MID-TERM

Slot:L13+L14-Wednesday

Date: 7-4-2021

1 . Use the following data, and plot the graphs using plotly.

```
Item = [['E001', 'M', 34, 123, 'Normal', 350],
        ['E002', 'F', 40, 114, 'Overweight', 450],
        ['E003', 'F', 37, 135, 'Obesity', 169],
        ['E004', 'M', 30, 139, 'Underweight', 189],
        ['E005', 'F', 44, 117, 'Underweight', 183],
        ['E006', 'M', 36, 121, 'Normal', 80],
        ['E007', 'M', 32, 133, 'Obesity', 166],
        ['E008', 'F', 26, 140, 'Normal', 120],
        ['E009', 'M', 32, 133, 'Normal', 75],
        ['E010', 'M', 36, 133, 'Underweight', 40] ]
Attribute = ['EMPID', 'Gender', 'Age', 'Sales','BMI', 'Income']
```

- Line plot using the columns empid, sales
- Stacked Bar plot sales, income
- Histogram gender, BMI
- Boxplot for income
- Scatter plot - Map the color of the points to BMI and Make the points bigger by setting size to 2.

2. Consider the iris data set in the plotly package.

- Calculate the mean values for the Species components of the first four columns in the iris data set. Organize the results in a matrix where the row names are the unique values from the iris Species column and the column names are the same as in the first four iris columns.
- Generate two bar plots: one with stacked bars and one with horizontally arranged bars by taking necessary attributes.
- Generate scatter plot: Map a continuous variable to colour, size, and shape.

3. Consider the diamond data set in the ggplot2 package.

- Create a histogram of "carat"
- Set the bin width of the histogram to 0.01
- Make a scatterplot: carat vs price, set the color to clarity
- Show only diamonds with cut =Good and very good
- Facet it by clarity.
- Show carat vs cut, make a jitter and a boxplot.

4.

Consider the mpg data set in the dplyr and plotly/ggplot2 package.

a. Which car(s) had the highest highway gas mileage? (For the purposes of this question, consider each observation a different car.)
b. Compute the mean city mileage for compact cars.
c. Compute the mean city mileage for each class of cars, and arrange in decreasing order.
d. Which cars have the smallest absolute difference between highway mileage and city mileage? (For the purposes of this question, consider each observation a different “car”.)
e. Compute the mean highway mileage for each year, and arrange in decreasing order.
f. Show visualization for any one(above query).