R programming workshop 2023-intermediate level

Time
9:00-15:00, April 14, 2023

Place
Parker, Widerströmska Huset, Tomtebodavägen 18, 171 65 Solna & Zoom

Contents

Time	Activity
9:00-10:00	Introductory talk on methodological challenges in (observational) health research by Viktor H. Ahlqvist (Widerströmska Huset and Zoom: https://ki-se.zoom.us/j/65989648750)
10:00-10:10	Break with fika
10:10-11:10	Data manipulation with Tidyverse by Bolin Wu (Widerströmska Huset)
11:10-12:10	Introduction to loops and apply functions by Ashley Tate (Widerströmska Huset)
12:10-13:00	Lunch
13:00-14:00	Generating reports with R markdown by Bolin Wu (Widerströmska Huset)
14:00-14:10	Break with fika
14:10-15:00	Practice and wrap-up by Bolin Wu

Github repository of the workshop (built by Bolin Wu): https://github.com/Bolin-Wu/workshopr

Preparations before the workshop

1. **Install the following statistical packages by running the following syntaxes in R:**

install.packages("remotes")
remotes::install_github("Bolin-Wu/workshopr", subdir = "rpackage", force = TRUE)
install.packages("tidyverse")

2. **Check if the statistical packages are installed successfully and check the data set that will be used in the workshop by running the following syntaxes in R:**

library("remotes")
library("workshopr")
library("tidyverse")
workshopr::fake_data

3. **Get familiar with the data set that will be used in the workshop**

Variable	Meaning
Lopnr	ID for each individual
Date_wave*	Date of each study visit for each individual
age_wave*	Age at each study visit for each individual
mmse_wave*	Mini-Mental State Examination (MMSE) score at each study visit for each individual
dementia_wave*	Dementia status at each study visit for each individual; 0=without dementia, 1=with dementia
age_base	Age at the first study visit for each individual
sex	Sex; 0=male, 1=female
education	Educational level; 1=elementary, 2=high school, 3=university and above

4. **Retrieve the R script and rmarkdown files following the instructions here https://github.com/Bolin-Wu/workshopr/tree/main/rpackage if you wish to practice during the lectures (optional).**

Lecture	File name

Data manipulation with Tidyverse by Bolin Wu	tidyverse_2023.R
Introduction to loops and apply functions by Ashley Tate	ashly_loop_2023.Rmd
Generating reports with R markdown by Bolin Wu	pdf_example.Rmd word_example.Rmd html_example.Rmd

Note that after running the syntaxes on this link, two files named "R_example_code" and "rmd" will be created in your working directory. You can access the R script and rmarkdown files used in the lectures in these two files.