Challenge-2

Insert your name here

2023-08-20

Welcome! Hope you have watched the lecture videos and followed the instructions in code-along. 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. **Pair** with a neighbor and work
2. **Download** the `Challenge-2.Rmd` and `playlist_data.csv` files from Canvas
3. **Move** the downloaded files to the folder, "Week-2"
4. **Set** it as the working directory
5. **Edit** content wherever indicated
6. **Remember** to set `eval=TRUE` after completing the code to generate the output
7. **Ensure** that `echo=TRUE` so that the code is rendered in the final document
8. **Inform** the tutor/instructor upon completion
9. **Submit** the document on Canvas after they approve
10. **Attendance** will be marked only after submission
11. Once again, **do not hesitate** to reach out to the tutors/instructor, if you are stuck

I. Exploring music preferences

A. Background

Imagine that you have been hired as a data analyst by a radio station to analyze music preferences of their DJs. They have provided you with a dataset, `playlist_data.csv`, containing information about DJs, their preferred music genres, song titles, and ratings.

Using the data-set you are required to complete some tasks that are listed subsequently. All these tasks are based on the concepts taught in the video lectures. The questions may not be entirely covered in the lectures; To complete them, you are encouraged to use Google and the resources therein.

B.Tasks

Task-1

In the lecture, we used two data-sets, `starwars` and `anscombe's quartet` that were readily available with the packages, `tidyverse` and `Tmisc`, respectively. When we have to use custom-made data-sets or the ones like we downloaded from Canvas, we have to import it using the R commands before using them. All the questions below are related to this task.

Question 1.1: What does the term "CSV" in `playlist_data.csv` stand for, and why is it a popular format for storing tabular data?

Solution: *CSV stands for Comma-separated values. CSV files are plain text files that separates values in each row by commas and end each row with a line break.*

Question 1.2: load the `tidyverse` package to work with `.csv` files in R.

Solution:

```
# Load the necessary package to work with CSV files in R.

library(tidyverse)
```

Question 1.3: Import the data-set, `playlist_data.csv`

Solution:

```
# Import the "playlist_data.csv" dataset into R

read_csv("playlist_data.csv")
```

Question 1.4: Assign the data-set to a variable, `playlist_data`

Solution:

```
# Assign the variable to a dataset

playlist_data <- read_csv("playlist_data.csv")
```

From now on, you can use the name of the variable to view the contents of the data-set

Question 1.5: Get more information about `read_csv()` command and provide a screenshot of the information displayed in the "Help" tab of the "Files" pane

Solution:

```
# More information about the R command, complete the code

?read_csv
```

```
knitr::include_graphics("D:/NM2207/Week-2/read_csv.png")
```

Question 1.6: What does the `skip` argument in the read_csv() function do?

Solution: `Number of lines to skip before reading data. If comment is supplied any commented lines are ignored after skipping.`

Question 1.7: Display the contents of the data-set

Solution:

```
# Type the name of the variable, to see what it contains

playlist_data
```

Question 1.8: Assume you have a CSV file named `sales_data.csv` containing information about sales transactions. How would you use the `read_csv()` function to import this file into R and store it in a variable named `sales_data`?

Solution:

```
# No output is required for this code
# Only the list of commands that execute the task mentioned in the question are required

sales_data <- read_csv("sales_data.csv")
```

Task-2

After learning to import a data-set, let us explore the contents of the data-set through the following questions

Question 2.1: Display the first few rows of the data-set to get an overview of its structure

Solution:

```
# Type the name of the variable we assigned the data-set to
head(playlist_data)
```

Question 2.2: Display all the columns of the variable stacked one below another

Solution:

```
# Stack columns of playlist_data


```

Question 2.3: How many columns are there in the dataset?

Solution:

```
# Number of columns

ncol(playlist_data)
```

Question 2.4: What is the total count of DJs?

Solution:

```
# Number of DJs

nrow(playlist_data)
```

Question 2.5: Display all the location of all the DJs

Solution:

```
# Location of DJs

playlist_data$Location
```

Question 2.6: Display the age of the DJs

Solution:

```
# Age of DJs

playlist_data$Age
```

Task-3

Let us plot the data to get more insights about the DJs.

Question 3.1: Create a plot to visualize the relationship between DJs' ages and their ratings.

Solution:

```
# complete the code to generate the plot

ggplot(playlist_data)


```

Question 3.2: Label the x-axis as "Age" and the y-axis as "Rating."

Solution:

```
# complete the code to generate the plot

ggplot(playlist_data) +

aes(x=Age,y=Rating)
```

Question 3.3: Represent data using points

Solution:

```
# complete the code to generate the plot

ggplot(playlist_data) + aes(x=Age,y=Rating) + geom_point()


```

Question 3.4: Can you change the points represented by dots/small circles to any other shape of your liking?

Solution:

```
# complete the code to generate the plot

ggplot(playlist_data) + aes(x=Age, y=Rating) + geom_point(shape = 17, size = 5)

# <-- Hint: Use ? to learn more about geom_point and use appropriate values for shape


```

Question 3.5: Insert a suitable title and briefly provide your insights in the caption

Solution:

```
# complete the code to generate the plot

ggplot(playlist_data) + aes(x=Age, y=Rating) + geom_point(shape = 17, size = 5) +

labs(title="Rating versus Age", caption = "Rating and Age are independent of each other.")
```