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** Data Visualization project using company sales dataset**
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Group Members are:

- Praveen kumar.Sugreevu, 20171CSE0531
- Pradeep S kalmath, 20171CSE09016
- prateek kv, 20171CSE0527
- p.saikrishna,20171CSE0541
- Kotha vekata manideep,20171CSE0324

Praveen kumar.S, 20171CSE0531

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

from google.colab import drive
drive.mount('/content/drive')

Mounted at /content/drive

data = pd.read_csv('/content/drive/My Drive/data/company_sales_data.csv')

data.head()
```

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

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

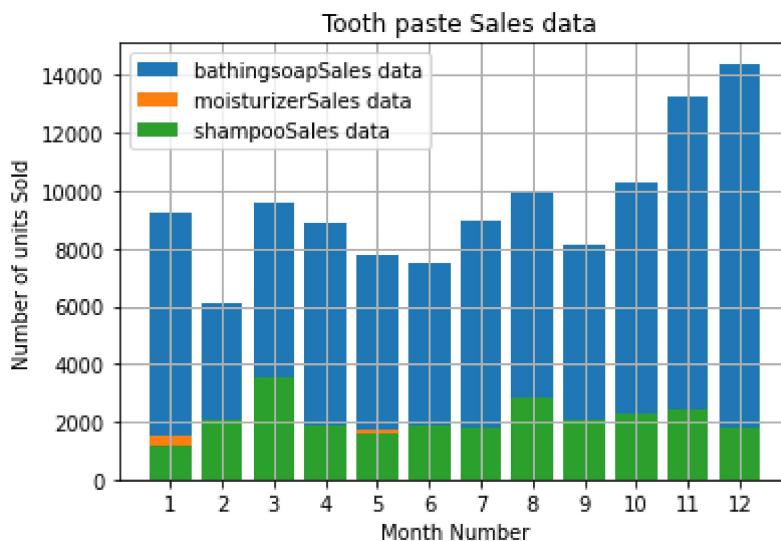
df = pd.read_csv("/content/drive/My Drive/data/company_sales_data.csv")
```

https://colab.research.google.com/drive/1-roDCHztQVSMbZue1Zl1M7hgd_t7xlgN#scrollTo=Dfj2xgo13G7l&printMode=true

```

monthList = df ['month_number'].tolist()
toothPasteSalesData = df ['toothpaste'].tolist()
faceCremSalesData = df ['facecream'].tolist()
faceWashSalesData = df ['facewash'].tolist()
bathingsoapSalesData = df ['bathingsoap'].tolist()
shampooSalesData = df ['shampoo'].tolist()
moisturizerSalesData = df ['moisturizer'].tolist()
plt.bar(monthList, bathingsoapSalesData, label = 'bathingsoapSales data')
plt.bar(monthList, moisturizerSalesData, label = 'moisturizerSales data')
plt.bar(monthList, shampooSalesData, label = 'shampooSales 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()

```

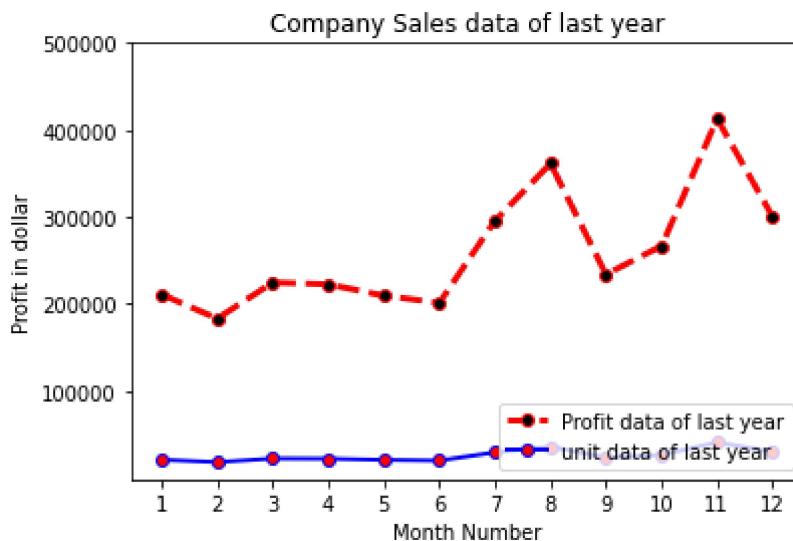


```

df = pd.read_csv("/content/drive/My Drive/data/company_sales_data.csv")
profitList = df ['total_profit'].tolist()
monthList = df ['month_number'].tolist()
unitList = df ['total_units'].tolist()
monthList = df ['month_number'].tolist()
plt.plot(monthList, profitList, label = 'Profit data of last year',
          color='r', marker='o', markerfacecolor='k',
          linestyle='--', linewidth=3)
plt.plot(monthList, unitList, label = 'unit data of last year',
          color='b', marker='o', markerfacecolor='r',
          linestyle='-', linewidth=2)
plt.xlabel('Month Number')
plt.ylabel('Profit in dollar')
plt.legend(loc='lower right')
plt.title('Company Sales data of last year')
plt.xticks(monthList)
plt.yticks([100000, 200000, 300000, 400000, 500000])

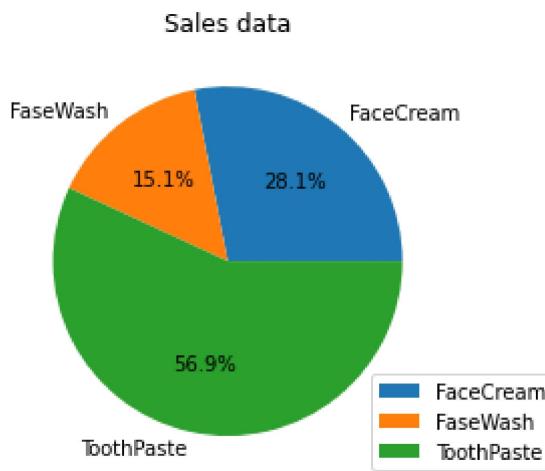
```

```
plt.show()
```



```
df = pd.read_csv("/content/drive/My Drive/data/company_sales_data.csv")
monthList = df['month_number'].tolist()

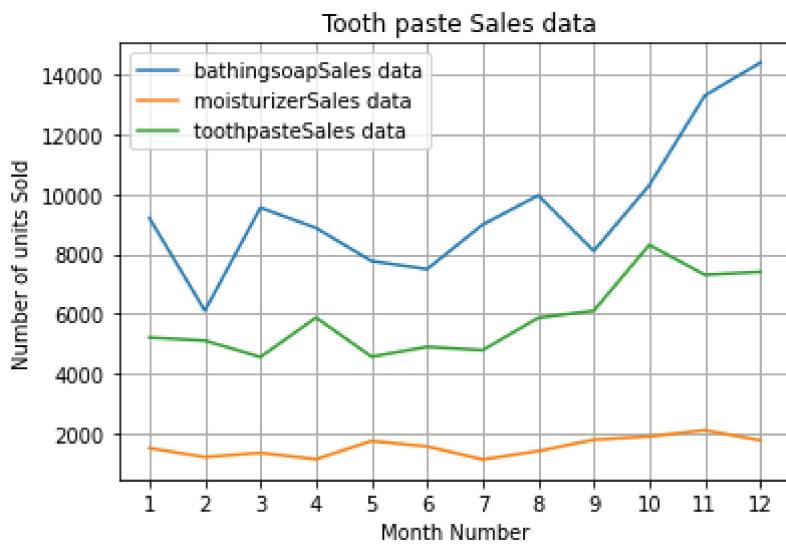
labels = ['FaceCream', 'FaseWash', 'ToothPaste']
salesData = [df ['facecream'].sum(), df ['facewash'].sum(), df ['toothpaste'].sum()]
plt.axis("equal")
plt.pie(salesData, labels=labels, autopct='%.1f%%')
plt.legend(loc='lower right')
plt.title('Sales data')
plt.show()
```



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

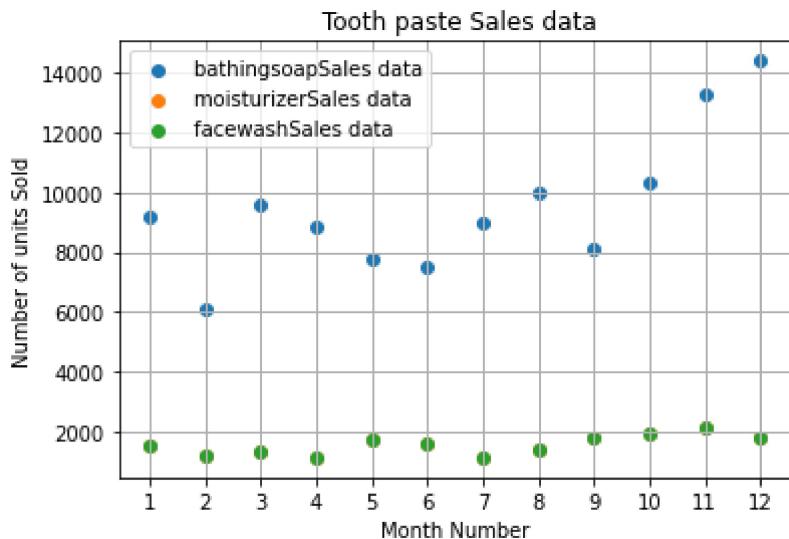
df = pd.read_csv("/content/drive/My Drive/data/company_sales_data.csv")
monthList = df ['month_number'].tolist()
toothPasteSalesData = df ['toothpaste'].tolist()
faceCremSalesData = df ['facecream'].tolist()
faceWashSalesData = df ['facewash'].tolist()
```

```
bathingsoapSalesData = df ['bathingsoap'].tolist()
shampooSalesData = df ['shampoo'].tolist()
moisturizerSalesData = df ['moisturizer'].tolist()
plt.plot(monthList, bathingsoapSalesData, label = 'bathingsoapSales data',)
plt.plot(monthList, moisturizerSalesData, label = 'moisturizerSales data')
plt.plot(monthList, toothPasteSalesData, label = 'toothpasteSales 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()
```



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

df = pd.read_csv("/content/drive/My Drive/data/company_sales_data.csv")
monthList = df ['month_number'].tolist()
toothPasteSalesData = df ['toothpaste'].tolist()
faceCremSalesData = df ['facecream'].tolist()
faceWashSalesData = df ['facewash'].tolist()
bathingsoapSalesData = df ['bathingsoap'].tolist()
shampooSalesData = df ['shampoo'].tolist()
moisturizerSalesData = df ['moisturizer'].tolist()
plt.scatter(monthList, bathingsoapSalesData, label = 'bathingsoapSales data')
plt.scatter(monthList, moisturizerSalesData, label = 'moisturizerSales data')
plt.scatter(monthList, faceWashSalesData, label = 'facewashSales 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()
```



Pradeep S kalmath, 20171CSE09016

```
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import matplotlib.pyplot as plt
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data = pd.read_csv('/content/drive/My Drive/data/company_sales_data.csv')
```

```
data.head()
```

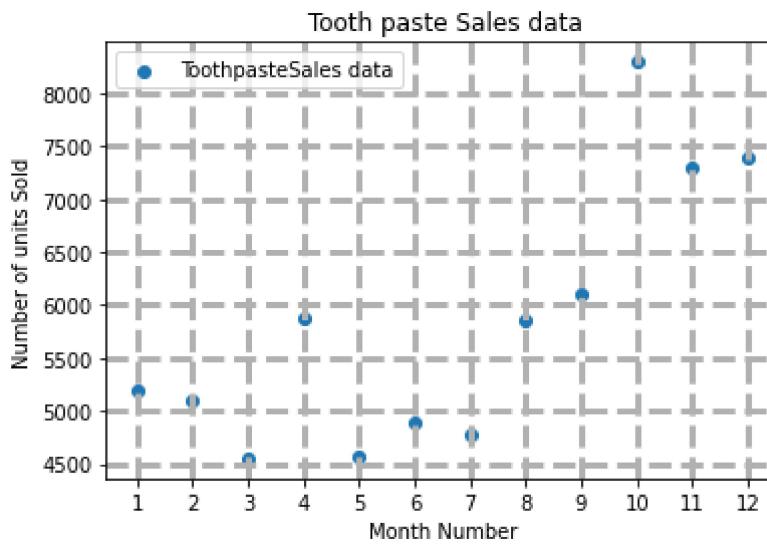
	month_number	facecream	facewash	toothpaste	bathingsoap	shampoo	moisturizer	total
0	1	2500	1500	5200	9200	1200	1500	18000
1	2	2630	1200	5100	6100	2100	1200	18930
2	3	2140	1340	4550	9550	3550	1340	18580
3	4	3400	1130	5870	8870	1870	1130	18370
4	5	3600	1740	4560	7760	1560	1740	18310

```
import pandas as pd
import matplotlib.pyplot as plt
df = pd.read_csv("/content/drive/My Drive/data/company_sales_data.csv")
monthList = df ['month_number'].tolist()
```

```

toothPasteSalesData = df ['toothpaste'].tolist()
faceCremSalesData = df ['facecream'].tolist()
faceWashSalesData = df ['facewash'].tolist()
bathingsoapSalesData = df ['bathingsoap'].tolist()
shampooSalesData = df ['shampoo'].tolist()
moisturizerSalesData = df ['moisturizer'].tolist()
plt.scatter(monthList, toothPasteSalesData, label = 'ToothpasteSales 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= 3, linestyle="--")
plt.show()

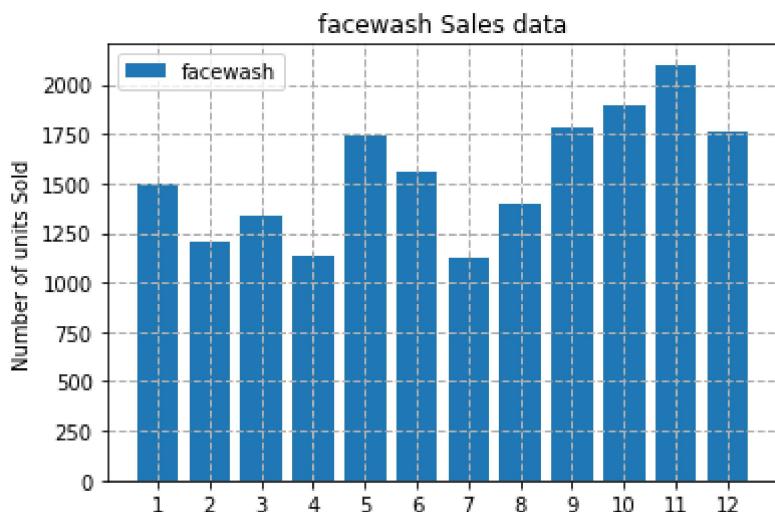
```



```

import pandas as pd
import matplotlib.pyplot as plt
df = pd.read_csv("/content/drive/My Drive/data/company_sales_data.csv")
monthList = df ['month_number'].tolist()
toothPasteSalesData = df ['toothpaste'].tolist()
faceCremSalesData = df ['facecream'].tolist()
faceWashSalesData = df ['facewash'].tolist()
bathingsoapSalesData = df ['bathingsoap'].tolist()
shampooSalesData = df ['shampoo'].tolist()
moisturizerSalesData = df ['moisturizer'].tolist()
plt.bar(monthList, faceWashSalesData, label = 'facewash')
plt.xlabel('Month Number')
plt.ylabel('Number of units Sold')
plt.legend(loc='upper left')
plt.title('facewash Sales data')
plt.xticks(monthList)
plt.grid(True, linewidth= 1, linestyle="--")
plt.show()

```



```

monthList = df ['month_number'].tolist()
faceCremSalesData = df ['facecream'].tolist()
faceWashSalesData = df ['facewash'].tolist()
toothPasteSalesData = df ['toothpaste'].tolist()
bathingsoapSalesData = df ['bathingsoap'].tolist()
moisturizerData = df ['moisturizer'].tolist()

plt.plot([],[],color='b', label='face Cream', linewidth=2)
plt.plot([],[],color='g', label='Face wash', linewidth=2)
plt.plot([],[],color='r', label='Tooth paste', linewidth=2)
plt.plot([],[],color='c', label='Bathing soap', linewidth=2)
plt.plot([],[],color='k', label='moisturizer', linewidth=2)

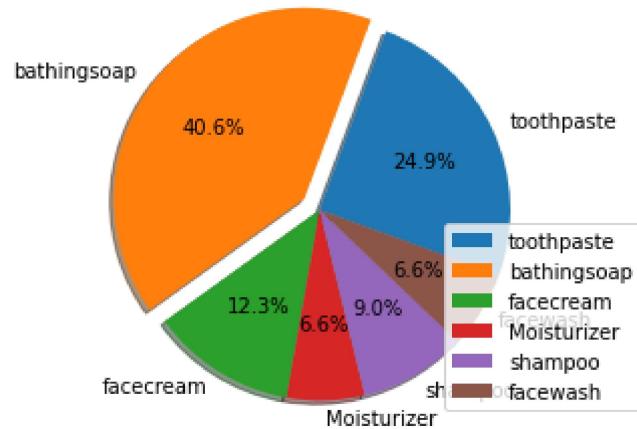
plt.stackplot(monthList, faceCremSalesData, faceWashSalesData, toothPasteSalesData,
              bathingsoapSalesData,moisturizerData,
              colors=['b','g','r','c','k'])
plt.xlabel('Month Number')
plt.ylabel('total units in Number')
plt.title('Alll product sales data using stack plot')
plt.legend(loc='upper left')
plt.show()

```

```

import pandas as pd
import matplotlib.pyplot as plt
df = pd.read_csv("/content/drive/My Drive/data/company_sales_data.csv")
toothpaste = sum(df['toothpaste'])/len(df['toothpaste'])
facewash = sum(df['facewash'])/len(df['toothpaste'])
facecream = sum(df['facecream'])/len(df['toothpaste'])
bathingsoap = sum(df['bathingsoap'])/len(df['toothpaste'])
shampoo = sum(df['shampoo'])/len(df['toothpaste'])
moisturizer = sum(df['moisturizer'])/len(df['toothpaste'])
labels = ['toothpaste', 'bathingsoap', 'facecream', 'Moisturizer', 'shampoo', 'facewash']
sizes = [toothpaste , bathingsoap, facecream, moisturizer,shampoo,facewash]
explode = (0, 0.1, 0, 0,0,0)
plt.pie(sizes, explode=explode ,labels=labels, autopct='%.1f%%', shadow=True, startangle=340
plt.legend(loc='lower right')
plt.axis('equal')
plt.show()

```



```

import matplotlib.pyplot as plt
import seaborn as sns
sns.set_style('white')
%matplotlib inline
df = pd.read_csv("/content/drive/My Drive/data/company_sales_1data.csv")
g = sns.FacetGrid(df, col = 'products')
g.map(plt.hist, 'units')
plt.show()

```

```
4 | products = facecream | products = shampoo | products = facewash | products = bathingsoap | products = toothpaste | products = moisturizer
```

prateek kv, 20171CSE0527

```
import pandas as pd
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```

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```
data = pd.read_csv('/content/drive/My Drive/data/company_sales_data.csv')
```

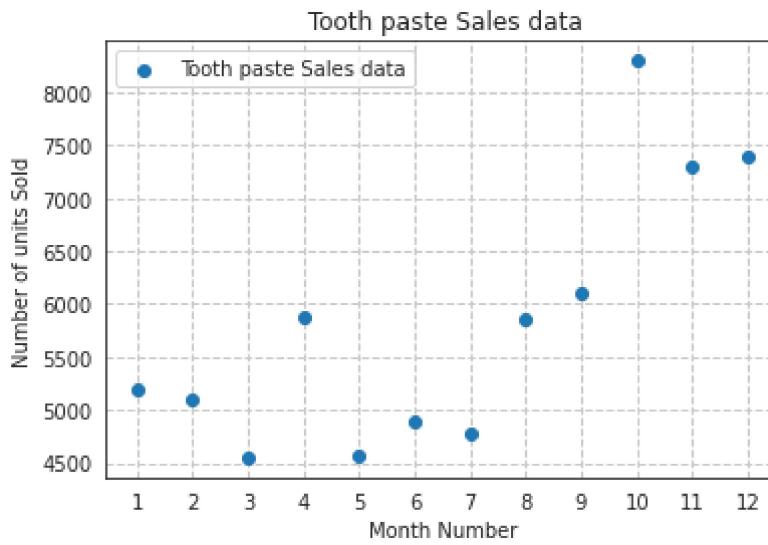
```
data.head()
```

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

```
import pandas as pd
import matplotlib.pyplot as plt
df = pd.read_csv("/content/drive/My Drive/data/company_sales_data.csv")
profitList = df ['total_profit'].tolist()
monthList = df ['month_number'].tolist()
plt.plot(monthList, profitList, 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(monthList)
plt.yticks([100000, 200000, 300000, 400000, 500000])
plt.show()
```

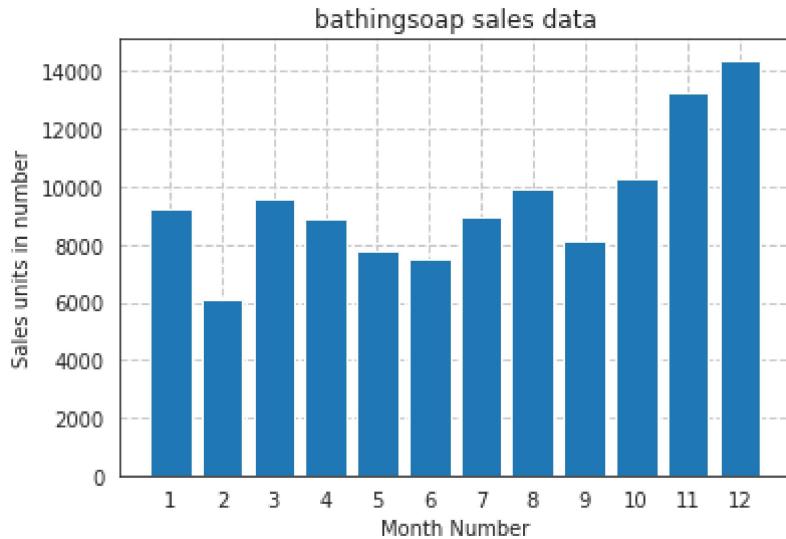


```
import pandas as pd
import matplotlib.pyplot as plt
df = pd.read_csv("/content/drive/My Drive/data/company_sales_data.csv")
monthList = df ['month_number'].tolist()
toothPasteSalesData = df ['toothpaste'].tolist()
plt.scatter(monthList, toothPasteSalesData,
           label = 'Tooth paste Sales data')
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()
```



```
import pandas as pd
import matplotlib.pyplot as plt
df = pd.read_csv("/content/drive/My Drive/data/company_sales_data.csv")
monthList = df ['month_number'].tolist()
bathingsoapSalesData = df ['bathingsoap'].tolist()
plt.bar(monthList, bathingsoapSalesData)
plt.xlabel('Month Number')
plt.ylabel('Sales units in numbers')
```

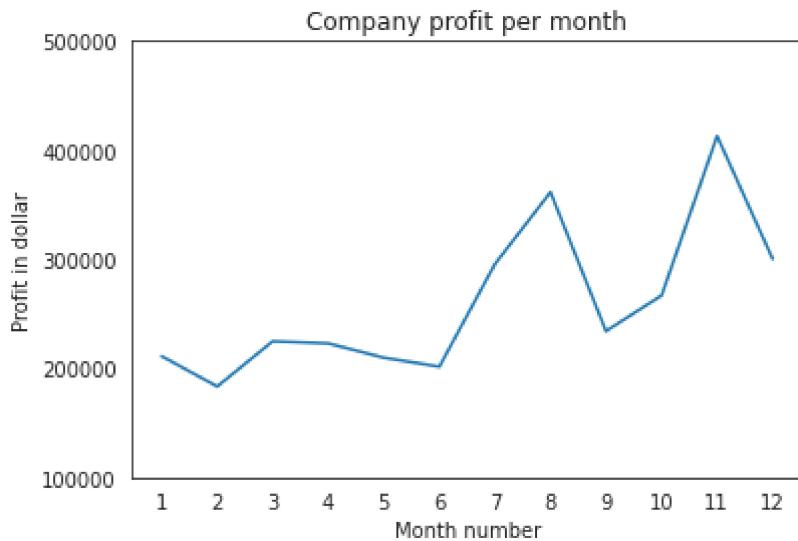
```
plt.ylabel('Sales units in number')
plt.title(' Sales data')
plt.xticks(monthList)
plt.grid(True, linewidth= 1, linestyle="--")
plt.title('bathingsoap sales data')
plt.savefig('D:\Python\Articles\matplotlib\sales_data_of_bathingsoap.png', dpi=150)
plt.show()
```



```
import pandas as pd
import matplotlib.pyplot as plt
df = pd.read_csv("/content/drive/My Drive/data/company_sales_data.csv")
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 in dollar')
plt.ylabel('Actual Profit in dollar')
plt.legend(loc='upper left')
plt.xticks(profit_range)
plt.title('Profit data')
plt.show()
```

Profit data

```
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()
```



p.saikrishna,20171CSE0541

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

from google.colab import drive
drive.mount('/content/drive')

Drive already mounted at /content/drive; to attempt to forcibly remount, call drive.mour

data = pd.read_csv('/content/drive/My Drive/data/company_sales_data.csv')

data.head()
```

	month_number	facecream	facewash	toothpaste	bathingsoap	shampoo	moisturizer	total
0	1	2500	1500	5200	9200	1200	1500	15000
1	2	2630	1200	5100	6100	2100	1200	12000

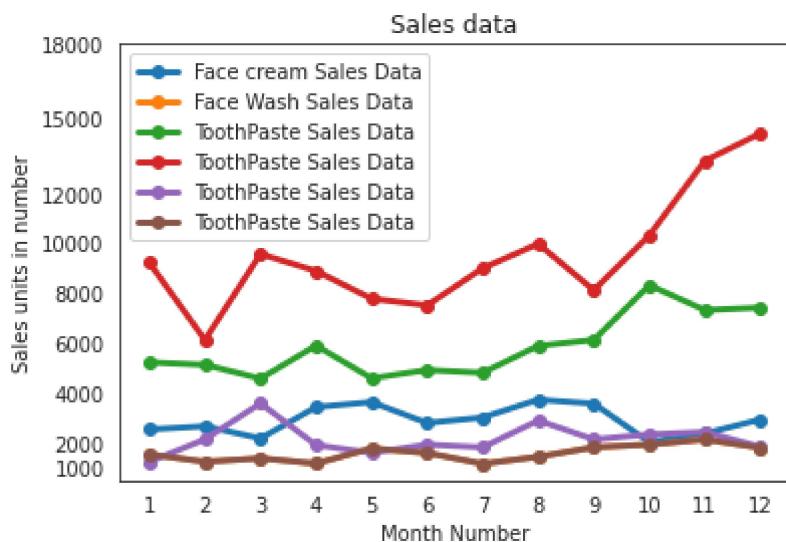
```

monthList = df ['month_number'].tolist()
faceCremSalesData = df ['facecream'].tolist()
faceWashSalesData = df ['facewash'].tolist()
toothPasteSalesData = df ['toothpaste'].tolist()
bathingsoapSalesData = df ['bathingsoap'].tolist()
shampooSalesData = df ['shampoo'].tolist()
moisturizerSalesData = df ['moisturizer'].tolist()

plt.plot(monthList, faceCremSalesData, label = 'Face cream Sales Data', marker='o', linewidth=2)
plt.plot(monthList, faceWashSalesData, label = 'Face Wash Sales Data', marker='o', linewidth=2)
plt.plot(monthList, toothPasteSalesData, label = 'ToothPaste Sales Data', marker='o', linewidth=2)
plt.plot(monthList, bathingsoapSalesData, label = 'ToothPaste Sales Data', marker='o', linewidth=2)
plt.plot(monthList, shampooSalesData, label = 'ToothPaste Sales Data', marker='o', linewidth=2)
plt.plot(monthList, moisturizerSalesData, label = 'ToothPaste Sales Data', marker='o', linewidth=2)

plt.xlabel('Month Number')
plt.ylabel('Sales units in number')
plt.legend(loc='upper left')
plt.xticks(monthList)
plt.yticks([1000, 2000, 4000, 6000, 8000, 10000, 12000, 15000, 18000])
plt.title('Sales data')
plt.show()

```



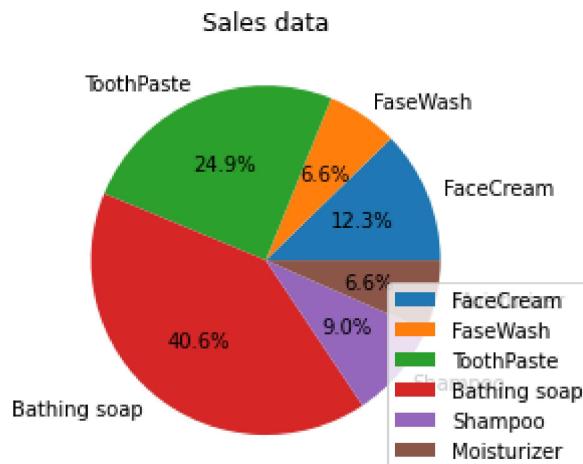
```

monthList = df ['month_number'].tolist()

labels = ['FaceCream', 'FaseWash', 'ToothPaste', 'Bathing soap', 'Shampoo', 'Moisturizer']
salesData = [df ['facecream'].sum(), df ['facewash'].sum(), df ['toothpaste'].sum(),
            df ['bathingsoap'].sum(), df ['shampoo'].sum(), df ['moisturizer'].sum()]
plt.axis("equal")

```

```
plt.pie(salesData, labels=labels, autopct='%.1f%%')
plt.legend(loc='lower right')
plt.title('Sales data')
plt.show()
```



```
monthList = df ['month_number'].tolist()

faceCremSalesData = df ['facecream'].tolist()
faceWashSalesData = df ['facewash'].tolist()
toothPasteSalesData = df ['toothpaste'].tolist()
bathingsoapSalesData = df ['bathingsoap'].tolist()
shampooSalesData = df ['shampoo'].tolist()
moisturizerSalesData = df ['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 units in Number')
plt.title('Alll product sales data using stack plot')
plt.legend(loc='upper left')
plt.show()
```



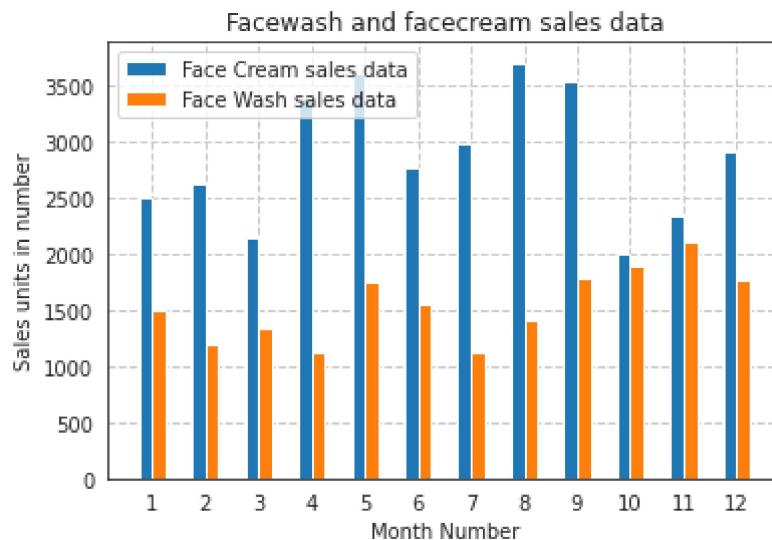
```

monthList = df ['month_number'].tolist()
faceCremSalesData = df ['facecream'].tolist()
faceWashSalesData = df ['facewash'].tolist()

plt.bar([a-0.25 for a in monthList], faceCremSalesData, width= 0.25, label = 'Face Cream sale'
plt.bar([a+0.25 for a in monthList], faceWashSalesData, width= -0.25, label = 'Face Wash sale'
plt.xlabel('Month Number')
plt.ylabel('Sales units in number')
plt.legend(loc='upper left')
plt.title(' Sales data')

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

```



```

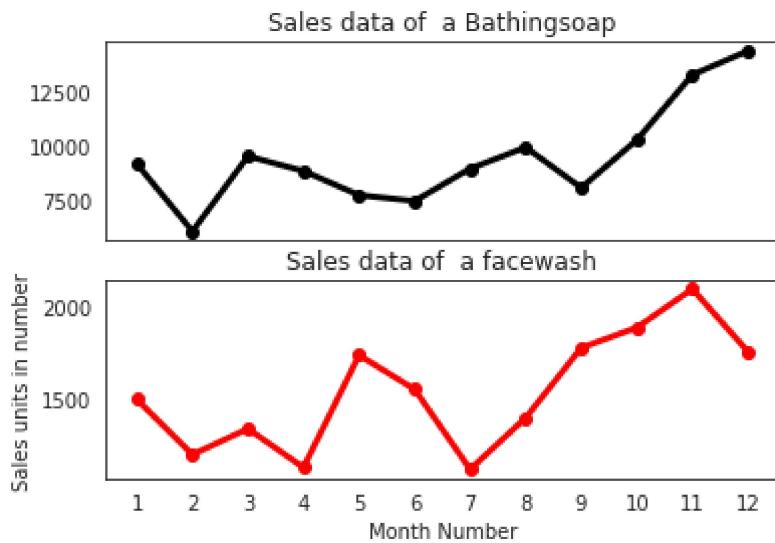
monthList = df ['month_number'].tolist()
bathingsoap = df ['bathingsoap'].tolist()
faceWashSalesData = df ['facewash'].tolist()

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

```

```
axarr[1].set_title('Sales data of a facewash')
```

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



Kotha vekata manideep,20171CSE0324

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```

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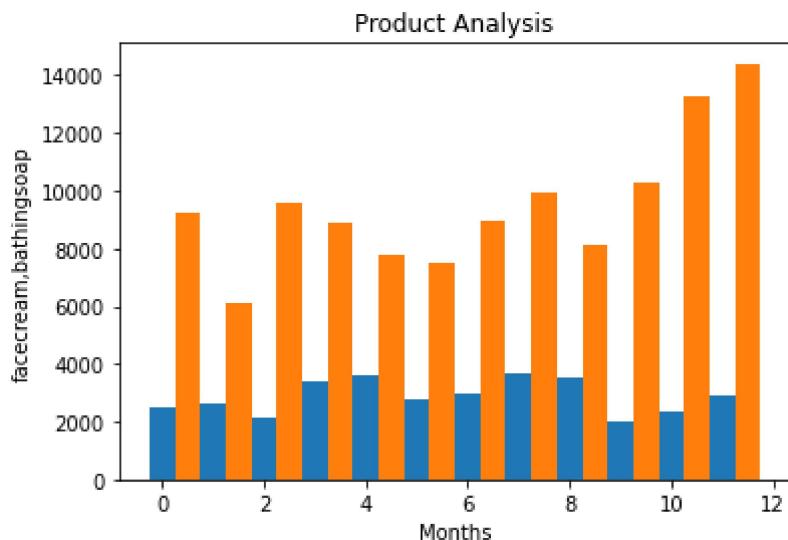
```
data.head()
```

	month_number	facecream	facewash	toothpaste	bathingsoap	shampoo	moisturizer	total
0	1	2500	1500	5200	9200	1200	1500	15000
1	2	2630	1200	5100	6100	2100	1200	15000
2	3	2140	1340	4550	9550	3550	1340	15000
3	4	3400	1130	5870	8870	1870	1130	15000
4	5	3600	1740	4560	7760	1560	1740	15000

```

import numpy as np
import pandas as pd
from pandas import Series, DataFrame
import matplotlib.pyplot as plt
data = pd.read_csv('/content/drive/My Drive/data/company_sales_data.csv')
facecream = df ['facecream'].tolist()
bathingsoap = df ['bathingsoap'].tolist()
width =0.5
plt.bar(np.arange(len(facecream)), facecream, width=width)
plt.bar(np.arange(len(bathingsoap))+ width, bathingsoap, width=width)
plt.xlabel('Months')
plt.ylabel('facecream,bathingsoap')
plt.title('Product Analysis')
plt.show()

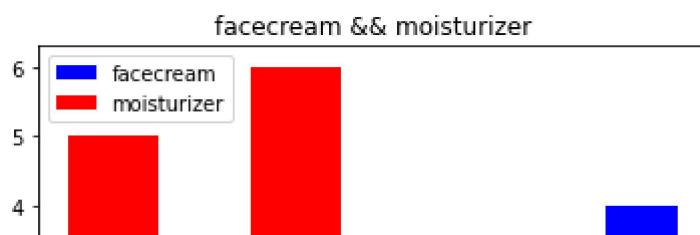
```



```

List = df ['facecream'].tolist()
list2=df['moisturizer'].tolist()
Bins = [1000,1500,2000,2500,2900]
plt.hist(List, Bins, label = 'facecream',color='blue',rwidth=0.5)
plt.hist(list2, Bins, label = 'moisturizer',color='red',rwidth=0.5)
plt.legend(loc='upper left')
plt.title('facecream & moisturizer')
plt.show()

```



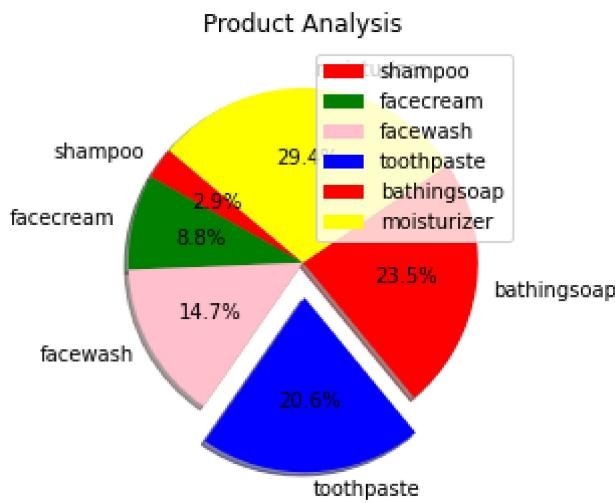
```

import matplotlib.pyplot as plt
import pandas as pd

data = pd.read_csv('/content/drive/My Drive/data/company_sales_data.csv')

shampoo = df ['shampoo'].tolist()
facecream = df ['facecream'].tolist()
facewash = df ['facewash'].tolist()
toothpaste = df ['toothpaste'].tolist()
bathingsoap = df ['bathingsoap'].tolist()
moisturizer = df['moisturizer'].tolist()
labels = ['shampoo','facecream','facewash','toothpaste','bathingsoap','moisturizer']
explode=[0,0,0,0.2,0,0]
colors=['red','green','pink','blue','red','yellow']
Bins = [1000,3000,5000,7000,8000,10000]
plt.pie(Bins, explode=explode,labels = labels,colors=colors,autopct='%.1f%%', shadow=True, s
plt.title('Product Analysis')
plt.legend()
plt.show()

```



```

import pandas as pd
import matplotlib.pyplot as plt

data = pd.read_csv('/content/drive/My Drive/data/company_sales_data.csv')

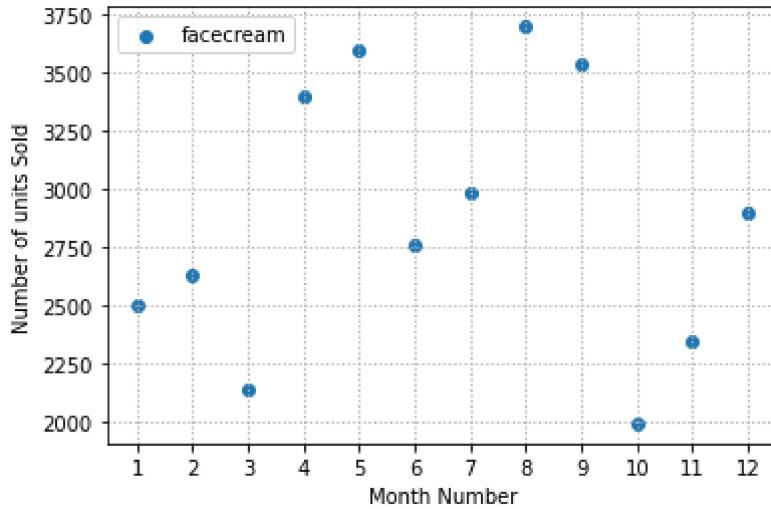
monthList = df ['month_number'].tolist()
facecream = df ['facecream'].tolist()

```

```

plt.scatter(monthList, facecream, label = 'facecream')
plt.xlabel('Month Number')
plt.ylabel('Number of units Sold')
plt.legend(loc='upper left')
plt.xticks(monthList)
plt.grid(True, linewidth= 1, linestyle='dotted')
plt.show()

```



```

import pandas as pd
import matplotlib.pyplot as plt

data = pd.read_csv('/content/drive/My Drive/data/company_sales_data.csv')
profitList = df ['facecream'].tolist()
monthList = df ['month_number'].tolist()
plt.plot(monthList, profitList, label = 'Profit data of last year',
          color='r', marker='o', linestyle='dotted', linewidth=3)
plt.xlabel('Month Number')
plt.ylabel('facecream')
plt.legend(loc='lower right')
plt.title('Company Sales data of last year')
plt.xticks(monthList)
plt.yticks([1500,1700,1800,2000,2200,2500])
plt.show()

```

