeStart; DateRangeEnd; DepartureTimeRangeStart; DepartureTimeRangeEnd; POS; AdvancePurchase; SaturdayNight; ChangeFees; NonRefundable; MinimumStay; Price; AirlineCode; Class;

fareID OriginCity (3-char airport code) DestinationCity (3-char airport code) DateRangeStart (yyyy-mm-dd) DateRangeEnd (yyyy-mm-dd) DepartureTimeRangeStart (hh:mm) DepartureTimeRangeEnd (hh:mm) POS (3-char point_of_sale city) Cabin Code (1-char cabin code) Channel (D=direct, I=indirect, N=online, F=offline) AdvancePurchase SaturdayNight (T=True, F=False) ChangeFees (T=True, F=False) NonRefundable (T=True, F=False) MinimumStay Price AirlineCode (2-char airline code) ClassList (List of 1-char class code) Grammar for the Fare-Rule parser.

Definition at line 503 of file [FareParserHelper.cpp](#).

24.14.2 Constructor & Destructor Documentation

24.14.2.1 template<typename Iterator> SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser (stdair::BomRoot & ioBomRoot, FareRuleStruct & iofareRule) [inline]

Definition at line 507 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::_bomRoot](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::_fareRule](#), [SIMFQT::FareRuleStruct::_itDay](#), [SIMFQT::FareRuleStruct::_itHours](#), [SIMFQT::FareRuleStruct::_itMinutes](#), [SIMFQT::FareRuleStruct::_itMonth](#), [SIMFQT::FareRuleStruct::_itSeconds](#), [SIMFQT::FareRuleStruct::_itYear](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::advancePurchase](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::cabinCode](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::changeFees](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::channel](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::comments](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::dateRangeEnd](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::dateRangeStart](#), [SIMFQT::FareParserHelper::day_p](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::destination](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::fare](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::fare_id](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::fare_key](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::fare_rule](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::fare_rule_end](#), [SIMFQT::FareParserHelper::hour_p](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::minimumStay](#), [SIMFQT::FareParserHelper::minute_p](#), [SIMFQT::FareParserHelper::month_p](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::nonRefundable](#),

SIMFQT::FareParserHelper::FareRuleParser< Iterator >::origin, SIMFQT::FareParserHelper::FareRuleParser< Iterator >::point_of_sale, SIMFQT::FareParserHelper::FareRuleParser< Iterator >::saturdayStay, SIMFQT::FareParserHelper::second_p, SIMFQT::FareParserHelper::FareRuleParser< Iterator >::segment, SIMFQT::FareParserHelper::FareRuleParser< Iterator >::start, SIMFQT::FareParserHelper::FareRuleParser< Iterator >::time, SIMFQT::FareParserHelper::FareRuleParser< Iterator >::timeRangeEnd, SIMFQT::FareParserHelper::FareRuleParser< Iterator >::timeRangeStart, SIMFQT::FareParserHelper::FareRuleParser< Iterator >::tripType, SIMFQT::FareParserHelper::uint1_4_p, and SIMFQT::FareParserHelper::year_p.

24.14.3 Member Data Documentation

24.14.3.1 `template<typename Iterator> boost::spirit::qi::rule<Iterator, boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser< Iterator >::start`

Definition at line 623 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.2 `template<typename Iterator> boost::spirit::qi::rule<Iterator, boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser< Iterator >::comments`

Definition at line 623 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.3 `template<typename Iterator> boost::spirit::qi::rule<Iterator, boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser< Iterator >::fare_rule`

Definition at line 623 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.4 `template<typename Iterator> boost::spirit::qi::rule<Iterator, boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser< Iterator >::fare_rule_end`

Definition at line 623 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.5 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::fare_key`

Definition at line 623 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.6 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::fare_id`

Definition at line 623 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.7 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::origin`

Definition at line 623 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.8 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::destination`

Definition at line 623 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.9 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::tripType`

Definition at line 623 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.10 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::dateRangeStart`

Definition at line 623 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.11 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::dateRangeEnd`

Definition at line 623 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.12 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::date`

Definition at line 623 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.13 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::timeRangeStart`

Definition at line 623 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.14 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::timeRangeEnd`

Definition at line 623 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.15 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::time`

Definition at line 623 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.16 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::point_of_sale`

Definition at line 623 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.17 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::cabinCode`

Definition at line 623 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.18 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::channel`

Definition at line 623 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.19 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::advancePurchase`

Definition at line 623 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.20 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::saturdayStay`

Definition at line 623 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.21 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::changeFees`

Definition at line 623 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.22 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::nonRefundable`

Definition at line 623 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.23 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::minimumStay`

Definition at line 623 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.24 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::fare`

Definition at line 623 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.25 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::segment`

Definition at line 623 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.26 `template<typename Iterator> stdair::BomRoot&
SIMFQT::FareParserHelper::FareRuleParser< Iterator
>::_bomRoot`

Definition at line 630 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.27 `template<typename Iterator> FareRuleStruct& SIMFQT::FareParserHelper::FareRuleParser< Iterator >::_fareRule`

Definition at line 631 of file [FareParserHelper.cpp](#).

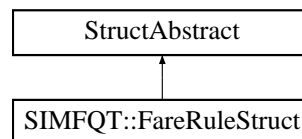
Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

The documentation for this struct was generated from the following file:

- [simfqt/command/FareParserHelper.cpp](#)

24.15 SIMFQT::FareRuleStruct Struct Reference

`#include <simfqt/bom/FareRuleStruct.hpp>`
Inheritance diagram for SIMFQT::FareRuleStruct:



Public Member Functions

- [FareRuleStruct \(\)](#)
- [SIMFQT::FareQuoteID_T getFareID \(\) const](#)
- [stdair::AirportCode_T getOrigin \(\) const](#)
- [stdair::AirportCode_T getDestination \(\) const](#)
- [stdair::TripType_T getTripType \(\) const](#)
- [stdair::Date_T getDateRangeStart \(\) const](#)
- [stdair::Date_T getDateRangeEnd \(\) const](#)
- [stdair::Duration_T getTimeRangeStart \(\) const](#)
- [stdair::Duration_T getTimeRangeEnd \(\) const](#)
- [stdair::CabinCode_T getCabinCode \(\) const](#)
- [const stdair::CityCode_T getPOS \(\) const](#)
- [stdair::ChannelLabel_T getChannel \(\) const](#)
- [stdair::DayDuration_T getAdvancePurchase \(\) const](#)
- [stdair::SaturdayStay_T getSaturdayStay \(\) const](#)
- [stdair::ChangeFees_T getChangeFees \(\) const](#)
- [stdair::NonRefundable_T getNonRefundable \(\) const](#)
- [stdair::DayDuration_T getMinimumStay \(\) const](#)
- [stdair::PriceValue_T getFare \(\) const](#)
- [stdair::AirlineCode_T getAirlineCode \(\) const](#)
- [stdair::ClassCode_T getClassCode \(\) const](#)
- [const unsigned int getAirlineListSize \(\) const](#)
- [const unsigned int getClassCodeListSize \(\) const](#)
- [stdair::AirlineCodeList_T getAirlineList \(\) const](#)
- [stdair::ClassList_StringList_T getClassCodeList \(\) const](#)

- stdair::Date_T [calculateDate](#) () const
- stdair::Duration_T [calculateTime](#) () const
- const std::string [describe](#) () const
- void [setFareID](#) (const SIMFQT::FareQuoteID_T &iFareQuoteID)
- void [setOrigin](#) (const stdair::AirportCode_T &iOrigin)
- void [setDestination](#) (const stdair::AirportCode_T &iDestination)
- void [setTripType](#) (const stdair::TripType_T &iTripType)
- void [setDateRangeStart](#) (const stdair::Date_T &iDateRangeStart)
- void [setDateRangeEnd](#) (const stdair::Date_T &iDateRangeEnd)
- void [setTimeRangeStart](#) (const stdair::Duration_T &iTimeRangeStart)
- void [setTimeRangeEnd](#) (const stdair::Duration_T &iTimeRangeEnd)
- void [setCabinCode](#) (const stdair::CabinCode_T &iCabinCode)
- void [setPOS](#) (const stdair::CityCode_T &iPOS)
- void [setChannel](#) (const stdair::ChannelLabel_T &iChannel)
- void [setAdvancePurchase](#) (const stdair::DayDuration_T &iAdvancePurchase)
- void [setSaturdayStay](#) (const stdair::SaturdayStay_T &iSaturdayStay)
- void [setChangeFees](#) (const stdair::ChangeFees_T &iChangeFees)
- void [setNonRefundable](#) (const stdair::NonRefundable_T &iNonRefundable)
- void [setMinimumStay](#) (const stdair::DayDuration_T &iMinimumStay)
- void [setFare](#) (const stdair::PriceValue_T &iFare)
- void [setAirlineCode](#) (const stdair::AirlineCode_T &iAirlineCode)
- void [setClassCode](#) (const stdair::ClassCode_T &iClassCode)
- void [clearAirlineCodeList](#) ()
- void [clearClassCodeList](#) ()
- void [addAirlineCode](#) (const stdair::AirlineCode_T &iAirlineCode)
- void [addClassCode](#) (const stdair::ClassCode_T &iClassCode)

Public Attributes

- stdair::year_t [_itYear](#)
- stdair::month_t [_itMonth](#)
- stdair::day_t [_itDay](#)
- stdair::hour_t [_itHours](#)
- stdair::minute_t [_itMinutes](#)
- stdair::second_t [_itSeconds](#)

24.15.1 Detailed Description

Utility Structure for the parsing of fare-rule structures.

Definition at line 21 of file [FareRuleStruct.hpp](#).

24.15.2 Constructor & Destructor Documentation

24.15.2.1 SIMFQT::FareRuleStruct::FareRuleStruct ()

Default constructor.

Definition at line 17 of file [FareRuleStruct.cpp](#).

24.15.3 Member Function Documentation

24.15.3.1 SIMFQT::FareQuoteID_T SIMFQT::FareRuleStruct::getFareID () const [inline]

Get the fare ID.

Definition at line 30 of file [FareRuleStruct.hpp](#).

24.15.3.2 stdair::AirportCode_T SIMFQT::FareRuleStruct::getOrigin () const [inline]

Get the origin.

Definition at line 35 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storePOS::operator\(\)](#).

24.15.3.3 stdair::AirportCode_T SIMFQT::FareRuleStruct::getDestination () const [inline]

Get the destination.

Definition at line 40 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storePOS::operator\(\)](#).

24.15.3.4 stdair::TripType_T SIMFQT::FareRuleStruct::getTripType () const [inline]

Get the trip type.

Definition at line 45 of file [FareRuleStruct.hpp](#).

24.15.3.5 stdair::Date_T SIMFQT::FareRuleStruct::getDateRangeStart () const [inline]

Get the date range start.

Definition at line 50 of file [FareRuleStruct.hpp](#).

24.15.3.6 stdair::Date_T SIMFQT::FareRuleStruct::getDateRangeEnd () const [inline]

Get the date range end.

Definition at line 55 of file [FareRuleStruct.hpp](#).

24.15.3.7 stdair::Duration_T SIMFQT::FareRuleStruct::getTimeRangeStart () const [inline]

Get the time range start.

Definition at line 60 of file [FareRuleStruct.hpp](#).

24.15.3.8 stdair::Duration_T SIMFQT::FareRuleStruct::getTimeRangeEnd () const [inline]

Get the time range end.

Definition at line 65 of file [FareRuleStruct.hpp](#).

24.15.3.9 stdair::CabinCode_T SIMFQT::FareRuleStruct::getCabinCode () const [inline]

Get the cabin code.

Definition at line 70 of file [FareRuleStruct.hpp](#).

24.15.3.10 const stdair::CityCode_T SIMFQT::FareRuleStruct::getPOS () const [inline]

Get the point-of-sale.

Definition at line 75 of file [FareRuleStruct.hpp](#).

24.15.3.11 stdair::ChannelLabel_T SIMFQT::FareRuleStruct::getChannel () const [inline]

Get the channel.

Definition at line 80 of file [FareRuleStruct.hpp](#).

24.15.3.12 stdair::DayDuration_T SIMFQT::FareRuleStruct::getAdvancePurchase () const [inline]

Get the advance purchase.

Definition at line 85 of file [FareRuleStruct.hpp](#).

24.15.3.13 stdair::SaturdayStay_T SIMFQT::FareRuleStruct::getSaturdayStay () const [inline]

Get the saturday stay option.

Definition at line 90 of file [FareRuleStruct.hpp](#).

24.15.3.14 stdair::ChangeFees_T SIMFQT::FareRuleStruct::getChangeFees () const [inline]

Get the change fees.

Definition at line 95 of file [FareRuleStruct.hpp](#).

24.15.3.15 stdair::NonRefundable_T SIMFQT::FareRuleStruct::getNonRefundable () const [inline]

Get the refundable option.

Definition at line 100 of file [FareRuleStruct.hpp](#).

24.15.3.16 stdair::DayDuration_T SIMFQT::FareRuleStruct::getMinimumStay () const [inline]

Get the minimum stay.

Definition at line 105 of file [FareRuleStruct.hpp](#).

24.15.3.17 stdair::PriceValue_T SIMFQT::FareRuleStruct::getFare () const [inline]

Get the fare.

Definition at line 110 of file [FareRuleStruct.hpp](#).

24.15.3.18 stdair::AirlineCode_T SIMFQT::FareRuleStruct::getAirlineCode () const [inline]

Get the airline code.

Definition at line 115 of file [FareRuleStruct.hpp](#).

24.15.3.19 stdair::ClassCode_T SIMFQT::FareRuleStruct::getClassCode () const [inline]

Get the class code.

Definition at line 120 of file [FareRuleStruct.hpp](#).

24.15.3.20 const unsigned int SIMFQT::FareRuleStruct::getAirlineListSize () const [inline]

Get the size of the airline code list.

Definition at line 125 of file [FareRuleStruct.hpp](#).

24.15.3.21 const unsigned int SIMFQT::FareRuleStruct::getClassCodeListSize () const [inline]

Get the size of the class code list.

Definition at line 130 of file [FareRuleStruct.hpp](#).

24.15.3.22 stdair::AirlineCodeList_T SIMFQT::FareRuleStruct::getAirlineList () const [inline]

Get the airline code list.

Definition at line 135 of file [FareRuleStruct.hpp](#).

24.15.3.23 stdair::ClassList_StringList_T SIMFQT::FareRuleStruct::getClassCodeList () const [inline]

Get the class code list.

Definition at line 140 of file [FareRuleStruct.hpp](#).

24.15.3.24 stdair::Date_T SIMFQT::FareRuleStruct::calculateDate () const

Calculate the date from the staging details.

Definition at line 39 of file [FareRuleStruct.cpp](#).

References [_itDay](#), [_itMonth](#), and [_itYear](#).

Referenced by [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), and [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#).

24.15.3.25 `stdair::Duration_T SIMFQT::FareRuleStruct::calculateTime () const`

Calculate the time from the staging details.

Definition at line 45 of file [FareRuleStruct.cpp](#).

References [_itHours](#), [_itMinutes](#), and [_itSeconds](#).

Referenced by [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), and [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#).

24.15.3.26 `const std::string SIMFQT::FareRuleStruct::describe () const`

Display of the structure.

Definition at line 54 of file [FareRuleStruct.cpp](#).

Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#).

24.15.3.27 `void SIMFQT::FareRuleStruct::setFareID (const SIMFQT::FareQuoteID_T & iFareQuoteID) [inline]`

Set the fare ID.

Definition at line 158 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

24.15.3.28 `void SIMFQT::FareRuleStruct::setOrigin (const stdair::AirportCode_T & iOrigin) [inline]`

Set the origin.

Definition at line 163 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#).

24.15.3.29 `void SIMFQT::FareRuleStruct::setDestination (const stdair::AirportCode_T & iDestination) [inline]`

Set the destination.

Definition at line 168 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#).

24.15.3.30 `void SIMFQT::FareRuleStruct::setTripType (const stdair::TripType_T & iTripType) [inline]`

Set the trip type.

Definition at line 173 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#).

24.15.3.31 `void SIMFQT::FareRuleStruct::setDateRangeStart (const stdair::Date_T & iDateRangeStart) [inline]`

Set the date range start.

Definition at line 178 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#).

24.15.3.32 `void SIMFQT::FareRuleStruct::setDateRangeEnd (const stdair::Date_T & iDateRangeEnd) [inline]`

Set the date range end.

Definition at line 183 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#).

24.15.3.33 `void SIMFQT::FareRuleStruct::setTimeRangeStart (const stdair::Duration_T & iTimeRangeStart) [inline]`

Set the time range start.

Definition at line 188 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#).

24.15.3.34 `void SIMFQT::FareRuleStruct::setTimeRangeEnd (const stdair::Duration_T & iTimeRangeEnd) [inline]`

Set the time range end.

Definition at line 193 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#).

24.15.3.35 `void SIMFQT::FareRuleStruct::setCabinCode (const stdair::CabinCode_T & iCabinCode) [inline]`

Set the cabin code.

Definition at line 198 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#).

24.15.3.36 `void SIMFQT::FareRuleStruct::setPOS (const stdair::CityCode_T & iPOS) [inline]`

Set the point-of-sale.

Definition at line 203 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storePOS::operator\(\)](#).

24.15.3.37 void SIMFQT::FareRuleStruct::setChannel (const stdair::ChannelLabel_T & *iChannel*) [inline]

Set the channel.

Definition at line 208 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#).

24.15.3.38 void SIMFQT::FareRuleStruct::setAdvancePurchase (const stdair::DayDuration_T & *iAdvancePurchase*) [inline]

Set the advance purchase.

Definition at line 213 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#).

24.15.3.39 void SIMFQT::FareRuleStruct::setSaturdayStay (const stdair::SaturdayStay_T & *iSaturdayStay*) [inline]

Set the saturday stay option.

Definition at line 218 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#).

24.15.3.40 void SIMFQT::FareRuleStruct::setChangeFees (const stdair::ChangeFees_T & *iChangeFees*) [inline]

Set the change fees.

Definition at line 223 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#).

24.15.3.41 void SIMFQT::FareRuleStruct::setNonRefundable (const stdair::NonRefundable_T & *iNonRefundable*) [inline]

Set the refundable option.

Definition at line 228 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#).

24.15.3.42 void SIMFQT::FareRuleStruct::setMinimumStay (const stdair::DayDuration_T & *iMinimumStay*) [inline]

Set the minimum stay.

Definition at line 233 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#).

24.15.3.43 void SIMFQT::FareRuleStruct::setFare (const stdair::PriceValue_T & *iFare*)
[inline]

Set the fare.

Definition at line 238 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFare::operator\(\)](#).

24.15.3.44 void SIMFQT::FareRuleStruct::setAirlineCode (const stdair::AirlineCode_T & *iAirlineCode*) [inline]

Set the airline code.

Definition at line 243 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

24.15.3.45 void SIMFQT::FareRuleStruct::setClassCode (const stdair::ClassCode_T & *iClassCode*) [inline]

Set the class code.

Definition at line 248 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

24.15.3.46 void SIMFQT::FareRuleStruct::clearAirlineCodeList () [inline]

Empty the airline code list.

Definition at line 253 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

24.15.3.47 void SIMFQT::FareRuleStruct::clearClassCodeList () [inline]

Empty the class code list.

Definition at line 258 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

24.15.3.48 void SIMFQT::FareRuleStruct::addAirlineCode (const stdair::AirlineCode_T & *iAirlineCode*) [inline]

Add an airline code to the list.

Definition at line 263 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#).

24.15.3.49 void SIMFQT::FareRuleStruct::addClassCode (const stdair::ClassCode_T & *iClassCode*) [inline]

Add a class code to the list.

Definition at line 268 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeClass::operator\(\)](#).

24.15.4 Member Data Documentation

24.15.4.1 stdair::year_t SIMFQT::FareRuleStruct::_itYear

Staging Date.

Definition at line 275 of file [FareRuleStruct.hpp](#).

Referenced by [calculateDate\(\)](#), and [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.15.4.2 stdair::month_t SIMFQT::FareRuleStruct::_itMonth

Definition at line 276 of file [FareRuleStruct.hpp](#).

Referenced by [calculateDate\(\)](#), and [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.15.4.3 stdair::day_t SIMFQT::FareRuleStruct::_itDay

Definition at line 277 of file [FareRuleStruct.hpp](#).

Referenced by [calculateDate\(\)](#), and [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.15.4.4 stdair::hour_t SIMFQT::FareRuleStruct::_itHours

Staging Time.

Definition at line 280 of file [FareRuleStruct.hpp](#).

Referenced by [calculateTime\(\)](#), and [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.15.4.5 stdair::minute_t SIMFQT::FareRuleStruct::_itMinutes

Definition at line 281 of file [FareRuleStruct.hpp](#).

Referenced by [calculateTime\(\)](#), and [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.15.4.6 stdair::second_t SIMFQT::FareRuleStruct::_itSeconds

Definition at line 282 of file [FareRuleStruct.hpp](#).

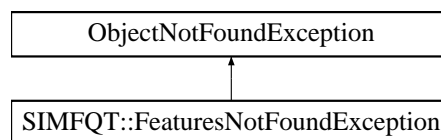
Referenced by [calculateTime\(\)](#), [SIMFQT::FareParserHelper::FareRuleParser<Iterator>::FareRuleParser\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), and [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

The documentation for this struct was generated from the following files:

- [simfqt/bom/FareRuleStruct.hpp](#)
- [simfqt/bom/FareRuleStruct.cpp](#)

24.16 SIMFQT::FeaturesNotFoundException Class Reference

`#include <simfqt/SIMFQT_Types.hpp>` Inheritance diagram for SIMFQT::FeaturesNotFoundException:



Public Member Functions

- [FeaturesNotFoundException](#) (const std::string &iWhat)

24.16.1 Detailed Description

The fare features can not be found.

Definition at line 87 of file [SIMFQT_Types.hpp](#).

24.16.2 Constructor & Destructor Documentation

24.16.2.1 SIMFQT::FeaturesNotFoundException::FeaturesNotFoundException (const std::string &iWhat) [inline]

Constructor.

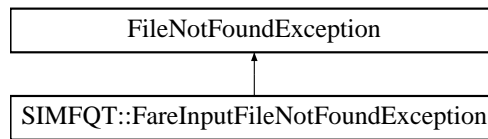
Definition at line 92 of file [SIMFQT_Types.hpp](#).

The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.17 FileNotFoundException Class Reference

Inheritance diagram for FileNotFoundException::

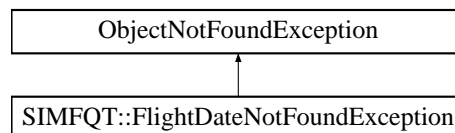


The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.18 SIMFQT::FlightDateNotFoundException Class Reference

`#include <simfqt/SIMFQT_Types.hpp>`
 Inheritance diagram for SIMFQT::FlightDateNotFoundException::



Public Member Functions

- [FlightDateNotFoundException](#) (const std::string &iWhat)

24.18.1 Detailed Description

The departure date of the flight can not be found.

Definition at line 63 of file [SIMFQT_Types.hpp](#).

24.18.2 Constructor & Destructor Documentation

24.18.2.1 SIMFQT::FlightDateNotFoundException::FlightDateNotFoundException (const std::string &iWhat) [inline]

Constructor.

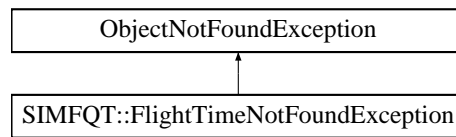
Definition at line 68 of file [SIMFQT_Types.hpp](#).

The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.19 SIMFQT::FlightTimeNotFoundException Class Reference

`#include <simfqt/SIMFQT_Types.hpp>`
 Inheritance diagram for SIMFQT::FlightTimeNotFoundException::



Public Member Functions

- [FlightTimeNotFoundException](#) (const std::string &iWhat)

24.19.1 Detailed Description

The departure time of the flight can not be found.

Definition at line 75 of file [SIMFQT_Types.hpp](#).

24.19.2 Constructor & Destructor Documentation

24.19.2.1 SIMFQT::FlightTimeNotFoundException::FlightTimeNotFoundException (const std::string &iWhat) [inline]

Constructor.

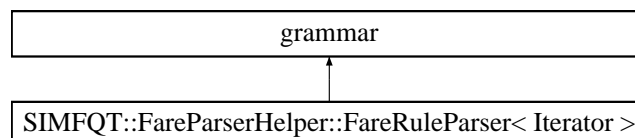
Definition at line 80 of file [SIMFQT_Types.hpp](#).

The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.20 grammar Class Reference

Inheritance diagram for grammar::

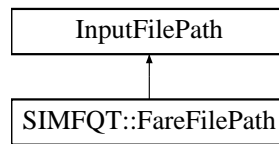


The documentation for this class was generated from the following file:

- [simfqt/command/FareParserHelper.cpp](#)

24.21 InputFilePath Class Reference

Inheritance diagram for InputFilePath::

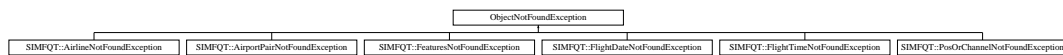


The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.22 ObjectNotFoundException Class Reference

Inheritance diagram for ObjectNotFoundException::

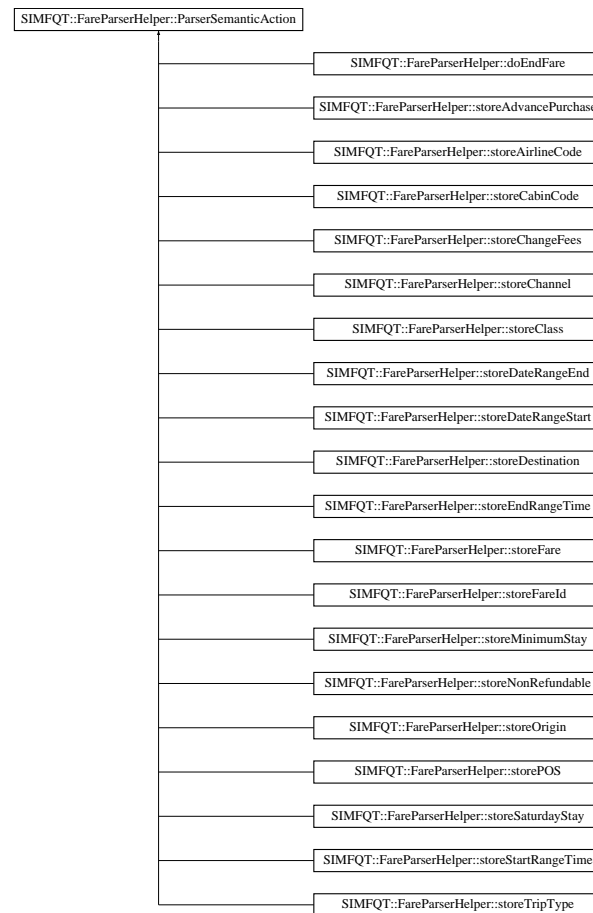


The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.23 SIMFQT::FareParserHelper::ParserSemanticAction Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>`
 Inheritance diagram for SIMFQT::FareParserHelper::ParserSemanticAction::



Public Member Functions

- [ParserSemanticAction](#) ([FareRuleStruct](#) &)

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.23.1 Detailed Description

Generic Semantic Action (Actor / Functor) for the Fare Parser.

Definition at line 31 of file [FareParserHelper.hpp](#).

24.23.2 Constructor & Destructor Documentation

24.23.2.1 SIMFQT::FareParserHelper::ParserSemanticAction::ParserSemanticAction (FareRuleStruct & ioFareRule)

Actor Constructor.

Definition at line 30 of file [FareParserHelper.cpp](#).

24.23.3 Member Data Documentation

24.23.3.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

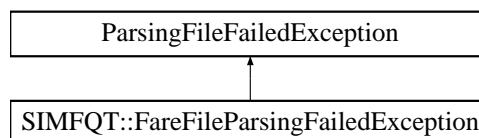
Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), and [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.24 ParsingFileFailedException Class Reference

Inheritance diagram for ParsingFileFailedException::

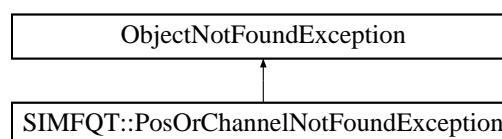


The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.25 SIMFQT::PosOrChannelNotFoundException Class Reference

`#include <simfqt/SIMFQT_Types.hpp>` Inheritance diagram for SIMFQT::PosOrChannelNotFoundException::



Public Member Functions

- [PosOrChannelNotFoundException](#) (const std::string &iWhat)

24.25.1 Detailed Description

The given POS/channel can not be found.

Definition at line 51 of file [SIMFQT_Types.hpp](#).

24.25.2 Constructor & Destructor Documentation
24.25.2.1 SIMFQT::PosOrChannelNotFoundException::PosOrChannelNotFoundException
 (const std::string & *iWhat*) `[inline]`

Constructor.

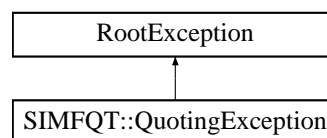
Definition at line 56 of file [SIMFQT_Types.hpp](#).

The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.26 SIMFQT::QuotingException Class Reference

`#include <simfqt/SIMFQT_Types.hpp>` Inheritance diagram for SIMFQT::QuotingException::

**24.26.1 Detailed Description**

The pricing operation fails.

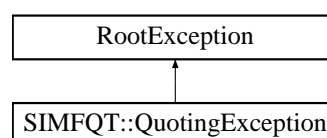
Definition at line 123 of file [SIMFQT_Types.hpp](#).

The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.27 RootException Class Reference

Inheritance diagram for RootException::

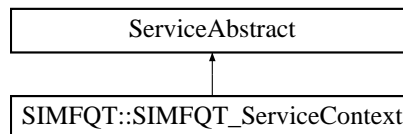


The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.28 ServiceAbstract Class Reference

Inheritance diagram for ServiceAbstract::



The documentation for this class was generated from the following file:

- [simfqt/service/SIMFQT_ServiceContext.hpp](#)

24.29 SIMFQT::SIMFQT_Service Class Reference

Interface for the [SIMFQT](#) Services.

```
#include <simfqt/SIMFQT_Service.hpp>
```

Public Member Functions

- [SIMFQT_Service](#) (const stdair::BasLogParams &)
- [SIMFQT_Service](#) (const stdair::BasLogParams &, const stdair::BasDBParams &)
- [SIMFQT_Service](#) (stdair::STDAIR_ServicePtr_T ioSTDAIR_ServicePtr)
- void [parseAndLoad](#) (const [FareFilePath](#) &iFareFilename)
- [~SIMFQT_Service](#) ()
- void [buildSampleBom](#) ()
- void [clonePersistentBom](#) ()
- void [buildComplementaryLinks](#) (stdair::BomRoot &)
- stdair::BookingRequestStruct [buildBookingRequest](#) (const bool isForCRS=false)
- void [buildSampleTravelSolutions](#) (stdair::TravelSolutionList_T &)
- void [quotePrices](#) (const stdair::BookingRequestStruct &, stdair::TravelSolutionList_T &)
- std::string [csvDisplay](#) () const
- std::string [csvDisplay](#) (const stdair::TravelSolutionList_T &) const
- std::string [csvDisplay](#) (const stdair::AirportCode_T &ioOrigin, const stdair::AirportCode_T &ioDestination, const stdair::Date_T &ioDepartureDate) const
- std::string [list](#) () const
- bool [check](#) (const stdair::AirportCode_T &ioOrigin, const stdair::AirportCode_T &ioDestination, const stdair::Date_T &ioDepartureDate) const

24.29.1 Detailed Description

Interface for the [SIMFQT](#) Services.

Definition at line 32 of file [SIMFQT_Service.hpp](#).

24.29.2 Constructor & Destructor Documentation

24.29.2.1 SIMFQT::SIMFQT_Service::SIMFQT_Service (const stdair::BasLogParams & iLogParams)

Constructor.

The initSimfqtService() method is called; see the corresponding documentation for more details.

A reference on an output stream is given, so that log outputs can be directed onto that stream.

Parameters:

const stdair::BasLogParams& Parameters for the output log stream.

Definition at line 36 of file [SIMFQT_Service.cpp](#).

24.29.2.2 SIMFQT::SIMFQT_Service::SIMFQT_Service (const stdair::BasLogParams & iLogParams, const stdair::BasDBParams & iDBParams)

Constructor.

The initSimfqtService() method is called; see the corresponding documentation for more details.

A reference on an output stream is given, so that log outputs can be directed onto that stream.

Parameters:

const stdair::BasLogParams& Parameters for the output log stream.

const stdair::BasDBParams& Parameters for the database access.

Definition at line 56 of file [SIMFQT_Service.cpp](#).

24.29.2.3 SIMFQT::SIMFQT_Service::SIMFQT_Service (stdair::STDAIR_ServicePtr_T ioSTDAIR_ServicePtr)

Constructor.

The initSimfqtService() method is called; see the corresponding documentation for more details.

Moreover, as no reference on any output stream is given, it is assumed that the StdAir log service has already been initialised with the proper log output stream by some other methods in the calling chain (for instance, when the [SIMFQT_Service](#) is itself being initialised by another library service such as SIMCRS_Service).

Parameters:

stdair::STDAIR_ServicePtr_T Reference on the STDAIR service.

Definition at line 78 of file [SIMFQT_Service.cpp](#).

24.29.2.4 SIMFQT::SIMFQT_Service::~~SIMFQT_Service ()

Destructor.

Definition at line 94 of file [SIMFQT_Service.cpp](#).

24.29.3 Member Function Documentation

24.29.3.1 void SIMFQT::SIMFQT_Service::parseAndLoad (const FareFilePath & iFareFilename)

Parse the fare dump and load it into memory.

The CSV file, describing the fare rule for the simulator, is parsed and instantiated in memory accordingly.

Parameters:

const FareFilePath& Filename of the input fare file.

Definition at line 171 of file [SIMFQT_Service.cpp](#).

References [buildComplementaryLinks\(\)](#), [clonePersistentBom\(\)](#), and [SIMFQT::FareParser::fareRuleGeneration\(\)](#).

Referenced by [main\(\)](#).

24.29.3.2 void SIMFQT::SIMFQT_Service::buildSampleBom ()

Build a sample BOM tree, and attach it to the BomRoot instance.

As for now, two sample BOM trees can be built.

- One BOM tree is based on two actual inventories (one for BA, another for AF). Each inventory contains one flight. One of those flights has two legs (and therefore three segments).
- The other BOM tree is fake, as a hook for RMOL to work.

Definition at line 223 of file [SIMFQT_Service.cpp](#).

References [buildComplementaryLinks\(\)](#), and [clonePersistentBom\(\)](#).

Referenced by [main\(\)](#).

24.29.3.3 void SIMFQT::SIMFQT_Service::clonePersistentBom ()

Clone the persistent BOM object.

Definition at line 279 of file [SIMFQT_Service.cpp](#).

References [buildComplementaryLinks\(\)](#).

Referenced by [buildSampleBom\(\)](#), and [parseAndLoad\(\)](#).

24.29.3.4 void SIMFQT::SIMFQT_Service::buildComplementaryLinks (stdair::BomRoot & ioBomRoot)

Build all the complementary links in the given bom root object.

Note:

Do nothing for now.

Definition at line 315 of file [SIMFQT_Service.cpp](#).

Referenced by [buildSampleBom\(\)](#), [clonePersistentBom\(\)](#), and [parseAndLoad\(\)](#).

24.29.3.5 stdair::BookingRequestStruct SIMFQT::SIMFQT_Service::buildBookingRequest
(const bool *isForCRS* = false)

Build a BookingRequest structure (for test purposes).

Returns:

stdair::BookingRequestStruct The created BookingRequest structure.

Definition at line 320 of file [SIMFQT_Service.cpp](#).

Referenced by [main\(\)](#).

24.29.3.6 void SIMFQT::SIMFQT_Service::buildSampleTravelSolutions
(stdair::TravelSolutionList_T & *ioTravelSolutionList*)

Build a sample list of travel solutions.

As of now (March 2011), that list is made of the following travel solutions:

- BA9
- LHR-SYD
- 2011-06-10
- Q
- WTP: 900
- Change fee: 20; Non refundable; Saturday night stay

Parameters:

TravelSolutionList_T& Sample list of travel solution structures. It should be given empty. It is altered with the returned sample.

Definition at line 344 of file [SIMFQT_Service.cpp](#).

Referenced by [main\(\)](#).

24.29.3.7 void SIMFQT::SIMFQT_Service::quotePrices (const stdair::BookingRequestStruct & *iBookingRequest*, stdair::TravelSolutionList_T & *ioTravelSolutionList*)

Calculate the prices for a given list of travel solutions.

A stdair::Fare_T attribute is calculated for every travel solution of the list.

Parameters:

stdair::BookingRequestStruct& Booking request.

stdair::TravelSolutionList_T& List of travel solution.

Definition at line 480 of file [SIMFQT_Service.cpp](#).

Referenced by [main\(\)](#).

24.29.3.8 std::string SIMFQT::SIMFQT_Service::csvDisplay () const

Recursively display (dump in the returned string) the objects of the BOM tree.

Returns:

std::string Output string in which the BOM tree is logged/dumped.

Definition at line 365 of file [SIMFQT_Service.cpp](#).

Referenced by [main\(\)](#).

24.29.3.9 std::string SIMFQT::SIMFQT_Service::csvDisplay (const stdair::TravelSolutionList_T & ioTravelSolutionList) const

Display (dump in the returned string) the full list of travel solution structures.

Returns:

std::string Output string in which the list of travel solutions is logged/dumped.

Definition at line 392 of file [SIMFQT_Service.cpp](#).

24.29.3.10 std::string SIMFQT::SIMFQT_Service::csvDisplay (const stdair::AirportCode_T & ioOrigin, const stdair::AirportCode_T & ioDestination, const stdair::Date_T & ioDepartureDate) const

Recursively display (dump in the returned string) the fare-rules corresponding to the parameters given as input.

Parameters:

const stdair::AirportCode_T& Origin airport of the fare-rules to display

const stdair::AirportCode_T& Destination airport of the fare- rules to display.

const stdair::Date_T& Departure date of the fare-rules to display.

Returns:

std::string Output string in which the BOM tree is logged/dumped.

Definition at line 414 of file [SIMFQT_Service.cpp](#).

24.29.3.11 std::string SIMFQT::SIMFQT_Service::list () const

Display (dump in the returned string) the airport pairs and the corresponding departure dates of the fare rules stored in the BOM tree.

Returns:

std::string Output string in which the airport pairs and departure dates are logged/dumped.

Definition at line 437 of file [SIMFQT_Service.cpp](#).

24.29.3.12 `bool SIMFQT::SIMFQT_Service::check (const stdair::AirportCode_T & ioOrigin, const stdair::AirportCode_T & ioDestination, const stdair::Date_T & ioDepartureDate) const`

Check whether the given couple airportpair-date is a valid one.

Parameters:

- `const` stdair::AirportCode_T& Origin airport of the fare rule to check.
- `const` stdair::AirportCode_T& Destination airport of the fare rule to check.
- `const` stdair::Date_T& Departure date of the fare rule to check.

Returns:

bool Whether or not the given airportpair-date couple is a valid one.

Definition at line 458 of file [SIMFQT_Service.cpp](#).

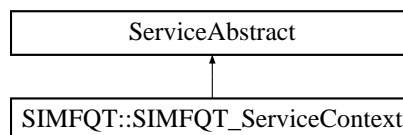
The documentation for this class was generated from the following files:

- [simfqt/SIMFQT_Service.hpp](#)
- [simfqt/service/SIMFQT_Service.cpp](#)

24.30 SIMFQT::SIMFQT_ServiceContext Class Reference

Class holding the context of the SimFQT services.

`#include <simfqt/service/SIMFQT_ServiceContext.hpp>` Inheritance diagram for SIMFQT::SIMFQT_ServiceContext::



Friends

- class [SIMFQT_Service](#)
- class [FacSimfqtServiceContext](#)

24.30.1 Detailed Description

Class holding the context of the SimFQT services.

Definition at line 25 of file [SIMFQT_ServiceContext.hpp](#).

24.30.2 Friends And Related Function Documentation

24.30.2.1 friend class SIMFQT_Service [friend]

The [SIMFQT_Service](#) class should be the sole class to get access to ServiceContext content: general users do not want to bother with a context interface.

Definition at line 31 of file [SIMFQT_ServiceContext.hpp](#).

24.30.2.2 friend class FacSimfqtServiceContext [friend]

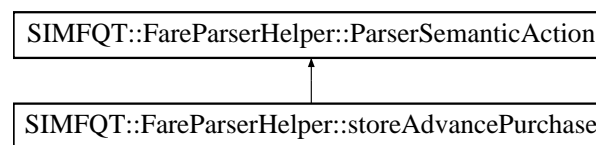
Definition at line 32 of file [SIMFQT_ServiceContext.hpp](#).

The documentation for this class was generated from the following files:

- [simfqt/service/SIMFQT_ServiceContext.hpp](#)
- [simfqt/service/SIMFQT_ServiceContext.cpp](#)

24.31 SIMFQT::FareParserHelper::storeAdvancePurchase Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>`Inheritance diagram for SIMFQT::FareParserHelper::storeAdvancePurchase::



Public Member Functions

- [storeAdvancePurchase](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) (unsigned int, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.31.1 Detailed Description

Store the parsed advance purchase days.

Definition at line 150 of file [FareParserHelper.hpp](#).

24.31.2 Constructor & Destructor Documentation

24.31.2.1 SIMFQT::FareParserHelper::storeAdvancePurchase::storeAdvancePurchase ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line 254 of file [FareParserHelper.cpp](#).

24.31.3 Member Function Documentation

24.31.3.1 void SIMFQT::FareParserHelper::storeAdvancePurchase::operator() (unsigned int *iAdvancePurchase*, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 259 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::setAdvancePurchase\(\)](#).

24.31.4 Member Data Documentation

24.31.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule
[inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

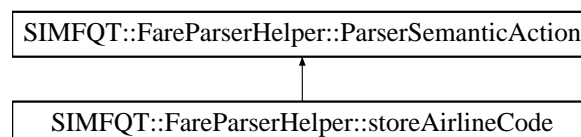
Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), and [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.32 SIMFQT::FareParserHelper::storeAirlineCode Struct Reference

#include <simfqt/command/FareParserHelper.hpp> Inheritance diagram for SIMFQT::FareParserHelper::storeAirlineCode::



Public Member Functions

- [storeAirlineCode](#) (FareRuleStruct &)
- void [operator\(\)](#) (std::vector< char >, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.32.1 Detailed Description

Store the parsed airline code.

Definition at line 210 of file [FareParserHelper.hpp](#).

24.32.2 Constructor & Destructor Documentation

24.32.2.1 SIMFQT::FareParserHelper::storeAirlineCode::storeAirlineCode (FareRuleStruct & *ioFareRule*)

Actor Constructor.

Definition at line 378 of file [FareParserHelper.cpp](#).

24.32.3 Member Function Documentation

24.32.3.1 void SIMFQT::FareParserHelper::storeAirlineCode::operator() (std::vector< char > *iChar*, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 383 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::addAirlineCode\(\)](#).

24.32.4 Member Data Documentation

24.32.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), and [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

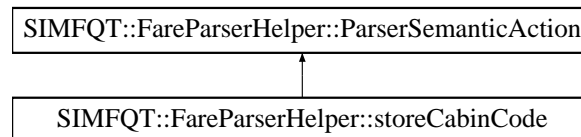
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)

- [simfqt/command/FareParserHelper.cpp](#)

24.33 SIMFQT::FareParserHelper::storeCabinCode Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>` Inheritance diagram for SIMFQT::FareParserHelper::storeCabinCode::



Public Member Functions

- [storeCabinCode](#) ([FareRuleStruct](#) &)
- [void operator\(\)](#) (char, [boost::spirit::qi::unused_type](#), [boost::spirit::qi::unused_type](#)) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.33.1 Detailed Description

Store the cabin code.

Definition at line 130 of file [FareParserHelper.hpp](#).

24.33.2 Constructor & Destructor Documentation

24.33.2.1 SIMFQT::FareParserHelper::storeCabinCode::storeCabinCode ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line 212 of file [FareParserHelper.cpp](#).

24.33.3 Member Function Documentation

24.33.3.1 void SIMFQT::FareParserHelper::storeCabinCode::operator() (char *iChar*, [boost::spirit::qi::unused_type](#), [boost::spirit::qi::unused_type](#)) const

Actor Function (functor).

Definition at line 217 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::setCabinCode\(\)](#).

24.33.4 Member Data Documentation

24.33.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

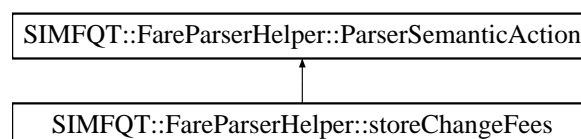
Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), and [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.34 SIMFQT::FareParserHelper::storeChangeFees Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>` Inheritance diagram for SIMFQT::FareParserHelper::storeChangeFees::



Public Member Functions

- [storeChangeFees](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) (char, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.34.1 Detailed Description

Store the parsed change fees.

Definition at line 170 of file [FareParserHelper.hpp](#).

24.34.2 Constructor & Destructor Documentation

24.34.2.1 SIMFQT::FareParserHelper::storeChangeFees::storeChangeFees (FareRuleStruct & *ioFareRule*)

Actor Constructor.

Definition at line 295 of file [FareParserHelper.cpp](#).

24.34.3 Member Function Documentation

24.34.3.1 void SIMFQT::FareParserHelper::storeChangeFees::operator() (char *iChangefees*, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 300 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::setChangeFees\(\)](#).

24.34.4 Member Data Documentation

24.34.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

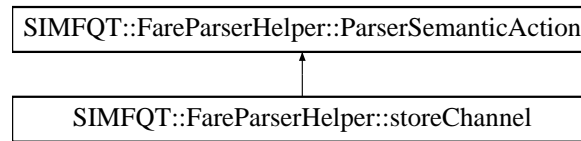
Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), and [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.35 SIMFQT::FareParserHelper::storeChannel Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>`Inheritance diagram for SIMFQT::FareParserHelper::storeChannel:



Public Member Functions

- [storeChannel](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) (std::vector< char >, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.35.1 Detailed Description

Store the channel distribution.

Definition at line 140 of file [FareParserHelper.hpp](#).

24.35.2 Constructor & Destructor Documentation

24.35.2.1 SIMFQT::FareParserHelper::storeChannel::storeChannel ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line 233 of file [FareParserHelper.cpp](#).

24.35.3 Member Function Documentation

24.35.3.1 void SIMFQT::FareParserHelper::storeChannel::operator() (std::vector< char > *iChar*, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 238 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::setChannel\(\)](#).

24.35.4 Member Data Documentation

24.35.4.1 [FareRuleStruct](#)& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

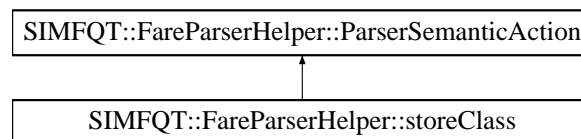
Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), and [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.36 SIMFQT::FareParserHelper::storeClass Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>`Inheritance diagram for SIMFQT::FareParserHelper::storeClass:



Public Member Functions

- [storeClass](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) (std::vector< char >, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.36.1 Detailed Description

Store the parsed class code.

Definition at line 220 of file [FareParserHelper.hpp](#).

24.36.2 Constructor & Destructor Documentation

24.36.2.1 SIMFQT::FareParserHelper::storeClass::storeClass (FareRuleStruct & *ioFareRule*)

Actor Constructor.

Definition at line 396 of file [FareParserHelper.cpp](#).

24.36.3 Member Function Documentation

24.36.3.1 void SIMFQT::FareParserHelper::storeClass::operator() (std::vector< char > *iChar*, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 401 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::addClassCode\(\)](#).

24.36.4 Member Data Documentation

24.36.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule
[inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

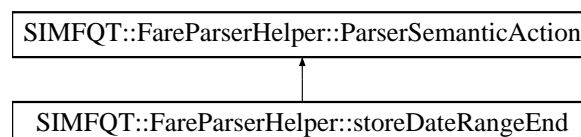
Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)\(\)](#), and [SIMFQT::FareParserHelper::storeFareId::operator\(\)\(\)](#).

The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.37 SIMFQT::FareParserHelper::storeDateRangeEnd Struct Reference

#include <simfqt/command/FareParserHelper.hpp> Inheritance diagram for SIMFQT::FareParserHelper::storeDateRangeEnd::



Public Member Functions

- [storeDateRangeEnd](#) (FareRuleStruct &)

- void [operator\(\)](#) (boost::spirit::qi::unused_type, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.37.1 Detailed Description

Store the parsed end of the date range.

Definition at line 90 of file [FareParserHelper.hpp](#).

24.37.2 Constructor & Destructor Documentation

24.37.2.1 SIMFQT::FareParserHelper::storeDateRangeEnd::storeDateRangeEnd (FareRuleStruct & *ioFareRule*)

Actor Constructor.

Definition at line 129 of file [FareParserHelper.cpp](#).

24.37.3 Member Function Documentation

24.37.3.1 void SIMFQT::FareParserHelper::storeDateRangeEnd::operator() (boost::spirit::qi::unused_type, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 134 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), [SIMFQT::FareRuleStruct::calculateDate\(\)](#), and [SIMFQT::FareRuleStruct::setDateRangeEnd\(\)](#).

24.37.4 Member Data Documentation

24.37.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#),

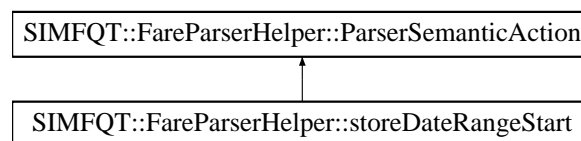
[SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), and [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.38 SIMFQT::FareParserHelper::storeDateRangeStart Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>` Inheritance diagram for SIMFQT::FareParserHelper::storeDateRangeStart::



Public Member Functions

- [storeDateRangeStart](#) ([FareRuleStruct](#) &)
- [void operator\(\)](#) ([boost::spirit::qi::unused_type](#), [boost::spirit::qi::unused_type](#), [boost::spirit::qi::unused_type](#)) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.38.1 Detailed Description

Store the parsed start of the date range.

Definition at line 80 of file [FareParserHelper.hpp](#).

24.38.2 Constructor & Destructor Documentation

24.38.2.1 SIMFQT::FareParserHelper::storeDateRangeStart::storeDateRangeStart ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line 113 of file [FareParserHelper.cpp](#).

24.38.3 Member Function Documentation

24.38.3.1 void SIMFQT::FareParserHelper::storeDateRangeStart::operator() ([boost::spirit::qi::unused_type](#), [boost::spirit::qi::unused_type](#), [boost::spirit::qi::unused_type](#)) const

Actor Function (functor).

Definition at line 118 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), [SIMFQT::FareRuleStruct::calculateDate\(\)](#), and [SIMFQT::FareRuleStruct::setDateRangeStart\(\)](#).

24.38.4 Member Data Documentation

24.38.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

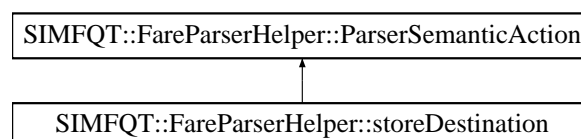
Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), and [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.39 SIMFQT::FareParserHelper::storeDestination Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>`Inheritance diagram for SIMFQT::FareParserHelper::storeDestination::



Public Member Functions

- [storeDestination](#) ([FareRuleStruct](#) &)
- [operator\(\)](#) (std::vector< char >, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.39.1 Detailed Description

Store the parsed destination.

Definition at line 59 of file [FareParserHelper.hpp](#).

24.39.2 Constructor & Destructor Documentation

24.39.2.1 SIMFQT::FareParserHelper::storeDestination::storeDestination (FareRuleStruct & *ioFareRule*)

Actor Constructor.

Definition at line 75 of file [FareParserHelper.cpp](#).

24.39.3 Member Function Documentation

24.39.3.1 void SIMFQT::FareParserHelper::storeDestination::operator() (std::vector< char > *iChar*, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 80 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::setDestination\(\)](#).

24.39.4 Member Data Documentation

24.39.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

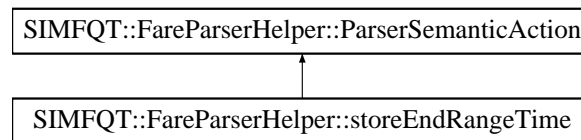
Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), and [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.40 SIMFQT::FareParserHelper::storeEndRangeTime Struct Reference

#include <simfqt/command/FareParserHelper.hpp> Inheritance diagram for SIMFQT::FareParserHelper::storeEndRangeTime::



Public Member Functions

- [storeEndRangeTime](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) (boost::spirit::qi::unused_type, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.40.1 Detailed Description

Store the parsed end range time.

Definition at line 110 of file [FareParserHelper.hpp](#).

24.40.2 Constructor & Destructor Documentation

24.40.2.1 SIMFQT::FareParserHelper::storeEndRangeTime::storeEndRangeTime ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line 168 of file [FareParserHelper.cpp](#).

24.40.3 Member Function Documentation

24.40.3.1 void SIMFQT::FareParserHelper::storeEndRangeTime::operator() (boost::spirit::qi::unused_type, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 173 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), [SIMFQT::FareRuleStruct::_itSeconds](#), [SIMFQT::FareRuleStruct::calculateTime\(\)](#), and [SIMFQT::FareRuleStruct::setTimeRangeEnd\(\)](#).

24.40.4 Member Data Documentation

24.40.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

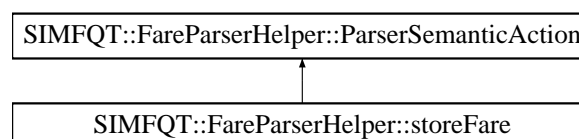
Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), and [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.41 SIMFQT::FareParserHelper::storeFare Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>` Inheritance diagram for SIMFQT::FareParserHelper::storeFare::



Public Member Functions

- [storeFare](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) (double, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.41.1 Detailed Description

Store the parsed fare value.

Definition at line 200 of file [FareParserHelper.hpp](#).

24.41.2 Constructor & Destructor Documentation

24.41.2.1 SIMFQT::FareParserHelper::storeFare::storeFare (FareRuleStruct & *ioFareRule*)

Actor Constructor.

Definition at line 362 of file [FareParserHelper.cpp](#).

24.41.3 Member Function Documentation

24.41.3.1 void SIMFQT::FareParserHelper::storeFare::operator() (double *iFare*, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 367 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::setFare\(\)](#).

24.41.4 Member Data Documentation

24.41.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

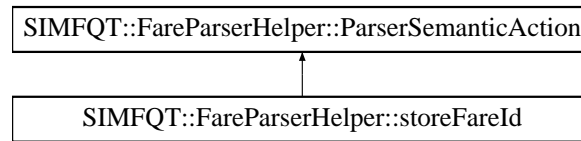
Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), and [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.42 SIMFQT::FareParserHelper::storeFareId Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>`Inheritance diagram for SIMFQT::FareParserHelper::storeFareId::



Public Member Functions

- [storeFareId](#) ([FareRuleStruct](#) &)
- [void operator\(\)](#) (unsigned int, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.42.1 Detailed Description

Store the parsed fare Id.

Definition at line 39 of file [FareParserHelper.hpp](#).

24.42.2 Constructor & Destructor Documentation

24.42.2.1 SIMFQT::FareParserHelper::storeFareId::storeFareId ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line 36 of file [FareParserHelper.cpp](#).

24.42.3 Member Function Documentation

24.42.3.1 void SIMFQT::FareParserHelper::storeFareId::operator() (unsigned int *iFareId*, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 41 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), [SIMFQT::FareRuleStruct::_itSeconds](#), [SIMFQT::FareRuleStruct::clearAirlineCodeList\(\)](#), [SIMFQT::FareRuleStruct::clearClassCodeList\(\)](#), [SIMFQT::FareRuleStruct::setAirlineCode\(\)](#), [SIMFQT::FareRuleStruct::setClassCode\(\)](#), and [SIMFQT::FareRuleStruct::setFareID\(\)](#).

24.42.4 Member Data Documentation

24.42.4.1 [FareRuleStruct](#)& [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#) [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

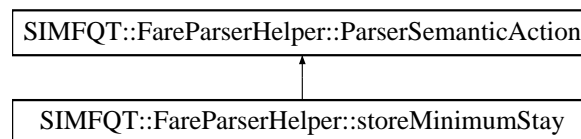
Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), and [operator\(\)](#).

The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.43 SIMFQT::FareParserHelper::storeMinimumStay Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>` Inheritance diagram for SIMFQT::FareParserHelper::storeMinimumStay::



Public Member Functions

- [storeMinimumStay](#) ([FareRuleStruct](#) &)
- [operator\(\)](#) (unsigned int, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.43.1 Detailed Description

Store the parsed minimum stay.

Definition at line 190 of file [FareParserHelper.hpp](#).

24.43.2 Constructor & Destructor Documentation

24.43.2.1 SIMFQT::FareParserHelper::storeMinimumStay::storeMinimumStay (FareRuleStruct & ioFareRule)

Actor Constructor.

Definition at line 346 of file [FareParserHelper.cpp](#).

24.43.3 Member Function Documentation

24.43.3.1 void SIMFQT::FareParserHelper::storeMinimumStay::operator() (unsigned int *iMinStay*, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 351 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::setMinimumStay\(\)](#).

24.43.4 Member Data Documentation

24.43.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

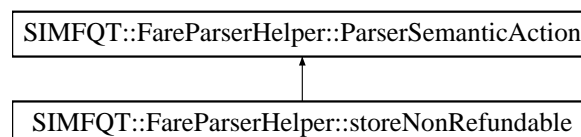
Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), and [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.44 SIMFQT::FareParserHelper::storeNonRefundable Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>`Inheritance diagram for SIMFQT::FareParserHelper::storeNonRefundable::



Public Member Functions

- [storeNonRefundable](#) ([FareRuleStruct](#) &)
- [operator\(\)](#) (char, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.44.1 Detailed Description

Store the parsed refundable option

Definition at line 180 of file [FareParserHelper.hpp](#).

24.44.2 Constructor & Destructor Documentation

24.44.2.1 SIMFQT::FareParserHelper::storeNonRefundable::storeNonRefundable(FareRuleStruct & ioFareRule)

Actor Constructor.

Definition at line 321 of file [FareParserHelper.cpp](#).

24.44.3 Member Function Documentation

24.44.3.1 void SIMFQT::FareParserHelper::storeNonRefundable::operator() (char iNonRefundable, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 326 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::setNonRefundable\(\)](#).

24.44.4 Member Data Documentation

24.44.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), and [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

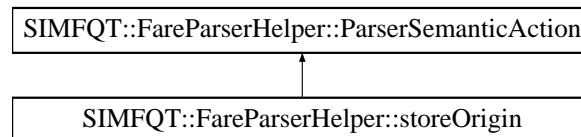
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)

- [simfqt/command/FareParserHelper.cpp](#)

24.45 SIMFQT::FareParserHelper::storeOrigin Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>` Inheritance diagram for SIMFQT::FareParserHelper::storeOrigin::



Public Member Functions

- [storeOrigin](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) (std::vector< char >, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.45.1 Detailed Description

Store the parsed origin.

Definition at line 49 of file [FareParserHelper.hpp](#).

24.45.2 Constructor & Destructor Documentation

24.45.2.1 SIMFQT::FareParserHelper::storeOrigin::storeOrigin (FareRuleStruct & *ioFareRule*)

Actor Constructor.

Definition at line 59 of file [FareParserHelper.cpp](#).

24.45.3 Member Function Documentation

24.45.3.1 void SIMFQT::FareParserHelper::storeOrigin::operator() (std::vector< char > *iChar*, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 64 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::setOrigin\(\)](#).

24.45.4 Member Data Documentation

24.45.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

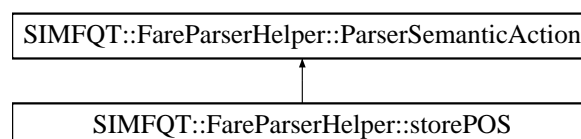
Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [operator\(\)](#), and [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.46 SIMFQT::FareParserHelper::storePOS Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>` Inheritance diagram for SIMFQT::FareParserHelper::storePOS::



Public Member Functions

- [storePOS](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) (std::vector< char >, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.46.1 Detailed Description

Store the parsed customer point_of_sale.

Definition at line 120 of file [FareParserHelper.hpp](#).

24.46.2 Constructor & Destructor Documentation

24.46.2.1 SIMFQT::FareParserHelper::storePOS::storePOS (FareRuleStruct & *ioFareRule*)

Actor Constructor.

Definition at line 186 of file [FareParserHelper.cpp](#).

24.46.3 Member Function Documentation

24.46.3.1 void SIMFQT::FareParserHelper::storePOS::operator() (std::vector< char > *iChar*, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 191 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), [SIMFQT::FareRuleStruct::getDestination\(\)](#), [SIMFQT::FareRuleStruct::getOrigin\(\)](#), and [SIMFQT::FareRuleStruct::setPOS\(\)](#).

24.46.4 Member Data Documentation

24.46.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

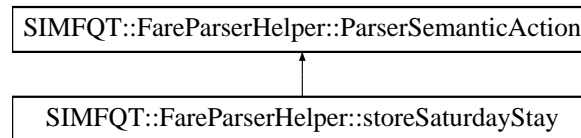
Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), and [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.47 SIMFQT::FareParserHelper::storeSaturdayStay Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>`Inheritance diagram for SIMFQT::FareParserHelper::storeSaturdayStay::



Public Member Functions

- [storeSaturdayStay](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) (char, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.47.1 Detailed Description

Store the parsed saturday night.

Definition at line 160 of file [FareParserHelper.hpp](#).

24.47.2 Constructor & Destructor Documentation

24.47.2.1 SIMFQT::FareParserHelper::storeSaturdayStay::storeSaturdayStay ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line 270 of file [FareParserHelper.cpp](#).

24.47.3 Member Function Documentation

24.47.3.1 void SIMFQT::FareParserHelper::storeSaturdayStay::operator() (char *iSaturdayStay*, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 275 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::setSaturdayStay\(\)](#).

24.47.4 Member Data Documentation

24.47.4.1 [FareRuleStruct](#)& [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#) [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

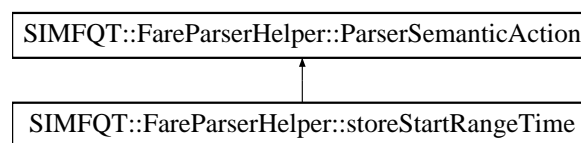
Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), and [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.48 SIMFQT::FareParserHelper::storeStartRangeTime Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>`Inheritance diagram for SIMFQT::FareParserHelper::storeStartRangeTime::



Public Member Functions

- [storeStartRangeTime](#) ([FareRuleStruct](#) &)
- [void operator\(\)](#) ([boost::spirit::qi::unused_type](#), [boost::spirit::qi::unused_type](#), [boost::spirit::qi::unused_type](#)) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.48.1 Detailed Description

Store the parsed start range time.

Definition at line 100 of file [FareParserHelper.hpp](#).

24.48.2 Constructor & Destructor Documentation

24.48.2.1 SIMFQT::FareParserHelper::storeStartRangeTime::storeStartRangeTime ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line 150 of file [FareParserHelper.cpp](#).

24.48.3 Member Function Documentation

24.48.3.1 void SIMFQT::FareParserHelper::storeStartRangeTime::operator()
(boost::spirit::qi::unused_type, boost::spirit::qi::unused_type,
boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 155 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#),
[SIMFQT::FareRuleStruct::_itSeconds](#), [SIMFQT::FareRuleStruct::calculateTime\(\)](#), and [SIMFQT::FareRuleStruct::setTimeRangeStart\(\)](#).

24.48.4 Member Data Documentation

24.48.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule
[inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

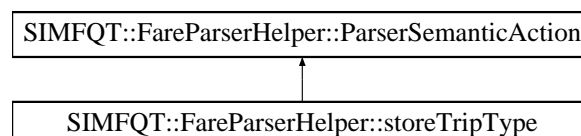
Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), and [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.49 SIMFQT::FareParserHelper::storeTripType Struct Reference

`#include <simfqt/command/FareParserHelper.hpp>`Inheritance diagram for SIMFQT::FareParserHelper::storeTripType:



Public Member Functions

- [storeTripType \(FareRuleStruct &\)](#)

- void [operator\(\)](#) (std::vector< char >, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.49.1 Detailed Description

Store the parsed customer trip type.

Definition at line 69 of file [FareParserHelper.hpp](#).

24.49.2 Constructor & Destructor Documentation

24.49.2.1 SIMFQT::FareParserHelper::storeTripType::storeTripType (FareRuleStruct & *ioFareRule*)

Actor Constructor.

Definition at line 91 of file [FareParserHelper.cpp](#).

24.49.3 Member Function Documentation

24.49.3.1 void SIMFQT::FareParserHelper::storeTripType::operator() (std::vector< char > *iChar*, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 96 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::setTripType\(\)](#).

24.49.4 Member Data Documentation

24.49.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#)

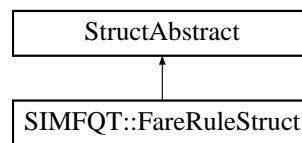
[SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), and [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.50 StructAbstract Class Reference

Inheritance diagram for StructAbstract::



The documentation for this class was generated from the following file:

- [simfqt/bom/FareRuleStruct.hpp](#)

25 File Documentation

25.1 doc/local/authors.doc File Reference

25.2 doc/local/codingrules.doc File Reference

25.3 doc/local/copyright.doc File Reference

25.4 doc/local/documentation.doc File Reference

25.5 doc/local/features.doc File Reference

25.6 doc/local/help_wanted.doc File Reference

25.7 doc/local/howto_release.doc File Reference

25.8 doc/local/index.doc File Reference

25.9 doc/local/installation.doc File Reference

25.10 doc/local/linking.doc File Reference

25.11 doc/local/test.doc File Reference

25.12 doc/local/users_guide.doc File Reference

25.13 doc/local/verification.doc File Reference

25.14 doc/tutorial/tutorial.doc File Reference

25.15 simfqt/basic/BasConst.cpp File Reference

```
#include <simfqt/basic/BasConst_General.hpp>
#include <simfqt/basic/BasConst_SIMFQT_Service.hpp>
```

Namespaces

- namespace [SIMFQT](#)

Variables

- const std::string [SIMFQT::DEFAULT_FARE_QUOTER_ID](#) = "IATA"

25.16 BasConst.cpp

```
00001 // //////////////////////////////////////
00002 // Import section
00003 // //////////////////////////////////////
00004 #include <simfqt/basic/BasConst_General.hpp>
00005 #include <simfqt/basic/BasConst_SIMFQT_Service.hpp>
00006
00007 namespace SIMFQT {
00008
00010     const std::string DEFAULT_FARE_QUOTER_ID = "IATA";
00011
00012 }
```

25.17 simfqt/basic/BasConst_General.hpp File Reference

Namespaces

- namespace [SIMFQT](#)

25.18 BasConst_General.hpp

```
00001 #ifndef __SIMFQT_BAS_BASCONST_GENERAL_HPP
00002 #define __SIMFQT_BAS_BASCONST_GENERAL_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007
00008 namespace SIMFQT {
00009
00010 }
00011 #endif // __SIMFQT_BAS_BASCONST_GENERAL_HPP
```

25.19 simfqt/basic/BasConst_SIMFQT_Service.hpp File Reference

```
#include <string>
```

Namespaces

- namespace [SIMFQT](#)

25.20 BasConst_SIMFQT_Service.hpp

```
00001 #ifndef __SIMFQT_BAS_BASCONST_SIMFQT_SERVICE_HPP
00002 #define __SIMFQT_BAS_BASCONST_SIMFQT_SERVICE_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 #include <string>
00008
00009 namespace SIMFQT {
00010
00012     extern const std::string DEFAULT_FARE_QUOTER_ID;
00013
00014 }
00015 #endif // __SIMFQT_BAS_BASCONST_SIMFQT_SERVICE_HPP
```

25.21 simfqt/batches/simfqt_parseFareRules.cpp File Reference

```
#include <cassert>
#include <iostream>
#include <sstream>
#include <fstream>
#include <vector>
#include <list>
#include <string>
#include <boost/date_time/posix_time/posix_time.hpp>
#include <boost/date_time/gregorian/gregorian.hpp>
#include <boost/tokenizer.hpp>
#include <boost/program_options.hpp>
#include <stdair/STDAIR_Service.hpp>
#include <stdair/bom/TravelSolutionStruct.hpp>
#include <stdair/bom/BookingRequestStruct.hpp>
#include <stdair/service/Logger.hpp>
#include <simfqt/SIMFQT_Service.hpp>
#include <simfqt/config/simfqt-paths.hpp>
```

Typedefs

- typedef std::vector< std::string > [WordList_T](#)

Functions

- const std::string [K_SIMFQT_DEFAULT_LOG_FILENAME](#) ("simfqt_parseFareRules.log")
- const std::string [K_SIMFQT_DEFAULT_FARE_INPUT_FILENAME](#) (STDAIR_SAMPLE_DIR"/fare01.csv")
- template<class T >
std::ostream & [operator<<](#) (std::ostream &os, const std::vector< T > &v)
- int [readConfiguration](#) (int argc, char *argv[], bool &ioIsBuiltin, stdair::Filename_T &ioFareInputFilename, std::string &ioLogFilename)
- int [main](#) (int argc, char *argv[])

Variables

- const bool [K_SIMFQT_DEFAULT_BUILT_IN_INPUT](#) = false
- const int [K_SIMFQT_EARLY_RETURN_STATUS](#) = 99

25.21.1 Typedef Documentation

25.21.1.1 `typedef std::vector<std::string> WordList_T`

Definition at line 24 of file [simfqt_parseFareRules.cpp](#).

25.21.2 Function Documentation

25.21.2.1 `const std::string K_SIMFQT_DEFAULT_LOG_FILENAME` `("simfqt_parseFareRules.log")`

Default name and location for the log file.

Referenced by [readConfiguration\(\)](#).

25.21.2.2 `const std::string K_SIMFQT_DEFAULT_FARE_INPUT_FILENAME` `(STDAIR_SAMPLE_DIR"/fare01.csv")`

Default name and location for the (CSV) input file.

Referenced by [readConfiguration\(\)](#).

25.21.2.3 `template<class T> std::ostream& operator<< (std::ostream & os, const std::vector<` `T> & v) [inline]`

Definition at line 44 of file [simfqt_parseFareRules.cpp](#).

25.21.2.4 `int readConfiguration (int argc, char * argv[], bool & ioIsBuiltin, stdair::Filename_T` `& ioFareInputFilename, std::string & ioLogFilename)`

Read and parse the command line options.

Definition at line 51 of file [simfqt_parseFareRules.cpp](#).

References [K_SIMFQT_DEFAULT_BUILT_IN_INPUT](#), [K_SIMFQT_DEFAULT_FARE_INPUT_FILENAME\(\)](#), [K_SIMFQT_DEFAULT_LOG_FILENAME\(\)](#), and [K_SIMFQT_EARLY_RETURN_STATUS](#).

Referenced by [main\(\)](#).

25.21.2.5 `int main (int argc, char * argv[])`

Definition at line 154 of file [simfqt_parseFareRules.cpp](#).

References [SIMFQT::SIMFQT_Service::buildBookingRequest\(\)](#), [SIMFQT::SIMFQT_Service::buildSampleBom\(\)](#), [SIMFQT::SIMFQT_Service::buildSampleTravelSolutions\(\)](#), [SIMFQT::SIMFQT_Service::csvDisplay\(\)](#), [K_SIMFQT_EARLY_RETURN_STATUS](#), [SIMFQT::SIMFQT_Service::parseAndLoad\(\)](#), [SIMFQT::SIMFQT_Service::quotePrices\(\)](#), and [readConfiguration\(\)](#).

25.21.3 Variable Documentation

25.21.3.1 `const bool K_SIMFQT_DEFAULT_BUILT_IN_INPUT = false`

Default for the input type. It can be either built-in or provided by an input file. That latter must then be given with the `-i` option.

Definition at line 37 of file [simfqt_parseFareRules.cpp](#).

Referenced by [readConfiguration\(\)](#).

25.21.3.2 `const int K_SIMFQT_EARLY_RETURN_STATUS = 99`

Early return status (so that it can be differentiated from an error).

Definition at line 40 of file [simfqt_parseFareRules.cpp](#).

Referenced by [main\(\)](#), and [readConfiguration\(\)](#).

25.22 simfqt_parseFareRules.cpp

```

00001 // STL
00002 #include <cassert>
00003 #include <iostream>
00004 #include <sstream>
00005 #include <fstream>
00006 #include <vector>
00007 #include <list>
00008 #include <string>
00009 // Boost (Extended STL)
00010 #include <boost/date_time/posix_time/posix_time.hpp>
00011 #include <boost/date_time/gregorian/gregorian.hpp>
00012 #include <boost/tokenizer.hpp>
00013 #include <boost/program_options.hpp>
00014 // StdAir
00015 #include <stdair/STDAIR_Service.hpp>
00016 #include <stdair/bom/TravelSolutionStruct.hpp>
00017 #include <stdair/bom/BookingRequestStruct.hpp>
00018 #include <stdair/service/Logger.hpp>
00019 // Simfqt
00020 #include <simfqt/SIMFQT_Service.hpp>
00021 #include <simfqt/config/simfqt-paths.hpp>
00022
00023 // ////////// Type definitions //////////
00024 typedef std::vector<std::string> WordList_T;
00025
00026
00027 // ////////// Constants //////////
00029 const std::string K_SIMFQT_DEFAULT_LOG_FILENAME ("simfqt_parseFareRules.log");
00030
00032 const std::string K_SIMFQT_DEFAULT_FARE_INPUT_FILENAME (STDAIR_SAMPLE_DIR
00033                                                         "/fare01.csv");
00034
00037 const bool K_SIMFQT_DEFAULT_BUILT_IN_INPUT = false;
00038
00040 const int K_SIMFQT_EARLY_RETURN_STATUS = 99;
00041
00042 // ////////// Parsing of Options & Configuration //////////
00043 // A helper function to simplify the main part.
00044 template<class T> std::ostream& operator<< (std::ostream& os,
00045                                           const std::vector<T>& v) {
00046     std::copy (v.begin(), v.end(), std::ostream_iterator<T> (std::cout, " "));
00047     return os;
00048 }
00049
00051 int readConfiguration (int argc, char* argv[], bool& ioIsBuiltin,
00052                      stdair::Filename_T& ioFareInputFilename,
00053                      std::string& ioLogFilename) {
00054
00055     // Default for the built-in input
00056     ioIsBuiltin = K_SIMFQT_DEFAULT_BUILT_IN_INPUT;
00057
00058     // Declare a group of options that will be allowed only on command line
00059     boost::program_options::options_description generic ("Generic options");
00060     generic.add_options()
00061         ("prefix", "print installation prefix")
00062         ("version,v", "print version string")
00063         ("help,h", "produce help message");
00064
00065     // Declare a group of options that will be allowed both on command
00066     // line and in config file
00067     boost::program_options::options_description config ("Configuration");
00068     config.add_options()
00069         ("builtin,b",
00070          "The sample BOM tree can be either built-in or parsed from an input file. Th
00071          at latter must then be given with the -f/--fare option")

```

```

00071     ("fare,f",
00072     boost::program_options::value< std::string >(&ioFareInputFilename)->default_
value(K_SIMFQT_DEFAULT_FARE_INPUT_FILENAME),
00073     "(CSV) input file for the fare rules")
00074     ("log,l",
00075     boost::program_options::value< std::string >(&ioLogFilename)->default_value(
K_SIMFQT_DEFAULT_LOG_FILENAME),
00076     "Filename for the logs")
00077     ;
00078
00079     // Hidden options, will be allowed both on command line and
00080     // in config file, but will not be shown to the user.
00081     boost::program_options::options_description hidden ("Hidden options");
00082     hidden.add_options()
00083         ("copyright",
00084         boost::program_options::value< std::vector<std::string> >(),
00085         "Show the copyright (license)");
00086
00087     boost::program_options::options_description cmdline_options;
00088     cmdline_options.add(generic).add(config).add(hidden);
00089
00090     boost::program_options::options_description config_file_options;
00091     config_file_options.add(config).add(hidden);
00092
00093     boost::program_options::options_description visible ("Allowed options");
00094     visible.add(generic).add(config);
00095
00096     boost::program_options::positional_options_description p;
00097     p.add ("copyright", -1);
00098
00099     boost::program_options::variables_map vm;
00100     boost::program_options::
00101         store (boost::program_options::command_line_parser (argc, argv).
00102             options (cmdline_options).positional(p).run(), vm);
00103
00104     std::ifstream ifs ("simfqt.cfg");
00105     boost::program_options::store (parse_config_file (ifs, config_file_options),
00106         vm);
00107     boost::program_options::notify (vm); if (vm.count ("help")) {
00108         std::cout << visible << std::endl;
00109         return K_SIMFQT_EARLY_RETURN_STATUS;
00110     }
00111
00112     if (vm.count ("version")) {
00113         std::cout << PACKAGE_NAME << ", version " << PACKAGE_VERSION << std::endl;
00114         return K_SIMFQT_EARLY_RETURN_STATUS;
00115     }
00116
00117     if (vm.count ("prefix")) {
00118         std::cout << "Installation prefix: " << PREFIXDIR << std::endl;
00119         return K_SIMFQT_EARLY_RETURN_STATUS;
00120     }
00121
00122     if (vm.count ("builtin")) {
00123         ioIsBuiltin = true;
00124     }
00125     const std::string isBuiltinStr = (ioIsBuiltin == true)? "yes": "no";
00126     std::cout << "The BOM should be built-in? " << isBuiltinStr << std::endl;
00127
00128     if (ioIsBuiltin == false) {
00129
00130         // The BOM tree should be built from parsing a fare (and O&D) file
00131         if (vm.count ("fare")) {
00132             ioFareInputFilename = vm["fare"].as< std::string >();
00133             std::cout << "Input fare filename is: " << ioFareInputFilename
00134                 << std::endl;
00135

```

```

00136     } else {
00137         // The built-in option is not selected. However, no fare file
00138         // is specified
00139         std::cerr << "Either one among the -b/--builtin and -f/--fare "
00140             << "options must be specified" << std::endl;
00141     }
00142 }
00143
00144 if (vm.count ("log")) {
00145     ioLogFilename = vm["log"].as< std::string >();
00146     std::cout << "Log filename is: " << ioLogFilename << std::endl;
00147 }
00148
00149 return 0;
00150 }
00151
00152
00153 // ////////////////////////////////// M A I N //////////////////////////////////
00154 int main (int argc, char* argv[]) {
00155
00156     // State whether the BOM tree should be built-in or parsed from an input file
00157     bool isBuiltin;
00158
00159     // Fare input filename
00160     stdair::Filename_T lFareInputFilename;
00161
00162     // Output log File
00163     stdair::Filename_T lLogFilename;
00164
00165     // Call the command-line option parser
00166     const int lOptionParserStatus =
00167         readConfiguration (argc, argv, isBuiltin, lFareInputFilename, lLogFilename);
00168
00169     if (lOptionParserStatus == K_SIMFQT_EARLY_RETURN_STATUS) {
00170         return 0;
00171     }
00172
00173     // Set the log parameters
00174     std::ofstream logOutputFile;
00175     // Open and clean the log outputfile
00176     logOutputFile.open (lLogFilename.c_str());
00177     logOutputFile.clear();
00178
00179     // Initialise the Simfqt service object
00180     const stdair::BasLogParams lLogParams (stdair::LOG::DEBUG, logOutputFile);
00181
00182     SIMFQT::SIMFQT_Service simfqtService (lLogParams);
00183
00184     // DEBUG
00185     STDAIR_LOG_DEBUG ("Welcome to Simfqt");
00186
00187     // Build a default sample list of travel solutions
00188     stdair::TravelSolutionList_T lTravelSolutionList;
00189     simfqtService.buildSampleTravelSolutions (lTravelSolutionList);
00190
00191     // Build a default booking request
00192     stdair::BookingRequestStruct lBookingRequest =
00193         simfqtService.buildBookingRequest();
00194
00195     // Check wether or not a (CSV) input file should be read
00196     if (isBuiltin == true) {
00197
00198         // Build the default sample BOM tree (filled with fares) for Simfqt
00199         simfqtService.buildSampleBom();
00200
00201     } else {
00202

```

```
00203     // Build the BOM tree from parsing a fare file
00204     SIMFQT::FareFilePath lFareFilePath (lFareInputFilename);
00205     simfqtService.parseAndLoad (lFareFilePath);
00206
00207 }
00208
00209 // DEBUG: Display the travel solutions
00210 const std::string& lTSCSVDump =
00211     simfqtService.csvDisplay (lTravelSolutionList);
00212     STDAIR_LOG_DEBUG (lTSCSVDump);
00213
00214 // FareQuote the sample list of travel solutions
00215 simfqtService.quotePrices (lBookingRequest, lTravelSolutionList);
00216
00217 // DEBUG: Display the whole BOM tree
00218 const std::string& lBOMCSVDump = simfqtService.csvDisplay();
00219     STDAIR_LOG_DEBUG ("BOM tree: " << lBOMCSVDump);
00220
00221 // DEBUG: Display the travel solutions
00222 const std::string& lTSCSVDumpEnd
00223     = simfqtService.csvDisplay (lTravelSolutionList);
00224     STDAIR_LOG_DEBUG (lTSCSVDumpEnd);
00225
00226 // Close the Log outputFile
00227 logOutputFile.close();
00228
00229 /*
00230     Note: as that program is not intended to be run on a server in
00231     production, it is better not to catch the exceptions. When it
00232     happens (that an exception is throwned), that way we get the
00233     call stack.
00234 */
00235
00236 return 0;
00237 }
00238
```

25.23 simfqt/bom/FareRuleStruct.cpp File Reference

```
#include <cassert>
#include <sstream>
#include <vector>
#include <stdair/basic/BasConst_General.hpp>
#include <stdair/service/Logger.hpp>
#include <simfqt/bom/FareRuleStruct.hpp>
```

Namespaces

- namespace [SIMFQT](#)

25.24 FareRuleStruct.cpp

```

00001 // //////////////////////////////////////
00002 // Import section
00003 // //////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 #include <sstream>
00007 #include <vector>
00008 // StdAir
00009 #include <stdair/basic/BasConst_General.hpp>
00010 #include <stdair/service/Logger.hpp>
00011 // SIMFQT
00012 #include <simfqt/bom/FareRuleStruct.hpp>
00013
00014 namespace SIMFQT {
00015
00016 // //////////////////////////////////////
00017 FareRuleStruct::FareRuleStruct ()
00018     :_fareId(0),
00019     _origin(""),
00020     _destination(""),
00021     _dateRangeStart(stdair::DEFAULT_DATE),
00022     _dateRangeEnd(stdair::DEFAULT_DATE),
00023     _timeRangeStart(stdair::DEFAULT_EPSILON_DURATION),
00024     _timeRangeEnd(stdair::DEFAULT_EPSILON_DURATION),
00025     _cabinCode(""),
00026     _pos(""),
00027     _advancePurchase(0),
00028     _saturdayStay("T"),
00029     _changeFees("T"),
00030     _nonRefundable("T"),
00031     _minimumStay(0),
00032     _fare(0),
00033     _airlineCode(""),
00034     _classCode("") {
00035
00036 }
00037
00038 // //////////////////////////////////////
00039 stdair::Date_T FareRuleStruct::calculateDate() const {
00040     _itYear.check(); _itMonth.check(); _itDay.check();
00041     return stdair::Date_T (_itYear._value, _itMonth._value, _itDay._value);
00042 }
00043
00044 // //////////////////////////////////////
00045 stdair::Duration_T FareRuleStruct::calculateTime() const {
00046     _itHours.check(); _itMinutes.check(); _itSeconds.check();
00047     return boost::posix_time::hours (_itHours._value)
00048         + boost::posix_time::minutes (_itMinutes._value)
00049         + boost::posix_time::seconds (_itSeconds._value);
00050 }
00051
00052 // //////////////////////////////////////
00053 const std::string FareRuleStruct::describe () const {
00054
00055     std::ostringstream ostr;
00056     ostr << "FareRule: " << _fareId << ", ";
00057
00058     ostr << _origin << "-" << _destination << " ("
00059         << _pos << "), " << _channel << ", [";
00060     ostr << _dateRangeStart << "/" << _dateRangeEnd << "]" << " - ["
00061         << boost::posix_time::to_simple_string (_timeRangeStart) << "/"
00062         << boost::posix_time::to_simple_string (_timeRangeEnd) << "], ";
00063
00064     ostr << _cabinCode << ", " << _fare << " EUR, ";

```

```
00066     ostr << _tripType << ", " << _saturdayStay << ", "
00067         << _changeFees << ", " << _nonRefundable << ", "
00068         << _advancePurchase << ", " << _minimumStay << ", ";
00069
00070     // Sanity check
00071     assert (_airlineCodeList.size() == _classCodeList.size());
00072
00073     // Browse the airline and class pathes
00074     unsigned short idx = 0;
00075     stdair::ClassList_StringList_T::const_iterator itClass =
00076         _classCodeList.begin();
00077     for (stdair::AirlineCodeList_T::const_iterator itAirline =
00078         _airlineCodeList.begin();
00079         itAirline != _airlineCodeList.end(); ++itAirline, ++itClass, ++idx) {
00080         if (idx != 0) {
00081             ostr << " - ";
00082         }
00083         const stdair::AirlineCode_T lAirlineCode = *itAirline;
00084         const stdair::ClassCode_T lClassCode = *itClass;
00085         ostr << lAirlineCode << " / " << lClassCode;
00086     }
00087
00088     return ostr.str();
00089 }
00090
00091 }
00092
```


25.25 simfqt/bom/FareRuleStruct.hpp File Reference

```
#include <string>
#include <vector>
#include <stdair/stdair_demand_types.hpp>
#include <stdair/stdair_inventory_types.hpp>
#include <stdair/basic/StructAbstract.hpp>
#include <stdair/basic/BasParserHelperTypes.hpp>
#include <simfqt/SIMFQT_Types.hpp>
```

Classes

- struct [SIMFQT::FareRuleStruct](#)

Namespaces

- namespace [SIMFQT](#)

25.26 FareRuleStruct.hpp

```

00001 #ifndef __SIMFQT_BOM_FARERULESTRUCT_HPP
00002 #define __SIMFQT_BOM_FARERULESTRUCT_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 // STL
00008 #include <string>
00009 #include <vector>
00010 // StdAir
00011 #include <stdair/stdair_demand_types.hpp>
00012 #include <stdair/stdair_inventory_types.hpp>
00013 #include <stdair/basic/StructAbstract.hpp>
00014 #include <stdair/basic/BasParserHelperTypes.hpp>
00015 // SIMFQT
00016 #include <simfqt/SIMFQT_Types.hpp>
00017
00018 namespace SIMFQT {
00019
00021     struct FareRuleStruct : public stdair::StructAbstract {
00022     public:
00023
00025         FareRuleStruct ();
00026
00027     public:
00028         // ////////// Getters //////////
00030         SIMFQT::FareQuoteID_T getFareID () const {
00031             return _fareId;
00032         }
00033
00035         stdair::AirportCode_T getOrigin () const {
00036             return _origin;
00037         }
00038
00040         stdair::AirportCode_T getDestination () const {
00041             return _destination;
00042         }
00043
00045         stdair::TripType_T getTripType () const {
00046             return _tripType;
00047         }
00048
00050         stdair::Date_T getDateRangeStart () const {
00051             return _dateRangeStart;
00052         }
00053
00055         stdair::Date_T getDateRangeEnd () const {
00056             return _dateRangeEnd;
00057         }
00058
00060         stdair::Duration_T getTimeRangeStart () const {
00061             return _timeRangeStart;
00062         }
00063
00065         stdair::Duration_T getTimeRangeEnd () const {
00066             return _timeRangeEnd;
00067         }
00068
00070         stdair::CabinCode_T getCabinCode () const {
00071             return _cabinCode;
00072         }
00073
00075         const stdair::CityCode_T getPOS () const {
00076             return _pos;
00077         }

```

```

00078
00080     stdair::ChannelLabel_T getChannel () const {
00081         return _channel;
00082     }
00083
00085     stdair::DayDuration_T getAdvancePurchase () const {
00086         return _advancePurchase;
00087     }
00088
00090     stdair::SaturdayStay_T getSaturdayStay () const {
00091         return _saturdayStay;
00092     }
00093
00095     stdair::ChangeFees_T getChangeFees () const {
00096         return _changeFees;
00097     }
00098
00100     stdair::NonRefundable_T getNonRefundable () const {
00101         return _nonRefundable;
00102     }
00103
00105     stdair::DayDuration_T getMinimumStay () const {
00106         return _minimumStay;
00107     }
00108
00110     stdair::PriceValue_T getFare () const {
00111         return _fare;
00112     }
00113
00115     stdair::AirlineCode_T getAirlineCode () const {
00116         return _airlineCode;
00117     }
00118
00120     stdair::ClassCode_T getClassCode () const {
00121         return _classCode;
00122     }
00123
00125     const unsigned int getAirlineListSize () const {
00126         return _airlineCodeList.size();
00127     }
00128
00130     const unsigned int getClassCodeListSize () const {
00131         return _classCodeList.size();
00132     }
00133
00135     stdair::AirlineCodeList_T getAirlineList () const {
00136         return _airlineCodeList;
00137     }
00138
00140     stdair::ClassList_StringList_T getClassCodeList () const {
00141         return _classCodeList;
00142     }
00143
00144 public:
00145     // ////////// Display support methods //////////
00147     stdair::Date_T calculateDate() const;
00148
00150     stdair::Duration_T calculateTime() const;
00151
00153     const std::string describe() const;
00154
00155 public:
00156     // ////////// Setters //////////
00158     void setFareID (const SIMFQT::FareQuoteID_T& iFareQuoteID) {
00159         _fareId = iFareQuoteID;
00160     }
00161

```

```
00163     void setOrigin (const stdair::AirportCode_T& iOrigin) {
00164         _origin = iOrigin;
00165     }
00166
00168     void setDestination (const stdair::AirportCode_T& iDestination) {
00169         _destination = iDestination;
00170     }
00171
00173     void setTripType (const stdair::TripType_T& iTripType) {
00174         _tripType = iTripType;
00175     }
00176
00178     void setDateRangeStart (const stdair::Date_T& iDateRangeStart) {
00179         _dateRangeStart = iDateRangeStart;
00180     }
00181
00183     void setDateRangeEnd (const stdair::Date_T& iDateRangeEnd) {
00184         _dateRangeEnd = iDateRangeEnd;
00185     }
00186
00188     void setTimeRangeStart (const stdair::Duration_T& iTimeRangeStart) {
00189         _timeRangeStart = iTimeRangeStart;
00190     }
00191
00193     void setTimeRangeEnd (const stdair::Duration_T& iTimeRangeEnd) {
00194         _timeRangeEnd = iTimeRangeEnd;
00195     }
00196
00198     void setCabinCode (const stdair::CabinCode_T& iCabinCode) {
00199         _cabinCode = iCabinCode;
00200     }
00201
00203     void setPOS (const stdair::CityCode_T& iPOS) {
00204         _pos = iPOS;
00205     }
00206
00208     void setChannel (const stdair::ChannelLabel_T& iChannel) {
00209         _channel = iChannel;
00210     }
00211
00213     void setAdvancePurchase (const stdair::DayDuration_T& iAdvancePurchase) {
00214         _advancePurchase = iAdvancePurchase;
00215     }
00216
00218     void setSaturdayStay (const stdair::SaturdayStay_T& iSaturdayStay) {
00219         _saturdayStay = iSaturdayStay;
00220     }
00221
00223     void setChangeFees (const stdair::ChangeFees_T& iChangeFees) {
00224         _changeFees = iChangeFees;
00225     }
00226
00228     void setNonRefundable (const stdair::NonRefundable_T& iNonRefundable) {
00229         _nonRefundable = iNonRefundable;
00230     }
00231
00233     void setMinimumStay (const stdair::DayDuration_T& iMinimumStay) {
00234         _minimumStay = iMinimumStay;
00235     }
00236
00238     void setFare (const stdair::PriceValue_T& iFare) {
00239         _fare = iFare;
00240     }
00241
00243     void setAirlineCode (const stdair::AirlineCode_T& iAirlineCode) {
00244         _airlineCode = iAirlineCode;
00245     }
```

```
00246
00248     void setClassCode (const stdair::ClassCode_T& iClassCode) {
00249         _classCode = iClassCode;
00250     }
00251
00253     void clearAirlineCodeList () {
00254         _airlineCodeList.clear();
00255     }
00256
00258     void clearClassCodeList () {
00259         _classCodeList.clear();
00260     }
00261
00263     void addAirlineCode (const stdair::AirlineCode_T& iAirlineCode) {
00264         _airlineCodeList.push_back (iAirlineCode);
00265     }
00266
00268     void addClassCode (const stdair::ClassCode_T& iClassCode) {
00269         _classCodeList.push_back (iClassCode);
00270     }
00271
00272 public:
00273     // ////////////////////////////////// Attributes //////////////////////////////////
00275     stdair::year_t _itYear;
00276     stdair::month_t _itMonth;
00277     stdair::day_t _itDay;
00278
00280     stdair::hour_t _itHours;
00281     stdair::minute_t _itMinutes;
00282     stdair::second_t _itSeconds;
00283
00284 private:
00285     // ////////////////////////////////// Attributes //////////////////////////////////
00287     SIMFQT::FareQuoteID_T _fareId;
00288
00290     stdair::AirportCode_T _origin;
00291
00293     stdair::AirportCode_T _destination;
00294
00296     stdair::TripType_T _tripType;
00297
00299     stdair::Date_T _dateRangeStart;
00300
00302     stdair::Date_T _dateRangeEnd;
00303
00305     stdair::Duration_T _timeRangeStart;
00306
00308     stdair::Duration_T _timeRangeEnd;
00309
00311     stdair::CabinCode_T _cabinCode;
00312
00314     stdair::CityCode_T _pos;
00315
00317     stdair::ChannelLabel_T _channel;
00318
00320     stdair::DayDuration_T _advancePurchase;
00321
00323     stdair::SaturdayStay_T _saturdayStay;
00324
00326     stdair::ChangeFees_T _changeFees;
00327
00329     stdair::NonRefundable_T _nonRefundable;
00330
00332     stdair::DayDuration_T _minimumStay;
00333
00335     stdair::PriceValue_T _fare;
00336
```

```
00338     stdair::AirlineCode_T _airlineCode;
00339
00341     stdair::ClassCode_T _classCode;
00342
00345     stdair::AirlineCodeList_T _airlineCodeList;
00346
00349     stdair::ClassList_StringList_T _classCodeList;
00350
00351 };
00352
00353 }
00354 #endif // __SIMFQT_BOM_FARERULESTRUCT_HPP
```

25.27 simfqt/command/FareParser.cpp File Reference

```
#include <cassert>
#include <string>
#include <stdair/basic/BasFileMgr.hpp>
#include <stdair/service/Logger.hpp>
#include <simfqt/command/FareParserHelper.hpp>
#include <simfqt/command/FareParser.hpp>
```

Namespaces

- namespace [SIMFQT](#)

25.28 FareParser.cpp

```

00001 // //////////////////////////////////////
00002 // Import section
00003 // //////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 #include <string>
00007 // StdAir
00008 #include <stdair/basic/BasFileMgr.hpp>
00009 #include <stdair/service/Logger.hpp>
00010 // AirSched
00011 #include <simfqt/command/FareParserHelper.hpp>
00012 #include <simfqt/command/FareParser.hpp>
00013
00014 namespace SIMFQT {
00015
00016 // //////////////////////////////////////
00017 void FareParser::fareRuleGeneration (const FareFilePath& iFareFilename,
00018                                     stdair::BomRoot& ioBomRoot) {
00019
00020     const stdair::Filename_T lFilename = iFareFilename.name();
00021
00022     // Check that the file path given as input corresponds to an actual file
00023     const bool doesExistAndIsReadable =
00024         stdair::BasFileMgr::doesExistAndIsReadable (lFilename);
00025     if (doesExistAndIsReadable == false) {
00026         STDAIR_LOG_ERROR ("The fare input file, '" << lFilename
00027                         << "'", can not be retrieved on the file-system");
00028         throw FareInputFileNotFoundException ("The fare input file '" + lFilename
00029                                             + "' does not exist or can not "
00030                                             "be read");
00031     }
00032
00033     // Initialise the fare file parser.
00034     FareRuleFileParser lFareRuleFileParser (ioBomRoot, lFilename);
00035
00036     // Parse the CSV-formatted fare input file and generate the
00037     // corresponding fare rules.
00038     lFareRuleFileParser.generateFareRules ();
00039
00040 }
00041
00042 }

```


25.29 simfqt/command/FareParser.hpp File Reference

```
#include <string>
#include <stdair/stdair_basic_types.hpp>
#include <stdair/command/CmdAbstract.hpp>
#include <simfqt/SIMFQT_Types.hpp>
```

Classes

- class [SIMFQT::FareParser](#)

Namespaces

- namespace [stdair](#)
Forward declarations.
- namespace [SIMFQT](#)

25.30 FareParser.hpp

```
00001 #ifndef __SIMFQT_CMD_FAREPARSER_HPP
00002 #define __SIMFQT_CMD_FAREPARSER_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 // STL
00008 #include <string>
00009 // StdAir
00010 #include <stdair/stdair_basic_types.hpp>
00011 #include <stdair/command/CmdAbstract.hpp>
00012 // SimFQT
00013 #include <simfqt/SIMFQT_Types.hpp>
00014
00015 // Forward declarations.
00016 namespace stdair {
00017     class BomRoot;
00018 }
00019
00020 namespace SIMFQT {
00021
00022     class FareParser : public stdair::CmdAbstract {
00023     public:
00024         static void fareRuleGeneration (const FareFilePath&, stdair::BomRoot&);
00025     };
00026 }
00027
00028 #endif // __SIMFQT_CMD_FAREPARSER_HPP
```

25.31 simfqt/command/FareParserHelper.cpp File Reference

```
#include <cassert>
#include <vector>
#include <fstream>
#include <stdair/basic/BasFileMgr.hpp>
#include <stdair/basic/BasConst_Request.hpp>
#include <stdair/bom/BomRoot.hpp>
#include <stdair/service/Logger.hpp>
#include <stdair/basic/BasParserTypes.hpp>
#include <simfqt/command/FareParserHelper.hpp>
#include <simfqt/command/FareRuleGenerator.hpp>
```

Classes

- struct [SIMFQT::FareParserHelper::FareRuleParser< Iterator >](#)

Namespaces

- namespace [SIMFQT](#)
- namespace [SIMFQT::FareParserHelper](#)

Variables

- stdair::int1_p_t [SIMFQT::FareParserHelper::int1_p](#)
- stdair::uint2_p_t [SIMFQT::FareParserHelper::uint2_p](#)
- stdair::uint4_p_t [SIMFQT::FareParserHelper::uint4_p](#)
- stdair::uint1_4_p_t [SIMFQT::FareParserHelper::uint1_4_p](#)
- stdair::hour_p_t [SIMFQT::FareParserHelper::hour_p](#)
- stdair::minute_p_t [SIMFQT::FareParserHelper::minute_p](#)
- stdair::second_p_t [SIMFQT::FareParserHelper::second_p](#)
- stdair::year_p_t [SIMFQT::FareParserHelper::year_p](#)
- stdair::month_p_t [SIMFQT::FareParserHelper::month_p](#)
- stdair::day_p_t [SIMFQT::FareParserHelper::day_p](#)

25.32 FareParserHelper.cpp

```

00001 // //////////////////////////////////////
00002 // Import section
00003 // //////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 #include <vector>
00007 #include <fstream>
00008 // StdAir
00009 #include <stdair/basic/BasFileMgr.hpp>
00010 #include <stdair/basic/BasConst_Request.hpp>
00011 #include <stdair/bom/BomRoot.hpp>
00012 #include <stdair/service/Logger.hpp>
00013 // #define BOOST_SPIRIT_DEBUG
00014 #include <stdair/basic/BasParserTypes.hpp>
00015 // SIMFQT
00016 #include <simfqt/command/FareParserHelper.hpp>
00017 #include <simfqt/command/FareRuleGenerator.hpp>
00018
00019
00020
00021 namespace SIMFQT {
00022
00023     namespace FareParserHelper {
00024
00025         // //////////////////////////////////////
00026         // Semantic actions
00027         // //////////////////////////////////////
00028
00029         ParserSemanticAction::
00030         ParserSemanticAction (FareRuleStruct& ioFareRule)
00031             : _fareRule (ioFareRule) {
00032         }
00033
00034         // //////////////////////////////////////
00035         storeFareId::
00036         storeFareId (FareRuleStruct& ioFareRule)
00037             : ParserSemanticAction (ioFareRule) {
00038         }
00039
00040         // //////////////////////////////////////
00041         void storeFareId::operator() (unsigned int iFareId,
00042                                     boost::spirit::qi::unused_type,
00043                                     boost::spirit::qi::unused_type) const {
00044             _fareRule.setFareID (iFareId);
00045
00046             // DEBUG
00047             //STDAIR_LOG_DEBUG ( "Fare Id: " << _fareRule.getFareID ());
00048             const stdair::AirlineCode_T lEmptyAirlineCode ("");
00049             _fareRule.setAirlineCode(lEmptyAirlineCode);
00050             _fareRule.clearAirlineCodeList();
00051             const stdair::ClassCode_T lEmptyClassCode ("");
00052             _fareRule.setClassCode(lEmptyClassCode);
00053             _fareRule.clearClassCodeList();
00054             _fareRule._itSeconds = 0;
00055         }
00056
00057         // //////////////////////////////////////
00058         storeOrigin::
00059         storeOrigin (FareRuleStruct& ioFareRule)
00060             : ParserSemanticAction (ioFareRule) {
00061         }
00062
00063         // //////////////////////////////////////
00064         void storeOrigin::operator() (std::vector<char> iChar,
00065                                     boost::spirit::qi::unused_type,

```

```

00066                                     boost::spirit::qi::unused_type) const {
00067     const stdair::AirportCode_T lOrigin (iChar.begin(), iChar.end());
00068     _fareRule.setOrigin (lOrigin);
00069     // DEBUG
00070     //STDAIR_LOG_DEBUG ( "Origin: " << _fareRule.getOrigin ());
00071 }
00072
00073 ///////////////////////////////////////////////////////////////////
00074 storeDestination ::
00075 storeDestination (FareRuleStruct& ioFareRule)
00076 : ParserSemanticAction (ioFareRule) {
00077 }
00078
00079 ///////////////////////////////////////////////////////////////////
00080 void storeDestination::operator() (std::vector<char> iChar,
00081                                     boost::spirit::qi::unused_type,
00082                                     boost::spirit::qi::unused_type) const {
00083     const stdair::AirportCode_T lDestination (iChar.begin(), iChar.end());
00084     _fareRule.setDestination (lDestination);
00085     // DEBUG
00086     //STDAIR_LOG_DEBUG ( "Destination: " << _fareRule.getDestination ());
00087 }
00088
00089 ///////////////////////////////////////////////////////////////////
00090 storeTripType ::
00091 storeTripType (FareRuleStruct& ioFareRule)
00092 : ParserSemanticAction (ioFareRule) {
00093 }
00094
00095 ///////////////////////////////////////////////////////////////////
00096 void storeTripType::operator() (std::vector<char> iChar,
00097                                     boost::spirit::qi::unused_type,
00098                                     boost::spirit::qi::unused_type) const {
00099     const stdair::TripType_T lTripType (iChar.begin(), iChar.end());
00100     if (lTripType == "OW" || lTripType == "RT") {
00101         _fareRule.setTripType (lTripType);
00102     } else {
00103         // ERROR
00104         STDAIR_LOG_ERROR ("Invalid trip type " << lTripType);
00105     }
00106     // DEBUG
00107     //STDAIR_LOG_DEBUG ("TripType: " << _fareRule.getTripType ());
00108 }
00109
00110 ///////////////////////////////////////////////////////////////////
00111 storeDateRangeStart::
00112 storeDateRangeStart (FareRuleStruct& ioFareRule)
00113 : ParserSemanticAction (ioFareRule) {
00114 }
00115
00116 ///////////////////////////////////////////////////////////////////
00117 void storeDateRangeStart::operator() (boost::spirit::qi::unused_type,
00118                                     boost::spirit::qi::unused_type,
00119                                     boost::spirit::qi::unused_type) const {
00120
00121     const stdair::Date_T& lDateStart = _fareRule.calculateDate ();
00122     _fareRule.setDateRangeStart (lDateStart);
00123     // DEBUG
00124     //STDAIR_LOG_DEBUG ("Date Range Start: " << _fareRule.getDateRangeStart ());
00125 ;
00126 }
00127
00128 ///////////////////////////////////////////////////////////////////
00129 storeDateRangeEnd::
00129 storeDateRangeEnd(FareRuleStruct& ioFareRule)
00130 : ParserSemanticAction (ioFareRule) {

```

```

00131     }
00132
00133     // ////////////////////////////////////////
00134 void storeDateRangeEnd::operator() (boost::spirit::qi::unused_type,
00135                                     boost::spirit::qi::unused_type,
00136                                     boost::spirit::qi::unused_type) const {
00137     const stdair::Date_T& lDateEnd = _fareRule.calculateDate ();
00138     // As a Boost date period (DatePeriod_T) defines the last day of
00139     // the period to be end-date - one day, we have to add one day to that
00140     // end date before.
00141     const stdair::DateOffset_T oneDay (1);
00142     const stdair::Date_T lBoostDateEnd = lDateEnd + oneDay;
00143     _fareRule.setDateRangeEnd (lBoostDateEnd);
00144     // DEBUG
00145     //STDAIR_LOG_DEBUG ("Date Range End: " << _fareRule.getDateRangeEnd ());
00146 }
00147
00148     // ////////////////////////////////////////
00149 storeStartRangeTime::
00150 storeStartRangeTime (FareRuleStruct& ioFareRule)
00151     : ParserSemanticAction (ioFareRule) {
00152 }
00153
00154     // ////////////////////////////////////////
00155 void storeStartRangeTime::operator() (boost::spirit::qi::unused_type,
00156                                     boost::spirit::qi::unused_type,
00157                                     boost::spirit::qi::unused_type) const {
00158
00159     const stdair::Duration_T& lTimeStart = _fareRule.calculateTime ();
00160     _fareRule.setTimeRangeStart (lTimeStart);
00161     // DEBUG
00162     //STDAIR_LOG_DEBUG ("Time Range Start: " << _fareRule.getTimeRangeStart ());
00163 ;
00164     // Reset the number of seconds
00165     _fareRule._itSeconds = 0;
00166 }
00167
00168     // ////////////////////////////////////////
00169 storeEndRangeTime::
00170 storeEndRangeTime (FareRuleStruct& ioFareRule)
00171     : ParserSemanticAction (ioFareRule) {
00172 }
00173
00174     // ////////////////////////////////////////
00175 void storeEndRangeTime::operator() (boost::spirit::qi::unused_type,
00176                                     boost::spirit::qi::unused_type,
00177                                     boost::spirit::qi::unused_type) const {
00178     const stdair::Duration_T& lTimeEnd = _fareRule.calculateTime ();
00179     _fareRule.setTimeRangeEnd (lTimeEnd);
00180     // DEBUG
00181     //STDAIR_LOG_DEBUG ("Time Range End: " << _fareRule.getTimeRangeEnd ());
00182     // Reset the number of seconds
00183     _fareRule._itSeconds = 0;
00184 }
00185
00186     // ////////////////////////////////////////
00187 storePOS ::
00188 storePOS (FareRuleStruct& ioFareRule)
00189     : ParserSemanticAction (ioFareRule) {
00190 }
00191
00192     // ////////////////////////////////////////
00193 void storePOS::operator() (std::vector<char> iChar,
00194                             boost::spirit::qi::unused_type,
00195                             boost::spirit::qi::unused_type) const {
00196     const stdair::CityCode_T lPOS (iChar.begin(), iChar.end());
00197     if (lPOS == _fareRule.getOrigin() || lPOS == _fareRule.getDestination()) {

```

```

00196     _fareRule.setPOS (lPOS);
00197 } else if (lPOS == "ROW") {
00198     const stdair::CityCode_T lPOSROW ("ROW");
00199     _fareRule.setPOS (lPOSROW);
00200 } else if (lPOS == stdair::DEFAULT_POS) {
00201     _fareRule.setPOS (stdair::DEFAULT_POS);
00202 } else {
00203     // ERROR
00204     STDAIR_LOG_ERROR ("Invalid point of sale " << lPOS);
00205 }
00206 // DEBUG
00207 //STDAIR_LOG_DEBUG ("POS: " << _fareRule.getPOS ());
00208 }
00209
00210 // //////////////////////////////////////
00211 storeCabinCode ::
00212 storeCabinCode (FareRuleStruct& ioFareRule)
00213 : ParserSemanticAction (ioFareRule) {
00214 }
00215
00216 // //////////////////////////////////////
00217 void storeCabinCode::operator() (char iChar,
00218                                 boost::spirit::qi::unused_type,
00219                                 boost::spirit::qi::unused_type) const {
00220     std::ostringstream ostr;
00221     ostr << iChar;
00222     const std::string cabinCodeStr = ostr.str();
00223     const stdair::CabinCode_T& lCabinCode (cabinCodeStr);
00224     _fareRule.setCabinCode (lCabinCode);
00225
00226     // DEBUG
00227     //STDAIR_LOG_DEBUG ("Cabin Code: " << _fareRule.getCabinCode ());
00228
00229 }
00230
00231 // //////////////////////////////////////
00232 storeChannel ::
00233 storeChannel (FareRuleStruct& ioFareRule)
00234 : ParserSemanticAction (ioFareRule) {
00235 }
00236
00237 // //////////////////////////////////////
00238 void storeChannel::operator() (std::vector<char> iChar,
00239                               boost::spirit::qi::unused_type,
00240                               boost::spirit::qi::unused_type) const {
00241     const stdair::ChannelLabel_T lChannel (iChar.begin(), iChar.end());
00242     if (lChannel != "IN" && lChannel != "IF" && lChannel != "DN"
00243         && lChannel != "DF" && lChannel != stdair::DEFAULT_CHANNEL) {
00244         // ERROR
00245         STDAIR_LOG_ERROR ("Invalid channel " << lChannel);
00246     }
00247     _fareRule.setChannel (lChannel);
00248     // DEBUG
00249     //STDAIR_LOG_DEBUG ("Channel: " << _fareRule.getChannel ());
00250 }
00251
00252 // //////////////////////////////////////
00253 storeAdvancePurchase ::
00254 storeAdvancePurchase (FareRuleStruct& ioFareRule)
00255 : ParserSemanticAction (ioFareRule) {
00256 }
00257
00258 // //////////////////////////////////////
00259 void storeAdvancePurchase::operator() (unsigned int iAdvancePurchase,
00260                                       boost::spirit::qi::unused_type,
00261                                       boost::spirit::qi::unused_type) const

```

```

{
00262     const stdair::DayDuration_T& lAdvancePurchase = iAdvancePurchase;
00263     _fareRule.setAdvancePurchase (lAdvancePurchase);
00264     // DEBUG
00265     //STDAIR_LOG_DEBUG ( "Advance Purchase: " << _fareRule.getAdvancePurchase (
));
00266 }
00267
00268 // //////////////////////////////////////
00269 storeSaturdayStay ::
00270 storeSaturdayStay (FareRuleStruct& ioFareRule)
00271 : ParserSemanticAction (ioFareRule) {
00272 }
00273
00274 // //////////////////////////////////////
00275 void storeSaturdayStay::operator() (char iSaturdayStay,
                                boost::spirit::qi::unused_type,
                                boost::spirit::qi::unused_type) const {
00276     bool lBool = false;
00277     if (iSaturdayStay == 'T') {
00278         lBool = true;
00279     } else {
00280         if (iSaturdayStay != 'F') {
00281             // DEBUG
00282             STDAIR_LOG_DEBUG ("Invalid saturdayStay char " << iSaturdayStay);
00283         }
00284     }
00285     const stdair::SaturdayStay_T lSaturdayStay (lBool);
00286     _fareRule.setSaturdayStay (lSaturdayStay);
00287     // DEBUG
00288     //STDAIR_LOG_DEBUG ("Saturday Stay: " << _fareRule.getSaturdayStay ());
00289 }
00290
00291 // //////////////////////////////////////
00292 storeChangeFees ::
00293 storeChangeFees (FareRuleStruct& ioFareRule)
00294 : ParserSemanticAction (ioFareRule) {
00295 }
00296
00297 // //////////////////////////////////////
00298 void storeChangeFees::operator() (char iChangefees,
                                boost::spirit::qi::unused_type,
                                boost::spirit::qi::unused_type) const {
00299     bool lBool = false;
00300     if (iChangefees == 'T') {
00301         lBool = true;
00302     } else {
00303         if (iChangefees != 'F') {
00304             // DEBUG
00305             STDAIR_LOG_DEBUG ("Invalid change fees char " << iChangefees);
00306         }
00307     }
00308     const stdair::ChangeFees_T lChangefees (lBool);
00309     _fareRule.setChangeFees (lChangefees);
00310     // DEBUG
00311     //STDAIR_LOG_DEBUG ("Change fees: " << _fareRule.getChangeFees ());
00312 }
00313
00314 // //////////////////////////////////////
00315 storeNonRefundable ::
00316 storeNonRefundable (FareRuleStruct& ioFareRule)
00317 : ParserSemanticAction (ioFareRule) {
00318 }
00319
00320 // //////////////////////////////////////
00321 void storeNonRefundable::operator() (char iNonRefundable,

```



```

00327                                     boost::spirit::qi::unused_type,
00328                                     boost::spirit::qi::unused_type) const {
00329     bool lBool = false;
00330     if (iNonRefundable == 'T') {
00331         lBool = true;
00332     } else {
00333         if (iNonRefundable != 'F') {
00334             // DEBUG
00335             STDAIR_LOG_DEBUG ("Invalid non refundable char " << iNonRefundable);
00336         }
00337     }
00338     const stdair::NonRefundable_T lNonRefundable (lBool);
00339     _fareRule.setNonRefundable (lNonRefundable);
00340     // DEBUG
00341     //STDAIR_LOG_DEBUG ("Non refundable: " << _fareRule.getNonRefundable ());
00342 }
00343
00344 // //////////////////////////////////////
00345 storeMinimumStay ::
00346 storeMinimumStay (FareRuleStruct& ioFareRule)
00347 : ParserSemanticAction (ioFareRule) {
00348 }
00349
00350 // //////////////////////////////////////
00351 void storeMinimumStay::operator() (unsigned int iMinStay,
00352                                     boost::spirit::qi::unused_type,
00353                                     boost::spirit::qi::unused_type) const {
00354     const stdair::DayDuration_T lMinStay = iMinStay;
00355     _fareRule.setMinimumStay (lMinStay);
00356     // DEBUG
00357     //STDAIR_LOG_DEBUG ("Minimum Stay: " << _fareRule.getMinimumStay ());
00358 }
00359
00360 // //////////////////////////////////////
00361 storeFare ::
00362 storeFare (FareRuleStruct& ioFareRule)
00363 : ParserSemanticAction (ioFareRule) {
00364 }
00365
00366 // //////////////////////////////////////
00367 void storeFare::operator() (double iFare,
00368                             boost::spirit::qi::unused_type,
00369                             boost::spirit::qi::unused_type) const {
00370     const stdair::PriceValue_T lFare = iFare;
00371     _fareRule.setFare (lFare);
00372     // DEBUG
00373     //STDAIR_LOG_DEBUG ("Fare: " << _fareRule.getFare ());
00374 }
00375
00376 // //////////////////////////////////////
00377 storeAirlineCode ::
00378 storeAirlineCode (FareRuleStruct& ioFareRule)
00379 : ParserSemanticAction (ioFareRule) {
00380 }
00381
00382 // //////////////////////////////////////
00383 void storeAirlineCode::operator() (std::vector<char> iChar,
00384                                     boost::spirit::qi::unused_type,
00385                                     boost::spirit::qi::unused_type) const {
00386
00387     const stdair::AirlineCode_T lAirlineCode (iChar.begin(), iChar.end());
00388     // Insertion of this airline Code list in the whole AirlineCode name
00389     _fareRule.addAirlineCode (lAirlineCode);
00390     // DEBUG
00391     //STDAIR_LOG_DEBUG ( "Airline code: " << lAirlineCode);
00392 }
00393

```

```

00394 // //////////////////////////////////////
00395 storeClass ::
00396 storeClass (FareRuleStruct& ioFareRule)
00397 : ParserSemanticAction (ioFareRule) {
00398 }
00399
00400 // //////////////////////////////////////
00401 void storeClass::operator() (std::vector<char> iChar,
00402                             boost::spirit::qi::unused_type,
00403                             boost::spirit::qi::unused_type) const {
00404     std::ostringstream ostr;
00405     for (std::vector<char>::const_iterator lItVector = iChar.begin();
00406          lItVector != iChar.end();
00407          lItVector++) {
00408         ostr << *lItVector;
00409     }
00410     const std::string classCodeStr = ostr.str();
00411     const stdair::ClassCode_T lClassCode (classCodeStr);
00412     // Insertion of this class Code list in the whole classCode name
00413     _fareRule.addClassCode (lClassCode);
00414     // DEBUG
00415     //STDAIR_LOG_DEBUG ("Class Code: " << lClassCode);
00416 }
00417
00418 // //////////////////////////////////////
00419 doEndFare::
00420 doEndFare (stdair::BomRoot& ioBomRoot,
00421            FareRuleStruct& ioFareRule)
00422 : ParserSemanticAction (ioFareRule),
00423   _bomRoot (ioBomRoot) {
00424 }
00425
00426 // //////////////////////////////////////
00427 void doEndFare::operator() (boost::spirit::qi::unused_type,
00428                             boost::spirit::qi::unused_type,
00429                             boost::spirit::qi::unused_type) const {
00430     // DEBUG
00431     //STDAIR_LOG_DEBUG ("Do End");
00432     // Generation of the fare rule object.
00433     FareRuleGenerator::createAirportPair (_bomRoot, _fareRule);
00434     STDAIR_LOG_DEBUG(_fareRule.describe());
00435 }
00436
00437 // //////////////////////////////////////
00438 //
00439 // Utility Parsers
00440 //
00441 // //////////////////////////////////////
00442 namespace bsq = boost::spirit::qi;
00443 namespace bsa = boost::spirit::ascii;
00444
00445 stdair::intl_p_t intl_p;
00446
00447 stdair::uint2_p_t uint2_p;
00448
00449 stdair::uint4_p_t uint4_p;
00450
00451 stdair::uint1_4_p_t uint1_4_p;
00452
00453 stdair::hour_p_t hour_p;
00454 stdair::minute_p_t minute_p;
00455 stdair::second_p_t second_p;
00456
00457 stdair::year_p_t year_p;
00458 stdair::month_p_t month_p;
00459 stdair::day_p_t day_p;
00460
00461

```

```

00469    //
00470    // (Boost Spirit) Grammar Definition
00471    //
00472
00502    template <typename Iterator>
00503    struct FareRuleParser :
00504        public boost::spirit::qi::grammar<Iterator,
00505            boost::spirit::ascii::space_type> {
00506
00507        FareRuleParser (stdair::BomRoot& ioBomRoot,
00508            FareRuleStruct& iofareRule) :
00509
00510            FareRuleParser::base_type(start),
00511            _bomRoot(ioBomRoot), _fareRule(iofareRule) {
00512
00513
00514            start = *(comments | fare_rule);
00515
00516            comments = (bsq::lexeme[bsq::repeat(2)[bsa::char_('/')]
00517                >> +(bsa::char_ - bsq::eol)
00518                >> bsq::eol]
00519                | bsq::lexeme[bsa::char_('/') >> bsa::char_('*')
00520                >> +(bsa::char_ - bsa::char_('*'))
00521                >> bsa::char_('*') >> bsa::char_('/')]);
00522
00523            fare_rule = fare_key
00524                >> +( ';' >> segment )
00525                >> fare_rule_end[doEndFare(_bomRoot, _fareRule)];
00526
00527            fare_rule_end = bsa::char_(';');
00528
00529            fare_key = fare_id
00530                >> ';' >> origin >> ';' >> destination
00531                >> ';' >> tripType
00532                >> ';' >> dateRangeStart >> ';' >> dateRangeEnd
00533                >> ';' >> timeRangeStart >> ';' >> timeRangeEnd
00534                >> ';' >> point_of_sale >> ';' >> cabinCode >> ';' >> channel
00535                >> ';' >> advancePurchase >> ';' >> saturdayStay
00536                >> ';' >> changeFees >> ';' >> nonRefundable
00537                >> ';' >> minimumStay >> ';' >> fare;
00538
00539            fare_id = uint1_4_p[storeFareId(_fareRule)];
00540
00541            origin = bsq::repeat(3)[bsa::char_("A-Z")][storeOrigin(_fareRule)];
00542
00543            destination =
00544                bsq::repeat(3)[bsa::char_("A-Z")][storeDestination(_fareRule)];
00545
00546            tripType =
00547                bsq::repeat(2)[bsa::char_("A-Z")][storeTripType(_fareRule)];
00548
00549            dateRangeStart = date[storeDateRangeStart(_fareRule)];
00550
00551            dateRangeEnd = date[storeDateRangeEnd(_fareRule)];
00552
00553            date = bsq::lexeme
00554                [year_p[boost::phoenix::ref(_fareRule._itYear) = bsq::labels::_1]
00555                >> '-'
00556                >> month_p[boost::phoenix::ref(_fareRule._itMonth) = bsq::labels::_1]
00557                >> '-'
00558                >> day_p[boost::phoenix::ref(_fareRule._itDay) = bsq::labels::_1] ];
00559
00560            timeRangeStart = time[storeStartRangeTime(_fareRule)];
00561
00562            timeRangeEnd = time[storeEndRangeTime(_fareRule)];
00563
00564            time = bsq::lexeme

```

```

00565         [hour_p[boost::phoenix::ref(_fareRule._itHours) = bsq::labels::_1]
00566         >> ':'
00567         >> minute_p[boost::phoenix::ref(_fareRule._itMinutes) = bsq::labels::_1]

00568         >> - (':' >> second_p[boost::phoenix::ref(_fareRule._itSeconds) = bsq::la
bels::_1]) ];
00569
00570         point_of_sale = bsq::repeat(3)[bsa::char_("A-Z")][storePOS(_fareRule)];
00571
00572         cabinCode = bsa::char_("A-Z")[storeCabinCode(_fareRule)];
00573
00574         channel = bsq::repeat(2)[bsa::char_("A-Z")][storeChannel(_fareRule)];
00575
00576         advancePurchase = uint1_4_p[storeAdvancePurchase(_fareRule)];
00577
00578         saturdayStay = bsa::char_("A-Z")[storeSaturdayStay(_fareRule)];
00579
00580         changeFees = bsa::char_("A-Z")[storeChangeFees(_fareRule)];
00581
00582         nonRefundable = bsa::char_("A-Z")[storeNonRefundable(_fareRule)];
00583
00584         minimumStay = uint1_4_p[storeMinimumStay(_fareRule)];
00585
00586         fare = bsq::double_[storeFare(_fareRule)];
00587
00588         segment = bsq::repeat(2)[bsa::char_("A-Z")][storeAirlineCode(_fareRule)]
00589         >> ';';
00590         >> bsq::repeat(1,bsq::inf)[bsa::char_("A-Z")][storeClass(_fareRule)];
00591
00592         //BOOST_SPIRIT_DEBUG_NODE (FareRuleParser);
00593         BOOST_SPIRIT_DEBUG_NODE (start);
00594         BOOST_SPIRIT_DEBUG_NODE (comments);
00595         BOOST_SPIRIT_DEBUG_NODE (fare_rule);
00596         BOOST_SPIRIT_DEBUG_NODE (fare_rule_end);
00597         BOOST_SPIRIT_DEBUG_NODE (fare_key);
00598         BOOST_SPIRIT_DEBUG_NODE (fare_id);
00599         BOOST_SPIRIT_DEBUG_NODE (origin);
00600         BOOST_SPIRIT_DEBUG_NODE (destination);
00601         BOOST_SPIRIT_DEBUG_NODE (tripType);
00602         BOOST_SPIRIT_DEBUG_NODE (dateRangeStart);
00603         BOOST_SPIRIT_DEBUG_NODE (dateRangeEnd);
00604         BOOST_SPIRIT_DEBUG_NODE (date);
00605         BOOST_SPIRIT_DEBUG_NODE (timeRangeStart);
00606         BOOST_SPIRIT_DEBUG_NODE (time);
00607         BOOST_SPIRIT_DEBUG_NODE (point_of_sale);
00608         BOOST_SPIRIT_DEBUG_NODE (cabinCode);
00609         BOOST_SPIRIT_DEBUG_NODE (channel);
00610         BOOST_SPIRIT_DEBUG_NODE (advancePurchase);
00611         BOOST_SPIRIT_DEBUG_NODE (saturdayStay);
00612         BOOST_SPIRIT_DEBUG_NODE (changeFees);
00613         BOOST_SPIRIT_DEBUG_NODE (nonRefundable);
00614         BOOST_SPIRIT_DEBUG_NODE (minimumStay);
00615         BOOST_SPIRIT_DEBUG_NODE (fare);
00616         BOOST_SPIRIT_DEBUG_NODE (segment);
00617     }
00618 }
00619
00620 // Instantiation of rules
00621 boost::spirit::qi::rule<Iterator,
00622     boost::spirit::ascii::space_type>
00623 start, comments, fare_rule, fare_rule_end, fare_key, fare_id, origin,
00624     destination, tripType, dateRangeStart, dateRangeEnd, date,
00625     timeRangeStart, timeRangeEnd, time, point_of_sale, cabinCode, channel,
00626     advancePurchase, saturdayStay, changeFees, nonRefundable, minimumStay,
00627     fare, segment;
00628
00629 // Parser Context

```

```

00630         stdair::BomRoot& _bomRoot;
00631         FareRuleStruct& _fareRule;
00632     };
00633
00634 }
00635
00636
00637 //
00638 // Entry class for the file parser
00639 //
00640 //
00641 // //////////////////////////////////////
00642 FareRuleFileParser::
00643 FareRuleFileParser (stdair::BomRoot& ioBomRoot,
00644                     const stdair::Filename_T& iFilename)
00645 : _filename (iFilename), _bomRoot (ioBomRoot) {
00646     init();
00647 }
00648
00649 // //////////////////////////////////////
00650 void FareRuleFileParser::init() {
00651     // Check that the file exists and is readable
00652     const bool doesExistAndIsReadable =
00653         stdair::BasFileMgr::doesExistAndIsReadable (_filename);
00654
00655     if (doesExistAndIsReadable == false) {
00656         STDAIR_LOG_ERROR ("The fare schedule file " << _filename
00657                          << " does not exist or can not be read.");
00658
00659         throw FareInputFileNotFoundException ("The fare file " + _filename
00660                                              + " does not exist or can not be read
00661 ");
00662     }
00663 }
00664
00665 // //////////////////////////////////////
00666 void FareRuleFileParser::generateFareRules () {
00667     STDAIR_LOG_DEBUG ("Parsing fare input file: " << _filename);
00668
00669     // File to be parsed
00670     const std::string* lFileName = &_filename;
00671     const char *lChar = (*lFileName).c_str();
00672     std::ifstream fileToBeParsed(lChar, std::ios_base::in);
00673
00674     // Check if the filename exist and can be open
00675     if (fileToBeParsed.is_open() == false) {
00676         STDAIR_LOG_ERROR ("The fare file " << _filename << " can not be open."
00677                          << std::endl);
00678
00679         throw FareInputFileNotFoundException ("The file " + _filename
00680                                              + " does not exist or can not be read
00681 ");
00682     }
00683
00684     // Create an input iterator
00685     stdair::base_iterator_t inputBegin (fileToBeParsed);
00686
00687     // Convert input iterator to an iterator usable by spirit parser
00688     stdair::iterator_t
00689         start (boost::spirit::make_default_multi_pass (inputBegin));
00690     stdair::iterator_t end;
00691
00692     // Initialise the parser (grammar) with the helper/staging structure.
00693     FareParserHelper::FareRuleParser<stdair::iterator_t> lFPParser(_bomRoot, _fare
00694 eRule);
00695

```

```
00696 // Launch the parsing of the file and, thanks to the doEndFare
00697 // call-back structure, the building of the whole BomRoot BOM
00698 const bool hasParsingBeenSuccessful =
00699     boost::spirit::qi::phrase_parse (start, end, lFPParser,
00700                                     boost::spirit::ascii::space);
00701
00702 if (hasParsingBeenSuccessful == false) {
00703     STDAIR_LOG_ERROR ("Parsing of fare input file: " << _filename
00704                     << " failed");
00705     throw FareFileParsingFailedException ("Parsing of fare input file: "
00706                                         + _filename + " failed");
00707 }
00708
00709 if (start != end) {
00710     STDAIR_LOG_ERROR ("Parsing of fare input file: " << _filename
00711                     << " failed");
00712     throw FareFileParsingFailedException ("Parsing of fare input file: "
00713                                         + _filename + " failed");
00714 }
00715
00716 if (hasParsingBeenSuccessful == true && start == end) {
00717     STDAIR_LOG_DEBUG ("Parsing of fare input file: " << _filename
00718                     << " succeeded");
00719 }
00720
00721 }
00722
00723 }
```

25.33 simfqt/command/FareParserHelper.hpp File Reference

```
#include <string>
#include <boost/spirit/include/qi.hpp>
#include <stdair/command/CmdAbstract.hpp>
#include <simfqt/SIMFQT_Types.hpp>
#include <simfqt/bom/FareRuleStruct.hpp>
```

Classes

- struct [SIMFQT::FareParserHelper::ParserSemanticAction](#)
- struct [SIMFQT::FareParserHelper::storeFareId](#)
- struct [SIMFQT::FareParserHelper::storeOrigin](#)
- struct [SIMFQT::FareParserHelper::storeDestination](#)
- struct [SIMFQT::FareParserHelper::storeTripType](#)
- struct [SIMFQT::FareParserHelper::storeDateRangeStart](#)
- struct [SIMFQT::FareParserHelper::storeDateRangeEnd](#)
- struct [SIMFQT::FareParserHelper::storeStartRangeTime](#)
- struct [SIMFQT::FareParserHelper::storeEndRangeTime](#)
- struct [SIMFQT::FareParserHelper::storePOS](#)
- struct [SIMFQT::FareParserHelper::storeCabinCode](#)
- struct [SIMFQT::FareParserHelper::storeChannel](#)
- struct [SIMFQT::FareParserHelper::storeAdvancePurchase](#)
- struct [SIMFQT::FareParserHelper::storeSaturdayStay](#)
- struct [SIMFQT::FareParserHelper::storeChangeFees](#)
- struct [SIMFQT::FareParserHelper::storeNonRefundable](#)
- struct [SIMFQT::FareParserHelper::storeMinimumStay](#)
- struct [SIMFQT::FareParserHelper::storeFare](#)
- struct [SIMFQT::FareParserHelper::storeAirlineCode](#)
- struct [SIMFQT::FareParserHelper::storeClass](#)
- struct [SIMFQT::FareParserHelper::doEndFare](#)
- class [SIMFQT::FareRuleFileParser](#)

Namespaces

- namespace [stdair](#)
Forward declarations.
- namespace [SIMFQT](#)
- namespace [SIMFQT::FareParserHelper](#)

25.34 FareParserHelper.hpp

```

00001 #ifndef __SIMFQT_CMD_FAREPARSERHELPER_HPP
00002 #define __SIMFQT_CMD_FAREPARSERHELPER_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 // STL
00008 #include <string>
00009 // Boost
00010 #include <boost/spirit/include/qi.hpp>
00011 // StdAir
00012 #include <stdair/command/CmdAbstract.hpp>
00013 // Simfqt
00014 #include <simfqt/SIMFQT_Types.hpp>
00015 #include <simfqt/bom/FareRuleStruct.hpp>
00016
00017 // Forward declarations
00018 namespace stdair {
00019     class BomRoot;
00020 }
00021
00022 namespace SIMFQT {
00023
00024     namespace FareParserHelper {
00025
00026         // //////////////////////////////////////
00027         // Semantic actions
00028         // //////////////////////////////////////
00029
00030         struct ParserSemanticAction {
00031             ParserSemanticAction (FareRuleStruct&);
00032             FareRuleStruct& _fareRule;
00033         };
00034
00035         struct storeFareId : public ParserSemanticAction {
00036             storeFareId (FareRuleStruct&);
00037             void operator() (unsigned int,
00038                             boost::spirit::qi::unused_type,
00039                             boost::spirit::qi::unused_type) const;
00040         };
00041
00042         struct storeOrigin : public ParserSemanticAction {
00043             storeOrigin (FareRuleStruct&);
00044             void operator() (std::vector<char>,
00045                             boost::spirit::qi::unused_type,
00046                             boost::spirit::qi::unused_type) const;
00047         };
00048
00049         struct storeDestination : public ParserSemanticAction {
00050             storeDestination (FareRuleStruct&);
00051             void operator() (std::vector<char>,
00052                             boost::spirit::qi::unused_type,
00053                             boost::spirit::qi::unused_type) const;
00054         };
00055
00056         struct storeTripType : public ParserSemanticAction {
00057             storeTripType (FareRuleStruct&);
00058             void operator() (std::vector<char>,
00059                             boost::spirit::qi::unused_type,
00060                             boost::spirit::qi::unused_type) const;
00061         };
00062
00063         struct storeDateRangeStart : public ParserSemanticAction {
00064             storeDateRangeStart (FareRuleStruct&);
00065         };
00066     }
00067 }

```



```
00084     void operator() (boost::spirit::qi::unused_type,
00085                     boost::spirit::qi::unused_type,
00086                     boost::spirit::qi::unused_type) const;
00087 };
00088
00090 struct storeDateRangeEnd : public ParserSemanticAction {
00092     storeDateRangeEnd (FareRuleStruct&);
00094     void operator() (boost::spirit::qi::unused_type,
00095                     boost::spirit::qi::unused_type,
00096                     boost::spirit::qi::unused_type) const;
00097 };
00098
00100 struct storeStartRangeTime : public ParserSemanticAction {
00102     storeStartRangeTime (FareRuleStruct&);
00104     void operator() (boost::spirit::qi::unused_type,
00105                     boost::spirit::qi::unused_type,
00106                     boost::spirit::qi::unused_type) const;
00107 };
00108
00110 struct storeEndRangeTime : public ParserSemanticAction {
00112     storeEndRangeTime (FareRuleStruct&);
00114     void operator() (boost::spirit::qi::unused_type,
00115                     boost::spirit::qi::unused_type,
00116                     boost::spirit::qi::unused_type) const;
00117 };
00118
00120 struct storePOS : public ParserSemanticAction {
00122     storePOS (FareRuleStruct&);
00124     void operator() (std::vector<char>,
00125                     boost::spirit::qi::unused_type,
00126                     boost::spirit::qi::unused_type) const;
00127 };
00128
00130 struct storeCabinCode : public ParserSemanticAction {
00132     storeCabinCode (FareRuleStruct&);
00134     void operator() (char,
00135                     boost::spirit::qi::unused_type,
00136                     boost::spirit::qi::unused_type) const;
00137 };
00138
00140 struct storeChannel : public ParserSemanticAction {
00142     storeChannel (FareRuleStruct&);
00144     void operator() (std::vector<char>,
00145                     boost::spirit::qi::unused_type,
00146                     boost::spirit::qi::unused_type) const;
00147 };
00148
00150 struct storeAdvancePurchase : public ParserSemanticAction {
00152     storeAdvancePurchase (FareRuleStruct&);
00154     void operator() (unsigned int,
00155                     boost::spirit::qi::unused_type,
00156                     boost::spirit::qi::unused_type) const;
00157 };
00158
00160 struct storeSaturdayStay : public ParserSemanticAction {
00162     storeSaturdayStay (FareRuleStruct&);
00164     void operator() (char,
00165                     boost::spirit::qi::unused_type,
00166                     boost::spirit::qi::unused_type) const;
00167 };
00168
00170 struct storeChangeFees : public ParserSemanticAction {
00172     storeChangeFees (FareRuleStruct&);
00174     void operator() (char,
00175                     boost::spirit::qi::unused_type,
00176                     boost::spirit::qi::unused_type) const;
00177 };
```

```

00178
00180     struct storeNonRefundable : public ParserSemanticAction {
00182         storeNonRefundable (FareRuleStruct&);
00184         void operator() (char,
00185                         boost::spirit::qi::unused_type,
00186                         boost::spirit::qi::unused_type) const;
00187     };
00188
00190     struct storeMinimumStay : public ParserSemanticAction {
00192         storeMinimumStay (FareRuleStruct&);
00194         void operator() (unsigned int,
00195                         boost::spirit::qi::unused_type,
00196                         boost::spirit::qi::unused_type) const;
00197     };
00198
00200     struct storeFare : public ParserSemanticAction {
00202         storeFare (FareRuleStruct&);
00204         void operator() (double,
00205                         boost::spirit::qi::unused_type,
00206                         boost::spirit::qi::unused_type) const;
00207     };
00208
00210     struct storeAirlineCode : public ParserSemanticAction {
00212         storeAirlineCode (FareRuleStruct&);
00214         void operator() (std::vector<char>,
00215                         boost::spirit::qi::unused_type,
00216                         boost::spirit::qi::unused_type) const;
00217     };
00218
00220     struct storeClass : public ParserSemanticAction {
00222         storeClass (FareRuleStruct&);
00224         void operator() (std::vector<char>,
00225                         boost::spirit::qi::unused_type,
00226                         boost::spirit::qi::unused_type) const;
00227     };
00228
00230     struct doEndFare : public ParserSemanticAction {
00232         doEndFare (stdair::BomRoot&, FareRuleStruct&);
00234         void operator() (boost::spirit::qi::unused_type,
00235                         boost::spirit::qi::unused_type,
00236                         boost::spirit::qi::unused_type) const;
00238         stdair::BomRoot& _bomRoot;
00239     };
00240
00241 }
00242
00244 //
00245 //  Entry class for the file parser
00246 //
00248
00254 class FareRuleFileParser : public stdair::CmdAbstract {
00255 public:
00257     FareRuleFileParser (stdair::BomRoot& ioBomRoot,
00258                       const stdair::Filename_T& iFilename);
00259
00261     void generateFareRules ();
00262
00263 private:
00265     void init();
00266
00267 private:
00268     // Attributes
00270     stdair::Filename_T _filename;
00271
00273     stdair::BomRoot& _bomRoot;
00274
00276     FareRuleStruct _fareRule;

```

```
00277     };  
00278  
00279 }  
00280 #endif // __SIMFQT_CMD_FAREPARSERHELPER_HPP
```

25.35 simfqt/command/FareQuoter.cpp File Reference

```
#include <cassert>
#include <sstream>
#include <stdair/basic/BasConst_BomDisplay.hpp>
#include <stdair/basic/BasConst_Request.hpp>
#include <stdair/bom/BomKeyManager.hpp>
#include <stdair/bom/ParsedKey.hpp>
#include <stdair/bom/BomManager.hpp>
#include <stdair/bom/BomRoot.hpp>
#include <stdair/bom/InventoryKey.hpp>
#include <stdair/bom/FlightDateKey.hpp>
#include <stdair/bom/SegmentDateKey.hpp>
#include <stdair/bom/AirlineClassList.hpp>
#include <stdair/bom/AirportPair.hpp>
#include <stdair/bom/PosChannel.hpp>
#include <stdair/bom/DatePeriod.hpp>
#include <stdair/bom/TimePeriod.hpp>
#include <stdair/bom/FareFeatures.hpp>
#include <stdair/bom/BookingRequestStruct.hpp>
#include <stdair/bom/TravelSolutionStruct.hpp>
#include <stdair/service/Logger.hpp>
#include <stdair/bom/key_types.hpp>
#include <simfqt/SIMFQT_Types.hpp>
#include <simfqt/command/FareQuoter.hpp>
```

Namespaces

- namespace [SIMFQT](#)

25.36 FareQuoter.cpp

```

00001 // //////////////////////////////////////
00002 // Import section
00003 // //////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 #include <sstream>
00007 // StdAir
00008 #include <stdair/basic/BasConst_BomDisplay.hpp>
00009 #include <stdair/basic/BasConst_Request.hpp>
00010 #include <stdair/bom/BomKeyManager.hpp>
00011 #include <stdair/bom/ParsedKey.hpp>
00012 #include <stdair/bom/BomManager.hpp>
00013 #include <stdair/bom/BomRoot.hpp>
00014 #include <stdair/bom/InventoryKey.hpp>
00015 #include <stdair/bom/FlightDateKey.hpp>
00016 #include <stdair/bom/SegmentDateKey.hpp>
00017 #include <stdair/bom/AirlineClassList.hpp>
00018 #include <stdair/bom/AirportPair.hpp>
00019 #include <stdair/bom/PosChannel.hpp>
00020 #include <stdair/bom/DatePeriod.hpp>
00021 #include <stdair/bom/TimePeriod.hpp>
00022 #include <stdair/bom/FareFeatures.hpp>
00023 #include <stdair/bom/BookingRequestStruct.hpp>
00024 #include <stdair/bom/TravelSolutionStruct.hpp>
00025 #include <stdair/service/Logger.hpp>
00026 #include <stdair/bom/key_types.hpp>
00027 // SimFQT
00028 #include <simfqt/SIMFQT_Types.hpp>
00029 #include <simfqt/command/FareQuoter.hpp>
00030
00031 namespace SIMFQT {
00032
00033     bool FareQuoter::_atLeastOneAvailableDateRule = false;
00034     bool FareQuoter::_atLeastOneAvailablePosChannel = false;
00035     bool FareQuoter::_atLeastOneAvailableTimeRule = false;
00036     bool FareQuoter::_atLeastOneAvailableFeaturesRule = false;
00037     bool FareQuoter::_atLeastOneAvailableAirlineClassRule = false;
00038
00039     // //////////////////////////////////////
00040     FareQuoter::FareQuoter() {
00041         assert (false);
00042     }
00043
00044     // //////////////////////////////////////
00045     FareQuoter::FareQuoter(const FareQuoter&) {
00046         assert (false);
00047     }
00048
00049     // //////////////////////////////////////
00050     FareQuoter::~FareQuoter() {
00051     }
00052
00053     // //////////////////////////////////////
00054     void FareQuoter::reset() {
00055         _atLeastOneAvailableDateRule = false;
00056         _atLeastOneAvailablePosChannel = false;
00057         _atLeastOneAvailableTimeRule = false;
00058         _atLeastOneAvailableFeaturesRule = false;
00059         _atLeastOneAvailableAirlineClassRule = false;
00060     }
00061
00062     // //////////////////////////////////////
00063     void FareQuoter::
00064     priceQuote (const stdair::BookingRequestStruct& iBookingRequest,

```

```

00066         stdair::TravelSolutionList_T& ioTravelSolutionList,
00067         const stdair::BomRoot& iBomRoot) {
00068
00069     // Do an independent price quote for each travel solution related to the
00070     // booking request.
00071     for (stdair::TravelSolutionList_T::iterator itTravelSolution =
00072         ioTravelSolutionList.begin();
00073         itTravelSolution != ioTravelSolutionList.end(); ++itTravelSolution) {
00074         reset();
00075         // Select a travel solution.
00076         stdair::TravelSolutionStruct& lTravelSolutionStruct = *itTravelSolution;
00077         // Price quote the travel solution into question.
00078         priceQuote (iBookingRequest, lTravelSolutionStruct, iBomRoot);
00079     }
00080 }
00081
00082 // //////////////////////////////////////
00083 void FareQuoter::
00084 priceQuote (const stdair::BookingRequestStruct& iBookingRequest,
00085             stdair::TravelSolutionStruct& ioTravelSolution,
00086             const stdair::BomRoot& iBomRoot) {
00087
00088     // Get the origin of the first segment in order to get the origin of
00089     // the solution.
00090     const stdair::ParsedKey& lFirstSegmentKey =
00091         getFirstSPParsedKey(ioTravelSolution);
00092     const stdair::AirportCode_T& lOrigin = lFirstSegmentKey._boardingPoint;
00093
00094     // Get the destination of the last segment in order to get the
00095     // destination of the solution.
00096     const stdair::ParsedKey& lLastSegmentKey =
00097         getLastSPParsedKey(ioTravelSolution);
00098     const stdair::AirportCode_T& lDestination = lLastSegmentKey._offPoint;
00099
00100     // Construct the Airport pair stream of the segment path.
00101     const stdair::AirportPairKey lAirportPairKey (lOrigin, lDestination);
00102
00103     // Search for the fare rules having the same origin and destination airports
00104     // as the travel solution
00105     const stdair::AirportPair* lAirportPair_ptr = stdair::BomManager::
00106         getObjectPtr<stdair::AirportPair> (iBomRoot, lAirportPairKey.toString());
00107
00108     // If no fare rule has the same origin and destination airports, the pricing
00109     // is not possible, throw an exception.
00110     if (lAirportPair_ptr == NULL) {
00111         STDAIR_LOG_ERROR ("No available fare rule for the "
00112             << "Origin-Destination pair: "
00113             << lAirportPairKey.toString());
00114         throw AirportPairNotFoundException ("No available fare rule for "
00115             "the Origin-Destination pair: "
00116             + lAirportPairKey.toString());
00117     }
00118     // Sanity check.
00119     assert(lAirportPair_ptr != NULL);
00120
00121     // Fare rule(s) with the same origin and destination airports exist(s), now
00122     // the date range need to be checked.
00123     const stdair::AirportPair& lAirportPair = *lAirportPair_ptr;
00124     priceQuote(iBookingRequest, ioTravelSolution, lAirportPair);
00125
00126     if (_atLeastOneAvailableAirlineClassRule == false) {
00127         displayMissingFareRuleMessage(iBookingRequest, ioTravelSolution);
00128     }
00129 }
00130
00131 // //////////////////////////////////////

```

```

00132 void FareQuoter::
00133 priceQuote (const stdair::BookingRequestStruct& iBookingRequest,
00134             stdair::TravelSolutionStruct& ioTravelSolution,
00135             const stdair::AirportPair& iAirportPair) {
00136
00137     // Get the first segment path parsed key.
00138     const stdair::ParsedKey lFirstSPParsedKey =
00139         getFirstSPParsedKey(ioTravelSolution);
00140
00141     // Get the date of the first segment date key.
00142     const stdair::FlightDateKey& lFlightDateKey =
00143         lFirstSPParsedKey.getFlightDateKey();
00144     const stdair::Date_T& lSPDate = lFlightDateKey.getDepartureDate();
00145
00146     // Get the list of the fare date ranges.
00147     const stdair::DatePeriodList_T& lFareDatePeriodList =
00148         stdair::BomManager::getList<stdair::DatePeriod> (iAirportPair);
00149
00150     // Browse the list of the fare rules date range.
00151     for (stdair::DatePeriodList_T::const_iterator itDateRange =
00152         lFareDatePeriodList.begin();
00153         itDateRange != lFareDatePeriodList.end(); ++itDateRange) {
00154
00155         const stdair::DatePeriod* lCurrentFareDatePeriod_ptr = *itDateRange ;
00156         assert (lCurrentFareDatePeriod_ptr != NULL);
00157
00158         // Select the fare rules having a corresponding date range.
00159         const bool isDepartureDateValid =
00160             lCurrentFareDatePeriod_ptr->isDepartureDateValid (lSPDate);
00161
00162         // If a fare rule has a corresponding date range, its channel and position
00163         // need to be checked.
00164         if (isDepartureDateValid == true) {
00165             _atLeastOneAvailableDateRule = true;
00166             const stdair::DatePeriod& lCurrentFareDatePeriod =
00167                 *lCurrentFareDatePeriod_ptr;
00168             priceQuote (iBookingRequest, ioTravelSolution,
00169                 lCurrentFareDatePeriod, iAirportPair);
00170         }
00171     }
00172 }
00173
00174 // //////////////////////////////////////
00175 void FareQuoter::
00176 priceQuote (const stdair::BookingRequestStruct& iBookingRequest,
00177             stdair::TravelSolutionStruct& ioTravelSolution,
00178             const stdair::DatePeriod& iFareDatePeriod,
00179             const stdair::AirportPair& iAirportPair) {
00180
00181     // Get the point-of-sale of the booking request.
00182     const stdair::CityCode_T& lPointOfSale = iBookingRequest.getPOS();
00183
00184     // Get the booking request channel.
00185     const stdair::ChannelLabel_T& lChannel =
00186         iBookingRequest.getBookingChannel();
00187
00188     // Construct the corresponding POS-channel primary key.
00189     const stdair::PosChannelKey lFarePosChannelKey (lPointOfSale, lChannel);
00190
00191     // Search for the fare rules having the same point-of-sale and channel as
00192     // the travel solution.
00193     const stdair::PosChannelList_T lFarePosChannelList =
00194         stdair::BomManager::getList<stdair::PosChannel> (iFareDatePeriod);
00195
00196     // Browse the list of the fare rules pos channel.
00197     for (stdair::PosChannelList_T::const_iterator itPosChannel =

```

```

00199         lFarePosChannelList.begin();
00200         itPosChannel != lFarePosChannelList.end();
00201         ++itPosChannel) {
00202         const stdair::PosChannel* lCurrentFarePosChannel_ptr = *itPosChannel;
00203         assert (lCurrentFarePosChannel_ptr != NULL);
00204
00205         // Get the point-of-sale and channel of the current fare rule.
00206         const stdair::CityCode_T& lCurrentPointOfSale =
00207         lCurrentFarePosChannel_ptr->getPos();
00208         const stdair::ChannelLabel_T& lCurrentChannel =
00209         lCurrentFarePosChannel_ptr->getChannel();
00210
00211         // Select the fare rules having a corresponding pos channel.
00212         if (lCurrentPointOfSale == lPointOfSale || lCurrentPointOfSale == stdair::D
EFAULT_POS) {
00213         if (lCurrentChannel == lChannel || lCurrentChannel == stdair::DEFAULT_CHA
NNEL) {
00214             _atLeastOneAvailablePosChannel = true;
00215             // Fare rule(s) with the same point-of-sale and channel exist(s), now
00216             // the time range need to be checked.
00217             const stdair::PosChannel& lFarePosChannel= *lCurrentFarePosChannel_ptr;
00218
00218             STDAIR_LOG_DEBUG (lCurrentPointOfSale + " " + lCurrentChannel);
00219             priceQuote (iBookingRequest, ioTravelSolution, lFarePosChannel);
00220         }
00221     }
00222 }
00223
00224 }
00225
00226 // //////////////////////////////////////
00227 void FareQuoter::
00228 priceQuote (const stdair::BookingRequestStruct& iBookingRequest,
00229             stdair::TravelSolutionStruct& ioTravelSolution,
00230             const stdair::PosChannel& iFarePosChannel) {
00231
00232     // Get the first segment path parsed key.
00233     const stdair::ParsedKey lFirstSPParsedKey =
00234     getFirstSPParsedKey(ioTravelSolution);
00235
00236     // Get the segment boarding time of the segment path.
00237     const stdair::Duration_T& lSPTime = lFirstSPParsedKey.getBoardingTime();
00238
00239     // Get the list of the fare rules time period.
00240     const stdair::TimePeriodList_T& lFareTimePeriodList =
00241     stdair::BomManager::getList<stdair::TimePeriod> (iFarePosChannel);
00242
00243     // Browse the list of the fare rules time range.
00244     for (stdair::TimePeriodList_T::const_iterator itTimeRange =
00245         lFareTimePeriodList.begin();
00246         itTimeRange != lFareTimePeriodList.end();
00247         ++itTimeRange) {
00248         const stdair::TimePeriod* lCurrentFareTimePeriod_ptr = *itTimeRange ;
00249         assert (lCurrentFareTimePeriod_ptr != NULL);
00250
00251         // Select the fare rules having a corresponding time range.
00252         const bool isDepartureTimeValid =
00253         lCurrentFareTimePeriod_ptr->isDepartureTimeValid (lSPTime);
00254
00255         // If a fare rule has a corresponding time range, its advanced purchase,
00256         // trip type and minimum stay duration need to be checked.
00257         if (isDepartureTimeValid) {
00258             _atLeastOneAvailableTimeRule = true;
00259             const stdair::TimePeriod& lCurrentFareTimePeriod =
00260             *lCurrentFareTimePeriod_ptr;
00261             priceQuote (iBookingRequest, ioTravelSolution,
00262                 lCurrentFareTimePeriod, iFarePosChannel);

```



```

00263     }
00264 }
00265
00266 }
00267
00268 // //////////////////////////////////////
00269 void FareQuoter::
00270 priceQuote (const stdair::BookingRequestStruct& iBookingRequest,
00271             stdair::TravelSolutionStruct& ioTravelSolution,
00272             const stdair::TimePeriod& iFareTimePeriod,
00273             const stdair::PosChannel& iFarePosChannel) {
00274
00275     // Get the stay duration of the booking request.
00276     const stdair::DayDuration_T& lStayDuration=
00277         iBookingRequest.getStayDuration();
00278
00279     // Get the booking request trip type.
00280     const stdair::TripType_T& lTripType =
00281         iBookingRequest.getTripType();
00282
00283     // Get the booking request date time.
00284     const stdair::DateTime_T& lRequestDateTime =
00285         iBookingRequest.getRequestDateTime();
00286
00287     // Get the referenced departure date of the segment path.
00288     const stdair::ParsedKey lFirstSPParsedKey =
00289         getFirstSPParsedKey(ioTravelSolution);
00290     const stdair::Date_T& lSPDate =
00291         lFirstSPParsedKey.getFlightDateKey().getDepartureDate();
00292
00293     // Get the segment boarding time of the segment path.
00294     const stdair::Duration_T& lSPTime = lFirstSPParsedKey.getBoardingTime();
00295
00296     // Construct the date-time type correponding to the flight date
00297     const stdair::DateTime_T lSPDateTime (lSPDate, lSPTime);
00298
00299     bool isTripTypeValid = false;
00300     bool isStayDurationValid = false;
00301     bool isAdvancePurchaseValid = false;
00302
00303     // Get the list of the fare features (if such list exists: the POS
00304     // and channel couple can be only present in a yield rule).
00305     const bool hasFareFeaturesList =
00306         stdair::BomManager::hasList<stdair::FareFeatures> (iFareTimePeriod);
00307     if (hasFareFeaturesList == false) {
00308         return;
00309     }
00310     assert (hasFareFeaturesList == true);
00311     const stdair::FareFeaturesList_T& lFareFeaturesList =
00312         stdair::BomManager::getList<stdair::FareFeatures> (iFareTimePeriod);
00313
00314     // Browse the list of the fare rules features.
00315     for (stdair::FareFeaturesList_T::const_iterator itFareFeatures =
00316         lFareFeaturesList.begin();
00317         itFareFeatures != lFareFeaturesList.end();
00318         ++itFareFeatures) {
00319         const stdair::FareFeatures* lCurrentFareFeatures_ptr =
00320             *itFareFeatures;
00321         assert (lCurrentFareFeatures_ptr != NULL);
00322
00323         // Does the current fare features correspond to a correct trip
00324         // type?
00325         isTripTypeValid =
00326             lCurrentFareFeatures_ptr->isTripTypeValid (lTripType);
00327         // Does the current fare features correspond to a correct stay
00328         // duration?
00329         isStayDurationValid =

```

```

00330         lCurrentFareFeatures_ptr->isStayDurationValid (lStayDuration);
00331         // Does the current fare features correspond to a correct advanced
00332         // purchase?
00333         isAdvancePurchaseValid = lCurrentFareFeatures_ptr->
00334             isAdvancePurchaseValid (lRequestDateTime,
00335                                     lSPDateTime);
00336
00337         // Search for the fare rules having corresponding features.
00338         if (isStayDurationValid && isAdvancePurchaseValid && isTripTypeValid) {
00339             _atLeastOneAvailableFeaturesRule = true;
00340             // Create a fare structure for the travel solution.
00341             stdair::FareOptionStruct lFareOption;
00342             const stdair::ChangeFees_T& lChangeFees =
00343                 lCurrentFareFeatures_ptr->getChangeFees();
00344             // Set the fare change fees.
00345             lFareOption.setChangeFees (lChangeFees);
00346             const stdair::NonRefundable_T& lNonRefundable =
00347                 lCurrentFareFeatures_ptr->getRefundableOption();
00348             // Set the fare refundable option.
00349             lFareOption.setNonRefundable (lNonRefundable);
00350             const stdair::SaturdayStay_T& lSaturdayStay =
00351                 lCurrentFareFeatures_ptr->getSaturdayStay();
00352             // Set the fare saturday night stay option.
00353             lFareOption.setSaturdayStay (lSaturdayStay);
00354             const stdair::FareFeatures& lCurrentFareFeatures =
00355                 *lCurrentFareFeatures_ptr;
00356             priceQuote (iBookingRequest, ioTravelSolution,
00357                         lCurrentFareFeatures, iFarePosChannel,
00358                         lFareOption);
00359         }
00360     }
00361 }
00362 }
00363
00364
00365 // //////////////////////////////////////
00366 void FareQuoter::
00367 priceQuote (const stdair::BookingRequestStruct& iBookingRequest,
00368             stdair::TravelSolutionStruct& ioTravelSolution,
00369             const stdair::FareFeatures& iFareFeatures,
00370             const stdair::PosChannel& iFarePosChannel,
00371             stdair::FareOptionStruct& iFareOption) {
00372
00373     // Get the segment-path of the travel solution.
00374     const stdair::SegmentPath_T& lSegmentPath =
00375         ioTravelSolution.getSegmentPath();
00376
00377     // Get the list of the fare rules.
00378     const stdair::AirlineClassListList_T& lAirlineClassListList =
00379         stdair::BomManager::getList<stdair::AirlineClassList> (iFareFeatures);
00380
00381     bool lCorrectAirlineRule = false;
00382     bool lAtLeastOneDifferentAirline = false;
00383
00384     // Browse the list of airline code list and search for the fare rules
00385     // having a corresponding airline list.
00386     for (stdair::AirlineClassListList_T::const_iterator itAirlineClassList =
00387         lAirlineClassListList.begin();
00388         itAirlineClassList != lAirlineClassListList.end();
00389         ++itAirlineClassList) {
00390         const stdair::AirlineClassList* lCurrentAirlineClassList_ptr =
00391             *itAirlineClassList;
00392         assert (lCurrentAirlineClassList_ptr != NULL);
00393
00394         lCorrectAirlineRule = true;
00395         lAtLeastOneDifferentAirline = false;
00396

```

```

00397     const stdair::ClassList_StringList_T lClassList_StringList =
00398         lCurrentAirlineClassList_ptr->getAirlineCodeList();
00399
00400     // Compare the segment path airline list with the fare rule airline list.
00401     if (lClassList_StringList.size() == lSegmentPath.size()) {
00402         // If the two sizes are equal, we need to compare the airline codes.
00403         stdair::SegmentPath_T::const_iterator itSegmentPath =
00404             lSegmentPath.begin();
00405
00406         stdair::ClassList_StringList_T::const_iterator itClassList_String =
00407             lClassList_StringList.begin();
00408         // Browse the segment path airline code list (while the segment path
00409         // airline list is equal to the fare rule airline list).
00410         while (itSegmentPath != lSegmentPath.end()
00411             && lAtLeastOneDifferentAirline == false) {
00412
00413             // Get the segment airline code.
00414             const std::string lSegmentDateKey = *itSegmentPath;
00415             const stdair::ParsedKey& lParsedKey =
00416                 stdair::BomKeyManager::extractKeys (lSegmentDateKey);
00417             const stdair::InventoryKey& lInventoryKey =
00418                 lParsedKey.getInventoryKey();
00419             const stdair::AirlineCode_T& lSegmentAirlineCode =
00420                 lInventoryKey.getAirlineCode();
00421
00422             // Get the fare rule airline code.
00423             const stdair::AirlineCode_T& lFareRuleAirlineCode =
00424                 *itClassList_String;
00425
00426             if (lSegmentAirlineCode != lFareRuleAirlineCode) {
00427                 lAtLeastOneDifferentAirline = true;
00428             }
00429             itSegmentPath++;
00430             itClassList_String++;
00431         }
00432     }
00433     else {
00434         // If the two sizes are different, the fare rule does not match the
00435         // travel solution into question.
00436         lCorrectAirlineRule = false;
00437     }
00438
00439     // If one segment airline code and one fare rule airline code are
00440     // different then the fare rule does not match the travel solution.
00441     if (lAtLeastOneDifferentAirline == true) {
00442         lCorrectAirlineRule = false;
00443     }
00444
00445     // If the current fare rule is a match, add the fare option structure
00446     // to the travel solution into question.
00447     if (lCorrectAirlineRule == true) {
00448         _atLeastOneAvailableAirlineClassRule = true;
00449         // Get the booking request trip type.
00450         const stdair::TripType_T& lTripType =
00451             iBookingRequest.getTripType();
00452
00453         // Get the travel fare.
00454         stdair::Fare_T lFare =
00455             lCurrentAirlineClassList_ptr->getFare();
00456         // If the trip into question is the inbound or outbound part of a round t
rip,
00457         // the applicable fare is a half RT fare.
00458         if (lTripType == "RI" || lTripType == "RO") {
00459             lFare /= 2;
00460         }
00461         // Set the travel fare option.
00462         iFareOption.setFare (lFare);

```

```

00463         // Copy the class path list into the fare option.
00464         const stdair::ClassList_StringList_T& lClassCodeList =
00465             lCurrentAirlineClassList_ptr->getClassCodeList();
00466         for (stdair::ClassList_StringList_T::const_iterator itClassCodeList =
00467             lClassCodeList.begin();
00468             itClassCodeList != lClassCodeList.end(); ++itClassCodeList ) {
00469             const stdair::ClassList_String_T& lClassCodeList = *itClassCodeList;
00470             iFareOption.addClassList (lClassCodeList);
00471         }
00472
00473         // Add the fare option to the travel solution into question.
00474         ioTravelSolution.addFareOption (iFareOption);
00475
00476         // DEBUG
00477         STDAIR_LOG_DEBUG (ioTravelSolution.describeSegmentPath()
00478             << ". A corresponding fare option for the '"
00479             << lCurrentAirlineClassList_ptr->describeKey()
00480             << "' class is: " << iFareOption);
00481
00482         iFareOption.emptyClassList();
00483     }
00484 }
00485
00486 }
00487
00488 // //////////////////////////////////////
00489 stdair::ParsedKey FareQuoter::
00490 getFirstSPParsedKey (stdair::TravelSolutionStruct& ioTravelSolution) {
00491
00492     // Get the segment-path of the travel solution.
00493     const stdair::SegmentPath_T& lSegmentPath =
00494         ioTravelSolution.getSegmentPath();
00495
00496     // Get the number of segments of the travel solution.
00497     const stdair::NbOfSegments_T& lNbSegments = lSegmentPath.size();
00498
00499     // Sanity check: there is at least one segment in the travel solution.
00500     assert (lNbSegments >= 1);
00501
00502     // Get the first segment of the travel solution.
00503     const std::string& lFirstSegmentDateKey = lSegmentPath.front();
00504
00505     // Get the parsed key of the first segment of the travel solution.
00506     const stdair::ParsedKey& lFirstSegmentParsedKey =
00507         stdair::BomKeyManager::extractKeys (lFirstSegmentDateKey);
00508
00509     return lFirstSegmentParsedKey;
00510 }
00511
00512 // //////////////////////////////////////
00513 stdair::ParsedKey FareQuoter::
00514 getLastSPParsedKey (stdair::TravelSolutionStruct& ioTravelSolution) {
00515
00516     // Get the segment-path of the travel solution.
00517     const stdair::SegmentPath_T& lSegmentPath =
00518         ioTravelSolution.getSegmentPath();
00519
00520     // Get the number of segments of the travel solution.
00521     const stdair::NbOfSegments_T& lNbSegments = lSegmentPath.size();
00522
00523     // Sanity check: there is at least one segment in the travel solution.
00524     assert (lNbSegments >= 1);
00525
00526     // Get the last segment of the travel solution.
00527     const std::string& lLastSegmentDateKey = lSegmentPath.back();
00528
00529

```

```

00530     // Get the parsed key of the last segment of the travel solution.
00531     const stdair::ParsedKey& lLastSegmentParsedKey =
00532         stdair::BomKeyManager::extractKeys (lLastSegmentDateKey);
00533
00534     return lLastSegmentParsedKey;
00535 }
00536
00537 // ////////////////////////////////////////
00538 void FareQuoter::
00539     displayMissingFareRuleMessage (const stdair::BookingRequestStruct& iBookingRequ
00540 est,
00541
00542                                     stdair::TravelSolutionStruct& ioTravelSolution)
00543 {
00544     // Get the origin of the first segment in order to get the origin of
00545     // the solution.
00546     const stdair::ParsedKey lFirstSPParsedKey =
00547         getFirstSPParsedKey(ioTravelSolution);
00548     const stdair::AirportCode_T& lOrigin = lFirstSPParsedKey._boardingPoint;
00549
00550     // Get the destination of the last segment in order to get the
00551     // destination of the solution.
00552     const stdair::ParsedKey& lLastSegmentKey =
00553         getLastSPParsedKey(ioTravelSolution);
00554     const stdair::AirportCode_T& lDestination = lLastSegmentKey._offPoint;
00555
00556     // Construct the Airport pair stream of the segment path.
00557     const stdair::AirportPairKey lAirportPairKey (lOrigin, lDestination);
00558
00559     // Get the date of the first segment date key.
00560     const stdair::FlightDateKey& lFlightDateKey =
00561         lFirstSPParsedKey.getFlightDateKey();
00562
00563     // Get the point-of-sale of the booking request.
00564     const stdair::CityCode_T& lPointOfSale = iBookingRequest.getPOS();
00565     // Get the booking request channel.
00566     const stdair::ChannelLabel_T& lChannel =
00567         iBookingRequest.getBookingChannel();
00568     // Construct the corresponding POS-channel primary key.
00569     const stdair::PosChannelKey lFarePosChannelKey (lPointOfSale, lChannel);
00570
00571     // Get the booking request date time.
00572     const stdair::DateTime_T& lRequestDateTime =
00573         iBookingRequest.getRequestDateTime();
00574
00575     // If no fare rule has a corresponding date range, the pricing is not
00576     // possible, throw an exception.
00577     if (_atLeastOneAvailableDateRule == false) {
00578         const stdair::SegmentDateKey lSegmentDateKey =
00579             lFirstSPParsedKey.getSegmentKey();
00580         stdAIR_LOG_ERROR ("No available fare rule corresponding to the "
00581             "flight date " << lFlightDateKey.toString()
00582             "<< " and the Origin-Destination pair: "
00583             "<< lSegmentDateKey.toString());
00584         throw FlightDateNotFoundException ("No available fare rule for the "
00585             "flight date "
00586             + lFlightDateKey.toString()
00587             + " and the Origin-Destination pair: "
00588             + lSegmentDateKey.toString());
00589     }
00590     // If no fare rule has a corresponding pos channel, the pricing is not possib
00591 le,
00592 // throw an exception.
00593     else if (_atLeastOneAvailablePosChannel == false) {
00594         stdAIR_LOG_ERROR ("No available fare rule corresponding to the "
00595             "point of sale " << lPointOfSale

```

```

00594         << ", to the channel " << lChannel
00595         << ", to the flight date "
00596         << lFlightDateKey.toString()
00597         << " and to the Origin-Destination pair: "
00598         << lAirportPairKey.toString());
00599     throw PosOrChannelNotFoundException ("No available fare rule for the "
00600                                         "point of sale " + lPointOfSale
00601                                         + ", the channel " + lChannel
00602                                         + ", the flight date "
00603                                         + lFlightDateKey.toString()
00604                                         + " and the Origin-Destination pair: "
00605                                         + lAirportPairKey.toString());
00606 }
00607 // If no fare rule has a corresponding time range, the pricing is not possibl
e,
00608 // throw an exception.
00609 else if (_atLeastOneAvailableTimeRule == false) {
00610     STDAIR_LOG_ERROR ("No available fare rule corresponding to '"
00611                      << lFirstSPParsedKey.toString() << "' (parsed key) and to
'"
00612                      << lFarePosChannelKey.toString() << "' (POS and channel)"
);
00613     throw FlightTimeNotFoundException ("No available fare rule corresponding "
00614                                       "to '" + lFirstSPParsedKey.toString()
00615                                       + "' (parsed key) and to '"
00616                                       + lFarePosChannelKey.toString()
00617                                       + "' (POS and channel)");
00618 }
00619 // If no fare rule matches the advance purchase, trip type and stay
00620 // duration criterion, the pricing is not possible, throw an exception.
00621 else if (_atLeastOneAvailableFeaturesRule == false) {
00622     // Get the stay duration of the booking request.
00623     const stdair::DayDuration_T& lStayDuration=
00624         iBookingRequest.getStayDuration();
00625     std::ostringstream lStayDurationStream;
00626     lStayDurationStream << lStayDuration;
00627     const std::string lStayDurationString (lStayDurationStream.str());
00628
00629     // Get the booking request trip type.
00630     const stdair::TripType_T& lTripType =
00631         iBookingRequest.getTripType();
00632
00633     STDAIR_LOG_ERROR ("No available fare rule corresponding to a "
00634                      "trip type " << lTripType
00635                      << ", to a stay duration of " << lStayDurationString
00636                      << ", to a request date time of " << lRequestDateTime
00637                      << ", to '" << lFirstSPParsedKey.toString()
00638                      << "' (parsed key) and to '"
00639                      << lFarePosChannelKey << "' (POS and channel)");
00640     throw FeaturesNotFoundException ("No available fare rule corresponding to a
"
00641                                     "trip type " + lTripType
00642                                     + ", to a stay duration of "
00643                                     + lStayDurationString
00644                                     + ", to a request date time of "
00645                                     + boost::posix_time::to_simple_string(lReq
uestDateTime)
00646                                     + ", to '" + lFirstSPParsedKey.toString()
00647                                     + "' (parsed key) and to '"
00648                                     + lFarePosChannelKey.toString()
00649                                     + "' (POS and channel)");
00650 }
00651 assert (_atLeastOneAvailableAirlineClassRule == false);
00652 // If no fare rule matches the airline class path, the pricing is not
00653 // possible, throw an exception.
00654 STDAIR_LOG_ERROR ("No available fare rule corresponding to '"

```

```
00655             << lFirstSPParsedKey .toString() << " (parsed key), to '"
00656             << iBookingRequest.describe()
00657             << "' (booking request) and to '"
00658             << lFarePosChannelKey.toString() << " (POS and channel)");

00659     throw AirlineNotFoundException ("No available fare rule corresponding to '"
00660                                     + lFirstSPParsedKey .toString()
00661                                     + " (parsed key), to '"
00662                                     + iBookingRequest.describe()
00663                                     + "' (booking request) and to '"
00664                                     + lFarePosChannelKey.toString()
00665                                     + " (POS and channel)");
00666 }
00667 }
00668
```

25.37 simfqt/command/FareQuoter.hpp File Reference

```
#include <stdair/stdair_basic_types.hpp>
#include <stdair/bom/TravelSolutionTypes.hpp>
```

Classes

- class [SIMFQT::FareQuoter](#)
Command wrapping the pricing request process.

Namespaces

- namespace [stdair](#)
Forward declarations.
- namespace [SIMFQT](#)

25.38 FareQuoter.hpp

```

00001 #ifndef __SIMFQT_CMD_FAREQUOTER_HPP
00002 #define __SIMFQT_CMD_FAREQUOTER_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 // StdAir
00008 #include <stdair/stdair_basic_types.hpp>
00009 #include <stdair/bom/TravelSolutionTypes.hpp>
00010
00011 namespace stdair {
00012     class BomRoot;
00013     struct BookingRequestStruct;
00014     struct TravelSolutionStruct;
00015     struct ParsedKey;
00016     class AirportPair;
00017     class PosChannel;
00018     class DatePeriod;
00019     class TimePeriod;
00020     class FareFeatures;
00021 }
00022
00023 namespace SIMFQT {
00024     class FareQuoter {
00025     friend class SIMFQT_Service;
00026
00027     private:
00028         // ////////////////////////////////// Business support methods //////////////////////////////////
00029         static void priceQuote (const stdair::BookingRequestStruct&,
00030                                 stdair::TravelSolutionList_T&,
00031                                 const stdair::BomRoot&);
00032
00033         static void priceQuote (const stdair::BookingRequestStruct&,
00034                                 stdair::TravelSolutionStruct&,
00035                                 const stdair::BomRoot&);
00036
00037         static void priceQuote (const stdair::BookingRequestStruct&,
00038                                 stdair::TravelSolutionStruct&,
00039                                 const stdair::AirportPair&);
00040
00041         static void priceQuote (const stdair::BookingRequestStruct&,
00042                                 stdair::TravelSolutionStruct&,
00043                                 const stdair::DatePeriod&,
00044                                 const stdair::AirportPair&);
00045
00046         static void priceQuote (const stdair::BookingRequestStruct&,
00047                                 stdair::TravelSolutionStruct&,
00048                                 const stdair::PosChannel&);
00049
00050         static void priceQuote (const stdair::BookingRequestStruct&,
00051                                 stdair::TravelSolutionStruct&,
00052                                 const stdair::TimePeriod&,
00053                                 const stdair::PosChannel&);
00054
00055         static void priceQuote (const stdair::BookingRequestStruct&,
00056                                 stdair::TravelSolutionStruct&,
00057                                 const stdair::FareFeatures&,
00058                                 const stdair::PosChannel&,
00059                                 stdair::FareOptionStruct&);
00060
00061         static void reset ();
00062
00063         static void displayMissingFareRuleMessage (const stdair::BookingRequestStruct
00064 &,

```

```
00169                                     stdair::TravelSolutionStruct&);
00170
00178     static stdair::ParsedKey getFirstSPParsedKey (stdair::TravelSolutionStruct&);
00179
00187     static stdair::ParsedKey getLastSPParsedKey (stdair::TravelSolutionStruct&);
00188
00189
00190
00191 private:
00192     // ////////////////////////////////// Construction and destruction //////////////////////////////////
00196     FareQuoter();
00197
00201     FareQuoter(const FareQuoter&);
00202
00206     ~FareQuoter();
00207
00208 private:
00209
00212     static bool _atLeastOneAvailableDateRule;
00213
00216     static bool _atLeastOneAvailablePosChannel;
00217
00221     static bool _atLeastOneAvailableTimeRule;
00222
00226     static bool _atLeastOneAvailableFeaturesRule;
00227
00231     static bool _atLeastOneAvailableAirlineClassRule;
00232
00233 };
00234
00235 }
00236 #endif // __SIMFQT_CMD_FAREQUOTER_HPP
00237
```

25.39 simfqt/command/FareRuleGenerator.cpp File Reference

```
#include <cassert>
#include <stdair/bom/BomManager.hpp>
#include <stdair/bom/BomRoot.hpp>
#include <stdair/factory/FacBomManager.hpp>
#include <stdair/service/Logger.hpp>
#include <stdair/bom/AirportPair.hpp>
#include <stdair/bom/PosChannel.hpp>
#include <stdair/bom/DatePeriod.hpp>
#include <stdair/bom/TimePeriod.hpp>
#include <stdair/bom/FareFeatures.hpp>
#include <stdair/bom/AirlineClassList.hpp>
#include <simfqt/bom/FareRuleStruct.hpp>
#include <simfqt/command/FareRuleGenerator.hpp>
```

Namespaces

- namespace [SIMFQT](#)

25.40 FareRuleGenerator.cpp

```

00001 // //////////////////////////////////////
00002 // Import section
00003 // //////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 // StdAir
00007 #include <stdair/bom/BomManager.hpp>
00008 #include <stdair/bom/BomRoot.hpp>
00009 #include <stdair/factory/FacBomManager.hpp>
00010 #include <stdair/service/Logger.hpp>
00011 #include <stdair/bom/AirportPair.hpp>
00012 #include <stdair/bom/PosChannel.hpp>
00013 #include <stdair/bom/DatePeriod.hpp>
00014 #include <stdair/bom/TimePeriod.hpp>
00015 #include <stdair/bom/FareFeatures.hpp>
00016 #include <stdair/bom/AirlineClassList.hpp>
00017 // SimFQT
00018 #include <simfqt/bom/FareRuleStruct.hpp>
00019 #include <simfqt/command/FareRuleGenerator.hpp>
00020
00021 namespace SIMFQT {
00022
00023     // //////////////////////////////////////
00024     void FareRuleGenerator::
00025     createAirportPair (stdair::BomRoot& ioBomRoot,
00026                       const FareRuleStruct& iFareRuleStruct) {
00027
00028         // Create the airport-pair primary key.
00029         const stdair::AirportCode_T& lBoardPoint = iFareRuleStruct.getOrigin ();
00030         const stdair::AirportCode_T& lOffPoint =
00031             iFareRuleStruct.getDestination ();
00032         const stdair::AirportPairKey lAirportPairKey (lBoardPoint, lOffPoint);
00033
00034         // Check that the airport-pair object is not already existing. If an
00035         // airport-pair object with the same key has not already been created,
00036         // create it and link it to the ioBomRoot object.
00037         stdair::AirportPair* lAirportPair_ptr = stdair::BomManager::
00038             getObjectPtr<stdair::AirportPair> (ioBomRoot, lAirportPairKey.toString());
00039         if (lAirportPair_ptr == NULL) {
00040             lAirportPair_ptr =
00041                 &stdair::FacBom<stdair::AirportPair>::instance().
00042                 create (lAirportPairKey);
00043             stdair::FacBomManager::addToListAndMap (ioBomRoot, *lAirportPair_ptr);
00044             stdair::FacBomManager::linkWithParent (ioBomRoot, *lAirportPair_ptr);
00045         }
00046         // Sanity check.
00047         assert (lAirportPair_ptr != NULL);
00048
00049         stdair::AirportPair& lAirportPair = *lAirportPair_ptr;
00050         // Generate the date-period object corresponding to the given
00051         // fareRule.
00052         createDateRange (lAirportPair, iFareRuleStruct);
00053     }
00054
00055     // //////////////////////////////////////
00056     void FareRuleGenerator::
00057     createDateRange (stdair::AirportPair& iAirportPair,
00058                     const FareRuleStruct& iFareRuleStruct) {
00059
00060         // Create the fare date-period primary key.
00061         const stdair::Date_T& lDateRangeStart =
00062             iFareRuleStruct.getDateRangeStart ();
00063         const stdair::Date_T& lDateRangeEnd =
00064             iFareRuleStruct.getDateRangeEnd ();

```

```

00066     const stdair::DatePeriod_T lDatePeriod (lDateRangeStart, lDateRangeEnd);
00067     const stdair::DatePeriodKey lFareDatePeriodKey (lDatePeriod);
00068
00069     // Check that the date-period object is not already existing.
00070     // If a date-period object with the same key has not already been
00071     // created, create it and link it to the airport-pair object.
00072     stdair::DatePeriod* lFareDatePeriod_ptr = stdair::BomManager::
00073         getObjectPtr<stdair::DatePeriod> (iAirportPair,
00074             lFareDatePeriodKey.toString());
00075     if (lFareDatePeriod_ptr == NULL) {
00076         lFareDatePeriod_ptr = &stdair::FacBom<stdair::DatePeriod>::instance().
00077             create (lFareDatePeriodKey);
00078         stdair::FacBomManager::addToListAndMap (iAirportPair,
00079             *lFareDatePeriod_ptr);
00080         stdair::FacBomManager::linkWithParent (iAirportPair,
00081             *lFareDatePeriod_ptr);
00082     }
00083     // Sanity check.
00084     assert (lFareDatePeriod_ptr != NULL);
00085
00086     stdair::DatePeriod& lDateRange = *lFareDatePeriod_ptr;
00087     // Generate the point_of_sale-channel object corresponding to
00088     // the given fareRule.
00089     createPOSChannel (lDateRange, iFareRuleStruct);
00090 }
00091
00092 // //////////////////////////////////////
00093 void FareRuleGenerator::
00094 createPOSChannel (stdair::DatePeriod& iDatePeriod,
00095     const FareRuleStruct& iFareRuleStruct) {
00096
00097     // Create the point-of-sale-channel primary key.
00098     const stdair::CityCode_T& lPosition = iFareRuleStruct.getPOS ();
00099     const stdair::ChannelLabel_T& lChannel =
00100         iFareRuleStruct.getChannel ();
00101     const stdair::PosChannelKey lFarePosChannelKey (lPosition, lChannel);
00102
00103     // Check that the point_of_sale-channel object is not already existing.
00104     // If a point_of_sale-channel object with the same key has not already
00105     // been created, create it and link it to the date-period object.
00106     stdair::PosChannel* lFarePosChannel_ptr = stdair::BomManager::
00107         getObjectPtr<stdair::PosChannel> (iDatePeriod,
00108             lFarePosChannelKey.toString());
00109     if (lFarePosChannel_ptr == NULL) {
00110         lFarePosChannel_ptr = &stdair::FacBom<stdair::PosChannel>::instance().
00111             create (lFarePosChannelKey);
00112         stdair::FacBomManager::addToListAndMap (iDatePeriod,
00113             *lFarePosChannel_ptr);
00114         stdair::FacBomManager::linkWithParent (iDatePeriod,
00115             *lFarePosChannel_ptr);
00116     }
00117     // Sanity check.
00118     assert (lFarePosChannel_ptr != NULL);
00119
00120     stdair::PosChannel& lPosChannel = *lFarePosChannel_ptr;
00121     // Generate the time-period object corresponding to the given
00122     // fareRule.
00123     createTimeRange (lPosChannel, iFareRuleStruct);
00124 }
00125
00126 // //////////////////////////////////////
00127 void FareRuleGenerator::
00128 createTimeRange (stdair::PosChannel& iPosChannel,
00129     const FareRuleStruct& iFareRuleStruct) {

```

```

00133
00134 // Create the fare time-period primary key.
00135 const stdair::Time_T& lTimeRangeStart =
00136     iFareRuleStruct.getTimeRangeStart ();
00137 const stdair::Time_T& lTimeRangeEnd =
00138     iFareRuleStruct.getTimeRangeEnd ();
00139 const stdair::TimePeriodKey lFareTimePeriodKey (lTimeRangeStart,
00140                                                 lTimeRangeEnd);
00141
00142 // Check that the time-period object is not already existing.
00143 // If a time-period object with the same key has not already been
00144 // created, create it and link it to the point_of_sale-channel object.
00145
00146 stdair::TimePeriod* lFareTimePeriod_ptr = stdair::BomManager::
00147     getObjectPtr<stdair::TimePeriod> (iPosChannel,
00148                                       lFareTimePeriodKey.toString());
00149 if (lFareTimePeriod_ptr == NULL) {
00150     lFareTimePeriod_ptr = &stdair::FacBom<stdair::TimePeriod>::instance().
00151         create (lFareTimePeriodKey);
00152     stdair::FacBomManager::addToListAndMap (iPosChannel,
00153                                             *lFareTimePeriod_ptr);
00154     stdair::FacBomManager::linkWithParent (iPosChannel,
00155                                             *lFareTimePeriod_ptr);
00156 }
00157 // Sanity check.
00158 assert (lFareTimePeriod_ptr != NULL);
00159
00160 stdair::TimePeriod& lTimeRange = *lFareTimePeriod_ptr;
00161 // Generate the fare-features object corresponding to the given
00162 // fareRule.
00163 createFareFeatures (lTimeRange, iFareRuleStruct);
00164 }
00165
00166 // //////////////////////////////////////
00167 void FareRuleGenerator::
00168 createFareFeatures (stdair::TimePeriod& iTimePeriod,
00169                   const FareRuleStruct& iFareRuleStruct) {
00170
00171     // Create the fare-features primary key.
00172     const stdair::TripType_T& lTripType =
00173         iFareRuleStruct.getTripType ();
00174     const stdair::DayDuration_T& lAdvancePurchase =
00175         iFareRuleStruct.getAdvancePurchase ();
00176     const stdair::SaturdayStay_T& lSaturdayStay =
00177         iFareRuleStruct.getSaturdayStay ();
00178     const stdair::ChangeFees_T& lChangeFees =
00179         iFareRuleStruct.getChangeFees ();
00180     const stdair::NonRefundable_T& lNonRefundable =
00181         iFareRuleStruct.getNonRefundable ();
00182     const stdair::DayDuration_T& lMinimumStay =
00183         iFareRuleStruct.getMinimumStay ();
00184     const stdair::FareFeaturesKey
00185         lFareFeaturesKey (lTripType, lAdvancePurchase, lSaturdayStay,
00186                         lChangeFees, lNonRefundable, lMinimumStay);
00187
00188     // Check that the fare features object is not already existing.
00189     // If a fare features object with the same key has not already been
00190     // created, create it and link it to the time-period object.
00191     stdair::FareFeatures* lFareFeatures_ptr = stdair::BomManager::
00192         getObjectPtr<stdair::FareFeatures> (iTimePeriod,
00193                                             lFareFeaturesKey.toString());
00194     if (lFareFeatures_ptr == NULL) {
00195         lFareFeatures_ptr = &stdair::FacBom<stdair::FareFeatures>::instance().
00196             create (lFareFeaturesKey);
00197         assert(lFareFeatures_ptr != NULL);
00198         stdair::FacBomManager::addToListAndMap (iTimePeriod,

```

```

00199                                     *lFareFeatures_ptr);
00200     stdair::FacBomManager::linkWithParent (iTimePeriod,
00201                                     *lFareFeatures_ptr);
00202 }
00203 // Sanity check.
00204 assert(lFareFeatures_ptr != NULL);
00205
00206 stdair::FareFeatures& lFareFeatures = *lFareFeatures_ptr;
00207 // Generate the airline-class list object corresponding to the
00208 // given fareRule
00209 createAirlineClassList (lFareFeatures, iFareRuleStruct);
00210
00211 }
00212
00213 // //////////////////////////////////////
00214 void FareRuleGenerator::
00215 createAirlineClassList (stdair::FareFeatures& iFareFeatures,
00216                         const FareRuleStruct& iFareRuleStruct) {
00217
00218     // Create the AirlineClassList primary key.
00219     const unsigned int lAirlineListSize =
00220         iFareRuleStruct.getAirlineListSize();
00221     const unsigned int lClassCodeListSize =
00222         iFareRuleStruct.getClassCodeListSize();
00223     assert (lAirlineListSize == lClassCodeListSize);
00224     const stdair::AirlineClassListKey
00225         lAirlineClassListKey (iFareRuleStruct.getAirlineList(),
00226                             iFareRuleStruct.getClassCodeList());
00227     const stdair::Fare_T& lFare = iFareRuleStruct.getFare ();
00228
00229     // Create the airline class list object and link it to the fare features
00230     // object.
00231     stdair::AirlineClassList* lAirlineClassList_ptr =
00232         &stdair::FacBom<stdair::AirlineClassList>::instance().
00233         create (lAirlineClassListKey);
00234     lAirlineClassList_ptr->setFare(lFare);
00235     stdair::FacBomManager::addToListAndMap (iFareFeatures,
00236                                     *lAirlineClassList_ptr);
00237     stdair::FacBomManager::linkWithParent (iFareFeatures,
00238                                     *lAirlineClassList_ptr);
00239 }
00240
00241 }
00242

```

25.41 simfqt/command/FareRuleGenerator.hpp File Reference

```
#include <stdair/command/CmdAbstract.hpp>
#include <simfqt/SIMFQT_Types.hpp>
```

Classes

- class [SIMFQT::FareRuleGenerator](#)

Namespaces

- namespace [stdair](#)
Forward declarations.
- namespace [SIMFQT](#)
- namespace [SIMFQT::FareParserHelper](#)

25.42 FareRuleGenerator.hpp

```

00001 #ifndef __SIMFQT_CMD_FARERULEGENERATOR_HPP
00002 #define __SIMFQT_CMD_FARERULEGENERATOR_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 // StdAir
00008 #include <stdair/command/CmdAbstract.hpp>
00009 // Simfqt
00010 #include <simfqt/SIMFQT_Types.hpp>
00011
00012 // Forward declarations
00013 namespace stdair {
00014     class BomRoot;
00015     class FareRule;
00016     class AirportPair;
00017     class DatePeriod;
00018     class PosChannel;
00019     class TimePeriod;
00020     class FareFeatures;
00021     class AirlineClassList;
00022 }
00023
00024 namespace SIMFQT {
00025
00026     // Forward declarations
00027     struct FareRuleStruct;
00028     namespace FareParserHelper {
00029         struct doEndFare;
00030     }
00031
00032     class FareRuleGenerator : public stdair::CmdAbstract {
00033
00034         // Only the following class may use methods of FareGenerator.
00035         // Indeed, as those methods build the BOM, it is not good to expose
00036         // them public.
00037         friend class FareFileParser;
00038         friend struct FareParserHelper::doEndFare;
00039         friend class FareParser;
00040
00041     private:
00042
00043         static void createAirportPair (stdair::BomRoot&,
00044                                         const FareRuleStruct&);
00045
00046         static void createDateRange (stdair::AirportPair&,
00047                                         const FareRuleStruct&);
00048
00049         static void createPOSChannel (stdair::DatePeriod&,
00050                                         const FareRuleStruct&);
00051
00052         static void createTimeRange (stdair::PosChannel&,
00053                                         const FareRuleStruct&);
00054
00055         static void createFareFeatures (stdair::TimePeriod&,
00056                                         const FareRuleStruct&);
00057
00058         static void createAirlineClassList (stdair::FareFeatures&,
00059                                         const FareRuleStruct&);
00060
00061     };
00062 }

```

```
00115 #endif // __SIMFQT_CMD_FARERULEGENERATOR_HPP
```

25.43 simfqt/factory/FacSimfqtServiceContext.cpp File Reference

```
#include <cassert>
#include <stdair/service/FacSupervisor.hpp>
#include <simfqt/factory/FacSimfqtServiceContext.hpp>
#include <simfqt/service/SIMFQT_ServiceContext.hpp>
```

Namespaces

- namespace [SIMFQT](#)

25.44 FacSimfqtServiceContext.cpp

```

00001 // //////////////////////////////////////
00002 // Import section
00003 // //////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 // StdAir
00007 #include <stdair/service/FacSupervisor.hpp>
00008 // SimFQT
00009 #include <simfqt/factory/FacSimfqtServiceContext.hpp>
00010 #include <simfqt/service/SIMFQT_ServiceContext.hpp>
00011
00012 namespace SIMFQT {
00013
00014     FacSimfqtServiceContext* FacSimfqtServiceContext::_instance = NULL;
00015
00016     // //////////////////////////////////////
00017     FacSimfqtServiceContext::~FacSimfqtServiceContext() {
00018         _instance = NULL;
00019     }
00020
00021     // //////////////////////////////////////
00022     FacSimfqtServiceContext& FacSimfqtServiceContext::instance() {
00023
00024         if (_instance == NULL) {
00025             _instance = new FacSimfqtServiceContext();
00026             assert (_instance != NULL);
00027
00028             stdair::FacSupervisor::instance().registerServiceFactory (_instance);
00029         }
00030         return *_instance;
00031     }
00032
00033     // //////////////////////////////////////
00034     SIMFQT_ServiceContext& FacSimfqtServiceContext::create() {
00035         SIMFQT_ServiceContext* aServiceContext_ptr = NULL;
00036
00037         aServiceContext_ptr = new SIMFQT_ServiceContext();
00038         assert (aServiceContext_ptr != NULL);
00039
00040         // The new object is added to the Bom pool
00041         _pool.push_back (aServiceContext_ptr);
00042
00043         return *aServiceContext_ptr;
00044     }
00045
00046 }

```

25.45 simfqt/factory/FacSimfqtServiceContext.hpp File Reference

```
#include <string>
#include <stdair/stdair_basic_types.hpp>
#include <stdair/service/FacServiceAbstract.hpp>
```

Classes

- class [SIMFQT::FacSimfqtServiceContext](#)
Factory for the service context.

Namespaces

- namespace [SIMFQT](#)

25.46 FacSimfqtServiceContext.hpp

```
00001 #ifndef __SIMFQT_FAC_FACSIMFQTSERVICECONTEXT_HPP
00002 #define __SIMFQT_FAC_FACSIMFQTSERVICECONTEXT_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 // STL
00008 #include <string>
00009 // StdAir
00010 #include <stdair/stdair_basic_types.hpp>
00011 #include <stdair/service/FacServiceAbstract.hpp>
00012
00013 namespace SIMFQT {
00014
00016     class SIMFQT_ServiceContext;
00017
00018
00022     class FacSimfqtServiceContext : public stdair::FacServiceAbstract {
00023     public:
00024
00031         static FacSimfqtServiceContext& instance();
00032
00039         ~FacSimfqtServiceContext();
00040
00048         SIMFQT_ServiceContext& create();
00049
00050
00051     protected:
00057         FacSimfqtServiceContext() {}
00058
00059
00060     private:
00064         static FacSimfqtServiceContext* _instance;
00065     };
00066
00067 }
00068 #endif // __SIMFQT_FAC_FACSIMFQTSERVICECONTEXT_HPP
```

25.47 simfqt/service/SIMFQT_Service.cpp File Reference

```
#include <cassert>
#include <boost/make_shared.hpp>
#include <stdair/basic/BasChronometer.hpp>
#include <stdair/bom/BomDisplay.hpp>
#include <stdair/bom/TravelSolutionStruct.hpp>
#include <stdair/bom/BookingRequestStruct.hpp>
#include <stdair/service/Logger.hpp>
#include <stdair/STDAIR_Service.hpp>
#include <simfqt/basic/BasConst_SIMFQT_Service.hpp>
#include <simfqt/factory/FacSimfqtServiceContext.hpp>
#include <simfqt/command/FareParser.hpp>
#include <simfqt/command/FareQuoter.hpp>
#include <simfqt/service/SIMFQT_ServiceContext.hpp>
#include <simfqt/SIMFQT_Service.hpp>
```

Namespaces

- namespace [SIMFQT](#)

25.48 SIMFQT_Service.cpp

```

00001 // //////////////////////////////////////
00002 // Import section
00003 // //////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 // Boost
00007 #include <boost/make_shared.hpp>
00008 // StdAir
00009 #include <stdair/basic/BasChronometer.hpp>
00010 #include <stdair/bom/BomDisplay.hpp>
00011 #include <stdair/bom/TravelSolutionStruct.hpp>
00012 #include <stdair/bom/BookingRequestStruct.hpp>
00013 #include <stdair/service/Logger.hpp>
00014 #include <stdair/STDAIR_Service.hpp>
00015 // Simfqt
00016 #include <simfqt/basic/BasConst_SIMFQT_Service.hpp>
00017 #include <simfqt/factory/FacSimfqtServiceContext.hpp>
00018 #include <simfqt/command/FareParser.hpp>
00019 #include <simfqt/command/FareQuoter.hpp>
00020 #include <simfqt/service/SIMFQT_ServiceContext.hpp>
00021 #include <simfqt/SIMFQT_Service.hpp>
00022
00023 namespace SIMFQT {
00024
00025     // //////////////////////////////////////
00026     SIMFQT_Service::SIMFQT_Service() : _simfqtServiceContext (NULL) {
00027         assert (false);
00028     }
00029
00030     // //////////////////////////////////////
00031     SIMFQT_Service::SIMFQT_Service (const SIMFQT_Service& iService) {
00032         assert (false);
00033     }
00034
00035     // //////////////////////////////////////
00036     SIMFQT_Service::SIMFQT_Service (const stdair::BasLogParams& iLogParams)
00037         : _simfqtServiceContext (NULL) {
00038
00039         // Initialise the STDAIR service handler
00040         stdair::STDAIR_ServicePtr_T lSTDAIR_Service_ptr =
00041             initStdAirService (iLogParams);
00042
00043         // Initialise the service context
00044         initServiceContext();
00045
00046         // Add the StdAir service context to the SIMFQT service context
00047         // \note SIMFQT owns the STDAIR service resources here.
00048         const bool ownStdairService = true;
00049         addStdAirService (lSTDAIR_Service_ptr, ownStdairService);
00050
00051         // Initialise the (remaining of the) context
00052         initSimfqtService();
00053     }
00054
00055     // //////////////////////////////////////
00056     SIMFQT_Service::SIMFQT_Service (const stdair::BasLogParams& iLogParams,
00057                                     const stdair::BasDBParams& iDBParams)
00058         : _simfqtServiceContext (NULL) {
00059
00060         // Initialise the STDAIR service handler
00061         stdair::STDAIR_ServicePtr_T lSTDAIR_Service_ptr =
00062             initStdAirService (iLogParams, iDBParams);
00063
00064         // Initialise the service context
00065         initServiceContext();

```



```

00066
00067 // Add the StdAir service context to the SIMFQT service context
00068 // \note SIMFQT owns the STDAIR service resources here.
00069 const bool ownStdairService = true;
00070 addStdAirService (lSTDAIR_Service_ptr, ownStdairService);
00071
00072 // Initialise the (remaining of the) context
00073 initSimfqtService();
00074 }
00075
00076 // //////////////////////////////////////
00077 SIMFQT_Service::
00078 SIMFQT_Service (stdair::STDAIR_ServicePtr_T ioSTDAIR_Service_ptr)
00079 : _simfqtServiceContext (NULL) {
00080
00081 // Initialise the service context
00082 initServiceContext();
00083
00084 // Store the STDAIR service object within the (SIMFQT) service context
00085 // \note Simfqt does not own the STDAIR service resources here.
00086 const bool doesNotOwnStdairService = false;
00087 addStdAirService (ioSTDAIR_Service_ptr, doesNotOwnStdairService);
00088
00089 // Initialise the context
00090 initSimfqtService();
00091 }
00092
00093 // //////////////////////////////////////
00094 SIMFQT_Service::~SIMFQT_Service() {
00095 // Delete/Clean all the objects from memory
00096 finalise();
00097 }
00098
00099 // //////////////////////////////////////
00100 void SIMFQT_Service::finalise() {
00101 assert (_simfqtServiceContext != NULL);
00102 // Reset the (Boost.)Smart pointer pointing on the STDAIR_Service object.
00103 _simfqtServiceContext->reset();
00104 }
00105
00106 // //////////////////////////////////////
00107 void SIMFQT_Service::initServiceContext() {
00108 // Initialise the service context
00109 SIMFQT_ServiceContext& lSIMFQT_ServiceContext =
00110 FacSimfqtServiceContext::instance().create();
00111 _simfqtServiceContext = &lSIMFQT_ServiceContext;
00112 }
00113
00114 // //////////////////////////////////////
00115 void SIMFQT_Service::
00116 addStdAirService (stdair::STDAIR_ServicePtr_T ioSTDAIR_Service_ptr,
00117 const bool iOwnStdairService) {
00118
00119 // Retrieve the SimFQT service context
00120 assert (_simfqtServiceContext != NULL);
00121 SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00122
00123 // Store the STDAIR service object within the (SimFQT) service context
00124 lSIMFQT_ServiceContext.setSTDAIR_Service (ioSTDAIR_Service_ptr,
00125 iOwnStdairService);
00126 }
00127
00128 // //////////////////////////////////////
00129 stdair::STDAIR_ServicePtr_T SIMFQT_Service::
00130 initStdAirService (const stdair::BasLogParams& iLogParams,
00131 const stdair::BasDBParams& iDBParams) {
00132

```

```

00139     stdair::STDAIR_ServicePtr_T lSTDAIR_Service_ptr =
00140         boost::make_shared<stdair::STDAIR_Service> (iLogParams, iDBParams);
00141     assert (lSTDAIR_Service_ptr != NULL);
00142
00143     return lSTDAIR_Service_ptr;
00144 }
00145
00146 // //////////////////////////////////////
00147 stdair::STDAIR_ServicePtr_T SIMFQT_Service::
00148     initStdAirService (const stdair::BasLogParams& iLogParams) {
00149
00150     stdair::STDAIR_ServicePtr_T lSTDAIR_Service_ptr =
00151         boost::make_shared<stdair::STDAIR_Service> (iLogParams);
00152     assert (lSTDAIR_Service_ptr != NULL);
00153
00154     return lSTDAIR_Service_ptr;
00155 }
00156
00157 // //////////////////////////////////////
00158 void SIMFQT_Service::initSimfqtService() {
00159     // Do nothing at this stage. A sample BOM tree may be built by
00160     // calling the buildSampleBom() method
00161 }
00162
00163 // //////////////////////////////////////
00164 void SIMFQT_Service::
00165     parseAndLoad (const FareFilePath& iFareFilename) {
00166
00167     // Retrieve the SimFQT service context
00168     if (_simfqtServiceContext == NULL) {
00169         throw stdair::NonInitialisedServiceException ("The SimFQT service "
00170             "has not been initialised");
00171     }
00172     assert (_simfqtServiceContext != NULL);
00173
00174     // Retrieve the SimFQT service context and whether it owns the Stdair
00175     // service
00176     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00177     const bool doesOwnStdairService =
00178         lSIMFQT_ServiceContext.getOwnStdairServiceFlag();
00179
00180     // Retrieve the StdAir service object from the (SimFQT) service context
00181     stdair::STDAIR_Service& lSTDAIR_Service =
00182         lSIMFQT_ServiceContext.getSTDAIR_Service();
00183
00184     // Retrieve the persistent BOM root object.
00185     stdair::BomRoot& lPersistentBomRoot =
00186         lSTDAIR_Service.getPersistentBomRoot();
00187
00188     FareParser::fareRuleGeneration (iFareFilename, lPersistentBomRoot);
00189
00190     buildComplementaryLinks (lPersistentBomRoot);
00191
00192     if (doesOwnStdairService == true) {
00193         //
00194         clonePersistentBom ();
00195     }
00196 }
00197
00198 // //////////////////////////////////////
00199 void SIMFQT_Service::buildSampleBom() {
00200
00201     // Retrieve the SimFQT service context
00202     if (_simfqtServiceContext == NULL) {
00203         throw stdair::NonInitialisedServiceException ("The SimFQT service "
00204             "has not been initialised");
00205     }
00206 }

```

```

00230     assert (_simfqtServiceContext != NULL);
00231
00232     // Retrieve the SimFQT service context and whether it owns the Stdair
00233     // service
00234     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00235     const bool doesOwnStdairService =
00236         lSIMFQT_ServiceContext.getOwnStdairServiceFlag();
00237
00238     // Retrieve the StdAir service object from the (SimFQT) service context
00239     stdair::STDAIR_Service& lSTDAIR_Service =
00240         lSIMFQT_ServiceContext.getSTDAIR_Service();
00241
00242     // Retrieve the persistent BOM root object.
00243     stdair::BomRoot& lPersistentBomRoot =
00244         lSTDAIR_Service.getPersistentBomRoot();
00245
00250     if (doesOwnStdairService == true) {
00251         //
00252         lSTDAIR_Service.buildSampleBom();
00253     }
00254
00266     buildComplementaryLinks (lPersistentBomRoot);
00267
00272     if (doesOwnStdairService == true) {
00273         //
00274         clonePersistentBom ();
00275     }
00276 }
00277
00278 // //////////////////////////////////////
00279 void SIMFQT_Service::clonePersistentBom () {
00280
00281     // Retrieve the SimFQT service context
00282     if (_simfqtServiceContext == NULL) {
00283         throw stdair::NonInitialisedServiceException ("The SimFQT service "
00284                                                         "has not been initialised");
00285     }
00286     assert (_simfqtServiceContext != NULL);
00287
00288     // Retrieve the SimFQT service context and whether it owns the Stdair
00289     // service
00290     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00291     const bool doesOwnStdairService =
00292         lSIMFQT_ServiceContext.getOwnStdairServiceFlag();
00293
00294     // Retrieve the StdAir service object from the (SimFQT) service context
00295     stdair::STDAIR_Service& lSTDAIR_Service =
00296         lSIMFQT_ServiceContext.getSTDAIR_Service();
00297
00302     if (doesOwnStdairService == true) {
00303         //
00304         lSTDAIR_Service.clonePersistentBom ();
00305     }
00306
00310     stdair::BomRoot& lBomRoot = lSTDAIR_Service.getBomRoot();
00311     buildComplementaryLinks (lBomRoot);
00312 }
00313
00314 // //////////////////////////////////////
00315 void SIMFQT_Service::buildComplementaryLinks (stdair::BomRoot& ioBomRoot) {
00316     // Currently, no more things to do by SimFQT at that stage.
00317 }
00318
00319 // //////////////////////////////////////
00320 stdair::BookingRequestStruct SIMFQT_Service::buildBookingRequest(const bool isF
orCRS) {
00321

```

```

00322 // Retrieve the SIMFQT service context
00323 if (_simfqtServiceContext == NULL) {
00324     throw stdair::NonInitialisedServiceException ("The Simfqt service has not "
00325                                                     "been initialised");
00326 }
00327 assert (_simfqtServiceContext != NULL);
00328
00329 SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00330
00331 // Retrieve the STDAIR service object from the (Simfqt) service context
00332 stdair::STDAIR_Service& lSTDAIR_Service =
00333     lSIMFQT_ServiceContext.getSTDAIR_Service();
00334
00335 // Delegate the BOM building to the dedicated service
00336 stdair::BookingRequestStruct oBookingRequest =
00337     lSTDAIR_Service.buildSampleBookingRequest (isForCRS);
00338
00339 return oBookingRequest;
00340 }
00341
00342 // ////////////////////////////////////////
00343 void SIMFQT_Service::
00344 buildSampleTravelSolutions(stdair::TravelSolutionList_T& ioTravelSolutionList){
00345
00346 // Retrieve the SIMFQT service context
00347 if (_simfqtServiceContext == NULL) {
00348     throw stdair::NonInitialisedServiceException ("The Simfqt service has not "
00349                                                     "been initialised");
00350 }
00351 assert (_simfqtServiceContext != NULL);
00352
00353 SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00354
00355 // Retrieve the STDAIR service object from the (Simfqt) service context
00356 stdair::STDAIR_Service& lSTDAIR_Service =
00357     lSIMFQT_ServiceContext.getSTDAIR_Service();
00358
00359 // Delegate the BOM building to the dedicated service
00360 lSTDAIR_Service.buildSampleTravelSolutionForPricing (ioTravelSolutionList);
00361 }
00362
00363 // ////////////////////////////////////////
00364 std::string SIMFQT_Service::csvDisplay() const {
00365
00366 // Retrieve the SIMFQT service context
00367 if (_simfqtServiceContext == NULL) {
00368     throw stdair::NonInitialisedServiceException ("The SimFQT service "
00369                                                     "has not been initialised");
00370 }
00371
00372 assert (_simfqtServiceContext != NULL);
00373
00374 SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00375
00376 // Retrieve the STDAIR service object from the (SimFQT) service context
00377 stdair::STDAIR_Service& lSTDAIR_Service =
00378     lSIMFQT_ServiceContext.getSTDAIR_Service();
00379
00380 // Get the root of the BOM tree, on which all of the other BOM objects
00381 // are attached
00382 stdair::BomRoot& lBomRoot = lSTDAIR_Service.getBomRoot();
00383
00384 // Delegate the BOM display to the dedicated service
00385 std::ostringstream oCSVStr;

```

```

00386     stdair::BomDisplay::csvSimFQTAirRACDisplay (oCSVStr, lBomRoot);
00387     return oCSVStr.str();
00388 }
00389
00390 // //////////////////////////////////////
00391 std::string SIMFQT_Service::
00392 csvDisplay (const stdair::TravelSolutionList_T& ioTravelSolutionList) const {
00393
00394     // Retrieve the Simfqt service context
00395     if (_simfqtServiceContext == NULL) {
00396         throw stdair::NonInitialisedServiceException ("The Simfqt service has not "
00397
00398
00399                                     "been initialised");
00400     }
00401     assert (_simfqtServiceContext != NULL);
00402
00403     // Retrieve the Simfqt service context
00404     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00405
00406     // Retrieve the STDAIR service object from the (Simfqt) service context
00407     stdair::STDAIR_Service& lSTDAIR_Service =
00408         lSIMFQT_ServiceContext.getSTDAIR_Service();
00409
00410     // Delegate the BOM building to the dedicated service
00411     return lSTDAIR_Service.csvDisplay (ioTravelSolutionList);
00412 }
00413
00414 // //////////////////////////////////////
00415 std::string SIMFQT_Service::
00416 csvDisplay (const stdair::AirportCode_T& iOrigin,
00417             const stdair::AirportCode_T& iDestination,
00418             const stdair::Date_T& iDepartureDate) const {
00419
00420     // Retrieve the SIMFQT service context
00421     if (_simfqtServiceContext == NULL) {
00422         throw stdair::NonInitialisedServiceException ("The Simfqt service "
00423
00424                                     "has not been initialised");
00425     }
00426     assert (_simfqtServiceContext != NULL);
00427
00428     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00429
00430     // Retrieve the STDAIR service object from the (SIMFQT) service context
00431     stdair::STDAIR_Service& lSTDAIR_Service =
00432         lSIMFQT_ServiceContext.getSTDAIR_Service();
00433
00434     // Delegate the BOM display to the dedicated service
00435     return lSTDAIR_Service.csvDisplay (iOrigin, iDestination,
00436                                         iDepartureDate);
00437 }
00438
00439 // //////////////////////////////////////
00440 std::string SIMFQT_Service::list() const {
00441
00442     // Retrieve the SIMFQT service context
00443     if (_simfqtServiceContext == NULL) {
00444         throw stdair::NonInitialisedServiceException ("The Simfqt service "
00445
00446                                     "has not been initialised");
00447     }
00448     assert (_simfqtServiceContext != NULL);
00449
00450     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00451
00452     // Retrieve the STDAIR service object from the (SIMFQT) service context
00453     stdair::STDAIR_Service& lSTDAIR_Service =
00454         lSIMFQT_ServiceContext.getSTDAIR_Service();
00455
00456

```

```

00452     // Delegate the BOM display to the dedicated service
00453     return lSTDAIR_Service.listAirportPairDateRange ();
00454 }
00455
00456 // //////////////////////////////////////
00457 bool SIMFQT_Service::
00458 check (const stdair::AirportCode_T& iOrigin,
00459        const stdair::AirportCode_T& iDestination,
00460        const stdair::Date_T& iDepartureDate) const {
00461     std::ostream oFlightListStr;
00462
00463     if (_simfqtServiceContext == NULL) {
00464         throw stdair::NonInitialisedServiceException ("The Simfqt service "
00465                                                         "has not been initialised");
00466     }
00467     assert (_simfqtServiceContext != NULL);
00468     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00469
00470     // Retrieve the STDAIR service object from the (SIMFQT) service context
00471     stdair::STDAIR_Service& lSTDAIR_Service =
00472         lSIMFQT_ServiceContext.getSTDAIR_Service();
00473
00474     // Delegate the BOM display to the dedicated service
00475     return lSTDAIR_Service.check (iOrigin, iDestination, iDepartureDate);
00476 }
00477
00478 // //////////////////////////////////////
00479 void SIMFQT_Service::
00480 quotePrices (const stdair::BookingRequestStruct& iBookingRequest,
00481             stdair::TravelSolutionList_T& ioTravelSolutionList) {
00482
00483     // Retrieve the Simfqt service context
00484     if (_simfqtServiceContext == NULL) {
00485         throw stdair::NonInitialisedServiceException ("The SimFQT service "
00486                                                         "has not been initialised");
00487     }
00488     assert (_simfqtServiceContext != NULL);
00489
00490     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00491
00492     // Retrieve the StdAir service context
00493     stdair::STDAIR_Service& lSTDAIR_Service =
00494         lSIMFQT_ServiceContext.getSTDAIR_Service();
00495
00496     // Get the root of the BOM tree, on which all of the other BOM objects
00497     // will be attached
00498     stdair::BomRoot& lBomRoot = lSTDAIR_Service.getBomRoot();
00499
00500     // Delegate the action to the dedicated command
00501     stdair::BasChronometer lFareQuoteRetrievalChronometer;
00502     lFareQuoteRetrievalChronometer.start();
00503     FareQuoter::priceQuote (iBookingRequest, ioTravelSolutionList, lBomRoot);
00504
00505     // DEBUG
00506     const double lFareQuoteRetrievalMeasure =
00507         lFareQuoteRetrievalChronometer.elapsed();
00508     STDAIR_LOG_DEBUG ("Fare Quote retrieving: " << lFareQuoteRetrievalMeasure
00509                     << " - " << lSIMFQT_ServiceContext.display());
00510 }
00511
00512 }

```

25.49 simfqt/service/SIMFQT_ServiceContext.cpp File Reference

```
#include <cassert>
#include <sstream>
#include <simfqt/basic/BasConst_SIMFQT_Service.hpp>
#include <simfqt/service/SIMFQT_ServiceContext.hpp>
```

Namespaces

- namespace [SIMFQT](#)

25.50 SIMFQT_ServiceContext.cpp

```

00001 // //////////////////////////////////////
00002 // Import section
00003 // //////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 #include <sstream>
00007 // SimFQT
00008 #include <simfqt/basic/BasConst_SIMFQT_Service.hpp>
00009 #include <simfqt/service/SIMFQT_ServiceContext.hpp>
00010
00011 namespace SIMFQT {
00012
00013     // //////////////////////////////////////
00014     SIMFQT_ServiceContext::SIMFQT_ServiceContext() : _ownStdairService (false) {
00015     }
00016
00017     // //////////////////////////////////////
00018     SIMFQT_ServiceContext::SIMFQT_ServiceContext (const SIMFQT_ServiceContext&) {
00019         assert (false);
00020     }
00021
00022     // //////////////////////////////////////
00023     SIMFQT_ServiceContext::~SIMFQT_ServiceContext() {
00024     }
00025
00026     // //////////////////////////////////////
00027     stdair::STDAIR_Service& SIMFQT_ServiceContext::getSTDAIR_Service() const {
00028         assert (_stdairService != NULL);
00029         return *_stdairService;
00030     }
00031
00032     // //////////////////////////////////////
00033     const std::string SIMFQT_ServiceContext::shortDisplay() const {
00034         std::ostringstream oStr;
00035         oStr << "SIMFQT_ServiceContext -- Owns StdAir service: "
00036             << _ownStdairService;
00037         return oStr.str();
00038     }
00039
00040     // //////////////////////////////////////
00041     const std::string SIMFQT_ServiceContext::display() const {
00042         std::ostringstream oStr;
00043         oStr << shortDisplay();
00044         return oStr.str();
00045     }
00046
00047     // //////////////////////////////////////
00048     const std::string SIMFQT_ServiceContext::describe() const {
00049         return shortDisplay();
00050     }
00051
00052     // //////////////////////////////////////
00053     void SIMFQT_ServiceContext::reset() {
00054
00055         // The shared_ptr<>::reset() method drops the refcount by one.
00056         // If the count result is dropping to zero, the resource pointed to
00057         // by the shared_ptr<> will be freed.
00058
00059         // Reset the stdair shared pointer
00060         _stdairService.reset();
00061     }
00062
00063 }

```


25.51 simfqt/service/SIMFQT_ServiceContext.hpp File Reference

```
#include <string>
#include <stdair/stdair_service_types.hpp>
#include <stdair/service/ServiceAbstract.hpp>
#include <simfqt/SIMFQT_Types.hpp>
```

Classes

- class [SIMFQT::SIMFQT_ServiceContext](#)
Class holding the context of the SimFQT services.

Namespaces

- namespace [stdair](#)
Forward declarations.
- namespace [SIMFQT](#)

25.52 SIMFQT_ServiceContext.hpp

```

00001 #ifndef __SIMFQT_SVC_SIMFQTSERVICECONTEXT_HPP
00002 #define __SIMFQT_SVC_SIMFQTSERVICECONTEXT_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 // STL
00008 #include <string>
00009 // StdAir
00010 #include <stdair/stdair_service_types.hpp>
00011 #include <stdair/service/ServiceAbstract.hpp>
00012 // SimFQT
00013 #include <simfqt/SIMFQT_Types.hpp>
00014
00015 namespace stdair {
00016     class STDAIR_Service;
00017 }
00018
00019 namespace SIMFQT {
00020
00021     class SIMFQT_ServiceContext : public stdair::ServiceAbstract {
00022     friend class SIMFQT_Service;
00023     friend class FacSimfqtServiceContext;
00024
00025     private:
00026         // ////////// Getters //////////
00027         stdair::STDAIR_ServicePtr_T getSTDAIR_ServicePtr() const {
00028             return _stdairService;
00029         }
00030
00031         stdair::STDAIR_Service& getSTDAIR_Service() const;
00032
00033         const bool getOwnStdairServiceFlag() const {
00034             return _ownStdairService;
00035         }
00036
00037     private:
00038         // ////////// Setters //////////
00039         void setSTDAIR_Service (stdair::STDAIR_ServicePtr_T ioSTDAIR_ServicePtr,
00040                                 const bool iOwnStdairService) {
00041             _stdairService = ioSTDAIR_ServicePtr;
00042             _ownStdairService = iOwnStdairService;
00043         }
00044
00045         void reset();
00046
00047     private:
00048         // ////////// Display Methods //////////
00049         const std::string shortDisplay() const;
00050
00051         const std::string display() const;
00052
00053         const std::string describe() const;
00054
00055     private:
00056         // ////////// Construction / initialisation //////////
00057         SIMFQT_ServiceContext (const FareQuoteID_T&);
00058
00059         SIMFQT_ServiceContext ();
00060
00061         SIMFQT_ServiceContext (const SIMFQT_ServiceContext&);
00062

```

```
00111     ~SIMFQT_ServiceContext();
00112
00113
00114     private:
00115         // ////////////////////////////////// Children //////////////////////////////////
00119         stdair::STDAIR_ServicePtr_T _stdairService;
00120
00124         bool _ownStdairService;
00125     };
00126
00127 }
00128 #endif // __SIMFQT_SVC_SIMFQTSERVICECONTEXT_HPP
```

25.53 simfqt/SIMFQT_Service.hpp File Reference

```
#include <stdair/stdair_basic_types.hpp>
#include <stdair/stdair_service_types.hpp>
#include <stdair/bom/TravelSolutionTypes.hpp>
#include <simfqt/SIMFQT_Types.hpp>
```

Classes

- class [SIMFQT::SIMFQT_Service](#)
Interface for the [SIMFQT](#) Services.

Namespaces

- namespace [stdair](#)
Forward declarations.
- namespace [SIMFQT](#)

25.54 SIMFQT_Service.hpp

```

00001 #ifndef __SIMFQT_SVC_SIMFQT_SERVICE_HPP
00002 #define __SIMFQT_SVC_SIMFQT_SERVICE_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 // StdAir
00008 #include <stdair/stdair_basic_types.hpp>
00009 #include <stdair/stdair_service_types.hpp>
00010 #include <stdair/bom/TravelSolutionTypes.hpp>
00011 // SimFQT
00012 #include <simfqt/SIMFQT_Types.hpp>
00013
00015 namespace stdair {
00016     class STDAIR_Service;
00017     class BomRoot;
00018     struct BookingRequestStruct;
00019     struct BasLogParams;
00020     struct BasDBParams;
00021 }
00022
00023 namespace SIMFQT {
00024
00026     class SIMFQT_ServiceContext;
00027
00028     class SIMFQT_Service {
00032     public:
00033
00035         // ////////////////////////////////// Constructors and Destructors //////////////////////////////////
00047         SIMFQT_Service (const stdair::BasLogParams&);
00048
00061         SIMFQT_Service (const stdair::BasLogParams&, const stdair::BasDBParams&);
00062
00078         SIMFQT_Service (stdair::STDAIR_ServicePtr_T ioSTDAIR_ServicePtr);
00079
00088         void parseAndLoad (const FareFilePath& iFareFilename);
00089
00093         ~SIMFQT_Service ();
00094
00095     public:
00096         // ////////////////////////////////// Business Methods //////////////////////////////////
00097         void buildSampleBom();
00109
00110         void clonePersistentBom ();
00115
00120         void buildComplementaryLinks (stdair::BomRoot&);
00121
00128         stdair::BookingRequestStruct buildBookingRequest (const bool isForCRS = false)
00129     ;
00147         void buildSampleTravelSolutions (stdair::TravelSolutionList_T&);
00148
00158         void quotePrices (const stdair::BookingRequestStruct&,
00159                         stdair::TravelSolutionList_T&);
00160
00162     public:
00163         // ////////////////////////////////// Display support methods //////////////////////////////////
00171         std::string csvDisplay () const;
00172
00180         std::string csvDisplay (const stdair::TravelSolutionList_T&) const;
00181
00194         std::string csvDisplay (const stdair::AirportCode_T& ioOrigin,

```

```
00195             const stdair::AirportCode_T& ioDestination,
00196             const stdair::Date_T& ioDepartureDate) const;
00197
00206     std::string list() const;
00207
00220     bool check (const stdair::AirportCode_T& ioOrigin,
00221                const stdair::AirportCode_T& ioDestination,
00222                const stdair::Date_T& ioDepartureDate) const;
00223
00224 private:
00225     // ////////// Construction and Destruction helper methods //////////
00229     SIMFQT_Service();
00230
00234     SIMFQT_Service (const SIMFQT_Service&);
00235
00245     stdair::STDAIR_ServicePtr_T initStdAirService (const stdair::BasLogParams&,
00246                                                    const stdair::BasDBParams&);
00247
00256     stdair::STDAIR_ServicePtr_T initStdAirService (const stdair::BasLogParams&);
00257
00266     void addStdAirService (stdair::STDAIR_ServicePtr_T ioSTDAIR_ServicePtr,
00267                           const bool iOwnStdairService);
00268
00273     void initServiceContext();
00274
00281     void initSimfqtService();
00282
00291     void initSimfqtService (const FareFilePath& iFareFilename);
00292
00296     void finalise();
00297
00298
00299 private:
00300     // ////////// Service Context //////////
00304     SIMFQT_ServiceContext* _simfqtServiceContext;
00305 };
00306 }
00307 #endif // __SIMFQT_SVC_SIMFQT_SERVICE_HPP
```

25.55 simfq/SIMFQT_Types.hpp File Reference

```
#include <vector>
#include <string>
#include <boost/shared_ptr.hpp>
#include <stdair/stdair_exceptions.hpp>
#include <stdair/stdair_file.hpp>
```

Classes

- class [SIMFQT::FareFileParsingFailedException](#)
- class [SIMFQT::AirportPairNotFoundException](#)
- class [SIMFQT::PosOrChannelNotFoundException](#)
- class [SIMFQT::FlightDateNotFoundException](#)
- class [SIMFQT::FlightTimeNotFoundException](#)
- class [SIMFQT::FeaturesNotFoundException](#)
- class [SIMFQT::AirlineNotFoundException](#)
- class [SIMFQT::FareInputFileNotFoundException](#)
- class [SIMFQT::QuotingException](#)
- class [SIMFQT::FareFilePath](#)

Namespaces

- namespace [SIMFQT](#)

Typedefs

- typedef unsigned int [SIMFQT::FareQuoteID_T](#)
- typedef boost::shared_ptr< [SIMFQT_Service](#) > [SIMFQT::SIMFQT_ServicePtr_T](#)

25.56 SIMFQT_Types.hpp

```

00001 #ifndef __SIMFQT_SIMFQT_TYPES_HPP
00002 #define __SIMFQT_SIMFQT_TYPES_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 // STL
00008 #include <vector>
00009 #include <string>
00010 // Boost
00011 #include <boost/shared_ptr.hpp>
00012 // StdAir
00013 #include <stdair/stdair_exceptions.hpp>
00014 #include <stdair/stdair_file.hpp>
00015
00016 namespace SIMFQT {
00017
00018     // Forward declarations
00019     class SIMFQT_Service;
00020
00021
00022     // ////////// Exceptions //////////
00026     class FareFileParsingFailedException
00027     : public stdair::ParsingFileFailedException {
00028     public:
00032         FareFileParsingFailedException (const std::string& iWhat)
00033         : stdair::ParsingFileFailedException (iWhat) {}
00034     };
00035
00039     class AirportPairNotFoundException : public stdair::ObjectNotFoundException {
00040     public:
00044         AirportPairNotFoundException (const std::string& iWhat)
00045         : stdair::ObjectNotFoundException (iWhat) {}
00046     };
00047
00051     class PosOrChannelNotFoundException : public stdair::ObjectNotFoundException {
00052     public:
00056         PosOrChannelNotFoundException (const std::string& iWhat)
00057         : stdair::ObjectNotFoundException (iWhat) {}
00058     };
00059
00063     class FlightDateNotFoundException : public stdair::ObjectNotFoundException {
00064     public:
00068         FlightDateNotFoundException (const std::string& iWhat)
00069         : stdair::ObjectNotFoundException (iWhat) {}
00070     };
00071
00075     class FlightTimeNotFoundException : public stdair::ObjectNotFoundException {
00076     public:
00080         FlightTimeNotFoundException (const std::string& iWhat)
00081         : stdair::ObjectNotFoundException (iWhat) {}
00082     };
00083
00087     class FeaturesNotFoundException : public stdair::ObjectNotFoundException {
00088     public:
00092         FeaturesNotFoundException (const std::string& iWhat)
00093         : stdair::ObjectNotFoundException (iWhat) {}
00094     };
00095
00099     class AirlineNotFoundException : public stdair::ObjectNotFoundException {
00100     public:
00104         AirlineNotFoundException (const std::string& iWhat)
00105         : stdair::ObjectNotFoundException (iWhat) {}
00106     };
00107

```



```
00111 class FareInputFileNotFoundException : public stdair::FileNotFoundException {
00112 public:
00116     FareInputFileNotFoundException (const std::string& iWhat)
00117         : stdair::FileNotFoundException (iWhat) {}
00118 };
00119
00123 class QuotingException : public stdair::RootException {
00124 };
00125
00126 // ////////// Files //////////
00130 class FareFilePath : public stdair::InputFilePath {
00131 public:
00135     explicit FareFilePath (const stdair::Filename_T& iFilename)
00136         : stdair::InputFilePath (iFilename) {}
00137 };
00138
00139 // ////////// Type definitions specific to SimFQT //////////
00143 typedef unsigned int FareQuoteID_T;
00144
00148 typedef boost::shared_ptr<SIMFQT_Service> SIMFQT_ServicePtr_T;
00149 }
00150 #endif // __SIMFQT_SIMFQT_TYPES_HPP
```

25.57 simfqt/ui/cmdline/simfqt.cpp File Reference

25.58 simfqt.cpp

```

00001
00005 // STL
00006 #include <cassert>
00007 #include <iostream>
00008 #include <sstream>
00009 #include <fstream>
00010 #include <string>
00011 // Boost (Extended STL)
00012 #include <boost/program_options.hpp>
00013 #include <boost/tokenizer.hpp>
00014 #include <boost/regex.hpp>
00015 // StdAir
00016 #include <stdair/basic/BasLogParams.hpp>
00017 #include <stdair/basic/BasConst_BomDisplay.hpp>
00018 #include <stdair/basic/BasDBParams.hpp>
00019 #include <stdair/basic/BasConst_DefaultObject.hpp>
00020 #include <stdair/basic/BasConst_Inventory.hpp>
00021 #include <stdair/basic/BasConst_Request.hpp>
00022 #include <stdair/service/Logger.hpp>
00023 #include <stdair/stdair_exceptions.hpp>
00024 #include <stdair/stdair_basic_types.hpp>
00025 #include <stdair/stdair_date_time_types.hpp>
00026 #include <stdair/bom/TravelSolutionStruct.hpp>
00027 #include <stdair/bom/BookingRequestStruct.hpp>
00028 #include <stdair/bom/ParsedKey.hpp>
00029 #include <stdair/bom/BomKeyManager.hpp>
00030 #include <stdair/command/CmdBomManager.hpp>
00031 // Stdair GNU Readline Wrapper
00032 #include <stdair/ui/cmdline/SReadline.hpp>
00033 // Simfqt
00034 #include <simfqt/SIMFQT_Service.hpp>
00035 #include <simfqt/config/simfqt-paths.hpp>
00036
00037
00038 // ////////// Constants //////////
00042 const std::string K_SIMFQT_DEFAULT_LOG_FILENAME ("simfqt.log");
00043
00047 const std::string K_SIMFQT_DEFAULT_FARE_INPUT_FILENAME (STDAIR_SAMPLE_DIR
00048                                                         "/fare01.csv");
00049
00054 const bool K_SIMFQT_DEFAULT_BUILT_IN_INPUT = false;
00055
00059 const int K_SIMFQT_EARLY_RETURN_STATUS = 99;
00060
00065 typedef std::vector<std::string> TokenList_T;
00066
00070 struct Command_T {
00071     typedef enum {
00072         NOP = 0,
00073         QUIT,
00074         HELP,
00075         LIST,
00076         DISPLAY,
00077         PRICE,
00078         LAST_VALUE
00079     } Type_T;
00080 };
00081
00082 // ////////// Parsing of Options & Configuration //////////
00083 // A helper function to simplify the main part.
00084 template<class T> std::ostream& operator<< (std::ostream& os,
00085                                           const std::vector<T>& v) {
00086     std::copy (v.begin(), v.end(), std::ostream_iterator<T> (std::cout, " "));
00087     return os;
00088 }

```

```

00089
00093 int readConfiguration (int argc, char* argv[], bool& ioIsBuiltin,
00094                        std::string& ioFareInputFilename,
00095                        std::string& ioLogFilename) {
00096
00097     // Default for the built-in input
00098     ioIsBuiltin = K_SIMFQT_DEFAULT_BUILT_IN_INPUT;
00099
00100     // Declare a group of options that will be allowed only on command line
00101     boost::program_options::options_description generic ("Generic options");
00102     generic.add_options()
00103         ("prefix", "print installation prefix")
00104         ("version,v", "print version string")
00105         ("help,h", "produce help message");
00106
00107     // Declare a group of options that will be allowed both on command
00108     // line and in config file
00109     boost::program_options::options_description config ("Configuration");
00110     config.add_options()
00111         ("builtin,b",
00112          "The sample BOM tree can be either built-in or parsed from an input file. Th
00113          at latter must then be given with the -f/--fare option")
00114         ("fare,f",
00115          boost::program_options::value< std::string >(&ioFareInputFilename)->default_
00116          value(K_SIMFQT_DEFAULT_FARE_INPUT_FILENAME),
00117          "(CSV) input file for the fare rules")
00118         ("log,l",
00119          boost::program_options::value< std::string >(&ioLogFilename)->default_value(
00120          K_SIMFQT_DEFAULT_LOG_FILENAME),
00121          "Filename for the logs")
00122         ;
00123
00124     // Hidden options, will be allowed both on command line and
00125     // in config file, but will not be shown to the user.
00126     boost::program_options::options_description hidden ("Hidden options");
00127     hidden.add_options()
00128         ("copyright",
00129          boost::program_options::value< std::vector<std::string> >(),
00130          "Show the copyright (license)");
00131
00132     boost::program_options::options_description cmdline_options;
00133     cmdline_options.add(generic).add(config).add(hidden);
00134
00135     boost::program_options::options_description config_file_options;
00136     config_file_options.add(config).add(hidden);
00137
00138     boost::program_options::options_description visible ("Allowed options");
00139     visible.add(generic).add(config);
00140
00141     boost::program_options::positional_options_description p;
00142     p.add ("copyright", -1);
00143
00144     boost::program_options::variables_map vm;
00145     boost::program_options::
00146     store (boost::program_options::command_line_parser (argc, argv).
00147            options (cmdline_options).positional(p).run(), vm);
00148
00149     std::ifstream ifs ("simfqt.cfg");
00150     boost::program_options::store (parse_config_file (ifs, config_file_options),
00151                                   vm);
00152     boost::program_options::notify (vm); if (vm.count ("help")) {
00153         std::cout << visible << std::endl;
00154         return K_SIMFQT_EARLY_RETURN_STATUS;
00155     }
00156
00157     if (vm.count ("version")) {
00158         std::cout << PACKAGE_NAME << ", version " << PACKAGE_VERSION << std::endl;
00159     }

```

```

00156     return K_SIMFQT_EARLY_RETURN_STATUS;
00157 }
00158
00159 if (vm.count ("prefix")) {
00160     std::cout << "Installation prefix: " << PREFIXDIR << std::endl;
00161     return K_SIMFQT_EARLY_RETURN_STATUS;
00162 }
00163
00164 if (vm.count ("builtin")) {
00165     ioIsBuiltin = true;
00166 }
00167 const std::string isBuiltinStr = (ioIsBuiltin == true)? "yes": "no";
00168 std::cout << "The BOM should be built-in? " << isBuiltinStr << std::endl;
00169
00170 if (ioIsBuiltin == false) {
00171
00172     // The BOM tree should be built from parsing a fare (and O&D) file
00173     if (vm.count ("fare")) {
00174         ioFareInputFilename = vm["fare"].as< std::string >();
00175         std::cout << "Input fare filename is: " << ioFareInputFilename
00176             << std::endl;
00177     } else {
00178         // The built-in option is not selected. However, no fare file
00179         // is specified
00180         std::cerr << "Either one among the -b/--builtin and -f/--fare "
00181             << "options must be specified" << std::endl;
00182     }
00183 }
00184
00185 if (vm.count ("log")) {
00186     ioLogFilename = vm["log"].as< std::string >();
00187     std::cout << "Log filename is: " << ioLogFilename << std::endl;
00188 }
00189
00190 return 0;
00191
00192 }
00193
00194 // //////////////////////////////////////
00195 void initReadline (swift::SReadline& ioInputReader) {
00196
00197     // Prepare the list of my own completers
00198     std::vector<std::string> Completers;
00199
00200     // The following is supported:
00201     // - "identifiers"
00202     // - special identifier %file - means to perform a file name completion
00203     Completers.push_back ("help");
00204     Completers.push_back ("list");
00205     Completers.push_back ("display %airport_code %airport_code %departure_date");
00206     Completers.push_back ("price %airline_code %flight_number %departure_date %airp
00207 ort_code %airport_code %departure_time %booking_date %booking_time %POS %channel%
00208 %trip_type %stay_duration");
00209     Completers.push_back ("quit");
00210
00211     // Now register the completers.
00212     // Actually it is possible to re-register another set at any time
00213     ioInputReader.RegisterCompletions (Completers);
00214 }
00215 // //////////////////////////////////////
00216 Command_T::Type_T extractCommand (TokenList_T& ioTokenList) {
00217     Command_T::Type_T oCommandType = Command_T::LAST_VALUE;
00218
00219     // Interpret the user input
00220     if (ioTokenList.empty() == false) {

```

```

00221     TokenList_T::iterator itTok = ioTokenList.begin();
00222     std::string& lCommand (*itTok);
00223     boost::algorithm::to_lower (lCommand);
00224
00225     if (lCommand == "help") {
00226         oCommandType = Command_T::HELP;
00227
00228     } else if (lCommand == "list") {
00229         oCommandType = Command_T::LIST;
00230
00231     } else if (lCommand == "display") {
00232         oCommandType = Command_T::DISPLAY;
00233
00234     } else if (lCommand == "price") {
00235         oCommandType = Command_T::PRICE;
00236
00237     } else if (lCommand == "quit") {
00238         oCommandType = Command_T::QUIT;
00239
00240     }
00241
00242     // Remove the first token (the command), as the corresponding information
00243     // has been extracted in the form of the returned command type enumeration
00244     ioTokenList.erase (itTok);
00245
00246 } else {
00247     oCommandType = Command_T::NOP;
00248 }
00249
00250 return oCommandType;
00251 }
00252
00253 // //////////////////////////////////////
00254 // Re-compose a date using three strings: the year, the month and the
00255 // day. Return true if a correct date has been computed, false if not.
00256 bool retrieveDate (std::string iYearString,
00257                   std::string iMonthString,
00258                   std::string iDayString,
00259                   std::date::Date_T& ioDate) {
00260
00261     const std::string kMonthStr[12] = {"Jan", "Feb", "Mar", "Apr", "May", "Jun",
00262                                       "Jul", "Aug", "Sep", "Oct", "Nov", "Dec"};
00263
00264     // Check the year.
00265     unsigned short lDateYear;
00266     try {
00267
00268         lDateYear = boost::lexical_cast<unsigned short> (iYearString);
00269         if (lDateYear < 100) {
00270             lDateYear += 2000;
00271         }
00272
00273     } catch (boost::bad_lexical_cast& eCast) {
00274         std::cerr << "The year ('" << iYearString
00275                   << "') cannot be understood." << std::endl;
00276         return false;
00277     }
00278
00279     // Check the month.
00280     std::string lDateMonthStr;
00281     try {
00282
00283         const boost::regex lMonthRegex ("^(\\d{1,2})$");
00284         const bool isMonthANumber = regex_match (iMonthString, lMonthRegex);
00285
00286         if (isMonthANumber == true) {
00287             const unsigned short lMonth =

```

```

00288         boost::lexical_cast<unsigned short> (iMonthString);
00289     if (lMonth > 12) {
00290         throw boost::bad_lexical_cast();
00291     }
00292     if (lMonth != 0) {
00293         lDateMonthStr = kMonthStr[lMonth-1];
00294     } else {
00295         std::cerr << "The month ('" << iMonthString
00296             << "') cannot be understood." << std::endl;
00297         return false;
00298     }
00299
00300 } else {
00301     if (iMonthString.size() < 3) {
00302         throw boost::bad_lexical_cast();
00303     }
00304     std::string lMonthStr1 (iMonthString.substr (0, 1));
00305     boost::algorithm::to_upper (lMonthStr1);
00306     std::string lMonthStr23 (iMonthString.substr (1, 2));
00307     boost::algorithm::to_lower (lMonthStr23);
00308     lDateMonthStr = lMonthStr1 + lMonthStr23;
00309 }
00310
00311 } catch (boost::bad_lexical_cast& eCast) {
00312     std::cerr << "The month ('" << iMonthString
00313         << "') cannot be understood." << std::endl;
00314     return false;
00315 }
00316
00317 // Check the day.
00318 unsigned short lDateDay;
00319 try {
00320
00321     lDateDay = boost::lexical_cast<unsigned short> (iDayString);
00322
00323 } catch (boost::bad_lexical_cast& eCast) {
00324     std::cerr << "The day ('" << iDayString
00325         << "') cannot be understood." << std::endl;
00326     return false;
00327 }
00328
00329 // Re-compose the date.
00330 std::ostringstream lDateStr;
00331 lDateStr << lDateYear << "-" << lDateMonthStr
00332     << "-" << lDateDay;
00333 try {
00334
00335     ioDate =
00336         boost::gregorian::from_simple_string (lDateStr.str());
00337
00338 } catch (boost::gregorian::bad_month& eCast) {
00339     std::cerr << "The month of the date ('" << lDateStr.str()
00340         << "') cannot be understood." << std::endl;
00341     return false;
00342 } catch (boost::gregorian::bad_day_of_month& eCast) {
00343     std::cerr << "The date ('" << lDateStr.str()
00344         << "') is not correct: the day of month does not exist."
00345         << std::endl;
00346     return false;
00347 } catch (boost::gregorian::bad_year& eCast) {
00348     std::cerr << "The year ('" << lDateStr.str()
00349         << "') is not correct."
00350         << std::endl;
00351     return false;
00352 }
00353
00354 return true;

```

```

00355 }
00356
00357 // //////////////////////////////////////
00358 // Re-compose a time using two strings: the hour and the minute.
00359 // Return true if a correct time has been computed, false if not.
00360 bool retrieveTime (std::string iHourString,
00361                  std::string iMinuteString,
00362                  stdair::Duration_T& oTime) {
00363
00364     // Check the hour
00365     unsigned short lTimeHour;
00366     try {
00367
00368         lTimeHour = boost::lexical_cast<unsigned short> (iHourString);
00369
00370     } catch (boost::bad_lexical_cast& eCast) {
00371         std::cerr << "The hour of the time ('" << iHourString
00372                 << "') cannot be understood." << std::endl;
00373         return false;
00374     }
00375
00376     // Check the minutes
00377     unsigned short lTimeMinute;
00378     try {
00379
00380         lTimeMinute = boost::lexical_cast<unsigned short> (iMinuteString);
00381
00382     } catch (boost::bad_lexical_cast& eCast) {
00383         std::cerr << "The minute of the time ('" << iMinuteString
00384                 << "') cannot be understood." << std::endl;
00385         return false;
00386     }
00387
00388     // Re-compose the time
00389     std::ostringstream lTimeStr;
00390     lTimeStr << lTimeHour << ":" << lTimeMinute;
00391     oTime =
00392         boost::posix_time::duration_from_string (lTimeStr.str());
00393
00394     return true;
00395 }
00396
00397 // //////////////////////////////////////
00398 // Analyze the tokens of the 'price' command in order to construct
00399 // a travel solution list and a booking request.
00400 const stdair::BookingRequestStruct parseTravelSolutionAndBookingRequestKey
00401 (const TokenList_T& iTokenList,
00402  stdair::TravelSolutionList_T& ioInteractiveTravelSolutionList,
00403  const stdair::BookingRequestStruct& ioBookingRequestStruct) {
00404
00405     TokenList_T::const_iterator iTok = iTokenList.begin();
00406
00407     if (iTok->empty() == true) {
00408
00409         std::cerr << "Wrong list of parameters. "
00410                 << "The default booking request and travel solution list are kept."
00411
00412                 << std::endl;
00413         return ioBookingRequestStruct;
00414
00415     } else {
00416         // Parameters corresponding to the tokens.
00417         // Each parameter corresponds to one token except the dates
00418         // (three tokens) and the times (two tokens).
00419         stdair::AirlineCode_T lAirlineCode;

```



```

00421     stdair::FlightNumber_T lflightNumber;
00422     stdair::Date_T lDepartureDate;
00423     stdair::Duration_T lDepartureTime;
00424     stdair::AirportCode_T lOriginAirport;
00425     stdair::AirportCode_T lDestinationAirport;
00426     stdair::Date_T lRequestDate;
00427     stdair::Duration_T lRequestTime;
00428     stdair::CityCode_T lPOS;
00429     stdair::ChannelLabel_T lChannel;
00430     stdair::TripType_T lTripType;
00431     unsigned short lStayDuration;
00432
00433     // Read the airline code.
00434     lAirlineCode = *itTok;
00435     boost::algorithm::to_upper (lAirlineCode);
00436
00437     // Read the flight-number .
00438     ++itTok;
00439     if (itTok->empty() == false) {
00440         try {
00441             lflightNumber = boost::lexical_cast<stdair::FlightNumber_T> (*itTok);
00442
00443         } catch (boost::bad_lexical_cast& eCast) {
00444             std::cerr << "The flight number ('" << *itTok
00445                 << "') cannot be understood."
00446                 << std::endl;
00447             return ioBookingRequestStruct;
00448         }
00449     }
00450 }
00451
00452     // Read the departure date.
00453     ++itTok;
00454     if (itTok->empty() == true) {
00455         return ioBookingRequestStruct;
00456     }
00457     const std::string lDepartureYearString = *itTok;
00458     ++itTok;
00459     if (itTok->empty() == true) {
00460         return ioBookingRequestStruct;
00461     }
00462     const std::string lDepartureMonthString = *itTok;
00463     ++itTok;
00464     if (itTok->empty() == true) {
00465         return ioBookingRequestStruct;
00466     }
00467     const std::string lDepartureDayString = *itTok;
00468     const bool IsDepartureDateReadable =
00469         retrieveDate (lDepartureYearString, lDepartureMonthString,
00470             lDepartureDayString, lDepartureDate);
00471
00472     if (IsDepartureDateReadable == false) {
00473         std::cerr << "The default booking request and travel solution list are kept
00474     ."
00475         << std::endl;
00476         return ioBookingRequestStruct;
00477     }
00478     // Read the origin.
00479     ++itTok;
00480     if (itTok->empty() == false) {
00481         lOriginAirport = *itTok;
00482         boost::algorithm::to_upper (lOriginAirport);
00483     }
00484
00485     // Read the destination.
00486     ++itTok;

```

```

00487     if (itTok->empty() == false) {
00488         lDestinationAirport = *itTok;
00489         boost::algorithm::to_upper (lDestinationAirport);
00490     }
00491
00492     // Read the departure time.
00493     ++itTok;
00494     if (itTok->empty() == true) {
00495         return ioBookingRequestStruct;
00496     }
00497     const std::string lDepartureHourString = *itTok;
00498     ++itTok;
00499     if (itTok->empty() == true) {
00500         return ioBookingRequestStruct;
00501     }
00502     const std::string lDepartureMinuteString = *itTok;
00503     const bool IsDepartureTimeReadable =
00504         retrieveTime (lDepartureHourString, lDepartureMinuteString,
00505                     lDepartureTime);
00506
00507     if (IsDepartureTimeReadable == false) {
00508         std::cerr << "The default booking request and travel solution list are kept
00509     .\"
00509         << std::endl;
00510         return ioBookingRequestStruct;
00511     }
00512
00513     // Read the request date.
00514     ++itTok;
00515     if (itTok->empty() == true) {
00516         return ioBookingRequestStruct;
00517     }
00518     const std::string lRequestYearString = *itTok;
00519     ++itTok;
00520     if (itTok->empty() == true) {
00521         return ioBookingRequestStruct;
00522     }
00523     const std::string lRequestMonthString = *itTok;
00524     ++itTok;
00525     if (itTok->empty() == true) {
00526         return ioBookingRequestStruct;
00527     }
00528     const std::string lRequestDayString = *itTok;
00529     const bool IsRequestDateReadable =
00530         retrieveDate (lRequestYearString, lRequestMonthString,
00531                     lRequestDayString, lRequestDate);
00532
00533     if (IsRequestDateReadable == false) {
00534         std::cerr << "The default booking request and travel solution list are kept
00535     .\"
00535         << std::endl;
00536         return ioBookingRequestStruct;
00537     }
00538
00539     // Read the request time.
00540     ++itTok;
00541     if (itTok->empty() == true) {
00542         return ioBookingRequestStruct;
00543     }
00544     const std::string lRequestHourString = *itTok;
00545     ++itTok;
00546     if (itTok->empty() == true) {
00547         return ioBookingRequestStruct;
00548     }
00549     const std::string lRequestMinuteString = *itTok;
00550     const bool IsRequestTimeReadable =
00551         retrieveTime (lRequestHourString, lRequestMinuteString,

```

```

00552         lRequestTime);
00553
00554     if (IsRequestTimeReadable == false) {
00555         std::cerr << "The default booking request and travel solution list are kept
00556     .\"
00557         << std::endl;
00558         return ioBookingRequestStruct;
00559     }
00560     // Read the POS.
00561     ++itTok;
00562     if (itTok->empty() == false) {
00563         lPOS = *itTok;
00564         boost::algorithm::to_upper (lPOS);
00565     }
00566
00567     // Read the channel.
00568     ++itTok;
00569     if (itTok->empty() == false) {
00570         lChannel = *itTok;
00571         boost::algorithm::to_upper (lChannel);
00572     }
00573
00574     // Read the trip type.
00575     ++itTok;
00576     if (itTok->empty() == false) {
00577         lTripType = *itTok;
00578         boost::algorithm::to_upper (lTripType);
00579     }
00580
00581     // Read the stay duration.
00582     ++itTok;
00583     if (itTok->empty() == false) {
00584         try {
00585             lStayDuration = boost::lexical_cast<unsigned short> (*itTok);
00586
00587         } catch (boost::bad_lexical_cast& eCast) {
00588             std::cerr << "The stay duration ('" << *itTok
00589                 << "') cannot be understood." << std::endl;
00590             return ioBookingRequestStruct;
00591         }
00592     }
00593 }
00594
00595 // At this step we know that all the parameters designed to construct
00596 // the travel solution and the booking request are correct.
00597
00598 // Empty the travel solution list to store a new travel solution.
00599 ioInteractiveTravelSolutionList.pop_front();
00600 // Construct the new travel solution.
00601 stdair::TravelSolutionStruct lTravelSolution;
00602 std::ostringstream oStr;
00603 oStr << lAirlineCode
00604     << stdair::DEFAULT_KEY_FLD_DELIMITER
00605     << lflightNumber
00606     << stdair::DEFAULT_KEY_SUB_FLD_DELIMITER
00607     << lDepartureDate
00608     << stdair::DEFAULT_KEY_FLD_DELIMITER
00609     << lOriginAirport
00610     << stdair::DEFAULT_KEY_SUB_FLD_DELIMITER
00611     << lDestinationAirport
00612     << stdair::DEFAULT_KEY_FLD_DELIMITER
00613     << lDepartureTime;
00614 lTravelSolution.addSegment (oStr.str());
00615 ioInteractiveTravelSolutionList.push_front(lTravelSolution);
00616
00617 // Construct the new booking request.

```

```

00618     stdair::DateTime_T lRequestDateTime (lRequestDate, lRequestTime);
00619     const stdair::BookingRequestStruct &lBookingRequestStruct =
00620         stdair::BookingRequestStruct (lOriginAirport,
00621                                         lDestinationAirport,
00622                                         lPOS,
00623                                         lDepartureDate,
00624                                         lRequestDateTime,
00625                                         stdair::CABIN_ECO,
00626                                         stdair::DEFAULT_PARTY_SIZE,
00627                                         lChannel,
00628                                         lTripType,
00629                                         lStayDuration,
00630                                         stdair::FREQUENT_FLYER_MEMBER,
00631                                         lDepartureTime,
00632                                         stdair::DEFAULT_WTP,
00633                                         stdair::DEFAULT_VALUE_OF_TIME,
00634                                         true, 50, true, 50);
00635
00636     return lBookingRequestStruct;
00637 }
00638 }
00639
00640 // ////////////////////////////////////////
00641 // Analyze the tokens of the 'display' command in order to retrieve
00642 // an airport pair and a departure date.
00643 void parseFlightDateKey (const TokenList_T& iTokenList,
00644                         stdair::AirportCode_T& ioOrigin,
00645                         stdair::AirportCode_T& ioDestination,
00646                         stdair::Date_T& ioDepartureDate) {
00647
00648     TokenList_T::const_iterator iTok = iTokenList.begin();
00649
00650     // Interpret the user input.
00651     if (iTok->empty() == true) {
00652
00653         std::cerr << "Wrong parameters specified. Default paramaters '"
00654                     << ioOrigin << "-" << ioDestination
00655                     << "/" << ioDepartureDate
00656                     << "' are kept."
00657                     << std::endl;
00658
00659     } else {
00660
00661         // Read the origin.
00662         ioOrigin = *iTok;
00663         boost::algorithm::to_upper (ioOrigin);
00664
00665         // Read the destination.
00666         ++iTok;
00667         if (iTok->empty() == false) {
00668             ioDestination = *iTok;
00669             boost::algorithm::to_upper (ioDestination);
00670         }
00671
00672         // Read the departure date.
00673         ++iTok;
00674         if (iTok->empty() == true) {
00675             return;
00676         }
00677         std::string lYearString = *iTok;
00678         ++iTok;
00679         if (iTok->empty() == true) {
00680             return;
00681         }
00682         std::string lMonthString = *iTok;
00683         ++iTok;
00684         if (iTok->empty() == true) {

```

```

00685         return;
00686     }
00687     std::string lDayString = *itTok;
00688     const bool IsDepartureDateReadable =
00689         retrieveDate (lYearString, lMonthString, lDayString,
00690                     ioDepartureDate);
00691     if (IsDepartureDateReadable == false) {
00692         std::cerr << "Default paramaters '"
00693                 << ioOrigin << "-" << ioDestination
00694                 << "/" << ioDepartureDate
00695                 << "' are kept."
00696                 << std::endl;
00697         return;
00698     }
00699 }
00700 }
00701
00702 // //////////////////////////////////////
00703 std::string toString (const TokenList_T& iTokenList) {
00704     std::ostringstream oStr;
00705
00706     // Re-create the string with all the tokens, trimmed by read-line
00707     unsigned short idx = 0;
00708     for (TokenList_T::const_iterator itTok = iTokenList.begin();
00709         itTok != iTokenList.end(); ++itTok, ++idx) {
00710         if (idx != 0) {
00711             oStr << " ";
00712         }
00713         oStr << *itTok;
00714     }
00715
00716     return oStr.str();
00717 }
00718
00719 // //////////////////////////////////////
00720 TokenList_T extractTokenList (const TokenList_T& iTokenList,
00721                             const std::string& iRegularExpression) {
00722     TokenList_T oTokenList;
00723
00724     // Re-create the string with all the tokens (which had been trimmed
00725     // by read-line)
00726     const std::string lFullLine = toString (iTokenList);
00727
00728     // See the caller for the regular expression
00729     boost::regex expression (iRegularExpression);
00730
00731     std::string::const_iterator start = lFullLine.begin();
00732     std::string::const_iterator end = lFullLine.end();
00733
00734     boost::match_results<std::string::const_iterator> what;
00735     boost::match_flag_type flags = boost::match_default | boost::format_sed;
00736     regex_search (start, end, what, expression, flags);
00737
00738     // Put the matched strings in the list of tokens to be returned back
00739     // to the caller
00740     const unsigned short lMatchSetSize = what.size();
00741     for (unsigned short matchIdx = 1; matchIdx != lMatchSetSize; ++matchIdx) {
00742         const std::string lMatchedString (std::string (what[matchIdx].first,
00743                                                     what[matchIdx].second));
00744         //if (lMatchedString.empty() == false) {
00745             oTokenList.push_back (lMatchedString);
00746         //}
00747     }
00748
00749     // DEBUG
00750     // std::cout << "After (token list): " << oTokenList << std::endl;
00751

```

```

00752     return oTokenList;
00753 }
00754
00755 ///////////////////////////////////////////////////////////////////
00756 // Parse the token list of the 'price' command.
00757 TokenList_T extractTokenListForTSAndBR (const TokenList_T& iTokenList) {
00779     const std::string lRegex("^([[:alpha:]]{2,3})"
00780         "[[:space:]]+([[:digit:]]{1,4})"
00781         "[/ ]*"
00782         "[[:space:]]+([[:digit:]]{2,4})[/-]?"
00783         "[[:space:]]*([[:alpha:]]{3}|[[:digit:]]{1,2})[/-]?"
00784         "[[:space:]]*([[:digit:]]{1,2})[[:space:]]*"
00785         "[[:space:]]+([[:alpha:]]{3})"
00786         "[[:space:]]+([[:alpha:]]{3})"
00787         "[[:space:]]+([[:digit:]]{1,2})[:]?([[:digit:]]{1,2})"

00788         "[[:space:]]+([[:digit:]]{2,4})[/-]?"
00789         "[[:space:]]*([[:alpha:]]{3}|[[:digit:]]{1,2})[/-]?"
00790         "[[:space:]]*([[:digit:]]{1,2})"
00791         "[[:space:]]+([[:digit:]]{1,2})[:]?([[:digit:]]{1,2})"

00792         "[[:space:]]+([[:alpha:]]{3})"
00793         "[[:space:]]+([[:alpha:]]{2})"
00794         "[[:space:]]+([[:alpha:]]{2})"
00795         "[[:space:]]+([[:digit:]]{1})$");
00796
00797     //
00798     const TokenList_T& oTokenList = extractTokenList (iTokenList, lRegex);
00799     return oTokenList;
00800 }
00801
00802 ///////////////////////////////////////////////////////////////////
00803 // Parse the token list of the 'display' command.
00804 TokenList_T extractTokenListForOriDestDate (const TokenList_T& iTokenList) {
00814     const std::string lRegex("^([[:alpha:]]{3})"
00815         "[[:space:]]*[/-]?"
00816         "[[:space:]]*([[:alpha:]]{3})"
00817         "[[:space:]]*[/-]?"
00818         "[[:space:]]*([[:digit:]]{2,4})"
00819         "[[:space:]]*[/-]?"
00820         "[[:space:]]*([[:alpha:]]{3}|[[:digit:]]{1,2})"
00821         "[[:space:]]*[/-]?"
00822         "[[:space:]]*([[:digit:]]{1,2})$");
00823
00824     //
00825     const TokenList_T& oTokenList = extractTokenList (iTokenList, lRegex);
00826     return oTokenList;
00827 }
00828
00829 // //////////// M A I N ////////////
00830 int main (int argc, char* argv[]) {
00831
00832     // State whether the BOM tree should be built-in or parsed from an
00833     // input file
00834     bool isBuiltin;
00835
00836     // Fare input file name
00837     stdair::Filename_T lFareInputFilename;
00838
00839     // Readline history
00840     const unsigned int lHistorySize (100);
00841     const std::string lHistoryFilename ("simfqt.hist");
00842     const std::string lHistoryBackupFilename ("simfqt.hist.bak");
00843
00844     // Default parameters for the interactive session
00845     stdair::AirportCode_T lInteractiveOrigin;
00846     stdair::AirportCode_T lInteractiveDestination;

```

```

00847     stdair::Date_T lInteractiveDepartureDate;
00848
00849     // Output log File
00850     stdair::Filename_T lLogFilename;
00851
00852     // Call the command-line option parser
00853     const int lOptionParserStatus =
00854         readConfiguration (argc, argv, isBuiltin, lFareInputFilename, lLogFilename);
00855
00856     if (lOptionParserStatus == K_SIMFQT_EARLY_RETURN_STATUS) {
00857         return 0;
00858     }
00859
00860     // Set the log parameters
00861     std::ofstream logOutputFile;
00862     // Open and clean the log outputfile
00863     logOutputFile.open (lLogFilename.c_str());
00864     logOutputFile.clear();
00865
00866     // Initialise the fareQuote service
00867     const stdair::BasLogParams lLogParams (stdair::LOG::DEBUG, logOutputFile);
00868     SIMFQT::SIMFQT_Service simfqtService (lLogParams);
00869
00870     // DEBUG
00871     STDAIR_LOG_DEBUG ("Welcome to SimFQT display");
00872
00873     // Check wether or not a (CSV) input file should be read
00874     if (isBuiltin == true) {
00875         // Build the sample BOM tree (filled with fares) for Simfqt
00876         simfqtService.buildSampleBom();
00877     } else {
00878         // Build the BOM tree from parsing a fare file
00879         SIMFQT::FareFilePath lFareFilePath (lFareInputFilename);
00880         simfqtService.parseAndLoad (lFareFilePath);
00881     }
00882
00883     // DEBUG: Display the whole BOM tree
00884     const std::string& lCSVDump = simfqtService.csvDisplay();
00885     STDAIR_LOG_DEBUG (lCSVDump);
00886
00887     // DEBUG
00888     STDAIR_LOG_DEBUG ("=====");
00889     STDAIR_LOG_DEBUG ("=          Beginning of the interactive session          =");
00890     STDAIR_LOG_DEBUG ("=====");
00891
00892     // Initialise the GNU readline wrapper
00893     swift::SReadline lReader (lHistoryFilename, lHistorySize);
00894     initReadline (lReader);
00895
00896     // Now we can ask user for a line
00897     std::string lUserInput;
00898     bool EndOfInput (false);
00899     Command_T::Type_T lCommandType (Command_T::NOP);
00900
00901     while (lCommandType != Command_T::QUIT && EndOfInput == false) {
00902
00903         stdair::TravelSolutionList_T lInteractiveTravelSolutionList;
00904         stdair::TravelSolutionStruct lInteractiveTravelSolution;
00905
00906         // Update the default booking request.
00907         // If there is an input file, we want the CRS booking request (defined in std
00908         air).
00909         // If not, we want the default booking request.
00909         const bool isCRSBookingRequest = !isBuiltin;
00910         const stdair::BookingRequestStruct& lInteractiveBookingRequest =
00911             simfqtService.buildBookingRequest (isCRSBookingRequest);
00912

```

```

00913 // Update the default parameters for the following interactive session.
00914 if (isBuiltin == true) {
00915     lInteractiveOrigin = "LHR";
00916     lInteractiveDestination = "SYD";
00917     lInteractiveDepartureDate = stdair::Date_T(2011,06,10);
00918     simfqtService.buildSampleTravelSolutions (lInteractiveTravelSolutionList);
00919 } else {
00920     lInteractiveOrigin = "SIN";
00921     lInteractiveDestination = "BKK";
00922     lInteractiveDepartureDate = stdair::Date_T(2010,01,30);
00923 //
00924     const std::string lBA9_SegmentDateKey ("SQ, 970, 2010-01-30, SIN, BKK, 07:1
0");
00925
00926 // Add the segment date key to the travel solution.
00927 lInteractiveTravelSolution.addSegment (lBA9_SegmentDateKey);
00928
00929 // Add the travel solution to the list
00930 lInteractiveTravelSolutionList.push_back (lInteractiveTravelSolution);
00931 }
00932
00933 // Prompt.
00934 std::ostream oPromptStr;
00935 oPromptStr << "simfqt "
00936             << "> ";
00937 // The last parameter could be omitted.
00938 TokenList_T lTokenListByReadline;
00939 lUserInput = lReader.GetLine (oPromptStr.str(), lTokenListByReadline,
00940                               EndOfInput);
00941
00942 // The history could be saved to an arbitrary file at any time.
00943 lReader.SaveHistory (lHistoryBackupFilename);
00944
00945 if (EndOfInput) {
00946     std::cout << std::endl;
00947     break;
00948 }
00949
00950 // Interpret the user input.
00951 lCommandType = extractCommand (lTokenListByReadline);
00952
00953 switch (lCommandType) {
00954
00955     // ////////////////////////////////// Help //////////////////////////////////
00956 case Command_T::HELP: {
00957     // Search for information to display default parameters lists.
00958     // Get the first travel solution.
00959     stdair::TravelSolutionStruct& lTravelSolutionStruct =
00960         lInteractiveTravelSolutionList.front();
00961     // Get the segment-path of the first travel solution.
00962     const stdair::SegmentPath_T& lSegmentPath =
00963         lTravelSolutionStruct.getSegmentPath();
00964     // Get the first segment of the first travel solution.
00965     const std::string& lSegmentDateKey = lSegmentPath.front();
00966     // Get the parsed key of the first segment of the first travel solution.
00967     const stdair::ParsedKey& lParsedKey =
00968         stdair::BomKeyManager::extractKeys (lSegmentDateKey);
00969     // Get the request date time
00970     const stdair::DateTime_T& lRequestDateTime =
00971         lInteractiveBookingRequest.getRequestDateTime();
00972     const stdair::Time_T lRequestTime =
00973         lRequestDateTime.time_of_day();
00974     std::cout << std::endl;
00975     // Display help.
00976     std::cout << "Commands: " << std::endl;
00977     std::cout << " help" << "\t\t" << "Display this help" << std::endl;
00978     std::cout << " quit" << "\t\t" << "Quit the application" << std::endl;

```



```

00979         std::cout << " list" << "\t\t"
00980         << "List all the fare rule O&Ds and the corresponding date ranges
" << std::endl;
00981         std::cout << " display" << "\t"
00982         << "Display all fare rules for an O&D and a departure date. \n" <
< "\t\t"
00983         << "If no parameters specified or wrong list of parameters, defau
lt values are used: \n"<< "\t\t"
00984         << "         display" << lInteractiveOrigin << " "
00985         << lInteractiveDestination << " "
00986         << lInteractiveDepartureDate << std::endl;
00987         std::cout << " price" << "\t\t"
00988         << "Price the travel solution corresponding to a booking request.
\n" << "\t\t"
00989         << "If no parameters specified or wrong list of parameters, defau
lt value are used: \n" << "\t\t"
00990         << "         price "
00991         << lParsedKey._airlineCode << " "
00992         << lParsedKey._flightNumber << " "
00993         << lParsedKey._departureDate << " "
00994         << lParsedKey._boardingPoint << " "
00995         << lParsedKey._offPoint << " "
00996         << lParsedKey._boardingTime << " "
00997         << lRequestDateTime.date() << " "
00998         << lRequestTime.hours() << ":" << lRequestTime.minutes() << " "
00999         << lInteractiveBookingRequest.getPOS() << " "
01000         << lInteractiveBookingRequest.getBookingChannel() << " "
01001         << lInteractiveBookingRequest.getTripType() << " "
01002         << lInteractiveBookingRequest.getStayDuration() << std::endl;
01003         std::cout << std::endl;
01004         break;
01005     }
01006
01007     // /////////////////////////////////// Quit ///////////////////////////////////
01008     case Command_T::QUIT: {
01009         break;
01010     }
01011
01012     // /////////////////////////////////// List ///////////////////////////////////
01013     case Command_T::LIST: {
01014
01015         // Get the list of all airport pairs and date ranges for which
01016         // there are fares available.
01017         const std::string& lAirportPairDateListStr =
01018             simfqService.list ();
01019
01020         if (lAirportPairDateListStr.empty() == false) {
01021             std::cout << lAirportPairDateListStr << std::endl;
01022             STDAIR_LOG_DEBUG (lAirportPairDateListStr);
01023         } else {
01024             std::cerr << "There is no result for airport pairs and date ranges."
01025             << "Make sure your input file is not empty."
01026             << std::endl;
01027         }
01028     }
01029
01030     break;
01031 }
01032
01033 // /////////////////////////////////// Display ///////////////////////////////////
01034 case Command_T::DISPLAY: {
01035
01036     // If no parameters are entered by the user, keep default ones.
01037     if (lTokenListByReadline.empty() == true) {
01038
01039         std::cout << "No parameters specified. Default paramaters '"
01040         << lInteractiveOrigin << "-" << lInteractiveDestination

```

```

01041             << "/" << lInteractiveDepartureDate
01042             << " are kept."
01043             << std::endl;
01044
01045     } else {
01046
01047         // Find the best match corresponding to the given parameters.
01048         TokenList_T lTokenList =
01049             extractTokenListForOriDestDate (lTokenListByReadline);
01050
01051         // Parse the best match, and give default values in case the
01052         // user does not specify all the parameters or does not
01053         // specify some of them correctly.
01054         parseFlightDateKey (lTokenList, lInteractiveOrigin,
01055                             lInteractiveDestination, lInteractiveDepartureDate);
01056
01057     }
01058
01059     // Check whether the selected airportpair-date is valid:
01060     // i.e. if there are corresponding fare rules.
01061     const bool isAirportPairDateValid =
01062         simfqtService.check (lInteractiveOrigin, lInteractiveDestination,
01063                             lInteractiveDepartureDate);
01064
01065     if (isAirportPairDateValid == false) {
01066         std::ostringstream oFDKStr;
01067         oFDKStr << "The airport pair/departure date: "
01068                 << lInteractiveOrigin << "-" << lInteractiveDestination
01069                 << "/" << lInteractiveDepartureDate
01070                 << " does not correpond to any fare rule.\n"
01071                 << "Make sure it exists with the 'list' command.";
01072         std::cout << oFDKStr.str() << std::endl;
01073         STDAIR_LOG_ERROR (oFDKStr.str());
01074
01075         break;
01076     }
01077
01078     // Display the list of corresponding fare rules.
01079     std::cout << "List of fare rules for "
01080               << lInteractiveOrigin << "-"
01081               << lInteractiveDestination << "/"
01082               << lInteractiveDepartureDate
01083               << std::endl;
01084
01085     const std::string& lFareRuleListStr =
01086         simfqtService.csvDisplay (lInteractiveOrigin,
01087                                 lInteractiveDestination,
01088                                 lInteractiveDepartureDate);
01089
01090     assert (lFareRuleListStr.empty() == false);
01091     std::cout << lFareRuleListStr << std::endl;
01092     STDAIR_LOG_DEBUG (lFareRuleListStr);
01093
01094     break;
01095 }
01096
01097 // ////////////////////////////////// Price //////////////////////////////////
01098 case Command_T::PRICE: {
01099
01100     // If no parameters are entered by the user, keep default ones.
01101     if (lTokenListByReadline.empty() == true) {
01102
01103         lInteractiveTravelSolution = lInteractiveTravelSolutionList.front();
01104
01105         std::cout << "No parameters specified. Default booking request and default
01106 t travel solution list are kept.\n"
01107                 << "Booking request: << "

```

```

01107         << lInteractiveBookingRequest.display() << " >>"
01108         << "\nTravel Solution: << "
01109         << lInteractiveTravelSolution.display() << " >>"
01110         << "\n***** \n"
01111         << "Fare quote"
01112         << "\n*****"
01113         << std::endl;
01114
01115         // Try to fareQuote the sample list of travel solutions.
01116         try {
01117             simfqtService.quotePrices (lInteractiveBookingRequest,
01118                                         lInteractiveTravelSolutionList);
01119         } catch (stdair::ObjectNotFoundException& E) {
01120             std::cerr << "The given travel solution corresponding to the given book
01121 ing request can not be priced.\n"
01122             << E.what ()
01123             << std::endl;
01124             break;
01125         } else {
01126
01127             // Find the best match corresponding to the given parameters.
01128             TokenList_T lTokenList =
01129                 extractTokenListForTSAndBR (lTokenListByReadline);
01130
01131             // Parse the best match, and give default values in case the
01132             // user does not specify all the parameters or does not
01133             // specify some of them correctly.
01134             stdair::BookingRequestStruct lFinalBookingRequest
01135                 = parseTravelSolutionAndBookingRequestKey (lTokenList,
01136                                                             lInteractiveTravelSolutionLi
01137 st,
01138                                                             lInteractiveBookingRequest);
01139
01140             assert (lInteractiveTravelSolutionList.size() >= 1);
01141             lInteractiveTravelSolution = lInteractiveTravelSolutionList.front();
01142
01143             // Display the booking request and the first travel solution
01144             // before pricing.
01145             std::cout << "Booking request: << "
01146             << lFinalBookingRequest.display() << " >>"
01147             << "\nTravel Solution: << "
01148             << lInteractiveTravelSolution.display() << " >>"
01149             << "\n***** \n"
01150             << "Fare quote"
01151             << "\n*****"
01152             << std::endl;
01153
01154             // Try to fareQuote the sample list of travel solutions.
01155             try {
01156                 simfqtService.quotePrices (lFinalBookingRequest,
01157                                             lInteractiveTravelSolutionList);
01158             } catch (stdair::ObjectNotFoundException& E) {
01159                 std::cerr << "The given travel solution corresponding to the given book
01160 ing request can not be priced.\n"
01161                 << E.what ()
01162                 << std::endl;
01163                 break;
01164             }
01165
01166             // Display the first travel solution after pricing:
01167             // one or more fare option have been added.
01168             lInteractiveTravelSolution = lInteractiveTravelSolutionList.front();
01169             std::cout << "Travel Solution: << "

```

```
01170             << lInteractiveTravelSolution.display() << " >>\n"
01171             << std::endl;
01172
01173         break;
01174     }
01175
01176     // ////////////////////////////////// Default / No value //////////////////////////////////
01177     case Command_T::NOP: {
01178         break;
01179     }
01180     case Command_T::LAST_VALUE:
01181     default: {
01182         // DEBUG
01183         std::ostringstream oStr;
01184         oStr << "The '" << lUserInput << "' command is not yet understood.\n"
01185             << "Type help to have more information." << std::endl;
01186
01187         STDAIR_LOG_DEBUG (oStr.str());
01188         std::cout << oStr.str() << std::endl;
01189     }
01190 }
01191 }
01192
01193 // DEBUG
01194 STDAIR_LOG_DEBUG ("End of the session. Exiting.");
01195 std::cout << "End of the session. Exiting." << std::endl;
01196
01197 // Close the Log outputFile
01198 logOutputFile.close();
01199
01200 /*
01201     Note: as that program is not intended to be run on a server in
01202     production, it is better not to catch the exceptions. When it
01203     happens (that an exception is throwned), that way we get the
01204     call stack.
01205 */
01206
01207 return 0;
01208 }
```

25.59 test/simfqt/FQTestSuite.cpp File Reference

25.60 FQTestSuite.cpp

```

00001
00005 // //////////////////////////////////////
00006 // Import section
00007 // //////////////////////////////////////
00008 // STL
00009 #include <sstream>
00010 #include <fstream>
00011 #include <string>
00012 // Boost Unit Test Framework (UTF)
00013 #define BOOST_TEST_DYN_LINK
00014 #define BOOST_TEST_MAIN
00015 #define BOOST_TEST_MODULE FQTestSuite
00016 #include <boost/test/unit_test.hpp>
00017 // StdAir
00018 #include <stdair/basic/BasLogParams.hpp>
00019 #include <stdair/basic/BasDBParams.hpp>
00020 #include <stdair/basic/BasFileMgr.hpp>
00021 #include <stdair/service/Logger.hpp>
00022 #include <stdair/bom/TravelSolutionStruct.hpp>
00023 #include <stdair/bom/BookingRequestStruct.hpp>
00024 // SimFQT
00025 #include <simfqt/SIMFQT_Service.hpp>
00026 #include <simfqt/config/simfqt-paths.hpp>
00027
00028 namespace boost_utf = boost::unit_test;
00029
00033 struct UnitTestConfig {
00035     UnitTestConfig() {
00036         static std::ofstream _test_log ("FQTestSuite_utfresults.xml");
00037         boost_utf::unit_test_log.set_stream (_test_log);
00038         boost_utf::unit_test_log.set_format (boost_utf::XML);
00039         boost_utf::unit_test_log.set_threshold_level (boost_utf::log_test_units);
00040         //boost_utf::unit_test_log.set_threshold_level (boost_utf::log_successful_tes
00041     ts);
00042     }
00044     ~UnitTestConfig() {
00045     }
00046 };
00047
00048 // //////////////////////////////////////
00052 void testFareQuoterHelper (const unsigned short iTestFlag,
00053                          const stdair::Filename_T iFareInputFilename,
00054                          const bool isBuiltin) {
00055
00056     // Output log File
00057     std::ostringstream oStr;
00058     oStr << "FQTestSuite_" << iTestFlag << ".log";
00059     const stdair::Filename_T lLogFilename (oStr.str());
00060
00061     // Set the log parameters
00062     std::ofstream logOutputFile;
00063     // Open and clean the log outputfile
00064     logOutputFile.open (lLogFilename.c_str());
00065     logOutputFile.clear();
00066
00067     // Initialise the SimFQT service object
00068     const stdair::BasLogParams lLogParams (stdair::LOG::DEBUG,
00069                                           logOutputFile);
00070
00071     // Initialise the Simfqt service object
00072     SIMFQT::SIMFQT_Service simfqtService (lLogParams);
00073
00074     // Check wether or not a (CSV) input file should be read
00075     if (isBuiltin == true) {

```

```

00076
00077     // Build the default sample BOM tree (filled with fares) for Simfqt
00078     simfqtService.buildSampleBom();
00079
00080 } else {
00081
00082     // Build the BOM tree from parsing the fare input file
00083     SIMFQT::FareFilePath lFareFilePath (iFareInputFilename);
00084     simfqtService.parseAndLoad (lFareFilePath);
00085 }
00086
00087 // Build a sample list of travel solutions and a booking request.
00088 stdair::TravelSolutionList_T lTravelSolutionList;
00089 simfqtService.buildSampleTravelSolutions (lTravelSolutionList);
00090 stdair::BookingRequestStruct lBookingRequest =
00091     simfqtService.buildBookingRequest();
00092
00093 // Try to fareQuote the sample list of travel solutions
00094 simfqtService.quotePrices (lBookingRequest, lTravelSolutionList);
00095
00096 // Close the log file
00097 logOutputFile.close();
00098
00099 }
00100
00101 // ////////////////////////////////// Main: Unit Test Suite //////////////////////////////////
00102
00103 // Set the UTF configuration (re-direct the output to a specific file)
00104 BOOST_GLOBAL_FIXTURE (UnitTestFixture);
00105
00106 // Start the test suite
00107 BOOST_AUTO_TEST_SUITE (master_test_suite)
00108
00109
00110 BOOST_AUTO_TEST_CASE (simfqt_simple_pricing_test) {
00111
00112     // Input file name
00113     const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fare01.csv");
00114
00115     // State whether the BOM tree should be built-in or parsed from an input file
00116     const bool isBuiltin = false;
00117
00118     // Try to fareQuote the sample default list of travel solutions
00119     BOOST_CHECK_NO_THROW (testFareQuoterHelper (0, lFareInputFilename, isBuiltin));
00120
00121 }
00122
00123 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_01) {
00124
00125     // Input file name
00126     const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError01.csv");
00127
00128     // State whether the BOM tree should be built-in or parsed from an input file
00129     const bool isBuiltin = false;
00130
00131     // Try to fareQuote the sample default list of travel solutions
00132     BOOST_CHECK_THROW (testFareQuoterHelper (1, lFareInputFilename, isBuiltin),
00133         SIMFQT::AirportPairNotFoundException);
00134 }
00135
00136 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_02) {
00137
00138     // Input file name
00139     const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError02.csv");
00140 }

```

```
00150
00151 // State whether the BOM tree should be built-in or parsed from an input file
00152 const bool isBuiltin = false;
00153
00154 // Try to fareQuote the sample default list of travel solutions
00155 BOOST_CHECK_THROW (testFareQuoterHelper (2, lFareInputFilename, isBuiltin),
00156                   SIMFQT::PosOrChannelNotFoundException);
00157 }
00158
00163 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_03) {
00164
00165 // Input file name
00166 const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError03.cs
00167 v");
00168
00168 // State whether the BOM tree should be built-in or parsed from an input file
00169 const bool isBuiltin = false;
00170
00171 // Try to fareQuote the sample default list of travel solutions
00172 BOOST_CHECK_THROW (testFareQuoterHelper (3, lFareInputFilename, isBuiltin),
00173                   SIMFQT::FlightDateNotFoundException);
00174 }
00175
00180 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_04) {
00181
00182 // Input file name
00183 const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError04.cs
00184 v");
00185
00185 // State whether the BOM tree should be built-in or parsed from an input file
00186 const bool isBuiltin = false;
00187
00188 // Try to fareQuote the sample default list of travel solutions
00189 BOOST_CHECK_THROW (testFareQuoterHelper (4, lFareInputFilename, isBuiltin),
00190                   SIMFQT::FlightTimeNotFoundException);
00191 }
00192
00197 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_05) {
00198
00199 // Input file name
00200 const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError05.cs
00201 v");
00202
00202 // State whether the BOM tree should be built-in or parsed from an input file
00203 const bool isBuiltin = false;
00204
00205 // Try to fareQuote the sample default list of travel solutions
00206 BOOST_CHECK_THROW (testFareQuoterHelper (5, lFareInputFilename, isBuiltin),
00207                   SIMFQT::FeaturesNotFoundException);
00208 }
00209
00214 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_06) {
00215
00216 // Input file name
00217 const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError06.cs
00218 v");
00219
00219 // State whether the BOM tree should be built-in or parsed from an input file
00220 const bool isBuiltin = false;
00221
00222 // Try to fareQuote the sample default list of travel solutions
00223 BOOST_CHECK_THROW (testFareQuoterHelper (6, lFareInputFilename, isBuiltin),
00224                   SIMFQT::AirlineNotFoundException);
00225 }
00226
00231 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_07) {
00232
```



```
00233 // Input file name
00234 const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError07.cs
v");
00235
00236 // State whether the BOM tree should be built-in or parsed from an input file
00237 const bool isBuiltin = false;
00238
00239 // Try to fareQuote the sample default list of travel solutions
00240 BOOST_CHECK_THROW (testFareQuoterHelper (7, lFareInputFilename, isBuiltin),
00241 SIMFQT::FareFileParsingFailedException);
00242 }
00243
00244 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_08) {
00245
00250 // Input file name
00251 const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/missingFile.cs
v");
00252
00253 // State whether the BOM tree should be built-in or parsed from an input file
00254 const bool isBuiltin = false;
00255
00256 // Try to fareQuote the sample default list of travel solutions
00257 BOOST_CHECK_THROW (testFareQuoterHelper (8, lFareInputFilename, isBuiltin),
00258 SIMFQT::FareInputFileNotFoundException);
00259 }
00260
00265 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_09) {
00266
00267 // Input file name
00268 const stdair::Filename_T lEmptyInputFilename (STDAIR_SAMPLE_DIR "/" );
00269
00270 // State whether the BOM tree should be built-in or parsed from an input file
00271 const bool isBuiltin = true;
00272
00273 // Try to fareQuote the sample default list of travel solutions
00274 BOOST_CHECK_NO_THROW(testFareQuoterHelper (9, lEmptyInputFilename, isBuiltin));
00275 }
00276
00277
00278 // End the test suite
00279 BOOST_AUTO_TEST_SUITE_END()
00280
00281
```