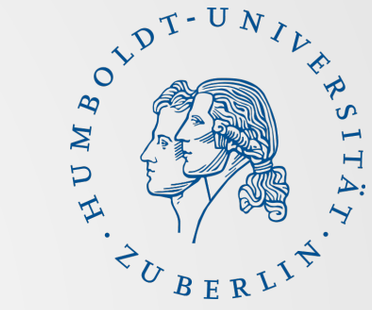
Styleguide for Quantlets

(GitHub.com/Quantlet)



IRTG 1792 High Dimensional Nonstationary Time Series
Humboldt-Universität zu Berlin
hu.berlin/irtg1792

Outline

1. Structure of Quantlet Folder 1

- Each **Quantlet** is a piece of code (an r, matlab, python script or a notebook), accompanied with a specific **documentation file**. A Quantlet could be either a whole project or a part of it.
- This documentation file is needed to index the Quantlet - to make the Quantlet searchable through the quantlet.com website. Moreover through this file it enables to create an LvB styled README file automatically (e.g. MVAdrug)

- This documentation file is called **Metainfo.txt** file - just a textual file, having a specific format, that contains additional information about your project and this specific Quantlet.

1. Structure of Quantlet Folder 2

- Such Metainfo.txt file looks as the following (you can copy it from here Metainfo.txt and just type in the information relevant for your project and/or Quantlet):

```
Name of Quantlet: 'MANDATORY! Has to be the same as the Quantlet file, without file type ending, e.g. R,py,...'

Published in: 'MANDATORY!'

Description: 'MANDATORY!'

Keywords: 'MANDATORY! You need at least 5 keywords'

Author: 'MANDATORY'

See also: 'optional: listing related Quantlets or Github code'

Submitted:  'optional: e.g. 01. Jan 2019, John Doe'

Datafile: 'optional: for your data sets - delete if not used'

Input: 'optional'

Output:  'optional'
```

1. Structure of Quantlet Folder 3

- Per **one meaningful analysis step one Quantlet**. If you have multiple folders in your project, for each step of your project - one folder, then it is better to treat each step as a separate Quantlet.
- If you have multiple folders/Quantlets - you can structure them in GitHub like this:
  - \RepositoryName\…\FolderName1\QuantletName1
  - \RepositoryName\…\FolderName2\QuantletName2

(Please note: that if your analysis step folder (= one Quantlet) has subfolders for data, images or other additional files inside you do not have to write additional Metainfo files)

1. Structure of Quantlet Folder 4

- Give each **Quantlet** a meaningful name:
  - The name should start with the project / book / class abbreviation followed by a unique name.
  - Make sure that the name is truly unique by checking it at the http://www.quantlet.com/ page - just type the potential name inside the search field - if it is already taken, it will appear
- Each Quantlet shall be executable, hence provide the input data!

  (Please note: If data cannot be published due to legal matters or too big, provide synthetic data of same structure or talk to the QuantletTeam about alternative options.)
- Save output pictures in the same folder as the Metainfo.txt file (in png or jpg format).

1. Structure of Quantlet Folder 5

- If you have a project which includes multiple major steps, split them into **multiple Quantlets**. For example a Quantlet for each of the following steps:
  - Data collection / scraping / mining,
  - Data preprocessing,
  - Data exploration,
  - Data visualisation.
- The README file is created **automatically** out of the
  - Metainfo file,
  - Pictures in the same folder (in alphabatical order),
  - Code of the Quantlet.
- Existing README files are not overwritten, if you make changes in the Metainfo file or the Quantlet, please delete the README.

2. Metainfo.txt File 1

- **Required** Meta-Information:
  - **Name of Quantlet**: Same name as the Quantlet without the program ending (.r,.py,.m,...). Select a meaningful name!
  - **Published in**: Book / Paper/ Class / other place of publication
  - **Description**: Describe with at least 10 words what this Quantlet does, which techniques are used, what is the applied use case, for what purpose etc.
  - **Keywords**: At least 5 keywords.
  - **Author**: Name of the authors

2. Metainfo.txt File 2

- **Optional** Meta-Information:
  - **See also**: mention related Quantlets, e.g. Quantlets of same project
  - **Submitted**: state the name and the time of the original submission
  - **Datafile**: All datafiles used by your code need to be listed here
  - **Input**: Should contain some new info, which is not written in other metainfo fields
  - **Output**: Should contain some new info, which is not written in other metainfo fields
  - **Example**: Should contain a list of generated plots and descriptions, which are not written in other metainfo fields

2. Metainfo.txt File 3

- The Metainfo file has to be a YAML debuggable text file.
  - A template is provided on GitHub.
  - If the Metainfo file is NOT debuggable the Quantlet is not displayed on Quantlet.de. You can check yourself whether it is debuggable, e.g. on http://yaml-online-parser.appspot.com/
- YAML rules:
  - The colon ':' separates the data field (left) from its description (right).
  - The dash '-' enumerates list items. Avoid them in text.
  - Put texts in quotes (single or double), especially if the text is multiline or if special characters, e.g. ':', '-', '_', …, are used.

3. README File

- The README file is the representation of the Quantlet, it contains
  - Name of Quantlet,
  - Metainfo file,
  - Graphics in the same folder (only JPEG or PNG),
  - Source code of Quantlet.
- You **do not have to create README by yourself** - it will be done **automatically**, if all mandatory Metainfo.txt fields are specified correctly.
- The README file is automatically created for all Quantlets in the Github organisation on the **„main“ or „master“ branch**.
  - **README files are not overwritten**, thus not updated.
  - If you need an updated README file, delete the README file, a new one is created automatically.

4. Example Quantlets

- Class projects:
  - SPL_class_WS1617
  - DEDA_Class_SS2018
- Projects with multiple Quantlets, e.g. thesis:
  - FVC - Face Value of Companies
  - BLEM

4. Special Cases

- R Shiny Apps:
  - Program UI and Server in one R Script, e.g.

```
library("shiny")
ui      = shinyUI(...)
server  = shinyServer(function(input, output)){...}
app     = shinyApp(ui, server)
```

  - See for example SVCJOptionApp.
- If you have a special case that is not listed below ask your supervisor and if necessary contact the Quantlet Team.

Contact

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