Installing SANDRA

**How to Install the Standardized AND Reproducible Analyses (SANDRA) Library and Framework**

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*Version 1.0, 2015-12-06*

This is a step-by-step guide on installing SANDRA, a library and framework for standardized and reproducible analyses.

## ****Step 1. Install R (and RStudio)****

The following software is needed or recommended:

1. R, which is a free and open source statistical programming language, just like MATLAB. You can download it at <https://www.r-project.org/>)
2. A program for editing R-scripts. A plain text editor (such as Notepad/Kladblok) is a simple but sufficient solution. For a more powerful editor, consider installing RStudio: <https://www.rstudio.com>.

## Step 2. Run the SANDRA installation script

Create an *analysis directory* (or folder) on your hard-drive, which will contain your analysis scripts and data. Next, start R and copy-paste the installation script shown below in the console. The most recent version of the this script can be found here: <https://github.com/tpronk/sandra/tree/master/framework_demos>

* Windows users can run the script as-is. A folder picker will appear that allows you to select the analysis directory you just created. Note that you might need to minimize R/RStudio to make this folder picker visible.
* Mac users need alter the installation script to specify the full path to their analysis folder, for example as follows:

installAnalysisFramework( “/studies/analysis” );

# Install & load package devtools

install.packages( "devtools" );

library( "devtools" )

# Install & load package SANDRA

install\_github( "tpronk/SANDRA/src" );

library( "sandra" );

# Install SANDRA Analysis Framework

installAnalysisFramework(

# Enter path to analysis folder here (without trailing slash)

# Only for Windows: leave empty to get a folder picker

);

The installation script first installs the SANDRA R-package and next installs a SANDRA Analysis Framework in the analysis directory that you specified. A SANDRA Analysis Framework is a standard way of organizing your data. The installation scripts creates all scripts and directories required for the framework if they do not exist yet.

**Table 1.** Folder structure of the ADPT Framework

|  |  |
| --- | --- |
| **Directory or File** | **Explanation** |
| analysis/Load SANDRA.R | Loads SANDRA package and sets up your SANDRA Analysis Framework for this analysis directory |
| analysis/interim | Your interim data (datasets produced by processing other datasets) |
| analysis/original | Your original unprocessed data |
| analysis/scripts | Your analysis scripts |

If everything went well, then the files and directories listed in Table 1 have been created. Finally, SANDRA confirms successfully loading the framework by showing the text seen below in the console.

sandra::FrameworkFileIO. Succesfully constructed FileIO

## Step 3. Reload your SANDRA Analysis Framework

After installing, your analysis framework is installed and setup. You only need to install the SANDRA Analysis Framework once, but you need to set it up each time you restart R to run an analysis. To setup your framework, run the script in ‘Load SANDRA.R’, which has just been created in your analysis directory.