Lab 1: Data Visualization

Lab Description

Matplotlib is a Python plotting library that produces high-quality charts and figures. In addition, Pandas is a handy and useful data-structure tool for analyzing large and complex data.

Exercise 1

In this exercise, we are using Pandas and Matplotlib to visualize Company Sales Data. The data set is called "company_sales_data.csv". Read this file using Pandas function.

a.) Read "total profit" of all months and show it using a line plot. Total profit data provided for each month. Generated line plot must include the following properties:

- X label name = Month Number
- Y label name = Total profit
- Line Style dotted and Line-color should be red
- Show legend at the lower right location.
- Add a circle marker.
- Line marker color as red
- Line width should be 3
- Also, add a grid in the plot

b.) Read all product sales data and show it using a multi-line plot. Display the number of units sold per month for each product using multi-line plots. (i.e., Separate plot line for each product).

c.) Read "Bathing soap" and "face wash" of all months and display them using the Subplot.

d.) Read "tooth paste" sales data for each month and show it using a scatter plot. Also, add a grid in the plot.

e.) Read face cream and face wash product sales data and show it using the bar chart. The bar chart should display the number of units sold per month for each product. Add a separate bar for each product in the same chart.

f.) Read sales data of bathing soap for all months and show it using a bar chart. Save this plot in a file.

g.) Read the total profit of each month and show it using the histogram to see the most common profit ranges

h.) Calculate total sale data for each product during this year and show it using a Pie chart (pie method).

i.) Read all product sales data and show it using the stack plot (stack plot method is considered one of the main area charts). This plot must include the following properties:

- X label name = Month Number
- Y label name = Sales units in Number

- Title= All product sales data using stack plot
- Show legend at the upper left location.
- color vectors =['m','c','r','k','g','y']