

# Fourth Industrial Revolution (4IR) Summer School

## Data Analysis Foundations – Day 1 (B) exercises

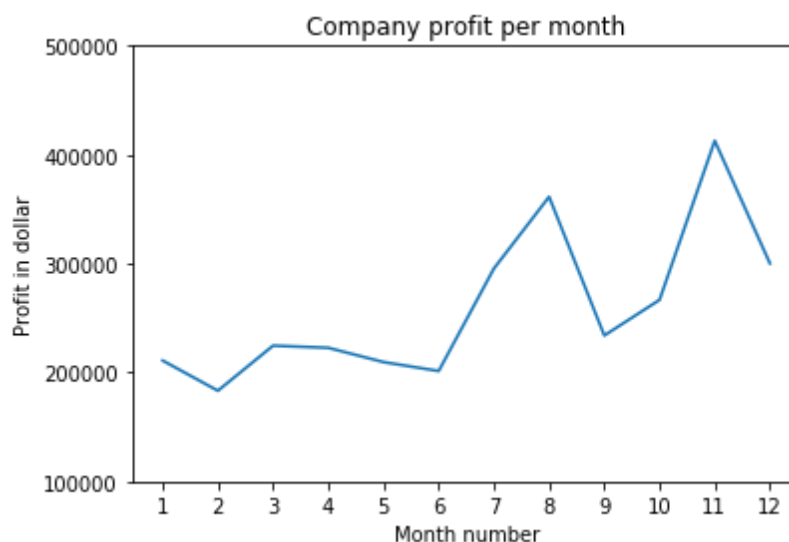
### Sales data exploration

Examine the supplemented CSV file ([SalesData.csv](#)) which contains the sales data for a number of store items over the year. Upload the file into your Colab environment, and work on the following exercises.

	month_number	facecream	facewash	toothpaste	bathingssoap	shampoo	moisturizer	total_units	total_profit
0	1	2500	1500	5200	9200	1200	1500	21100	211000
1	2	2630	1200	5100	6100	2100	1200	18330	183300
2	3	2140	1340	4550	9550	3550	1340	22470	224700
3	4	3400	1130	5870	8870	1870	1130	22270	222700
4	5	3600	1740	4560	7760	1560	1740	20960	209600
5	6	2760	1555	4890	7490	1890	1555	20140	201400
6	7	2980	1120	4780	8980	1780	1120	29550	295500
7	8	3700	1400	5860	9960	2860	1400	36140	361400
8	9	3540	1780	6100	8100	2100	1780	23400	234000
9	10	1990	1890	8300	10300	2300	1890	26670	266700
10	11	2340	2100	7300	13300	2400	2100	41280	412800
11	12	2900	1760	7400	14400	1800	1760	30020	300200

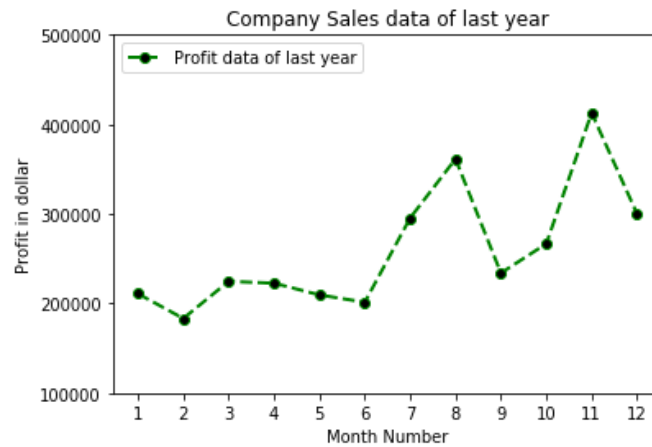
1. [Line plot] Plot the total profit of all months as a line plot.

- X label name = Month Number
- Y label name = Total profit



Change the style properties of the previous line chart according to the following properties:

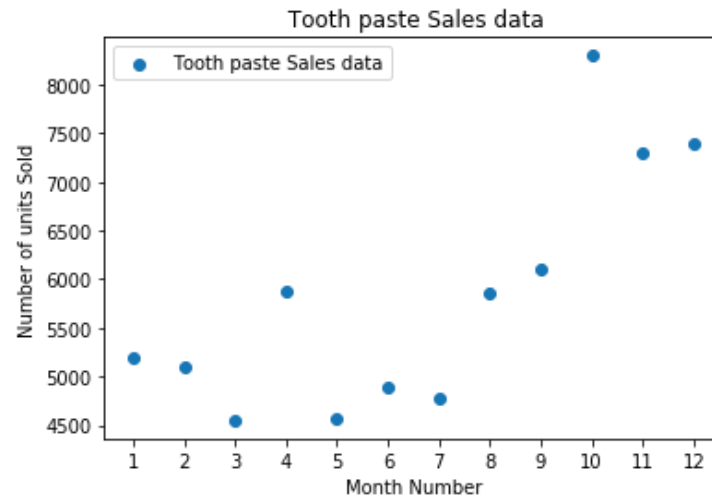
- Line Style dotted and Line color should be green
- Show legend at the upper left location.
- X label name = Month Number
- Y label name = Sold units number
- Add a circle marker.
- Line width should be 3



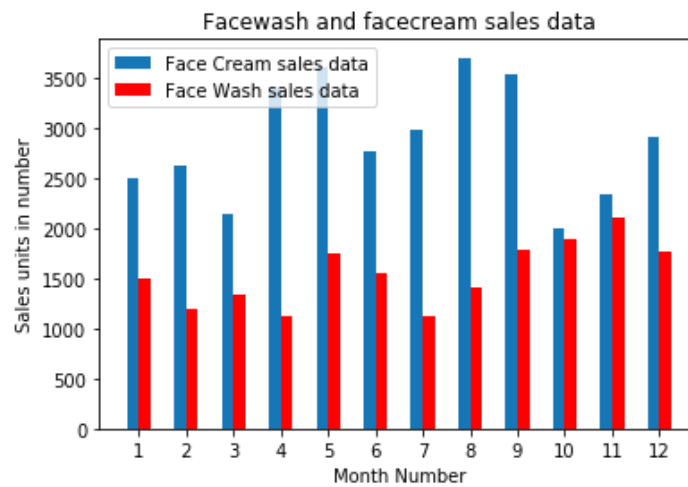
2. **[Multiline plot]** Display the number of units sold per month for each product using multiline plots.



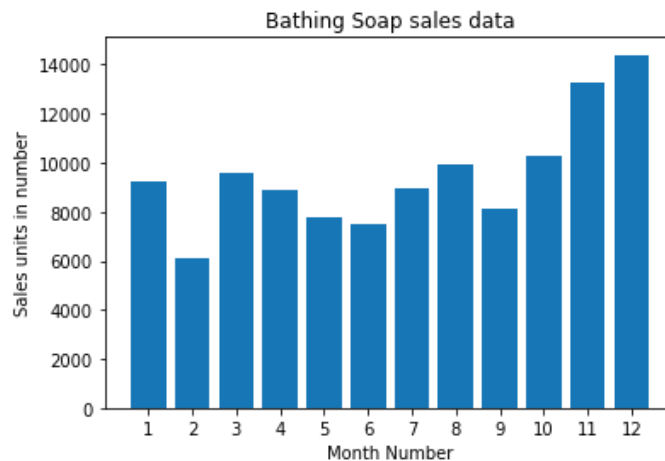
3. **[Scatter plot]** Plot the toothpaste sales data of each month as a scatter plot



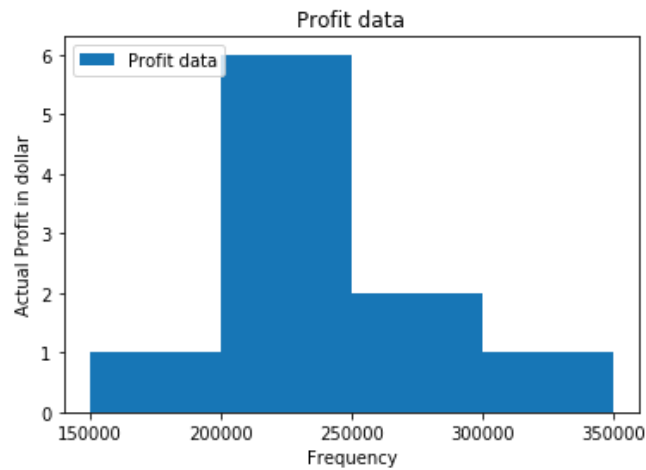
4. **[Bar chart]** Compare between the sales data of face cream and facewash using bar charts.



5. **[Bar chart]** Study the bathing soap sales data by plotting a bar chart.



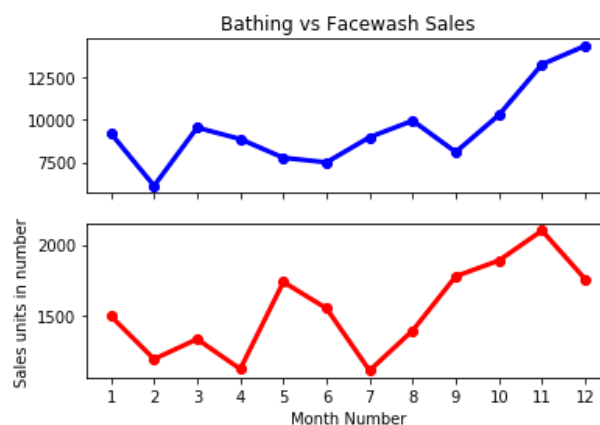
6. **[Histogram]** Show the most common profit ranges using a histogram.



7. **[Pie chart]** Show the year sale percentage for each product using a pie chart.



8. **[Multi chart]** Compare the sales pattern of Bathing sales against the Facewash sales by a multi chart plot.



9. **[Box plots]** Compare the sales of face wash and face cream using box plots. What is your observations?

