Matplotlib exercise

September 25, 2020

In [25]:
```
import csv
import numpy as np
import pandas as pd
%matplotlib inline
import matplotlib as mpl
import matplotlib.pyplot as plt
import seaborn as sns
```

In [26]:
```
df = pd.read_csv("company_sales_data.csv")
df
```

Out[26]:

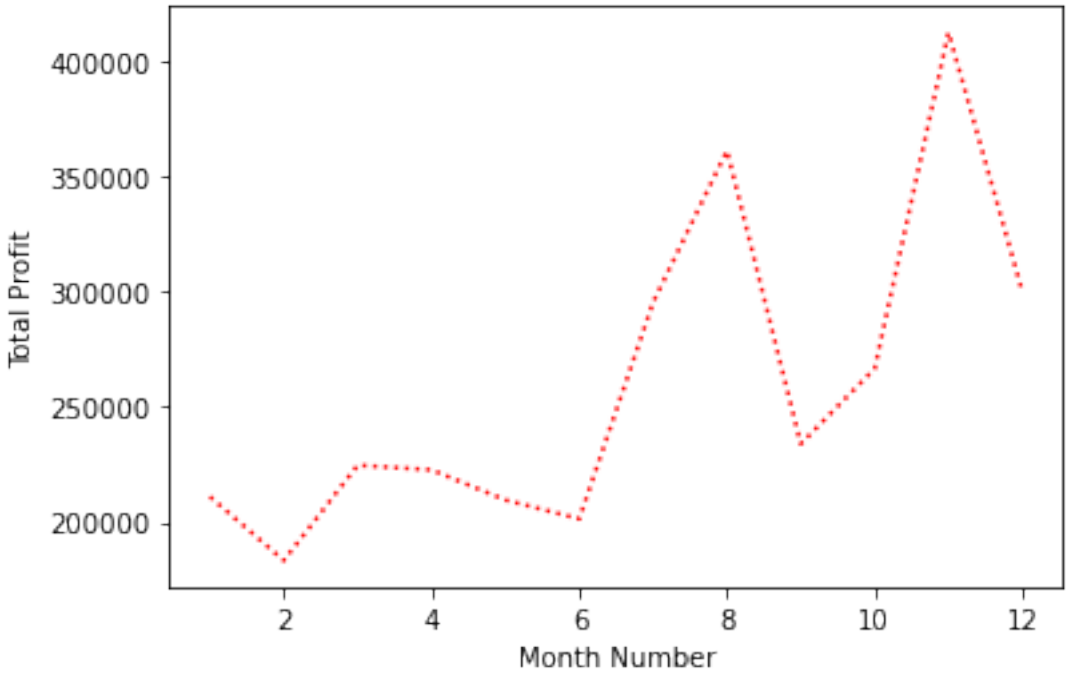
	month_number	facecream	facewash	toothpaste	bathingsoap	shampoo	moisturizer	total_units	total_profit
0	1	2500	1500	5200	9200	1200	1500	21100	211000
1	2	2630	1200	5100	6100	2100	1200	18330	183300
2	3	2140	1340	4550	9550	3550	1340	22470	224700
3	4	3400	1130	5870	8870	1870	1130	22270	222700
4	5	3600	1740	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

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

```
In [36]: x = df ["month_number"]
         y = df ["total_profit"]
         plt.xlabel('Month Number')
         plt.ylabel('Total Profit')
         plt.plot(x,y,linestyle="dotted",color="red")
```

```
Out[36]: [<matplotlib.lines.Line2D at 0x21b9361ba90>]
```



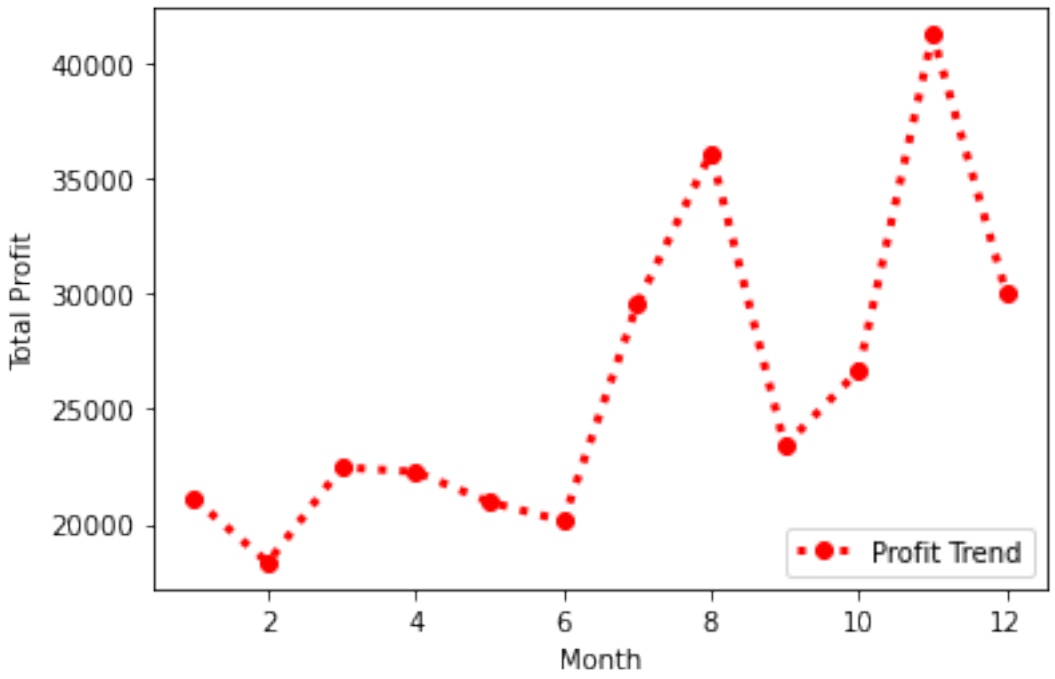

```
In [ ]: Exercise Question 2: Get Total profit of all months and show line plot with the follow
        Style properties.Generated line plot must include following Style properties:

        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
```

```
In [38]: x = df["month_number"]
         y = df["total_units"]
```

```
plt.xlabel('Month')
plt.ylabel('Total Profit')
plt.plot(x,y,"o",linestyle="dotted",color="red",linewidth=3,label="Profit Trend")
plt.legend(loc="lower right")
```

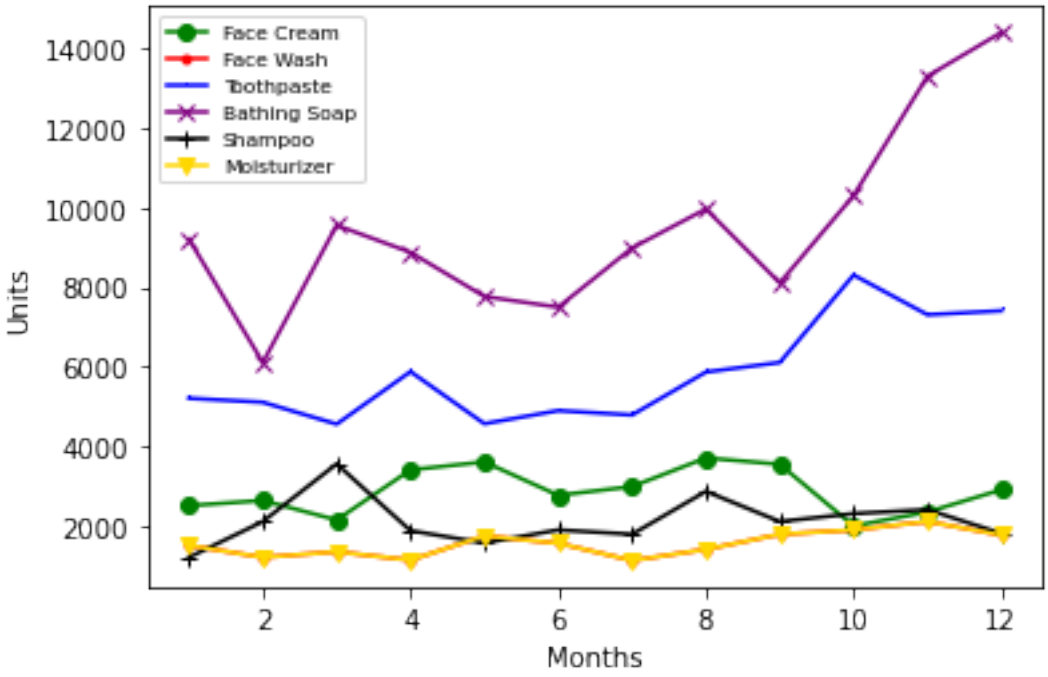
Out[38]: <matplotlib.legend.Legend at 0x21b938de630>



In [ ]: Exercise Question 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).

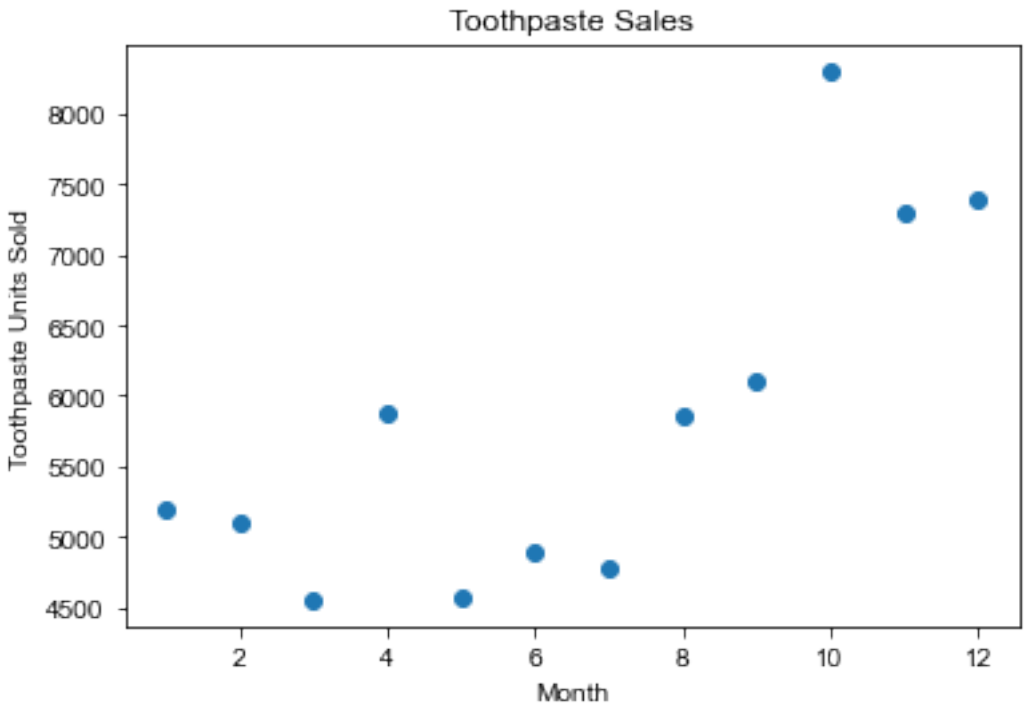
```
In [39]: colors = ["green","red","blue","purple","black","gold"]
         markers = ["o", ".", ",", "x", "+", "v"]
         labels = ["Face Cream", "Face Wash", "Toothpaste", "Bathing Soap", "Shampoo", "Moistu
         plt.xlabel("Months")
         plt.ylabel("Units")
         for i in range(1,7):
             plt.plot(df.month_number, df[df.columns[i]], marker=markers[i-1], color=colors[i-
         plt.legend(loc="upper left", fontsize=7.5)
```

Out[39]: <matplotlib.legend.Legend at 0x21b93924dd8>



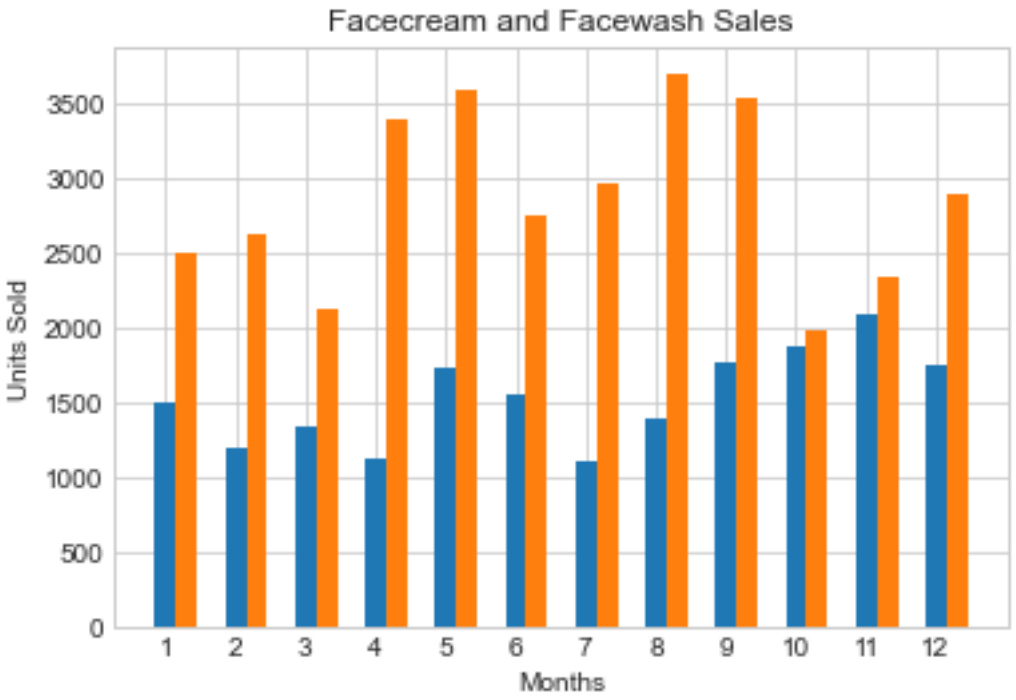
In [ ]: Exercise Question 4: Read toothpaste sales data of each month and show it using a scat
Also, add a grid in the plot. gridline style should .

In [41]:
```
plt.scatter(df.month_number,df.toothpaste)
plt.xlabel("Month")
plt.ylabel("Toothpaste Units Sold")
plt.title('Toothpaste Sales')
plt.style.use("seaborn-whitegrid")
```



Exercise Question 5: Read face cream and face wash product sales data and show it using the bar chart The bar chart should display the number of units sold per month for each product. Add a separate bar for each product in the same chart.

```
In [42]: data1 = df["facewash"]
         data2 = df["facecream"]
         width = 0.3
         plt.xlabel("Months")
         plt.ylabel("Units Sold")
         plt.title("Facecream and Facewash Sales")
         plt.bar((np.arange(len(data1))-width/2), data1, width=width,tick_label=df["month_numbe
         plt.bar((np.arange(len(data2))+width/2), data2, width=width)
         plt.show()
```


Facecream and Facewash Sales
Units Sold
0
500
1000
1500
2000
2500
3000
3500
1
2
3
4
5
6
7
8
9
10
11
12
Months