IE6600 - hw5

Due on 3/18/2020 11:30am PT

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IE6600 Homework Instructions

Once all the work is completed, you need to have your homework saved in the **hw5_Shiny.R** file. And rename it as:

hw5YourFullName.R

Only upload your **hw5YourFullName.R** file for hw5. Please make sure the shiny app in the .R file can be runned successfully.

Submission will only accepted on Piazza: Create a new note only to **Instructor(s)** and type **Instructors**> Select **hw5** tag > Summary/Title should be **hw5-submission-YourFullName**> Click insert > Insert file > Post the note.

Section A

We will develop a Shiny Web App as the link shows: https://zhenyuanlu.shinyapps.io/hw5_app/ (Let me know if the link is invalid. Also make sure to close the web app if it's not under usage. Since we only have 25 active hours available for 41 students per month. . .) This app shows a distribution of one selected column from one of the data tables - **ggplot::mpg**, **ggplot::diamonds**, and **ggplot::msleep**. If it's a continuous variable, it will show a histogram. If it's a categorical variable, it will show a bar chart.

Problem 1

Write a function:

```
chartCol(df, colN)
```

- **df**: one selected data frame (e.g. **mpg**, **diamonds**,or **msleep**)
- **colN**: one selected column's name (this should be a string, e.g. "displ")

This function will return a plot (histogram/bar chart) based on the data type of the selected column. If it's a continuous variable, it will show a histogram. If it's a categorical variable, it will show a bar chart.

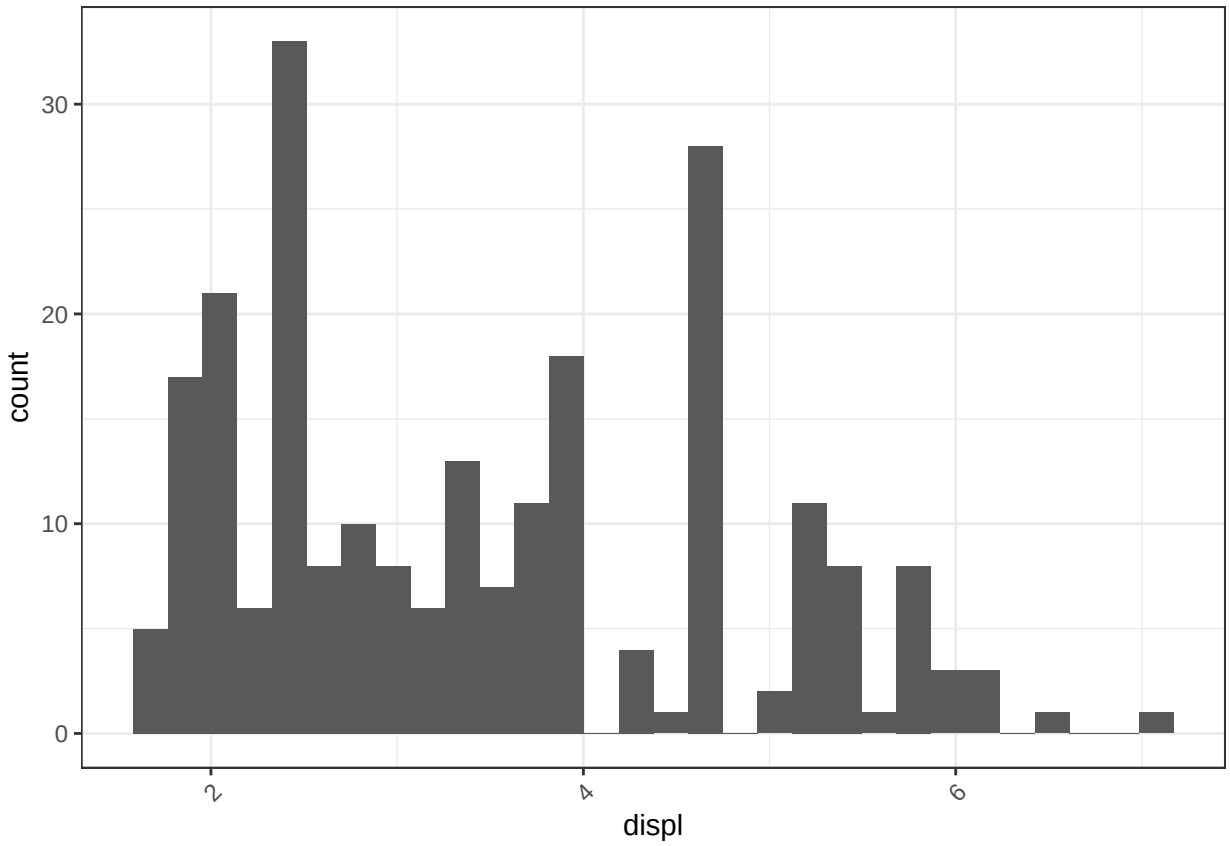
hint: use **aes_string** to deal with string names when mapping.

Example 1:

- **Input** with continuous variable
  - chartCol(df=mpg, colN="displ")

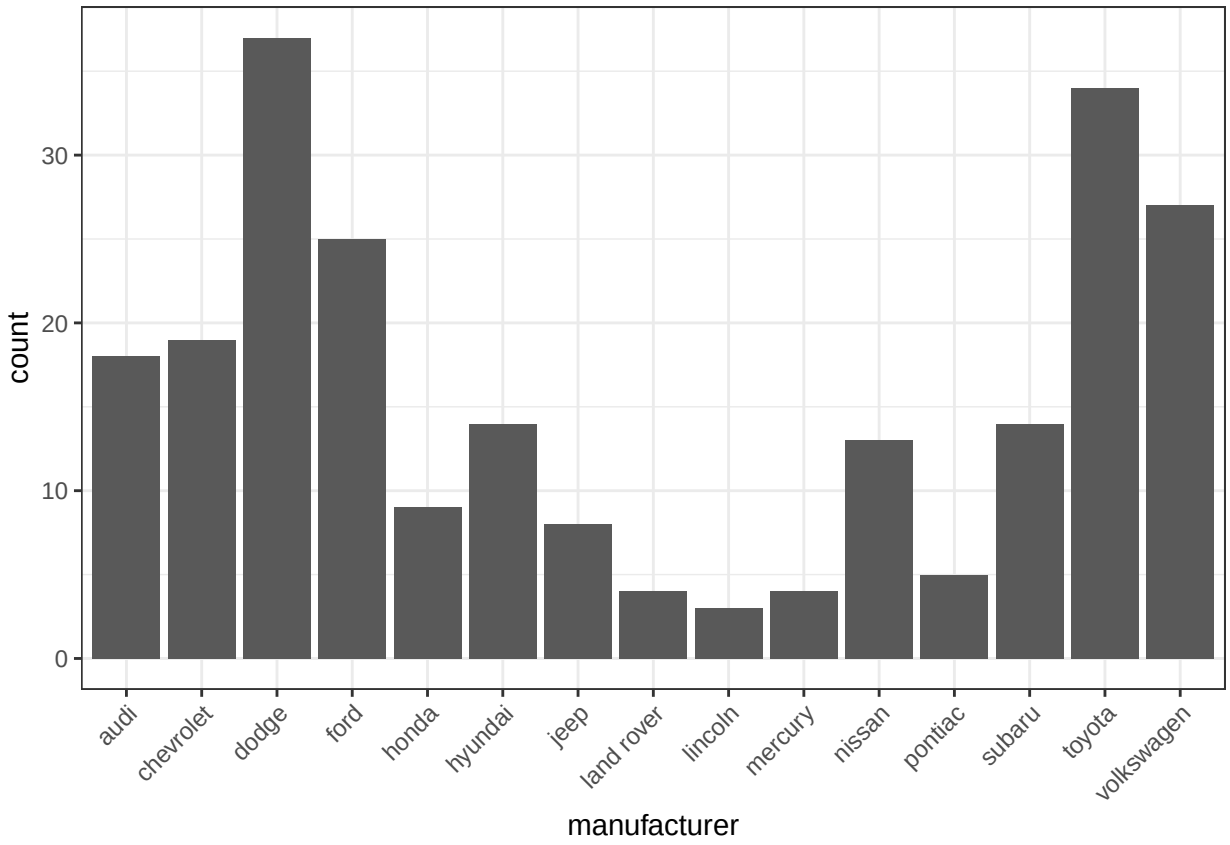
- **Output**

```
## `stat_bin()` using `bins = 30`. Pick better value with `binwidth`.
```



Example 2:

- **Input** with categorical variable
  - chartCol(df=mpg,colN="manufacturer")
- **Output**



Problem 2

Open **hw5_Shiny.R** file.

- Copy the whole **chartCol()** function you created to the **hw5_Shiny.R** before the **ui** part, you will see the instruction in the **hw5_Shiny.R**.
- Complete the code chunk in the **server** part, you will also see the instruction.

Problem 3 (OPTIONAL, 10 extra points. It won't affect your overall grade if problem 3 is not completed)

Add one more feature, **"Bin"**, into the app. If the selected column is countinuous variable, it's available to set up the bins value (range from 1 to 50). You may need to change the chartCol(df, colN) to chartCol(df, colN, b), where b is the bin value. Partial code of this shiny app will also need to be revised. See example: https://zhenyuanlu.shinyapps.io/hw5_app_bins/