Software Development Plan (SDP) for the Core of a new Statsomat App

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Introduction

The Statsomat apps https://statsomat.com are apps for automatic data analysis and interpretation created with R and Shiny. The interaction with the human user should be sufficient but as minimal as possible. The ***core*** of an app is technically speaking a parametrized Rmarkdown (Rmd) document. Therefore, this SDP is for the development of one (or several bundled) parametrized Rmd document(s).

After the development of the ***core*** of an app, further steps are needed to finalize the app: Adding code as a seamlessly text, integrate the Rmd file within a Shiny App, final testing.

Design

During the Design step following topics need to be specified:

1. Title of the App
2. Output of the App, i.e. what should be in the report i.e. what tables and graphics and in which order? The outcomes of the app should be (where possible and meaningful) structured similarly to the outcomes of the CFA app: https://statsomat.com/statsomat/confirmatory-factor-analysis (Basic Information, Model Information, Output Tables and Graphics, Interpretation, Final Summary, Statistical Methods, R Packages, R Code, R Code License (you can skip this), References)
3. Input of the App. The input to the parametrized Rmd (resp. to the App) document must be as minimal as possible, for example: Dataset information + model information + additional parameters (for example constraints). Add additional parameters only if you really cannot imagine automizing them.

The best way to define the Design and the terms from above is to take 1-3 (representative) datasets and to perform the desired (statistical) analysis from A to Z, i.e. from data input till data interpretation written in plain English.

Development

The app will be developed by using GitHub https://github.com/ and GitHub Desktop https://desktop.github.com/

Consider Programming Best Practices during the Development: https://www.r-bloggers.com/2018/09/r-code-best-practices/

Testing

Prepare testing data cases (CSV files + data input information + output expectation) and save them within the project folder. The expectation could be for example a book/page containing the data analysis and interpretation of a certain dataset. Prepare a testing template describing the tests to be passed. Repeat several testing and bug fixing cycles.

SDP_StatsomatCore.docx
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