Basic Introduction to

Simon Knüsel

r_courses@gmx.ch

Course administration

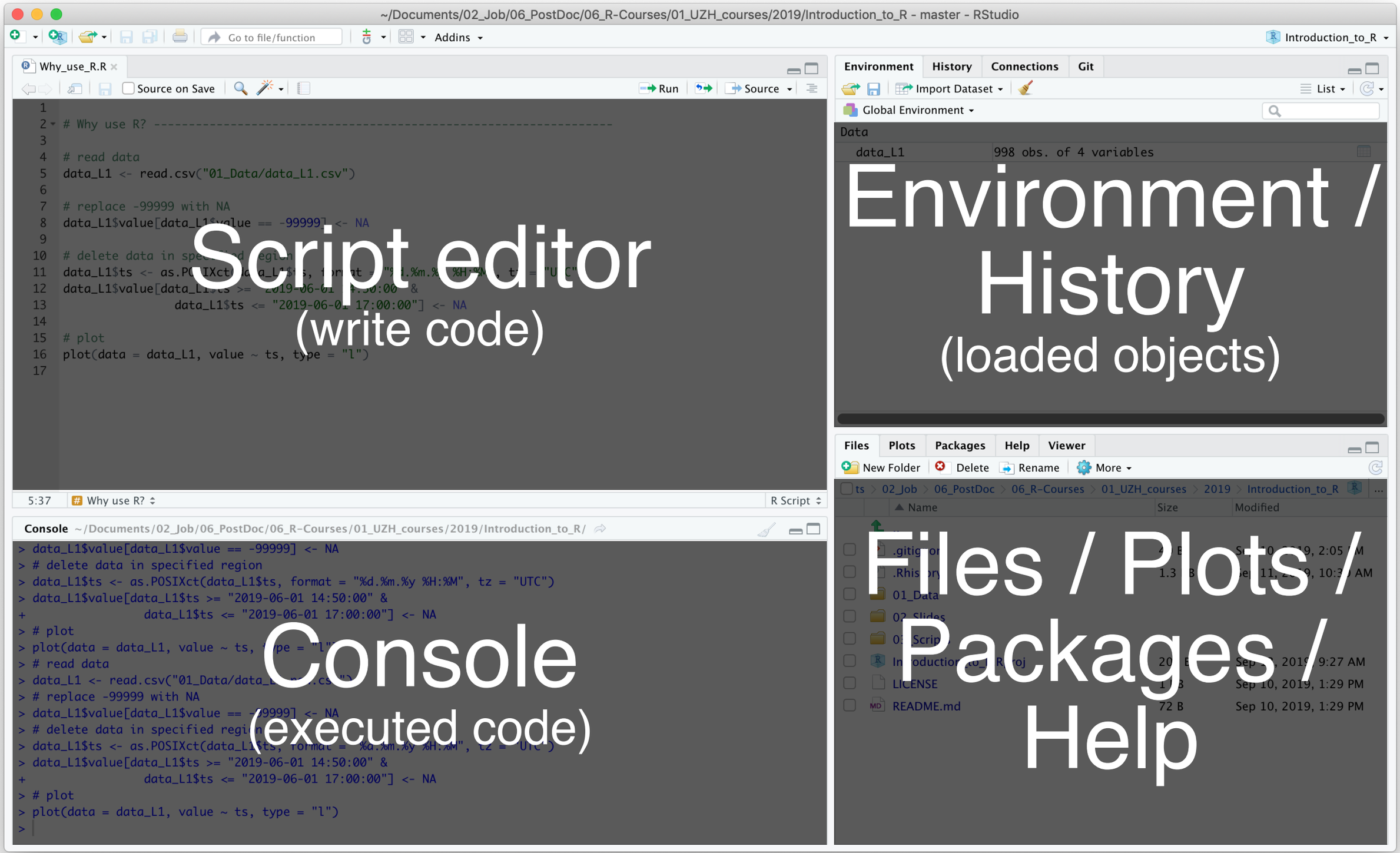
Tim Menck

kurssekretariat@id.uzh.ch

Goals

- Start to code
- Learn how to use R for the analysis of your data
- Know where and how to get help if you are stuck

RStudio


~/Documents/02_Job/06_PostDoc/06_R-Courses/01_UZH_courses/2019/Introduction_to_R - master - RStudio
Go to file/function
Addins
Introduction_to_R
Why_use_R.R
Source on Save
Run
Source
# Why use R? ----------
# read data
data_L1 <- read.csv("01_Data/data_L1.csv")
# replace -99999 with NA
data_L1$value[data_L1$value == -99999] <- NA
delete data in specified region
data_L1$ts <- as.POSIXct(data_L1$ts, format = "%d.%m.%y %H:%M", tz = "UTC")
data_L1$value[data_L1$ts >= "2019-06-01 14:50:00" &
data_L1$ts <= "2019-06-01 17:00:00"] <- NA
# plot
plot(data = data_L1, value ~ ts, type = "l")
5:37
Why use R?
R Script
Console ~/Documents/02_Job/06_PostDoc/06_R-Courses/01_UZH_courses/2019/Introduction_to_R/
> data_L1$value[data_L1$value == -99999] <- NA
> # delete data in specified region
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> data_L1$value[data_L1$ts >= "2019-06-01 14:50:00" &
+ data_L1$ts <= "2019-06-01 17:00:00"] <- NA
> # plot
> plot(data = data_L1, value ~ ts, type = "l")
Environment
History
Connections
Git
Import Dataset
List
Global Environment
Data
data_L1
998 obs. of 4 variables
Files
Plots
Packages
Help
Viewer
New Folder
Delete
Rename
More
ts > 02_Job > 06_PostDoc > 06_R-Courses > 01_UZH_courses > 2019 > Introduction_to_R
Name
Size
Modified
01_Data
LICENSE
1 kB
Sep 10, 2019, 1:29 PM
README.md
72 B
Sep 10, 2019, 1:29 PM
Script editor
(write code)
Environment / History
(loaded objects)
Console
(executed code)
Files / Plots / Packages / Help

Exercises

- Exercises are in the **05_Exercises** folder of the course material

- Exercises are on the first page(s), **hints** to possible solutions are on the **last page**

- Let me know when you reach „*For those who have time left…*“ in the chat

- Feel free to ask questions in the chat

- Write down the shortcuts for special characters (for MAC see *02_Slides_tutorials* folder)

Shortcuts

	Mac	Windows / Linux
Run line	Cmd + Enter	Ctrl + Enter
# Comment line	Alt + 3	
[ ] Square brackets	Alt + 5 / Alt + 6	
{ } Curly brackets	Alt + 8 / Alt + 9	
| OR operator	Alt + 7	
~ Tilde	Alt + N	
Show RStudio shortcuts	Alt + Shift + K	Option + Shift + K

Capabilities of R

- Nice graphs
  https://www.r-graph-gallery.com/violin_and_boxplot_ggplot2.html
  https://www.data-to-viz.com/

- Maps with R
  https://www.r-graph-gallery.com/choropleth-map.html

- Interactive web applications (R Shiny)
  https://shiny.rstudio.com/gallery/movie-explorer.html

- R and databases
  https://db.rstudio.com/getting-started/connect-to-database

Where to get help

- Websites
    - RStudio Cheat Sheets
      https://www.rstudio.com/resources/cheatsheets/
    - Google
      e.g. „r how to merge two data frames“
    - https://stackoverflow.com/
    - https://www.r-bloggers.com/
- Online book
    - R for Data Science
      https://r4ds.had.co.nz/

…more help

- Other R courses
    - R: tidyverse for data science (UZH) https://app.connect.uzh.ch/apps/id/kurse.nsf/veranstaltungen.xsp
    - Specialised R-Workshops (2 days, 1ECTS for PhD students, Plant Science Center) https://www.plantsciences.uzh.ch/en/teaching/phdplantscience/coursecatalogue.html
    - Zurich R Courses https://www.zhrcourses.uzh.ch/en.html
    - Specialised R-Workshops (1 day intensive course, small groups) https://ethz.ch/services/de/it-services/katalog/support-weiterbildung/it-training/kurse.html

Feedback

You will receive an email tomorrow with a link to a feedback form.

- You can already start to fill in the form now: https://www.zi.uzh.ch/en/teaching-and-research.html

  IT Training > Course Program > Data Science >
  R: Basic Introduction (in the first row of Data Science) >
  Feedback form at bottom of page

I am happy about personal feedback as well :)

Course certificate

Write an email to kurssekretariat@id.uzh.ch to get the course certificate.

Sources

For the development of this course I was mainly inspired by the course material of Jan Wunders *R* course

Introdution to R (Wunder, 2016)