Functions and iterations

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1 RStudio Project

Create a new RStudio Project and a new R Markdown File to document your work. Your task is to download Spotify charts data from a large number of countries via loops, and combine them into one large data frame.

2 Analyse the problem

- Analyse the problem by visiting the Spotifycharts web site. You see three filter parameters. How do these filter variables affect the URL? Also download a csv file and study its structure and contents.
- We want to import the data into R directly from the website (without separate download step). To get the right URL, right click on **Download to csv** and copy the address of the link.
- Import directly from this url via the `read_csv` command (readr or tidyverse package).
- Check whether the data looks fine. If there is a problem with column names, search for an argument of the `read_csv` function that resolves the problem. Make use of `help(read_csv)`.

3 Write a function

Write a data import function and test whether it works. Your function:

- has 1 argument: *country*
- reads the data for '2020-04-05' and for the chosen country
- appends a column that contains the country name
- returns the data

4 Map the function

Now automate the donwload for a series of countries using the `map` function from the **purrr** package. To do so, define a of selected countries, such as `list("de", "fr")`. Map your function onto this list. You obtain a list of data frames. Use `bind_rows()` to append these data frames one after the other.

5 For loop

Try to rewrite your apprach from above as a for loop. Which approach feels more natural to you?

6 Multiple loops

Extend your approach such that you can loop through both countries and dates. Use a nested for loop. Bonus question: Does someone find a way to achieve the same result using the map approach (probably one needs one of the many other functions of the purrr package)???