

QTimeSeries User Manual

Andrew Mustun andrew@mustun.com

19th December 2002

Version 0.3.4

Abstract

QTimeSeries is an application for visualizing and interactively modifying and redlining time series data.

Contents

1	License	3
2	Credits	3
3	Basics	3
3.1	File Types	3
3.1.1	CSV Data Files	3
3.1.2	DXF Graphics	3
3.2	User Interface	3
4	Getting Started	5
4.1	File Operations	5
4.1.1	Loading Files	5
4.1.2	Saving Files	5
4.2	Viewing	5
4.3	Drawing	5
4.4	Modifying	6
5	Data Retrieval	7
5.1	Ticker Symbol Lookup	7
5.2	Getting CSV Files from Yahoo	8
5.3	Data Retrieval with QTimeSeries	9
A	CSV Data Format	10

1 License

QTimeSeries is published under the GNU General Public License (GPL).
<http://www.gnu.org/licenses/gpl.txt>

2 Credits

The original specifications have been written by Dr. hc mult. Hans-Guenther Stadelmayr-Maiyores from **SAFELIFE** who's also the mastermind behind the whole project.

QTimeSeries and its underlying libraries are being developed by Andrew Mustun.

3 Basics

3.1 File Types

QTimeSeries handles a pair of two files as one document: a CSV and a DXFTM.

3.1.1 CSV Data Files

CSV files are plain text files which contain the tabular data visualized by QTimeSeries .

For a detailed description of the CSV format supported by QTimeSeries please refer to Appendix A.

3.1.2 DXF Graphics

DXF files contain additional graphical information for a particular CSV file. Such graphics are often referred to as 'redlining'.

Whenever you're dealing with files in QTimeSeries , you only have to care about the CSV files. Those are the ones you load and save from the QTimeSeries GUI. DXF files remain hidden from the user.

3.2 User Interface

The QTimeSeries user interface is splitted in two main views: a table view and a graphical view (Figure 1). You can switch between the views using the tabs in the top part of the window. The table view shows the data loaded from the CSV file. The same data is visualized in the graphical view as a time series diagram. If the values in the table view are modified, the graphical view is adjusted immediately.

The graphic view can also show additional graphical elements such as polylines or points.

Although the diagram appears in the same window as these additional graphical elements, it is separated and all drawing tools used for creating and modifying graphical elements have no effect on the diagram itself. The only way to modify the diagram is to change the data in the table view. Graphical data, however, doesn't appear in the table and can only be modified in the graphical view.

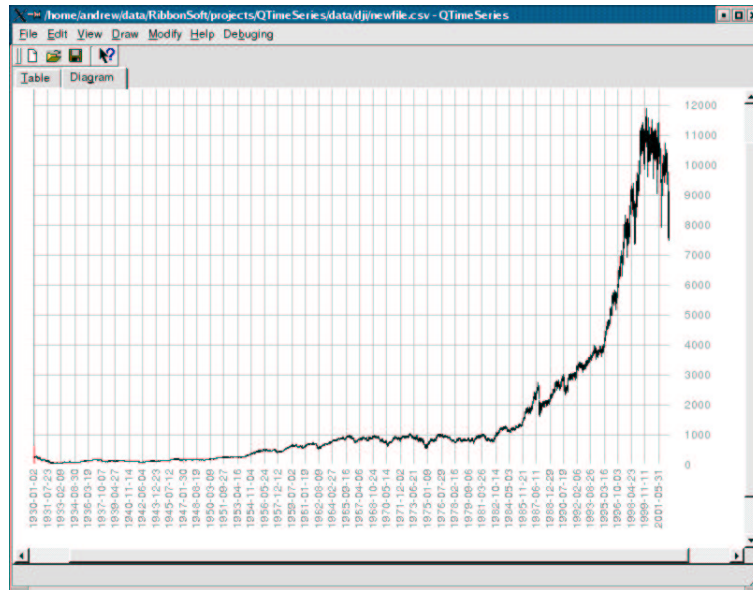


Figure 1: Graphical View of QTimeSeries .

4 Getting Started

4.1 File Operations

4.1.1 Loading Files

Loading a CSV file in QTimeSeries automatically loads the appropriate DXF graphic file as well if there is one.

File
Open

4.1.2 Saving Files

Saving a document means to save the table data into a CSV file and the graphical data into a DXF file. You can only choose a name for the CSV file since the DXF file will have the same base name. E.g. if the CSV file is called 'xyz_daily.csv' the appropriate DXF file is called 'xyz_daily.dxf'. Both files are stored in the same directory.

Save
Save As

4.2 Viewing

The view in the right frame of the QTimeSeries interface can be changed with the functions available in the menu 'View'.

Zoom out: Reduces the vertical and horizontal scaling by factor 1.25.

Zoom in: Increases the vertical and horizontal scaling by factor 1.25.

Auto Zoom: Fits the whole diagram at a maximum vertical and horizontal scale to the frame.

Auto Zoom Y: Automatically scales the diagram to fit the graphic window vertically. This option stays active and can be disabled by choosing the same menu again. Note: you cannot scale or scroll vertically if this option is active.

Window Zoom: Allows you to draw a rectangular window in the diagram frame which will be scaled to fit the frame.

View
Zoom Out
Zoom In
Auto Zoom
Auto Zoom Y
Window Zoom

4.3 Drawing

The menu 'Draw' currently offers two drawing functions.

Freehand: Draw freehand polylines using the mouse.

Points: Draw single points.

Draw
Freehand
Points

Edit

Delete

Delete Freehand

4.4 Modifying

The menu **Edit** is used to modify existing elements. Currently this is limited to deleting them. Note: Modification functions can never affect the diagram or time series data.

Delete: This function deletes the whole entity (polyline, point, ..) which is next to the mouse cursor when the left mouse button is clicked.

Delete Freehand: With this function you can delete a part of a free-hand polyline previously drawn. Use the left mouse button to choose the start point and the end point of the section to be removed.

5 Data Retrieval

5.1 Ticker Symbol Lookup

Most services related to financial data require you to enter a ticker symbol. This service can lookup ticker symbols by company names.

URL

`http://finance.yahoo.com/1`

Interface

- Market (U.S. & Canada, World Market)
- Name (Company name or a known part of it)
- Security Type (Any, Stock, Option, Mutual Fund, Index)

Output

- Symbol
- Name
- Market
- Type

5.2 Getting CSV Files from Yahoo

Yahoo offers a service which allows you to retrieve daily, weekly or monthly historical chart data.

URL

`http://table.finance.yahoo.com/d`

Interface

- Start Date (month, day and year)
- End Date (month, day and year)
- Daily, weekly or monthly
- Ticker symbol (see 5.1)

Output

- Date
- Open
- High
- Low
- Close
- Volume
- Adjusted close (adjusted for dividends and splits)

At the bottom of the page, follow the link *Download Spreadsheet Format*. Save the file to disk using an appropriate file name (e.g. *xyz_daily.csv*). Such CSV files can be loaded by QTimeSeries as well as many other spreadsheet applications such as StarCalc from Sun or Excel from Microsoft.

5.3 Data Retrieval with QTimeSeries

QTimeSeries can fetch CSV files directly from Yahoo. The menu File / Data Retrieval offers this feature.

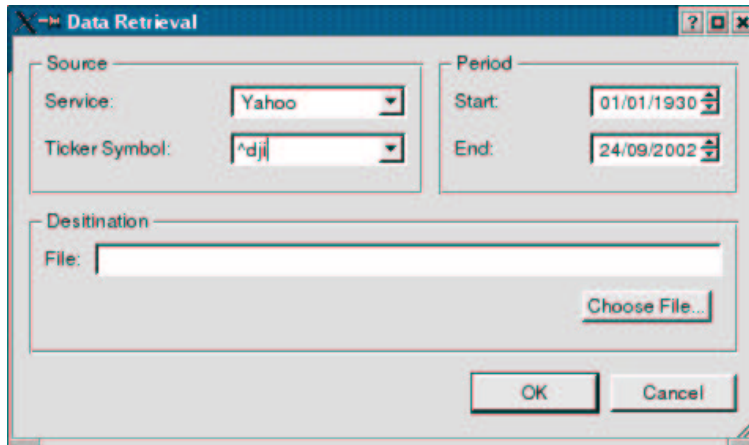


Figure 2: Dialog for retrieving financial chart data from Yahoo.

- **Service:** Currently only Yahoo.
- **Ticker Symbol:** The Ticker Symbol.
- **Start:** Start Date. If there's no data available for this date, Yahoo will start with the first record that is available.
- **End:** End Date. This defaults to the current Date. However, there's usually no date available yet for the current date. In this case, Yahoo will stop with the last record that is available.
- **File:** This field must hold the complete path and file name for the file where the data will get stored. Click the button "Choose File..." to choose a file using a "Save As"-dialog.

After clicking OK in the Data Retrieval dialog, the data is being downloaded from the Internet. The progress in Bytes is shown and updated from time to time. If the progress stays 0, please click Cancel and check your Internet connection and the data you provided for the Data Retrieval dialog.

As soon as the download has finished the new CSV file is loaded in QTimeSeries .

A CSV Data Format

The lines in CSV files understood by QTimeSeries must have the following format:

<Period>,<Open>,<High>,<Low>,<Close>[,<Optional Data>]

- **Period:** Currently the date of this record in the format *DD-MMM-YY* or *DD-MMM-YYYY*. In the first case a year below 20 means 20XX and a year above 20 means 19XX. The three letter abbreviation for the month is in English or German with "Mrz" for March, "Okt" for October and "Dez" for December.
e.g.: 21 - *Nov* - 01 or 21 - *Nov* - 2001
- **Open, High, Low, Close:** Real numbers in the format $\pm XXX.XX$.
- **Optional Data:** Optional data for this record which is ignored by QTimeSeries . Please note: This additional information is currently not loaded and cannot be stored when saving a file with QTimeSeries . To make sure that you don't lose any information, please make a copy of your CSV file before you open it with QTimeSeries .

The order of the records in the file is arbitrary. QTimeSeries sorts the records by time / data while loading the file.

The first line of each file must identify the file format like shown in this example CSV file:

```
Date,Open,High,Low,Close,Volume
21-Nov-01,64.36,64.60,63.48,64.05,25392600
20-Nov-01,66.45,67.80,65.03,65.40,32960900
19-Nov-01,66.25,66.97,65.70,66.54,28002500
16-Nov-01,66.36,66.61,64.95,65.75,29624500
15-Nov-01,66.10,67.05,65.45,66.12,38961000
```

Index

Auto zoom, 5

CAD, 5

Changing, 6

Close, 10

CSV, 3, 10

Data Retrieval, 7, 9

Deleting, 6

document, 3

Drawing, 5

DXF, 3

Editing, 6

Files, 5

format, 10

Freehand, 5

GPL, 3

Graphical User Interface, 3

GUI, 3

High, 10

libraries, 3

License, 3

Loading, 5

Low, 10

Modifying, 6

Open, 10

Open Source, 3

Period, 10

Points, 5

redlining, 3

Saving, 5

Ticker Symbol, 7, 9

User Interface, 3

Viewing, 5

Window zoom, 5

Yahoo, 7-9

Zooming, 5