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Y20CS078

LAB-CYCLE 7

Plots on company sales dataset

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

com=pd.read_csv("/content/company_sales_data.csv")
print(com)
```

1. **Read Total profit of all months and show it using a line plot**

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

Output:

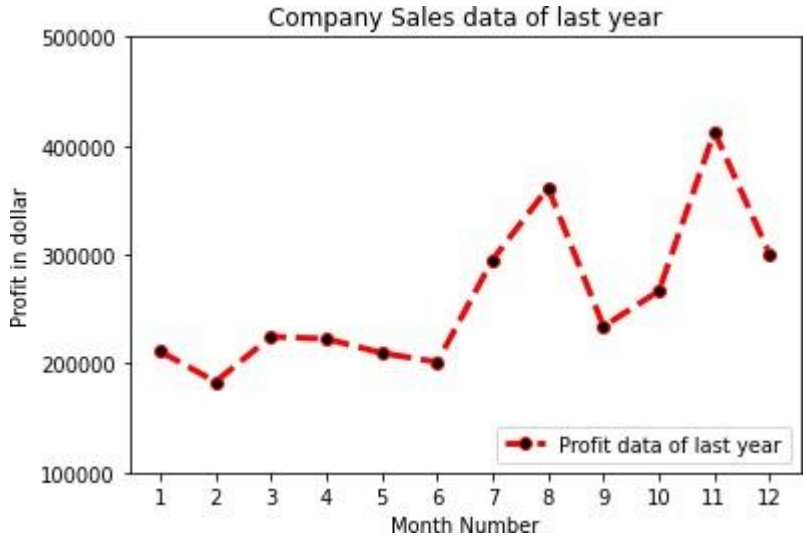
2. **Get total profit of all months and show line plot with the following Style properties**

```
pl= com ['total_profit'].tolist()
ml =com ['month_number'].tolist()

plt.plot(ml, pl, label = 'Profit data of last year',
    color='r', marker='o', markerfacecolor='k',
    linestyle='--', linewidth=3)
```

plt.xlabel('Month Number') plt.ylabel('Profit in dollar') plt.legend(loc='lower right' plt.title('Company Sales data of last year') plt.xticks(ml) plt.yticks([100000, 200000, 300000, 400000, 500000]) plt.show()

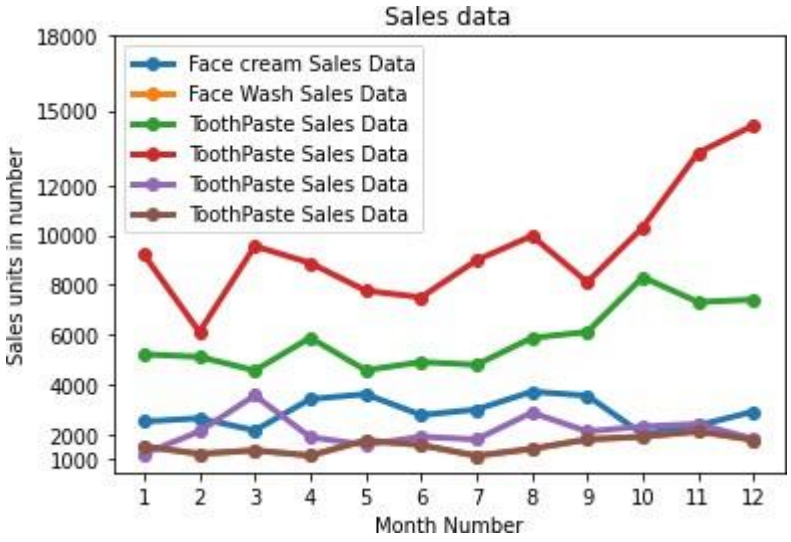
Output:



3. **Read all product sales data and show it using a multiline plot**

```
ml = com ['month_number'].tolist()
fc = com ['facecream'].tolist()
fw = com ['facewash'].tolist() tp
= com ['toothpaste'].tolist() bs =
com ['bathingsoap'].tolist() sh
= com ['shampoo'].tolist() mo =
com ['moisturizer'].tolist()
plt.plot(ml, fc, label = 'Face cream Sales Data', marker='o', linewidth=3)
plt.plot(ml, fw, label = 'Face Wash Sales Data', marker='o', linewidth=3)
plt.plot(ml, tp, label = 'ToothPaste Sales Data', marker='o', linewidth=3)
plt.plot(ml, bs, label = 'ToothPaste Sales Data', marker='o', linewidth=3)
plt.plot(ml, sh, label = 'ToothPaste Sales Data', marker='o', linewidth=3)
plt.plot(ml, mo, label = 'ToothPaste Sales Data', marker='o', linewidth=3)
plt.xlabel('Month Number') plt.ylabel('Sales units in number')
plt.legend(loc='upper left') plt.xticks(ml)
plt.yticks([1000, 2000, 4000, 6000, 8000, 10000, 12000, 15000, 18000]) plt.title('Sales
data')
plt.show()
```

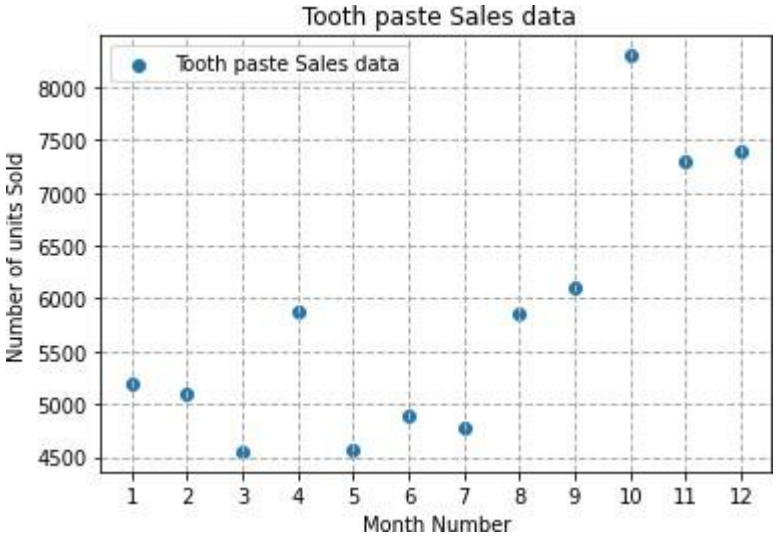
Output:



4. **Read toothpaste sales data of each month and show it using a scatter plot**

```
ml = com ['month_number'].tolist()
tp= com['toothpaste'].tolist()
plt.scatter(ml, tp, 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(ml)
plt.grid(True, linewidth= 1, linestyle="--") plt.show()
```

Output:



5. **Read face cream and facewash product sales data and show it using the bar chart**

```
ml = com ['month_number'].tolist()
 fc = com ['facecream'].tolist()
```

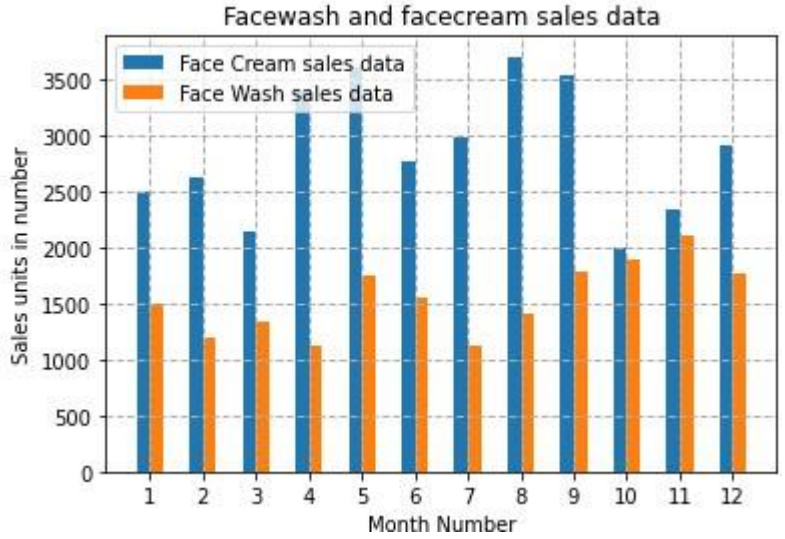
```
fw = com ['facewash'].tolist()

plt.bar([a-0.25 for a in ml], fc, width= 0.25, label = 'Face Cream sales data', align='edge')
plt.bar([a+0.25 for a in ml], fw, width= -0.25, label = 'Face Wash sales data', align='edge')
plt.xlabel('Month Number') plt.ylabel('Sales units in number') plt.legend(loc='upper left')
plt.title(' Sales data')

plt.xticks(ml) plt.grid(True, linewidth= 1,
linestyle="--") plt.title('Facewash and
facecream sales data')
```

Output:

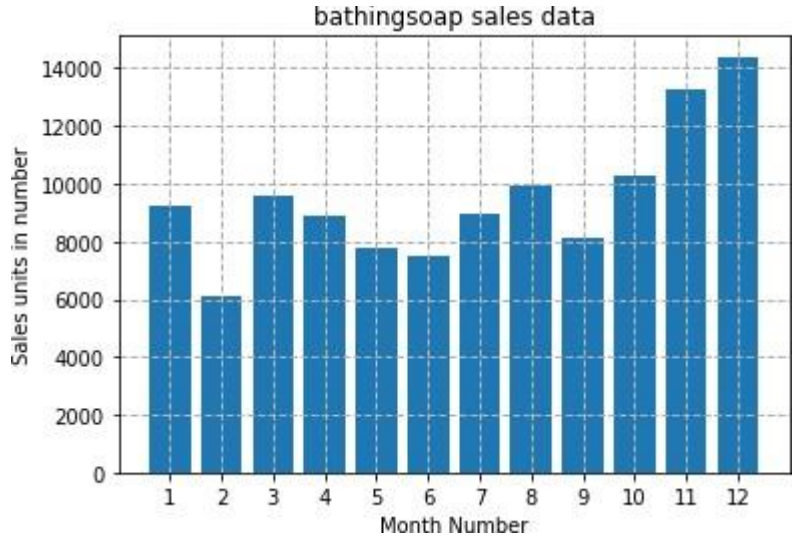
```
Text(0.5, 1.0, 'Facewash and facecream sales data')
```



6. Read sales data of bathing soap of all months and show it using a bar chart. Save this plot t o your hard disk

```
ml = com ['month_number'].tolist()
bs = com ['bathingsoap'].tolist()
plt.bar(ml, bs) plt.xlabel('Month
Number') plt.ylabel('Sales units in
number')
plt.title(' Sales data') plt.xticks(ml)
plt.grid(True, linewidth= 1, linestyle="--") plt.title('bathingsoap
sales data')
plt.savefig('D:\Python\Articles\matplotlib\sales_data_of_bathingsoap.png', dpi=150)
plt.show()
```

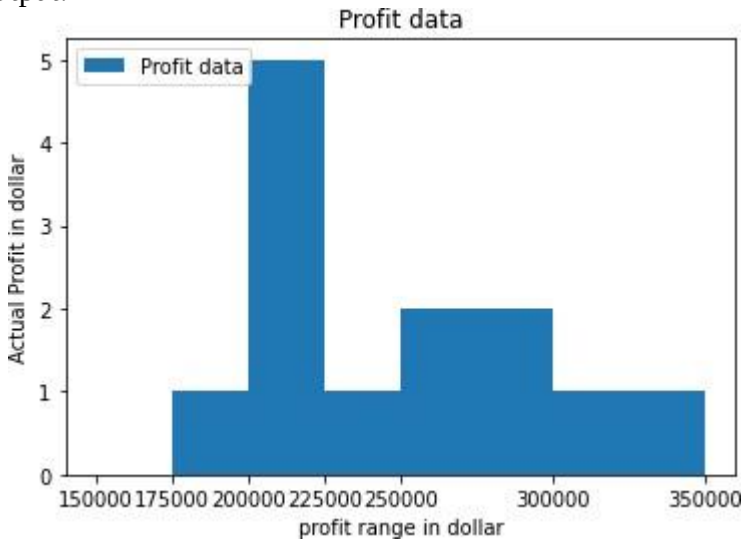
Output:



7. Read the total profit of each month and show it using the histogram to see the most commo n profit ranges

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

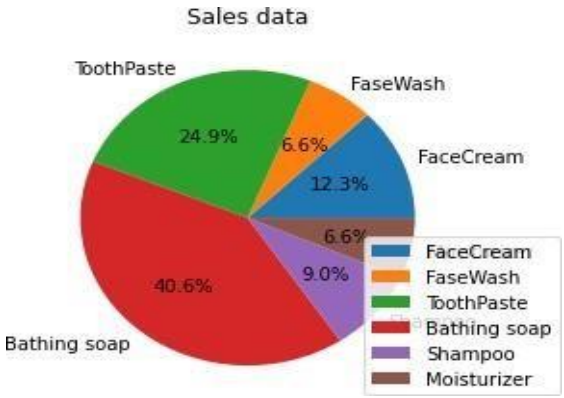
Output:



8. Calculate total sale data for last year for each product and show it using a Pie chart monthList = com ['month_number'].tolist()

```
labels = ['FaceCream', 'FaseWash', 'ToothPaste', 'Bathing soap', 'Shampoo', 'Moisturizer']
salesData = [com ['facecream'].sum(), com ['facewash'].sum(), com ['toothpaste'].sum(),
com ['bathingsoap'].sum(), com ['shampoo'].sum(), com ['moisturizer'].sum()]
plt.axis("equal")
plt.pie(salesData, labels=labels, autopct='%1.1f%%') plt.legend(loc='lower
right')
plt.title('Sales data') plt.show()
```

Output:



9. Read Bathing soap facewash of all months and display it using the Subplot

```
monthList = com['month_number'].tolist()
bathingsoap = com['bathingsoap'].tolist()
faceWashSalesData = com ['facewash'].tolist()

f, axarr = plt.subplots(2, sharex=True)
axarr[0].plot(monthList, bathingsoap, label = 'Bathingsoap Sales Data', color='k', marker='o',
linewidth=3)
axarr[0].set_title('Sales data of a Bathingsoap')
axarr[1].plot(monthList, faceWashSalesData, label = 'Face Wash Sales Data', color='r', marke
r='o', linewidth=3) axarr[1].set_title('Sales data of a facewash')

plt.xticks(monthList)
plt.xlabel('Month Number')
plt.ylabel('Sales units in number')
plt.show()
```

Output:

10. **Read all product sales data and show it using the stack plot**

```
monthList = com ['month_number'].tolist()
faceCremSalesData = com ['facecream'].tolist()
faceWashSalesData = com ['facewash'].tolist()
toothPasteSalesData = com ['toothpaste'].tolist()
bathingsoapSalesData = com ['bathingsoap'].tolist()
shampooSalesData = com['shampoo'].tolist()
moisturizerSalesData = com ['moisturizer'].tolist()
plt.plot([],[],color='m', label='face Cream', linewidth=5)
plt.plot([],[],color='c', label='Face wash', linewidth=5)
plt.plot([],[],color='r', label='Tooth paste', linewidth=5)
plt.plot([],[],color='k', label='Bathing soap', linewidth=5)
plt.plot([],[],color='g', label='Shampoo', linewidth=5)
plt.plot([],[],color='y', label='Moisturizer', linewidth=5)
plt.stackplot(monthList, faceCremSalesData, faceWashSalesData, toothPasteSalesData,
bathingsoapSalesData, shampooSalesData, moisturizerSalesData,
colors=['m','c','r','k','g','y'])
plt.xlabel('Month Number') plt.ylabel('Sales
unints in Number') plt.title('Alll product sales
data using stack plot') plt.legend(loc='upper left')
plt.show()
```

Output:

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