Due: 22nd January 2024,10pm

1. Enter data from the inclass worksheet in the google spreadsheet:
https://docs.google.com/spreadsheets/d/1kSJ1rfuRd6gVMKj4jiQYg7onwLM3nfwbv6rtU74NHk0/edit#gid=0

2. Shamsheen has a log book of time spent by them on Instagram. In the log book they keep track of the 24-hour reading before each time they log in. The last 10 readings are:

   8, 8, 3, 12, 13, 10, 1, 8, 7

   (a) Enter these numbers into R as a variable `instasee`. Use the function `diff` on the data. What does it give? Write down,x, the number of hours between each time Shamsheen logs into Instagram.

   (b) Use the `max` to find the maximum number of hours, the `mean` function to find the average number of hours and the `min` to get the minimum number of hours for Shamasheen between two logins.

3. Super-Suppandi scores in various quizzes in test of a lifetime are given below

   7, 6, 10, 8, 7, 9, 9, 6, 4, 10, 8, 6, 9, 10

   (a) Enter this into R as a variable `scoreSS`. Use the function `max` to find the highest score, the function `mean` to find the average and the function `min` to find the minimum.

   (b) When confronted by instructor, SS realises that entry 4 was a mistake. It should have been 5. How can you fix this? Do so, and then find the new average.

   (c) What does the below command provide in R ?

   ```
   > sum( scoreSS >= 9)
   ```

   (d) What do you get? What percent of your scores are less than 17 ? How can you answer this with R?

4. Shreelakshmi's cell phone bill varies from month to month. Suppose in their first year of online Data Science program, under the Drop-atmost 10-calls monthly plan, the following monthly amounts were incurred:

   460, 330, 390, 370, 460, 300, 480, 320, 490, 350, 300, 480

   (a) Enter this data into a variable called `Shreelakshmibill`. Use the `sum` command to find the amount spent by Shreelakshmi that year on the cell phone.

   (b) Using R find out what is the smallest amount they spent in a month and the largest amount they spent in a month ?

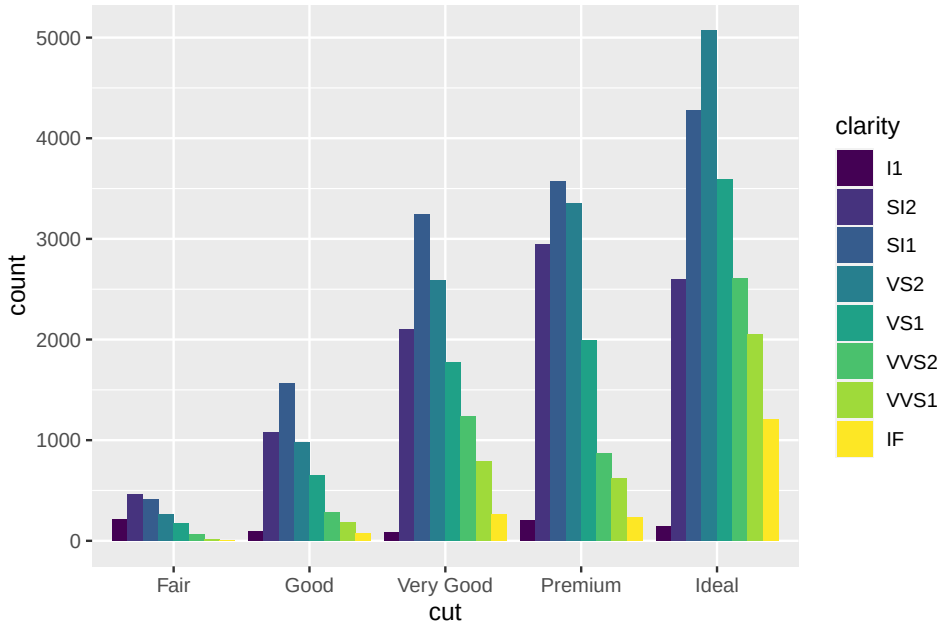
   (c) How many months was the amount greater than Rs 400? What percentage was this?

(d) If her monthly loan from NOmoney Bank was Rs 3000. Using R store their balance(after paying their phone bill) in a variable called `freemoney`. Find the average amount available each month for other expenses.

5. The below figure is from the dataset `diamonds`.

   (a) Write a couple of sentences describing the data set.

   (b) Write an R-command that uses `ggplot` and `geom_bar` to produce the following figure.



   (c) Write (one sentence) an observation you can draw from the bar graph.