School of Computer Science Engineering and Technology

Course-BTech   Type - AI Core-1
Course Code - CSET211   Course Name - Statistical Machine Learning
Year - Second   Semester - ODD
Date - 12/08/2024   Batch - CSE 3rd Semester

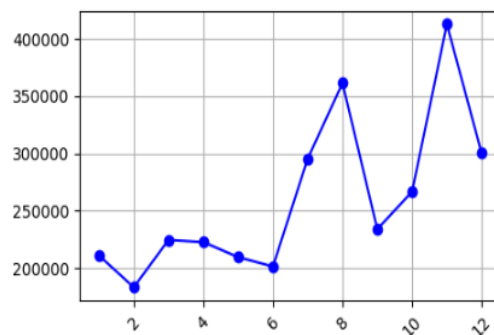## Lab Assignment - 2: Performing visualization using Matplotlib and Seaborn packages

CO- Mapping

Section	CO1	CO2	CO3	CO4
Section 1: Q1-Q5	√			
Section 2: Q1-Q5	√			

Useful Links for Matplotlib & Seaborn
1. http://www.matplotlib.org - The project web page for matplotlib.
2. https://github.com/matplotlib/matplotlib - The source code for matplotlib.
3. http://matplotlib.org/gallery.html - A large gallery showcasing various types of plots matplotlib can create. Highly recommended!
4. http://www.loria.fr/~rougier/teaching/matplotlib - A good matplotlib tutorial.
5. Seaborn documentation: https://seaborn.pydata.org/index.html

Section 1: Matplotlib
1. Import matplotlib and pandas libraries.
2. Load the given dataset - 'ecommerce_data.csv'.
3. Create a simple line plot in Matplotlib to show total profit of the ecommerce website month wise. Use the Month column of the data on the x-axis and total profit on the y-axis.

4. Using the same plot as in Q3. Add the following style properties in the graph:

a. Line should be red-colored.

b. Each axis should be properly labeled.
c. Display title of the plot.

d. Show legend at the lower right location.

e. Line width should be 3.

5. For each month, plot the 'shirts', 't shirts', 'trousers', and 'shoes' data in one graph. Add the following style properties in the graph:
   a. Each line should be of a different color.
   b. Set the linewidth to be 3.
   c. Set marker as 'o'.
   d. Set the titles for x and y label axes.
   e. Set the title of the graph.
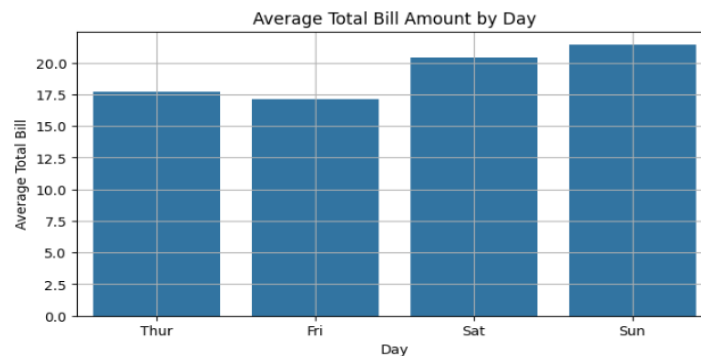   f. Set the legend in the upper right corner inside the plot.
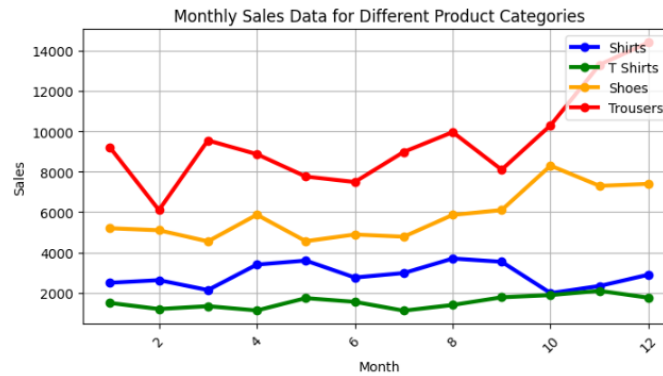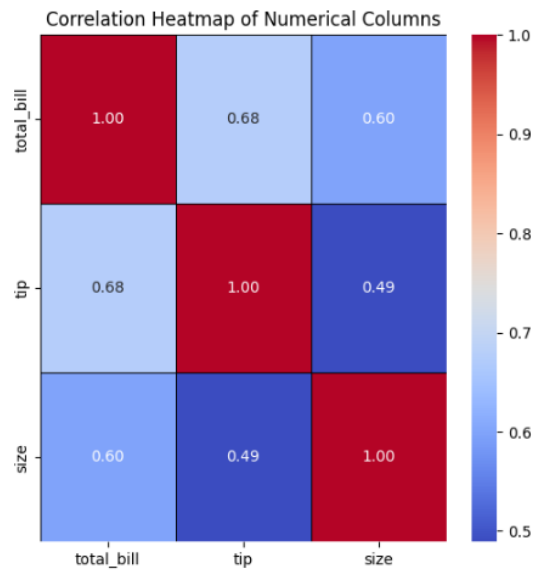

Section 2: Seaborn

1. Import seaborn library.
2. Load the built-in 'tips' dataset in seaborn and check the columns.
3. Plot the data distribution of the column 'total_bill'.
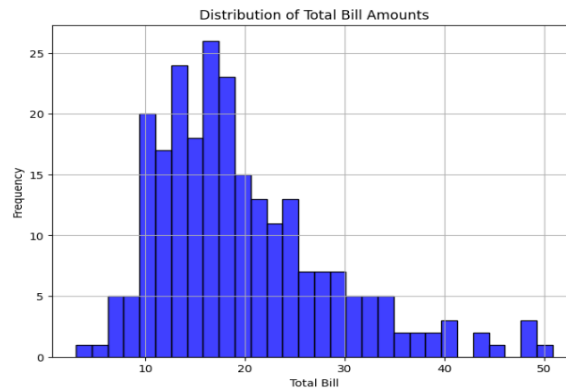
4. Use the bar plot for 'total bill' and 'day' columns.

5. Draw Heatmap by finding the correlation of numerical columns in the data.

Correlation Heatmap of Numerical Columns

Platform Required: Anaconda, Editor: Jupyter/Spyder/Pycharm/Google Colab

Submission Instructions:

- Submission required .ipynb file only
- Submission is through LMS only.