

Python Matplotlib

1) Use the company sales data and plot the Total profit of all months.

In [1]:

```
import pandas as pd
import matplotlib.pyplot as plt
```

In [2]:

```
df = pd.read_csv('company_sales_data (1).csv')
```

In [3]:

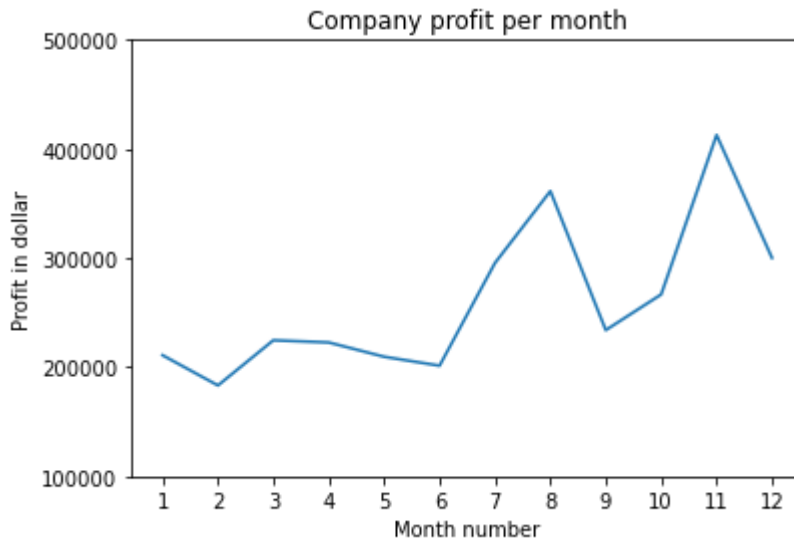
```
df.head()
```

Out[3]:

	month_number	facecream	facewash	toothpaste	bathingsoap	shampoo	moisturizer	total_
0	1	2500	1500	5200	9200	1200	1500	2
1	2	2630	1200	5100	6100	2100	1200	1
2	3	2140	1340	4550	9550	3550	1340	2
3	4	3400	1130	5870	8870	1870	1130	2
4	5	3600	1740	4560	7760	1560	1740	2

In [4]:

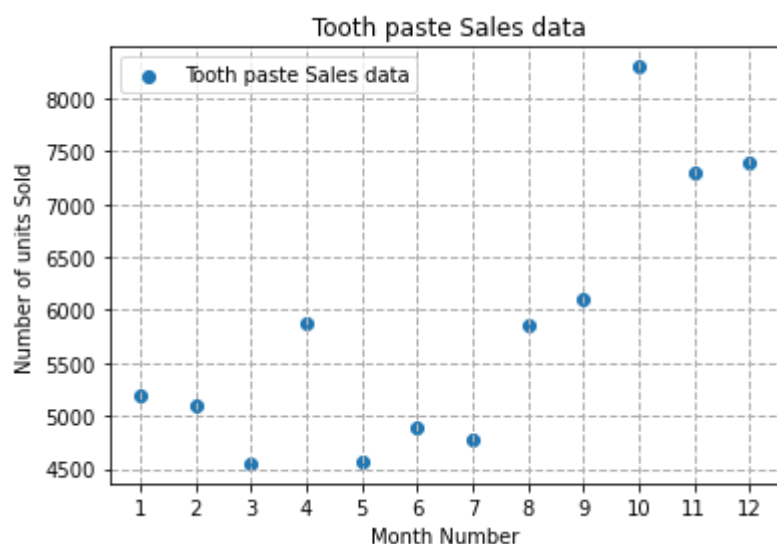
```
profitList = df ['total_profit'].tolist()
monthList = df ['month_number'].tolist()
plt.plot(monthList, profitList, label = 'Month-wise Profit data of last year')
plt.xlabel('Month number')
plt.ylabel('Profit in dollar')
plt.xticks(monthList)
plt.title('Company profit per month')
plt.yticks([100000, 200000, 300000, 400000, 500000])
plt.show()
```



2) Read toothpaste sales data of each month and show it using a scatter plot. Also, add a grid in the plot. gridline style should “—”.

In [5]:

```
monthList = df ['month_number'].tolist()
toothPasteSalesData = df ['toothpaste'].tolist()
plt.scatter(monthList, toothPasteSalesData, label = 'Tooth paste Sales data')
plt.xlabel('Month Number')
plt.ylabel('Number of units Sold')
plt.legend(loc='upper left')
plt.title('Tooth paste Sales data')
plt.xticks(monthList)
plt.grid(True, linewidth= 1, linestyle="--")
plt.show()
```



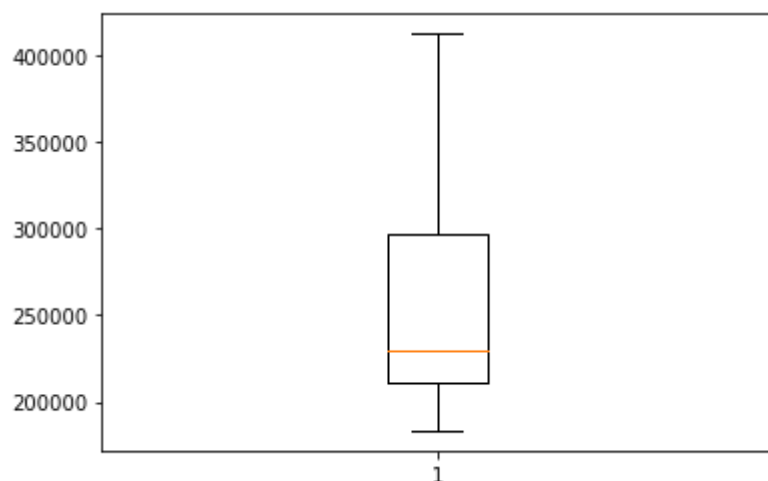
3) Plot the Total profit column with Boxplot(horizontal, Vertical, Notch), Histogram, barplot, Dotchart.

In [12]:

```
#Boxplot
Total_Profit = df["total_profit"]

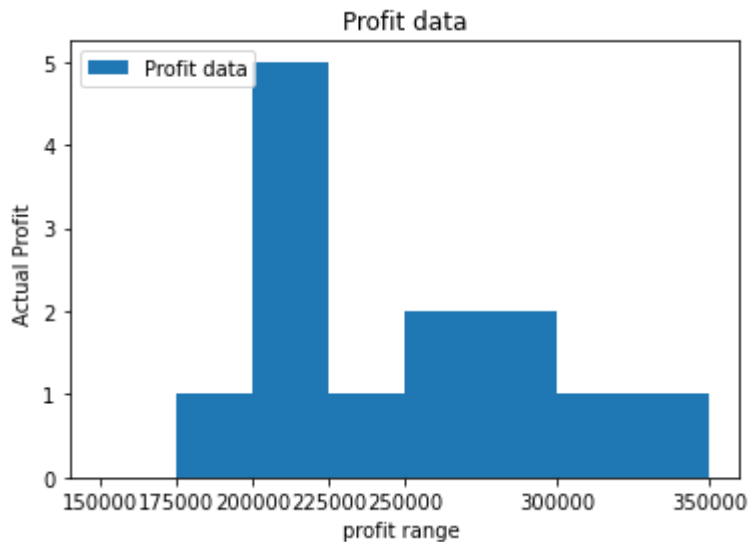
columns = [Total_Profit]

fig, ax = plt.subplots()
ax.boxplot(columns)
plt.show()
```



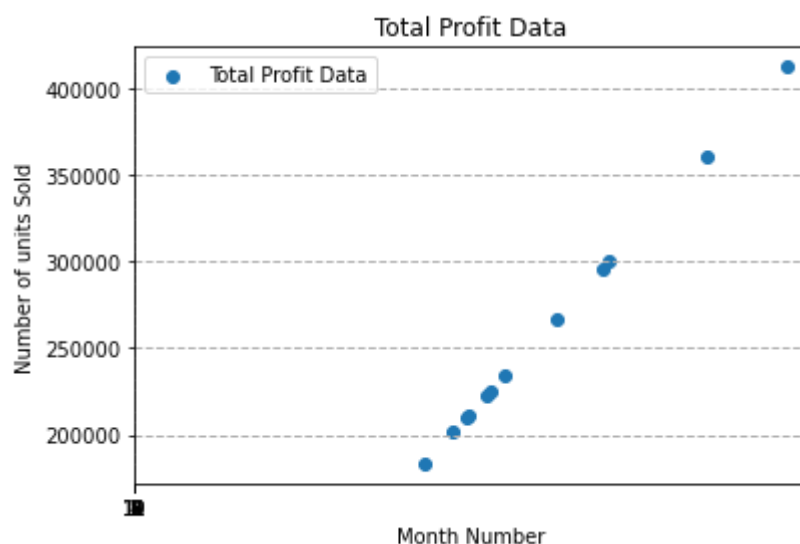
In [27]:

```
#Histogram
profitList = df ['total_profit'].tolist()
labels = ['low', 'average', 'Good', 'Best']
profit_range = [150000, 175000, 200000, 225000, 250000, 300000, 350000]
plt.hist(profitList, profit_range, label = 'Profit data')
plt.xlabel('profit range ')
plt.ylabel('Actual Profit ')
plt.legend(loc='upper left')
plt.xticks(profit_range)
plt.title('Profit data')
plt.show()
```



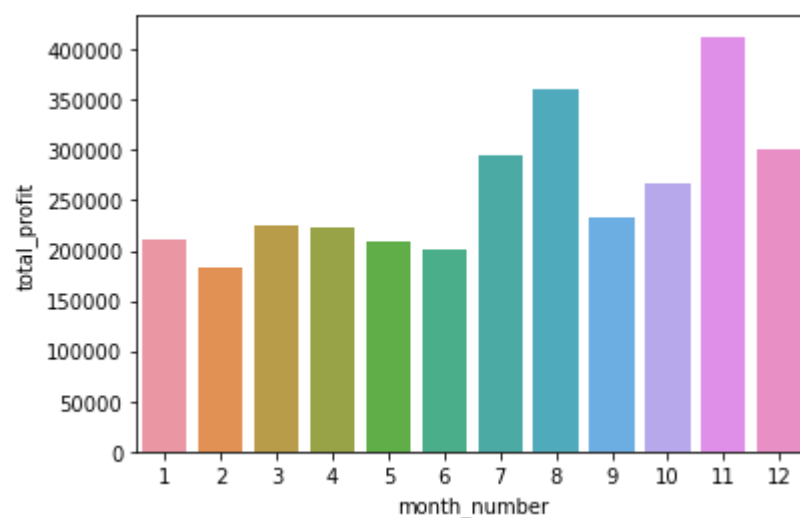
In [26]:

```
#Dotplot
profitList = df ['total_profit'].tolist()
TotalProfitData = df ['total_profit'].tolist()
plt.scatter(profitList, toothPasteSalesData, label = 'Total Profit Data')
plt.xlabel('Month Number')
plt.ylabel('Number of units Sold')
plt.legend(loc='upper left')
plt.title('Total Profit Data')
plt.xticks(monthList)
plt.grid(True, linewidth= 1, linestyle="--")
plt.show()
```



In [20]:

```
#Barplot
sns.barplot(y='total_profit',x='month_number',data=df);
```



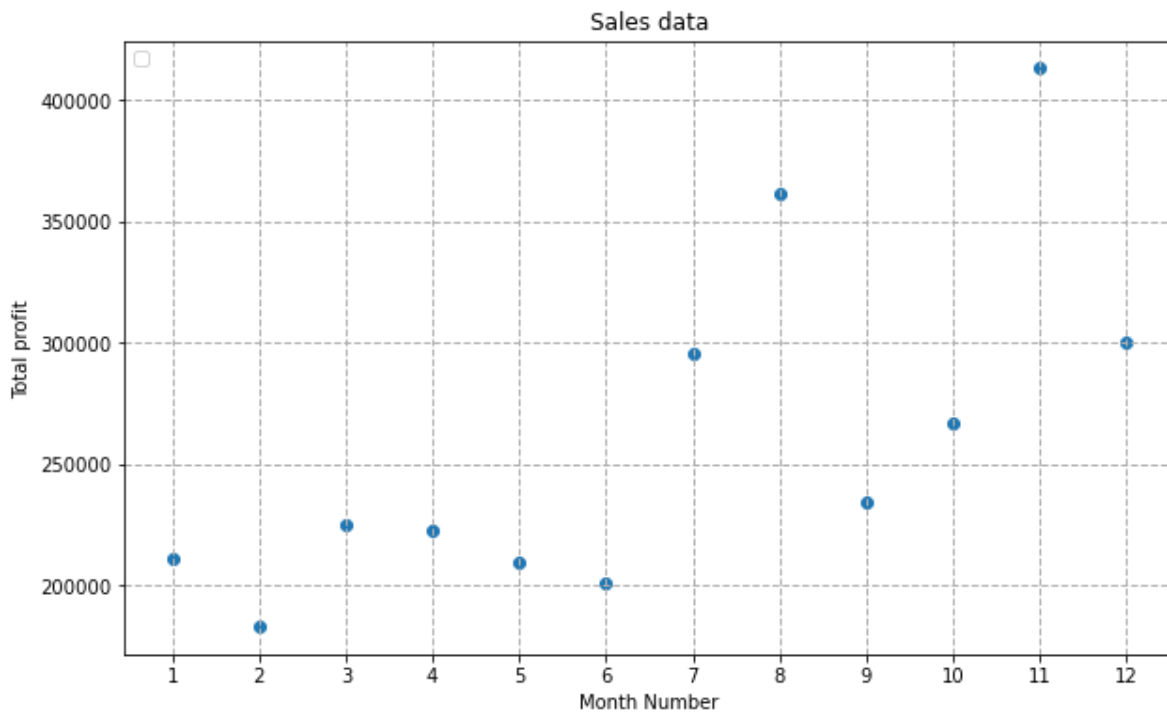
4) Do the scatterplot on Total profit & Month_number column.

In [69]:

```
#Scatterplot
fig, ax = plt.subplots(figsize=(10, 6))
ax.scatter(x = df['month_number'], y = df['total_profit'])
plt.xlabel('Month Number')
plt.ylabel('Total profit')
plt.legend(loc='upper left')
plt.title('Sales data')
plt.xticks(monthList)
plt.grid(True, linewidth= 1, linestyle="--")

plt.show()
```

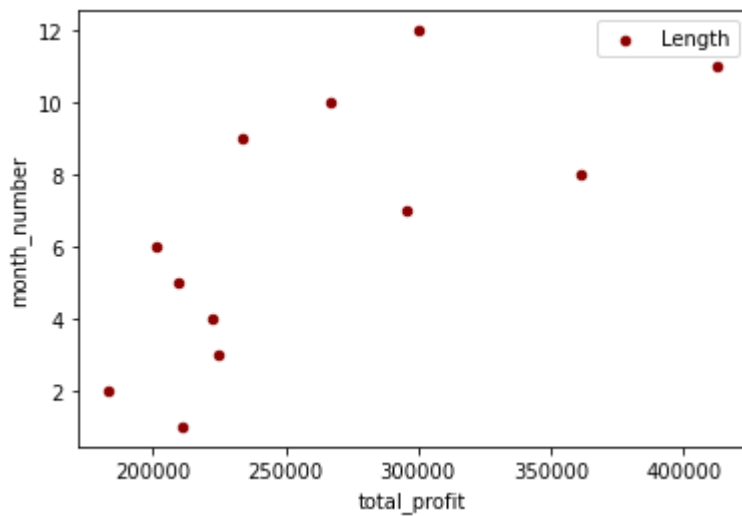
No handles with labels found to put in legend.



5) Plot the Total profit with format "red square -" ("rs-") and only "red circles" ("ro").

In [57]:

```
Sp = df.plot.scatter(x='total_profit', y='month_number', color='DarkRed', label='Length')
```



6) Read sales data of bathing soap of all months and show it using a bar chart

In [54]:

```
month_number = df["month_number"].tolist()
bathingsoap = df["bathingsoap"].tolist()

plt.bar(month_number, bathingsoap, label="Bathing Soap Sales", )
plt.title("bathing soap of all months")
plt.xlabel("month_number")
plt.ylabel("Bathing Soap Sales")
plt.grid(b=True, which="major", linewidth= 1, linestyle="--")
plt.legend()
plt.show()
```

