Week-6: Code-along

NM2207: Computational Media Literacy

2023-09-12

Welcome! Go through the steps described below, *carefully*. It is totally fine to get stuck - **ASK FOR HELP**; reach out to your friends, TAs, or the discussion forum on Canvas.

Here is what you have to do,

1. **Download** `Code-along-6.Rmd` file from Canvas and move it to the folder "Week-6" (see instructions for creating folder in Section I below)
2. **Open** the video lectures and start listening to them
3. **Every time** you come across a code chunk (inside shaded blocks) in the lecture video, **Pause the video**
4. **Edit** the `Code-along-6.Rmd` file with the codes explained in the lecture videos within appropriate R chunk/code-block/shaded area (environment enclosed within ```)
5. **Comments** inside the R chunk/code-block/shaded area indicates which command explained in the lecture should be typed in there
6. **Set** `eval=TRUE` to generate the output and verify it to the one shown in the lecture videos
7. **Knit** the file upon completion and submit the pdf document on Canvas **before** coming to the tutorial session

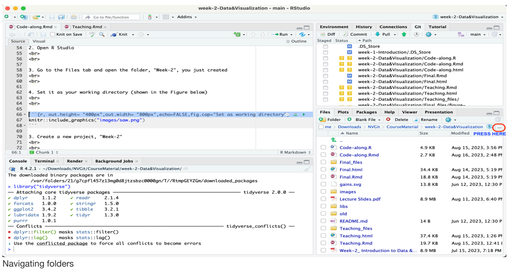
I. Preliminaries

1. Create a new folder, "Week-6", inside "NM2207" folder you created last week

2. Open R Studio

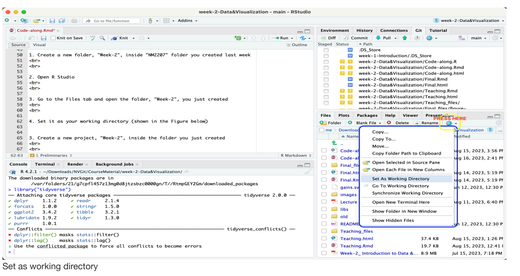
3. Go to the Files tab and open the folder, "Week-6", you just created

- Press the three horizontal dots highlighted in the Figure below
- Browse and select "Week-6" folder that you created in the previous step, inside "NM2207" folder



Navigating folders

4. Set it as your working directory (shown in the Figure below)



Set as working directory

5. Now, create a new project and name it "Week-6"

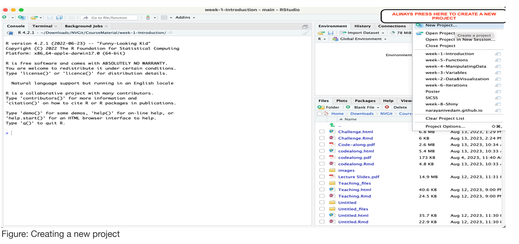


Figure: Creating a new project

6. Download the `Code-along-6.Rmd` file from Canvas and move it to the folder, "Week-6"

II. Code to edit and execute using the Code-along-6.Rmd file

A. `for` loop

1. Simple `for` loop (Slide #6)

```
# Enter code here
```

2. `for` loops structure (Slide #7)

```
# Left-hand side code: for loop for passing values
```

```
# Right-hand side code: for loop for passing indices
```

3. Example: find sample means (Slide #9)

```
# Enter code here
```

4. Alternate ways to pre-allocate space (Slide #12)

```
# Example 3 for data_type=double
```

```
# Initialisation of data_list
```

5. Review: Vectorized operations (Slide #18)

```
# Example: bad idea!
```

```
# Taking advantage of vectorization
```

B. Functionals

6. `for` loops vs Functionals (Slides #23 and #24)

```
# Slide 23
```

```
# Slide 24
#Compute mean

# Compute median

# Compute sd
```

C. `while` loop

7. `while` loop (Slides #27)

```
# Left-hand side code: for loop
```

```
# Right-hand side code: while loop
```