Psychology 350: Advanced statistics and programming in R
UserRs versus ProgrammeRs

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April, 2020

Outline

UserRs and ProgrammeRs

1. There are many ways to use R
2. It is important to become a useR before becoming a programmeR
3. This requires learning how to work through various examples
4. Using functions
5. Writing short scripts which combine functions
6. Only then should we try to develop programs
7. Lets work through various scripts for doing reliability analysis

R as a useful tool

1. For simple data analysis and graphics just a few lines of code
2. For programmatic analyses, use and keep scripts
   - This might involve a set of analysis on one set of data
   - Typically just step through the script and write more code as we go along
   - This is a way to document what you are doing in your research,
   - You are documenting the specific data set and the specific analyses you do.
3. For frequent analysis of different sets of data, write (program) a function
   - A way of organizing repeated analyses
   - Want to share a method with others.
   - Documentation of what the function does, not the specific application

Common structure of scripts and programs

1. Data entry (accessing the data)
   - Checking for correct entry
   - Basic characteristics of the data
2. Data processing
   - Apply some particular operation on the data
   - This might be an iterative operation or merely some closed form calculation
3. Reporting the results
   - Return all results (in a list of results)
   - But perhaps print out just the important results

See the R studio analysis for reliability as an example

1. http://personality-project.org/courses/350/350.wk.4.html