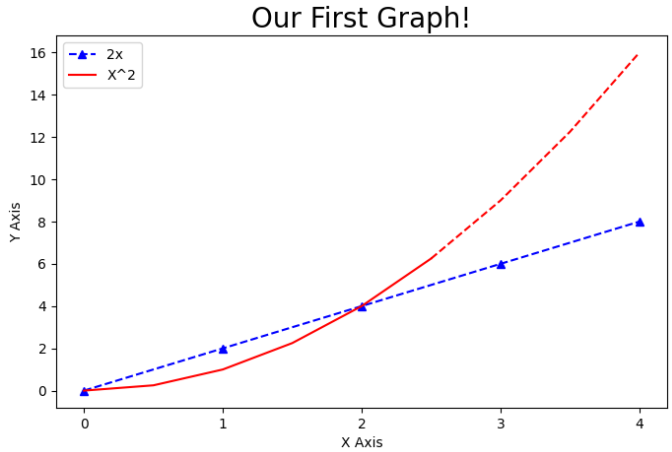
Lab Exercise – 4: Matplotlib Package

Note:

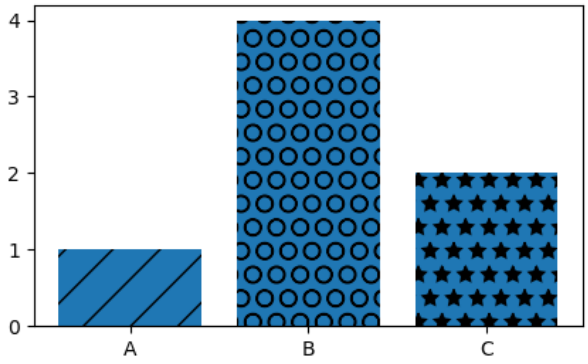
* Prepare a PDF document and name the file as “Lab4_RegisterNo.pdf”.
* PDF file should consist Question No, Code, and Result for each Question.
* File Should be headed with your Register number, Slot number, Lab Exercise number.

* * *

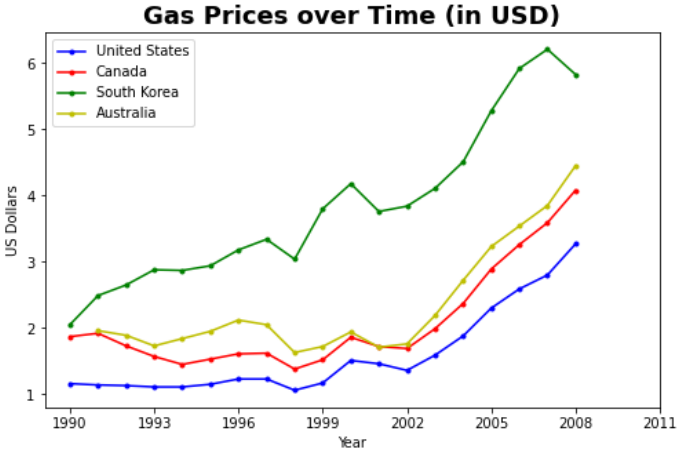
1. Draw Basic Graph using following data and instructions:
   - Data: x = [0,1,2,3,4], y = [0,2,4,6,8]
     - Plot the first line with a size (8,5), density per inch is 100, color is red, marker is ^, dashed line and the label is ‘2x’.
   - Data: x2 is a NumPy array of equal distributed from 0 to 4.5 with a space of 0.5
     - Plot the part of second line (up to 5 data items) with a red color and label it x^2. Here you need to calculate the appropriate y values based on the label.
     - Plot the remaining part of second line with a red color and dashed line.
   - Name the entire graph with title “My First Graph” with a ‘Comic Sans MS’ font name and font size is 20.
   - Label the X axis and Y axis with appropriate ticks
   - Save the figure as “MyFirstGraph.png” and display in the same Jupyter notebook.



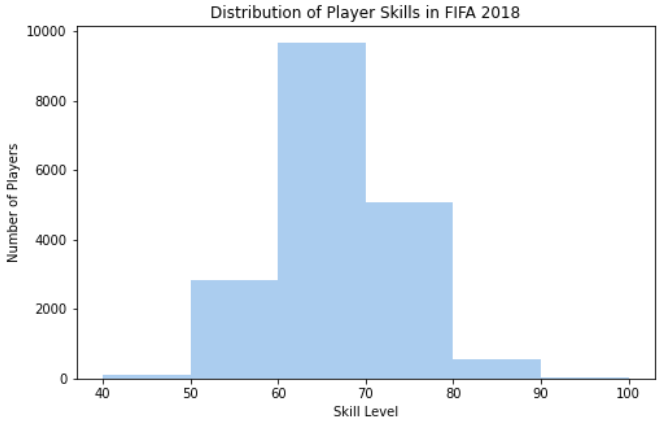
2. Draw Bar Chart using following data and instructions:
   - Data: labels = ['A', 'B', 'C'], values = [1,4,2]
   - Size of the figure is (5,3) and dpi is 100. Show each bar with different patterns.
   - Save this bar chart as ‘barchart.png’ and display it.



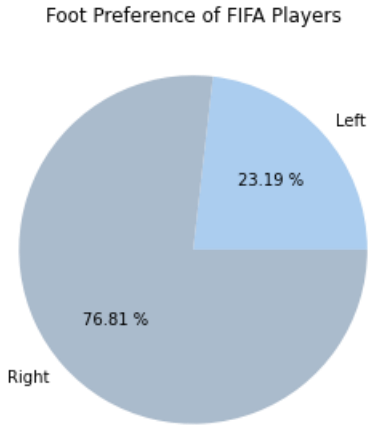
3. Plot the “Gas prices over time” using the data set “gas_prices.csv”



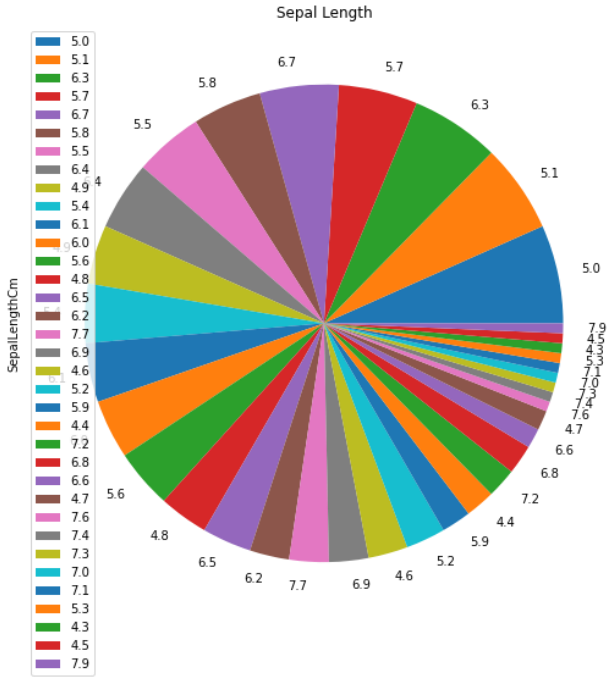
4. Draw histogram for the ‘Overall’ attribute of the data set ‘fifa_data.csv’.



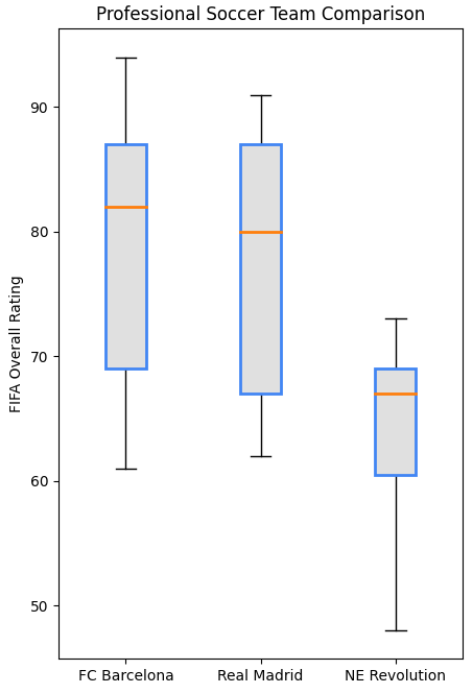
5. Draw the following pie chart which refers the Foot Preference of FIFA players.



6. Draw Sepal Length pie chart to refer frequency of each unique value in the Sepal Length attribute of the data set “iris_data.csv”

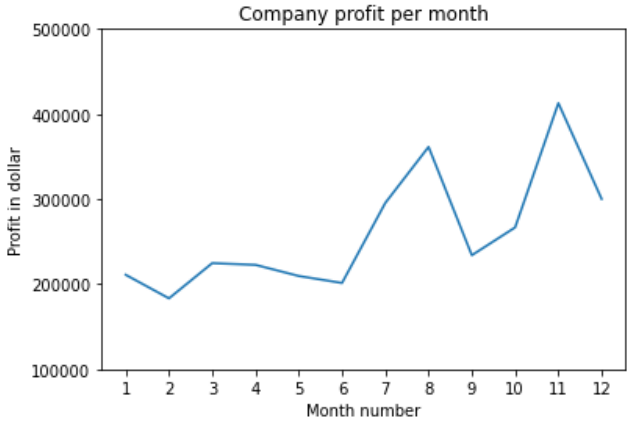


7. Draw the Box and Whisker plot for the ‘Overall’ attribute of various clubs “FC Barcelona”, “Real Madrid”, and "New England Revolution". Set the Box color and face color to '#4286f4' and '#e0e0e0' respectively.

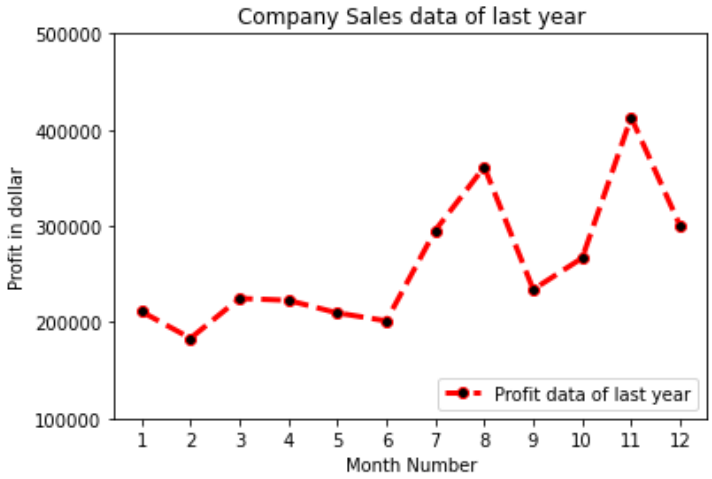


8. Use Company Sales Data(company_sales_data.csv) to draw the plots for the following:

a. Display total profit of all months using a line plot

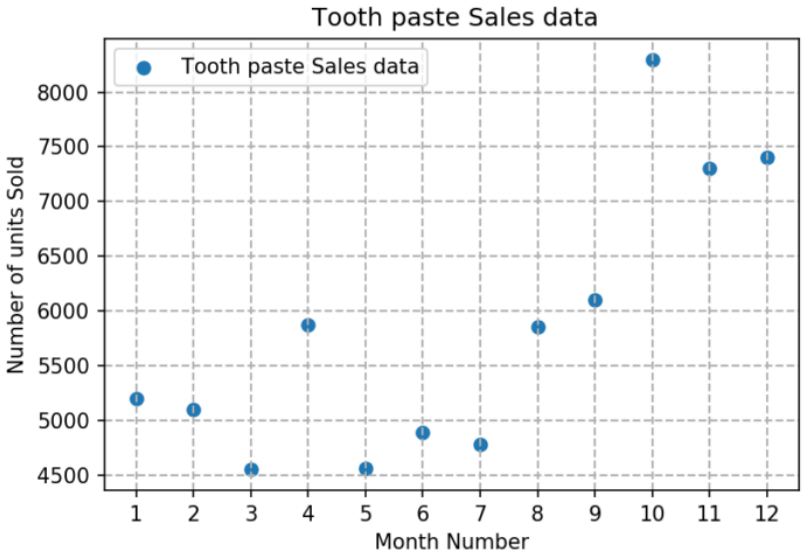


b. Change the above plot like the following

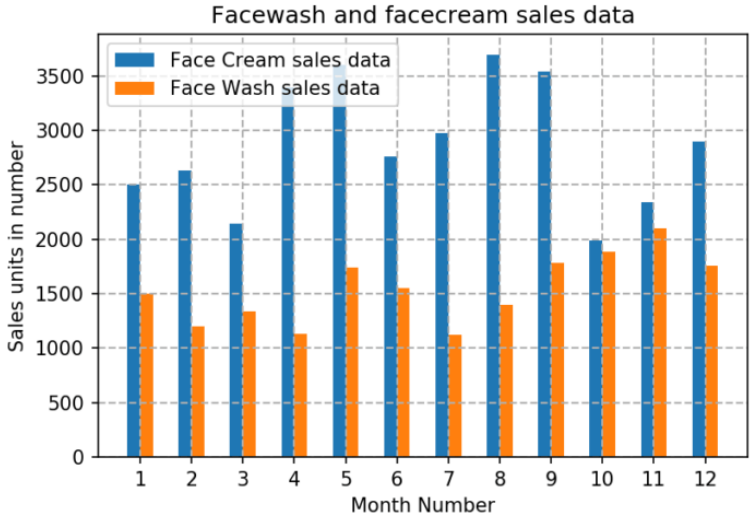


c. Draw Multiline plot to display all product sales data.

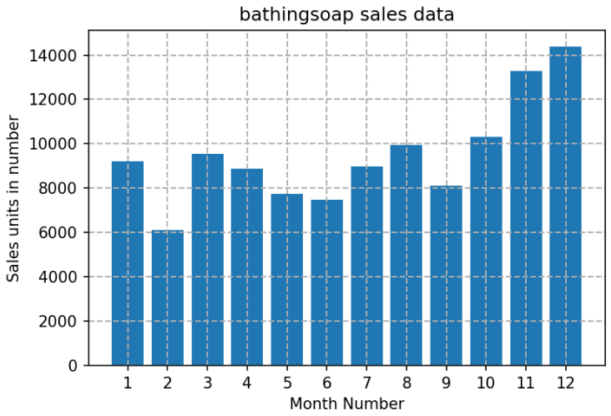
d. Draw Scatter plot to represent toothpaste sales data of each month (Add grid lines for clear understanding)



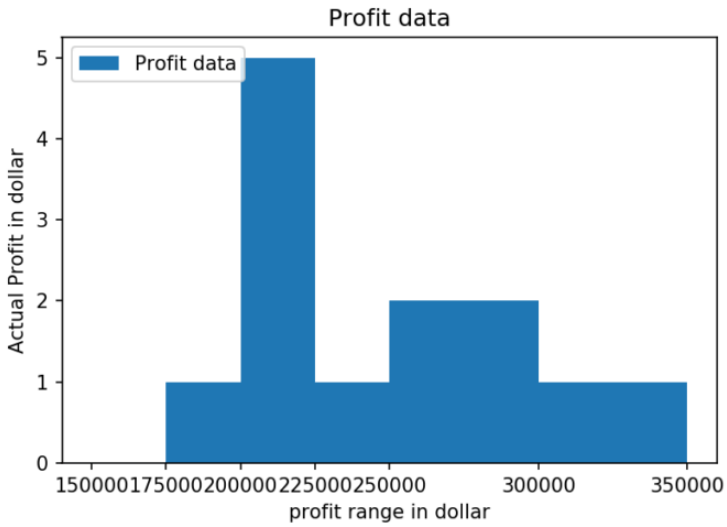
e. Draw Bar Chart for face cream and facewash product sales data



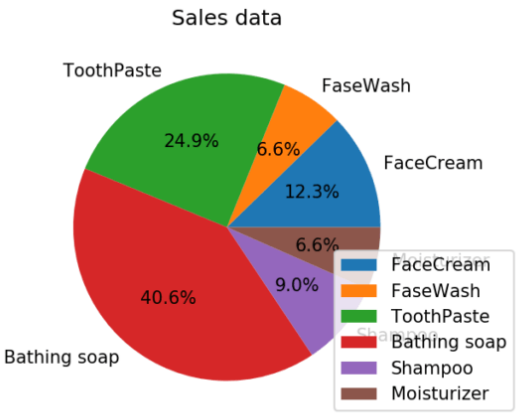
f. Draw bar chart for the Bathing soap sales of all months.



g. Draw histogram to display total profit of each month to observe most common profit ranges.



h. Calculate total sale data for last year for each product and show it using a Pie chart. In Pie chart display Number of units sold per year for each product in percentage.



i. Draw subplots for both Bathing soap and facewash sales of all months.