Python Programming

Business Scenario-Based Open Book Assessments

Exercise 1: Use Sales Data (CSV); read the total profit for all months and show it using a line plot.

Total profit data is provided for each month. The generated line plot must include the following properties:
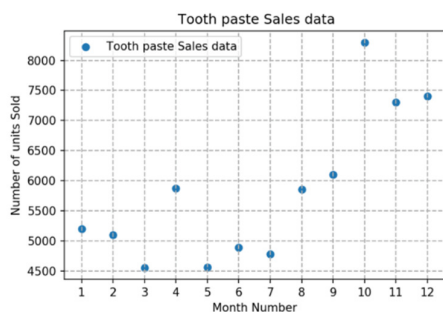
- X label name = Month Number
- Y label name = Total profit

Exercise 2: Use Sales Data (CSV): Read toothpaste sales data for each month and show it using a scatter plot.

Also, add a grid in the plot. gridline style should –.

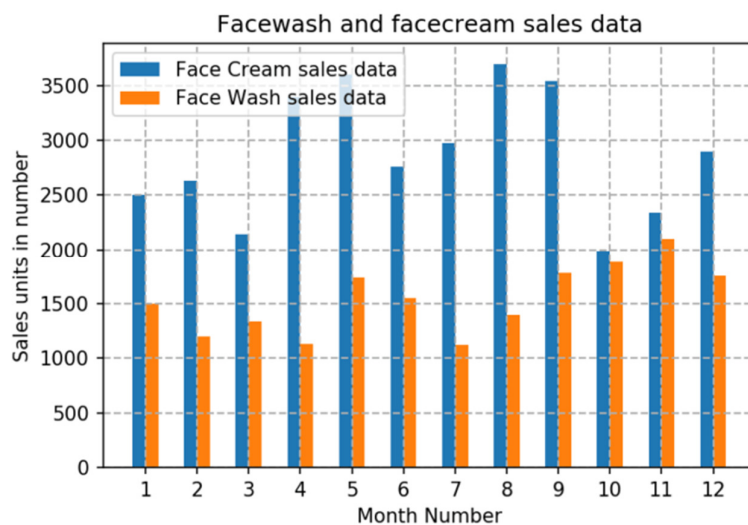- The scatter plot should look like this:

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Exercise 3: Use Sales Data (CSV): Read the sales data for face cream and facewash products and show it using the bar chart.

- The bar chart should display the monthly units sold for each product. Add a separate bar for each product in the same chart.

- The bar chart should look like this:

Exercise 4: Use Sales Data (CSV): Read the total profit of each month and show it using the histogram to see the most common profit ranges
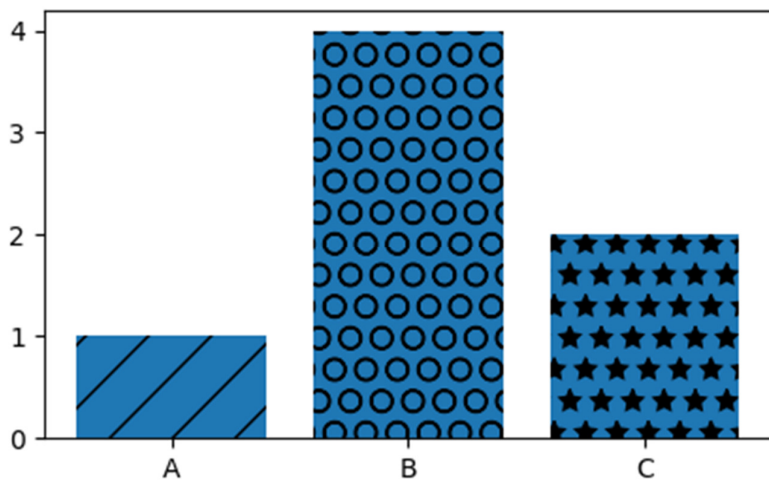The histogram should look like this:
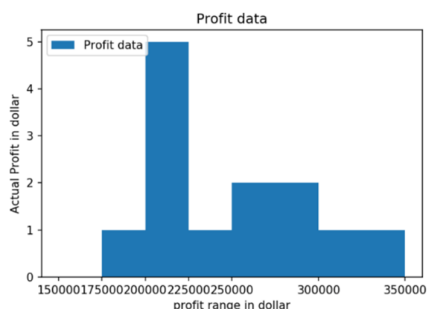
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Basic Lab:

Lab #1:

Use the following data set and create the line bar chart. It should look like this:
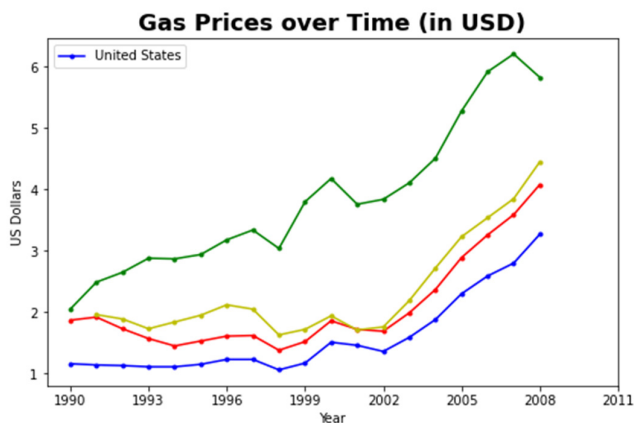
labels = ['A', 'B', 'C']

values = [1,4,2]

Lab #2:

Use the "gas_prices.csv" data file and show the trend of Gas Prices as shown in the chart below.
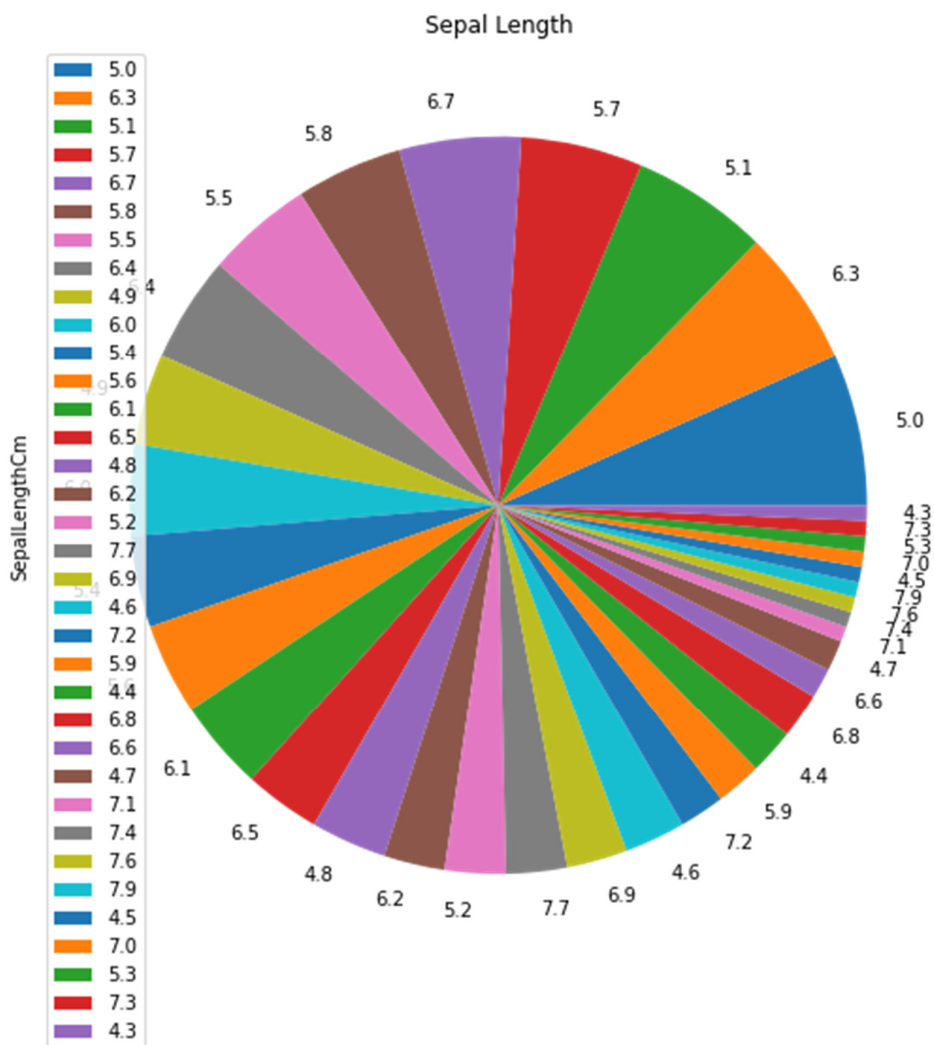
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Lab # 3:

Use the "iris" data set and create a pie chart like the one below to show the "Sepal Length" value count.

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PANDAS ASSESSMENT

Lab #1

Use the "Automobile (CSV)" Data set.
- Exercise 1: Print the first and last five rows from the given dataset.
- Exercise 2: Clean the dataset and update the CSV file - Hint: Replace all column values that contain? n.a, or NaN.
- Exercise 3: Find the most expensive car company name.
- Exercise 4: Print All Toyota Cars details.
- Exercise 5: Count total cars per company.
- Exercise 6: Find each company's highest car.
- Exercise 7: Find the average mileage of each car-making company.
- Exercise 8: Sort all cars by Price column.
- Exercise 9: Concatenate two data frames using the following conditions.
- Exercise 10: Merge two data frames using the following condition - Hint: Create two data frames using the following two Dicts, Merge two data frames, and append the second data frame as a new column to the first data frame.

Lab #2
Use the "Automobile (CSV)" Data set.
DataFrame Attributes: Implement the Data Frame using the following functions.

- DataFrame.index   It gives the Range of the row index
- DataFrame.columns   It gives a list of column labels
- DataFrame.dtypes   It gives column names and their data type
- DataFrame.values   It gives all the rows in DataFrame
- DataFrame.empty   It is used to check if the DataFrame is empty
- DataFrame.size   It gives a total number of values in DataFrame
- DataFrame.shape   It is a number of rows and columns in DataFrame

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Lab #3:

Use the "Automobile (CSV)" Data set.

Implement the Data Frame using the following functions.

- DataFrame.head(n)It is used to select top 'n' rows in DataFrame.
- DataFrame.tail(n)   It is used to select bottom 'n' rows in DataFrame.
- DataFrame.at   It is used to get and set the particular value of DataFrame using row and column labels.
- DataFrame.iat   It is used to get and set the particular value of DataFrame using row and column index positions.
- DataFrame.get(key)   It is used to get the value of a key in DataFrame where Key is the column name.
- DataFrame.loc()   It is used to select a group of data based on the row and column labels. It is used for slicing and filtering of the DataFrame.
- DataFrame.iloc()   It is used to select a group of data based on the row and column index position. You can use it to slice and filter the DataFrame.