

DATA TYPES

Tutorial #2

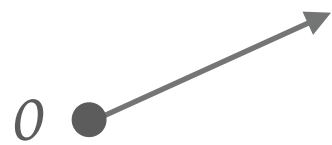
DATA TYPES



x categories



ranked categories



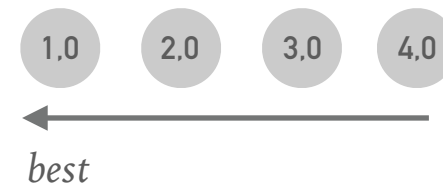
continuous with a 0



any number



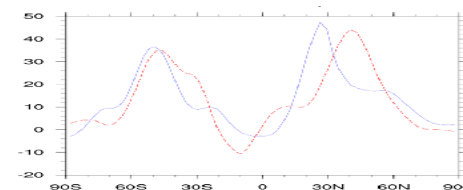
nominal



ordinal



interval



continuous/ratio

DATA TYPES

- Where was your starting point this morning in relation to this class room (N,S,W,E)?
- What distance did you travel to get here? write down the km.
- How are you feeling this morning?
- How did you get here? on foot, bike, car, train, other

nominal
(circular)

interval

ordinal

nominal

DATA TYPES AND BASIC TESTS

nominal

ordinal

interval

ratio



grouped together for tests

continuous

DATA TYPES AND BASIC TESTS

.....

	nominal	ordinal	continuous
nominal			
ordinal			
continuous			

→ *In the coming sessions, we'll basically just fill this table.*

WHAT'S DATA?

.....

ID	Space	Food eaten (in kg/day)
1	large	20
2	small	17
3	large	21
4	large	19
5	large	23
6	small	18
7	large	22
8	small	15
9	small	16
10	small	15

data = many
columns with
different data types

GUESS THE DATA TYPE

.....

1. weight of 230 chickens
2. spam mail or not
3. # of words in an email
4. height of trees on the campus
5. size in clothing
6. liters of coffee German students drink per day
7. number of flipchart markers in this classroom
8. mm of precipitation per year in Lüneburg
9. is a course in English or not
10. grades at Leuphana
11. type of room you're renting

ID	Spam	#words	...
1	0	120	...
2	1	15	...
3	1	30	...
4	0	11	...
5	1	32	...
6	1	27	...
7	0	219	...
8	0	72	...
9	0	89	...
10	0	254	...

GUESS THE DATA TYPE

- 12. survived the Titanic
- 13. number of rooms at Leuphana
- 14. temperature over one year
- 15. *change* in temperature over one year
- 16. wrong/false
- 17. speed of driving in km/h
- 18. your level at Phase 10
- 19. different types of dishes at Peter Pane
- 20. is a person vegan or not
- 21. is a person vegan, vegetarian or eats meat
- 22. cups of coffee German students drink per day

GUESS THE DATA TYPE

23. your # of bike trips last year

24. km of your bike trips last year

25. what would be a *nominal* example related to your bike trips?

26. whether or not the police stopped you during each bike trip

27. number of times the police stopped you during all your bike trips

28. € you paid to the police due to your excessive biking last year

29. educational level (High School/Bachelor/Master/PhD etc.)

30. your age

31. different types of tests in statistics

32. our names

33. your IP address

TIME TO DO SOME R!

The image shows the RStudio application window. The top menu bar includes File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Window, and Help. The toolbar below the menu has icons for file operations and a 'Go to file/function' search bar. The main editor pane on the left shows a file named 'Untitled1' with a single line of code at line 1. A light blue box with the text 'your script: can send commands to the console' is overlaid on the editor, with a white arrow pointing from it to the console pane. The console pane at the bottom left shows the R prompt and several lines of text: 'Type license() or licence() for distribution details.', 'Natural language support but running in an English locale', 'R is a collaborative project with many contributors.', 'Type contributors() for more information and', 'citation() on how to cite R or R packages in publications.', 'Type ? for on-line help, or', 'help() for user interface to help.', and 'Type ? for on-line help, or'. A light blue box with the text 'console: direct commands' is overlaid on the console, with a white arrow pointing from it to the console. The right-hand side of the RStudio window contains three panes: 'Environment', 'History', and 'Connections'. The 'Environment' pane shows 'Global Environment' and a message 'Environment is empty'. A light blue box with the text 'your environment: all objects' is overlaid on this pane. Below these are panes for 'Files', 'Plots', 'Packages', 'Help', and 'Viewer'. The 'Files' pane shows a file explorer view of the home directory with folders like Desktop, Documents, Downloads, Dropbox, envs, go, Library, miniconda3, models, and Movies. A light blue box with the text 'Files, Help... helpful part of RStudio' is overlaid on the Files and Help panes.

your script: can send commands to the console

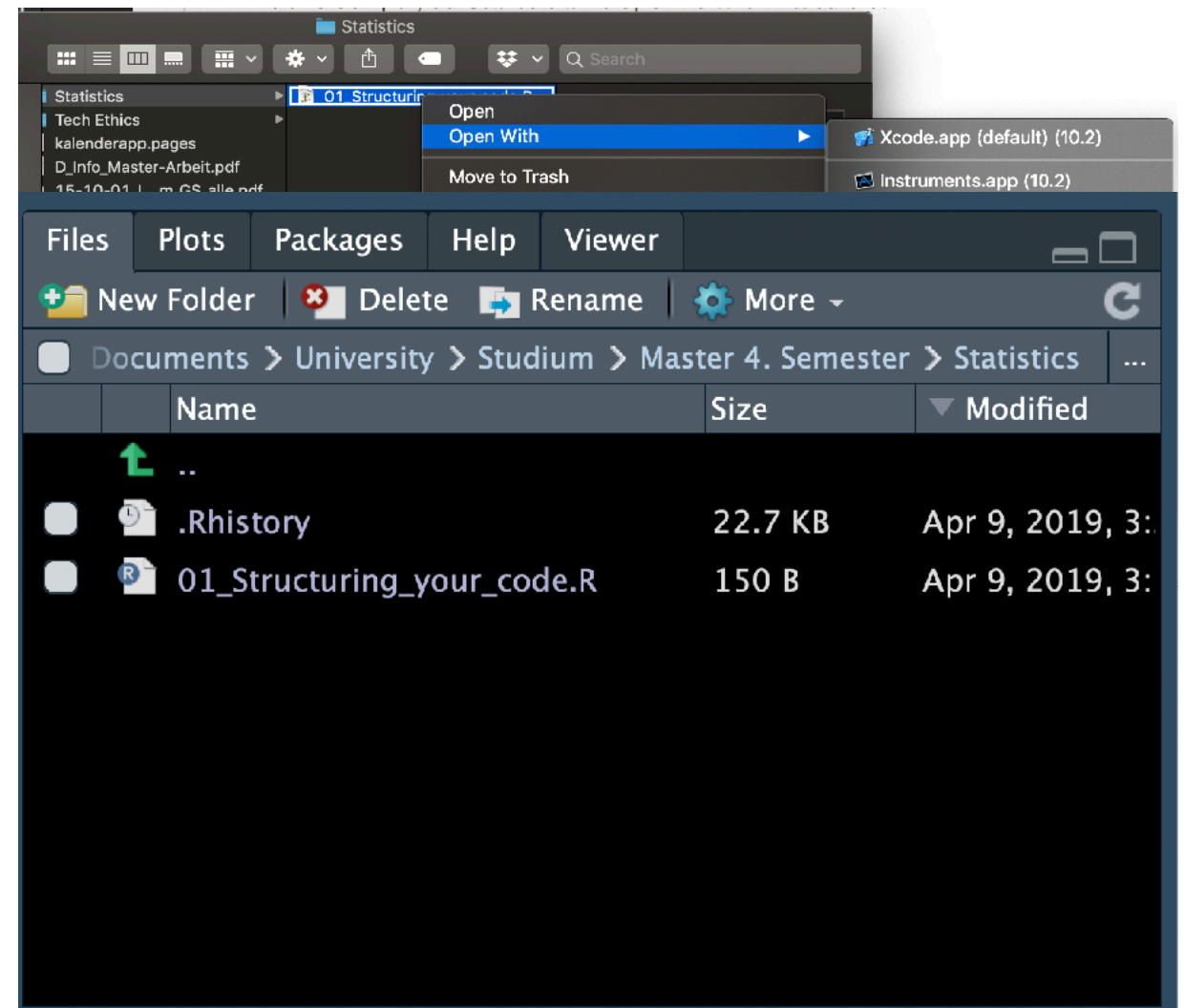
your environment: all objects

console: direct commands

Files, Help... helpful part of RStudio

TIME TO DO SOME R!

- Close R again.
- Find the script you started and open it with RStudio.
- The folder in the left bottom corner is the same folder, you don't have to “set your working directory”.



MONA CHALABI: “BAD STATISTICS”

- We’ll watch a video and you should write down the following things:
 - What types of data does she mention?
 - What criteria does she mention for “bad statistics”?

UNTIL NEXT TIME

- Install the package swirl
 - `install.packages("packagename")`
 - `library(swirl)`
- Get ahold of the course “1: R Programming” and do
 - lesson “1: Base Building Blocks” and
 - lesson “2: Workspace and Files”

SOURCES

- Thermometer by Yeoul Kwon from the Noun Project

Next time: **Distributions**

- See you there!