Cultural Data Science 2022
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3:W35: Start with R

DESCRIPTION

Instructions: For this assignment, you need to answer a couple questions with code and then take a screenshot of your working environment.
Submit the solutions including the URL to the screenshot in a doc/pdf to Brightspace.

1) Use R to figure out how many elements in the vector below are greater than 2 and then tell me what their sum (of the larger than 2 elements) is.
rooms <- c(1, 2, 4, 5, 1, 3, 1, NA, 3, 1, 3, 2, 1, NA, 1, 8, 3, 1, 4, NA, 1, 3, 1, 2, 1, 7, 1, 9, 3, NA)

- 12 elements are larger than 2 and the sum of those are 55.

```
## Week 1 Day 2
1) Use R to figure out how many elements in the vector below are greater than 2 and then tell me what their sum (of the
larger than 2 elements) is.
```{r}
#creating the vector
rooms <- c(1, 2, 4, 5, 1, 3, 1, NA, 3, 1, 3, 2, 1, NA, 1, 8, 3, 1, 4, NA, 1, 3, 1, 2, 1, 7, 1, 9, 3, NA)

# how many elements in the vector below are greater than 2
rooms_1<- rooms[complete.cases(rooms)] #isolate all numeric values
length(rooms_1[rooms_1>2]) #length of all elements larger than 2, which is 12

# The sum of all elements larger than 2
rooms_2<- rooms_1[rooms_1>2] #assigning all elements above 2 to a new vector
sum(rooms_2) # sum of all elements above 2 is 55
```
```

2) What type of data is in the 'rooms' vector?

- the ‘rooms’ vector is numeric.

```
67  2) What type of data is in the 'rooms' vector?
68  ```{r}
69  class(rooms)
70  ```
66:1  # Week 1 Day 2

Console  Terminal  Jobs
~/Desktop/OneDrive - Aarhus Universitet/Cognitive Science/5th semester/Cultural Datascience/Week1/
> class(rooms)
[1] "numeric"
```

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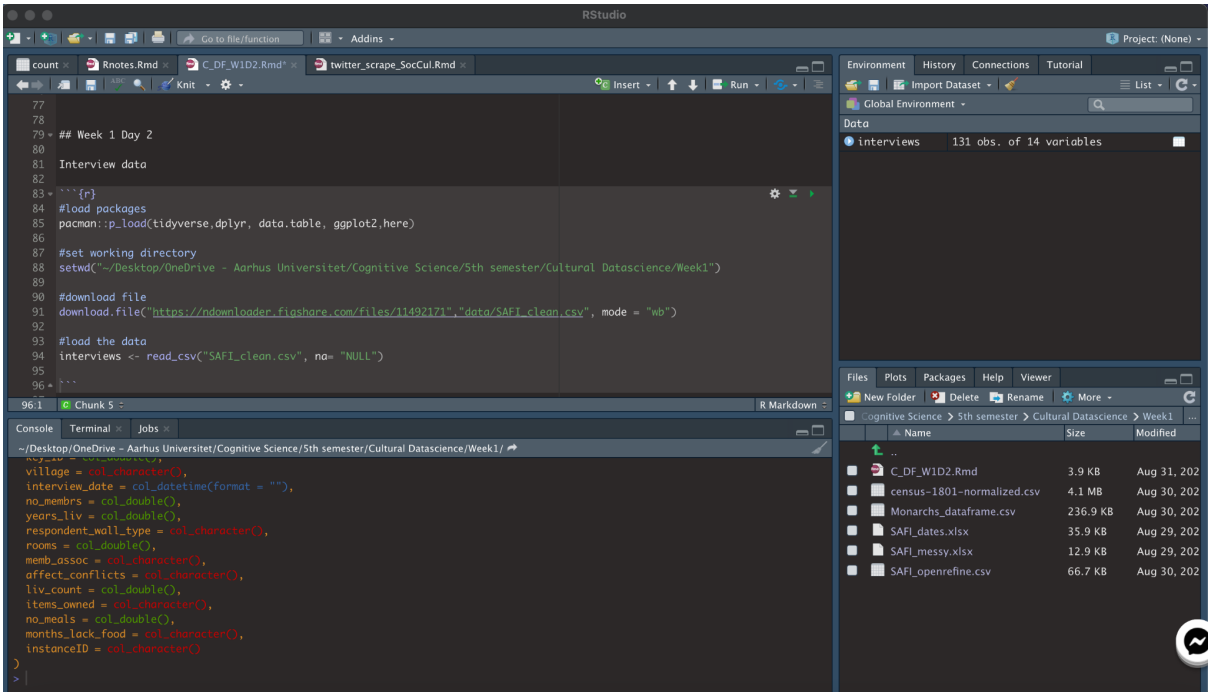
3) Submit the following image to Github: Inside your R Project (.Rproj), install the 'tidyverse' package and use the download.file() and read_csv() function to read the SAFI_clean.csv dataset into your R project as 'interviews' digital object (see instructions in https://datacarpentry.org/r-socialsci/setup.html and 'Starting with Data' section). Take a screenshot of your RStudio interface showing
a) the line of code you used to create the object,
b) the 'interviews' object in the Environment, and
c) the file structure of your R project in the bottom right "Files" pane.
Save the screenshot as an image and put it in your AUID_lastname_firstname repository inside our Github organisation (github.com/Digital-Methods-HASS) or equivalent. Place here the URL leading to the screenshot in your repository.



4) Challenge: Attached to this assignment you will find Danish monarchs dataset that might need to be cleaned up a bit. Load the provided 'kings.csv" dataset into R as a tibble. Calculate the mean() and median() duration of rule over time and find the three monarchs ruling the longest. How many days did they rule (accounting for transition year?)
The mean duration of rule over time is 18.68182 years while the median duration of rule over time is 14 years. The three monarchs that ruled for the longest were 1) Christian 4., 2) Erik 7. af Pommern, 3) Christian 7. And the number of days they ruled is listed below.

	Kings	Start_date	End_date	Yearasruler	days_ruling
1	Christian 4.	1588	1648	60	21900
2	Erik 7. af Pommern	1396	1439	43	15695
3	Christian 7.	1766	1808	42	15330

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```r
#packages
pacman::p_load(tidyverse,dplyr, data.table, ggplot2, tibble, devtools, readr)

#load the data
kings <- read_delim("kings.csv", ";", escape_double = FALSE,
    trim_ws = TRUE)

#checking the data
ls.str(kings)

#Cleaning the data
kings <- na.omit(kings)
kings$Yearasruler <-  as.numeric(kings$Yearasruler)

#calculate mean and median duration of rule over time
mean(kings$Yearasruler) # mean duration of rule over time 18.68182 years
median(kings$Yearasruler) # median duration of rule over time 14 years

#find the three mondarchs ruling the longest
kings%>%
  arrange(desc(Yearasruler)) # 1) Christian 4., 2) Erik 7. af Pommern, 3) Christian 7.


#How many days did they rule (accounting for transition year?)
kings <- kings%>%
  arrange(desc(Yearasruler))

kings1<- kings[1:3,]

kings1 <- kings1 %>%
  mutate(days_ruling= (Yearasruler*365))
```