18TH JUNE, 2024

CPEN302

LAB 5

LAB EXERCISE (DATA VISUALIZATION)

Deadline: 6:30pm, Tuesday, 18th June, 2024

Submission link: *https://forms.gle/trEz13nz4JDAS8SN7*

Note: Name your file in the format: *lastname_ID_lab5.py*

Matplotlib is a Python 2D plotting library that produces high-quality charts and figures, which helps us visualize extensive data to understand better. Pandas is a handy and useful data-structure tool for analyzing large and complex data.

In this exercise, we are using Pandas and Matplotlib to **visualize Company Sales Data**. (*company_sales_data.csv* is attached.)

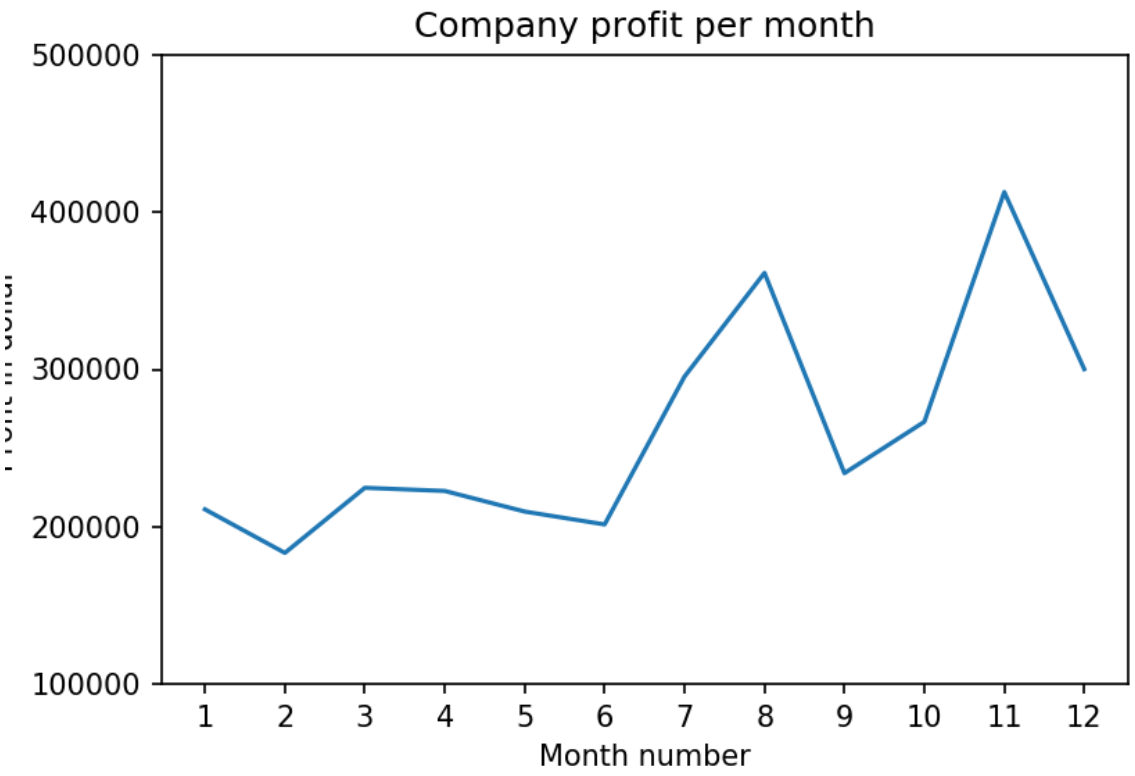
month_number	facecream	facewash	toothpaste	bathingsoap	shampoo	moisturizer	total_units	total_profit
1	2500	1500	5200	9200	1200	1500	21100	211000
2	2630	1200	5100	6100	2100	1200	18330	183300
3	2140	1340	4550	9550	3550	1340	22470	224700
4	3400	1130	5870	8870	1870	1130	22270	222700
5	3600	1740	4560	7760	1560	1740	20960	209600
6	2760	1555	4890	7490	1890	1555	20140	201400
7	2980	1120	4780	8980	1780	1120	29550	295500
8	3700	1400	5860	9960	2860	1400	36140	361400
9	3540	1780	6100	8100	2100	1780	23400	234000
10	1990	1890	8300	10300	2300	1890	26670	266700
11	2340	2100	7300	13300	2400	2100	41280	412800
12	2900	1760	7400	14400	1800	1760	30020	300200

Exercise 1: 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

The line plot graph should look like this.



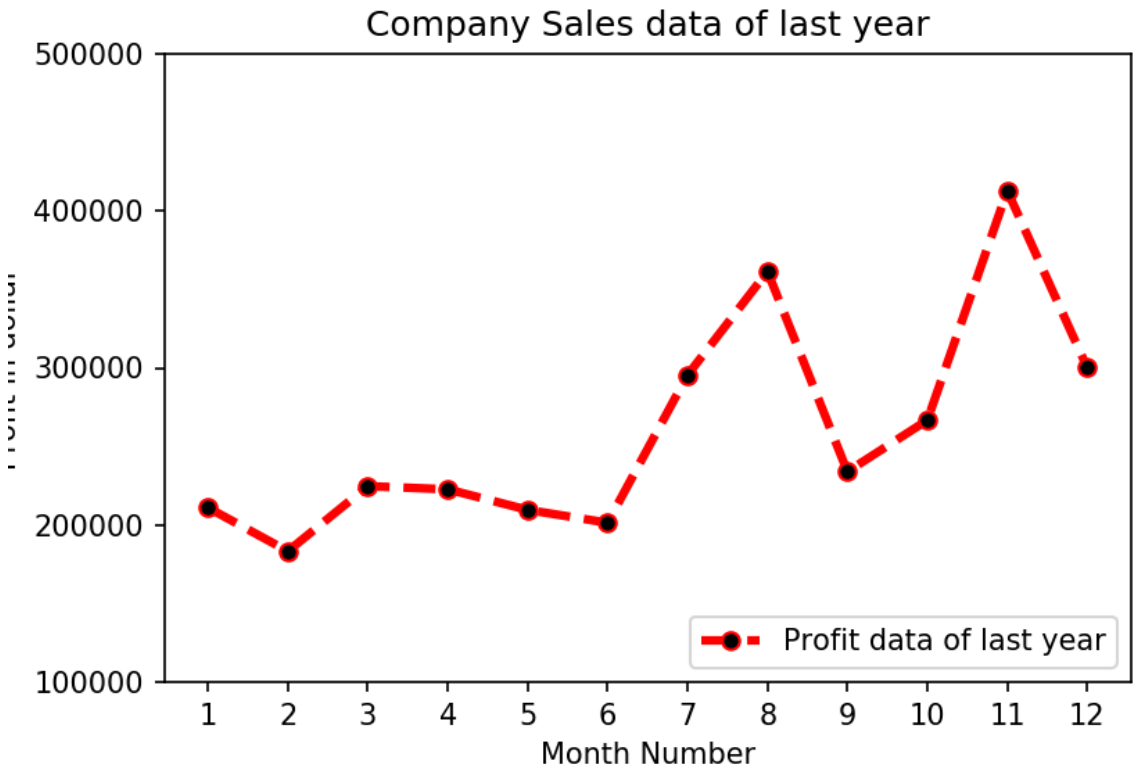
Exercise 2: Get total profit of all months and show line plot with the following Style properties

Generated line plot must include following Style properties: –

- Line Style dotted and Line-color should be red
- Show legend at the lower right location.
- X label name = Month Number
- Y label name = Sold units number
- Add a circle marker.
- Line marker color as read

- Line width should be 3

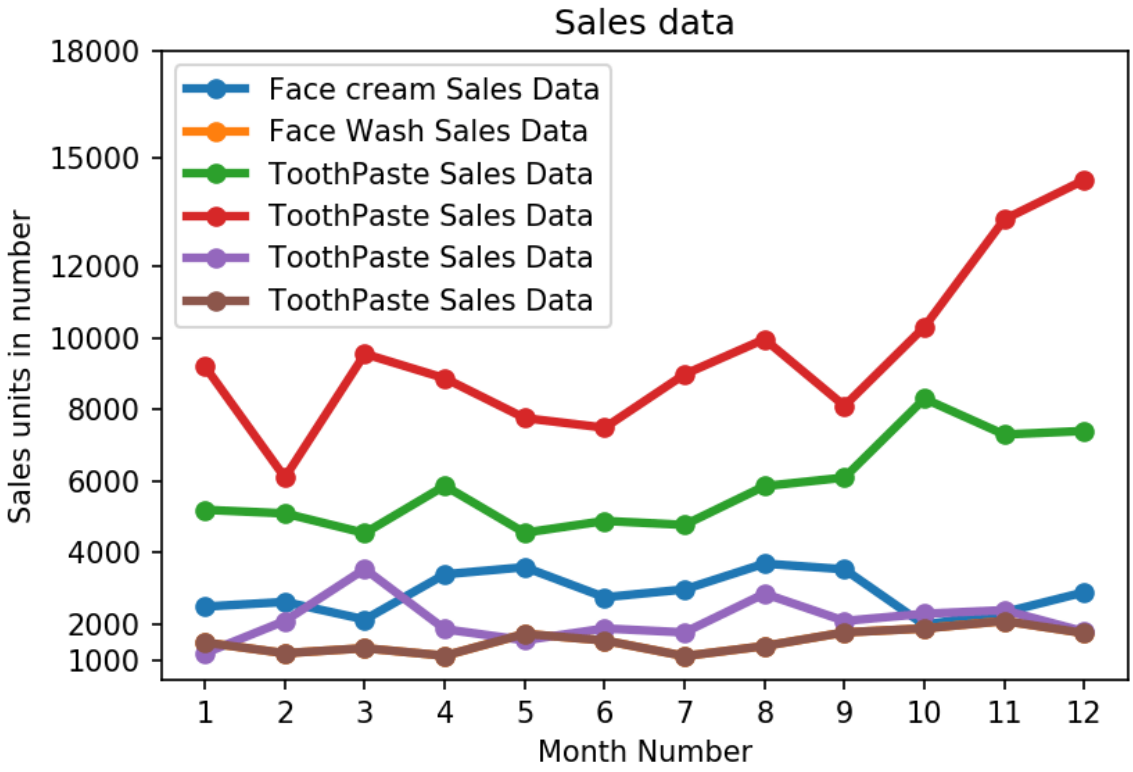
The line plot graph should look like this.



Exercise 3: Read all product sales data and show it using a multiline plot

Display the number of units sold per month for each product using multiline plots. (i.e., Separate Plotline for each product).

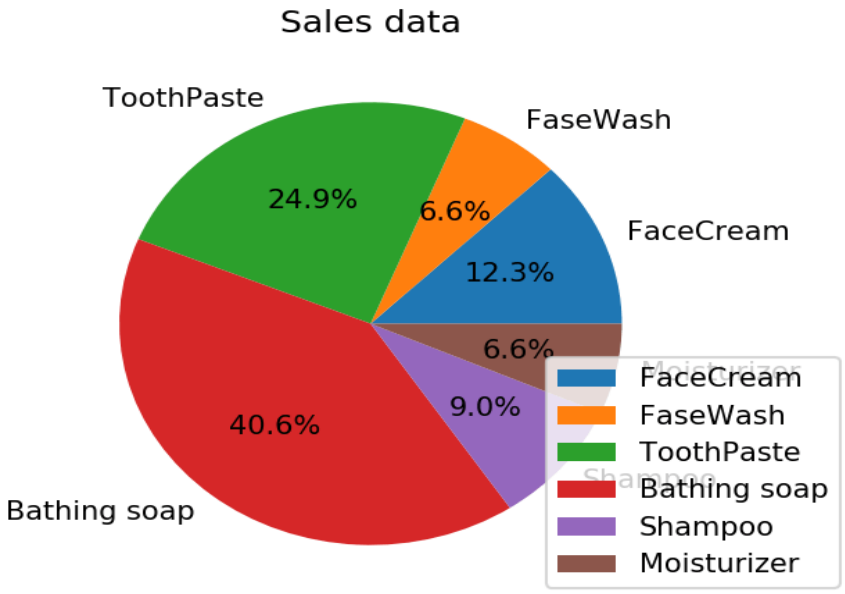
The graph should look like this.



Exercise 4: Calculate total sale data for the year for each product and show it using a Pie chart

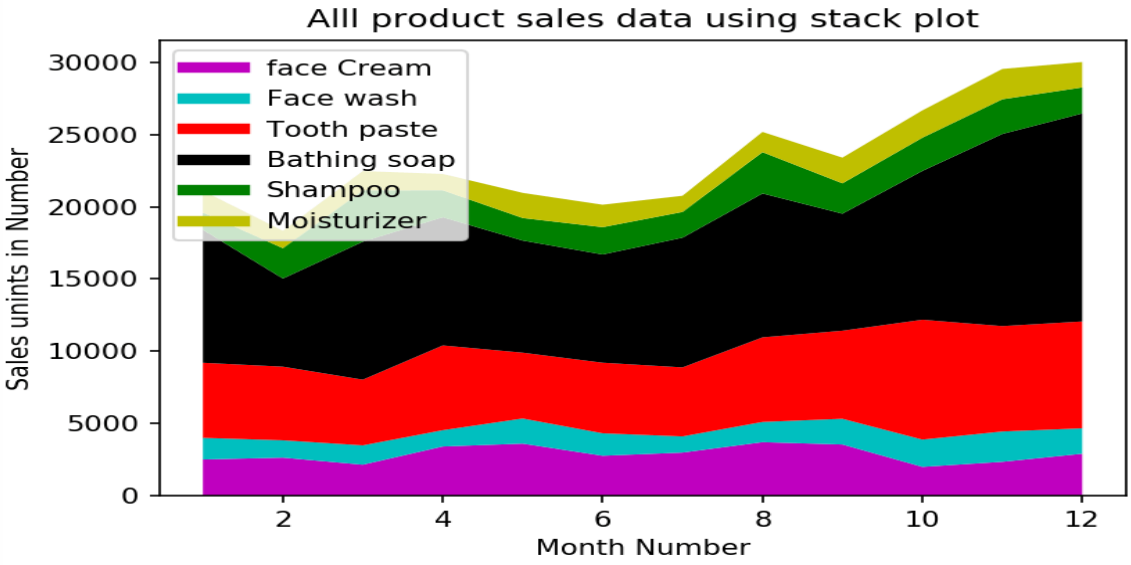
Note: In Pie chart display Number of units sold per year for each product in percentage.

The Pie chart should look like this.



Exercise 5: Read all product sales data and show it using the stack plot

The Stack plot should look like this.



Exercise 6: Read Bathing soap facewash of all months and display it using the Subplot

The Subplot should look like this.