

2023

ASSIGNMENT-3

PYTHON

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ENROLLMENT NO:- 210004004

ROLL NO. :- 3



1. Draw a pie chart

a. `y = np.array([35, 25, 25, 15])`

b. `mylabels = ["Tomatoes", "Mangoes", "Oranges", "Apples"]`

c. `myexplode = [0.2, 0, 0, 0]`

```
import matplotlib.pyplot as plt
```

```
import numpy as np
```

```
slice= np.array([35, 25, 25, 15])
```

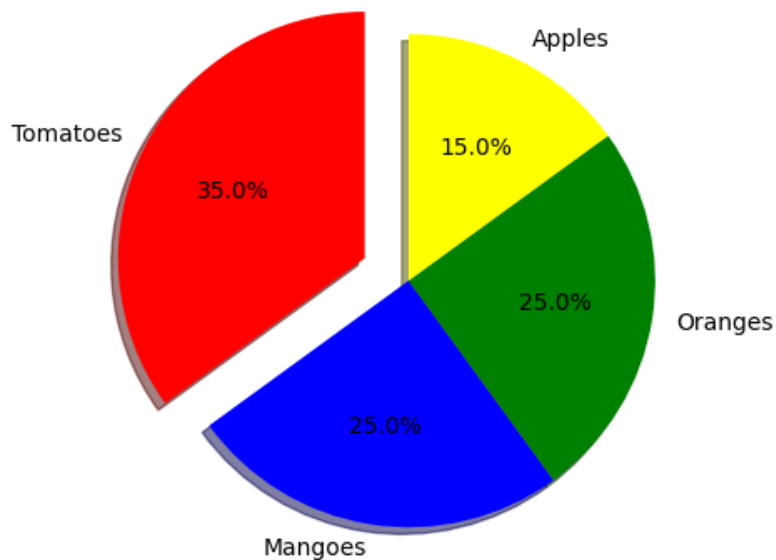
```
mylabels = ["Tomatoes", "Mangoes", "Oranges", "Apples"]
```

```
myexplode =[0.2, 0, 0, 0]
```

```
cols = ['red','blue','green','yellow']
```

```
plt.pie(slice, labels=mylabels, colors=cols, startangle=90, explode=myexplode,  
shadow=True, autopct='%.1f%%')
```

```
plt.show()
```



2. Draw a piechart

```
y = np.array([35, 25, 25, 15])
```

```
mylabels = ["Tomatoes", "Mangoes", "Oranges", "Apples"]
```

```
myexplode = [0.2, 0, 0.4, 0.1]
```

```
import matplotlib.pyplot as plt
```

```
import numpy as np
```

```
slice= np.array([35, 25, 25, 15])
```

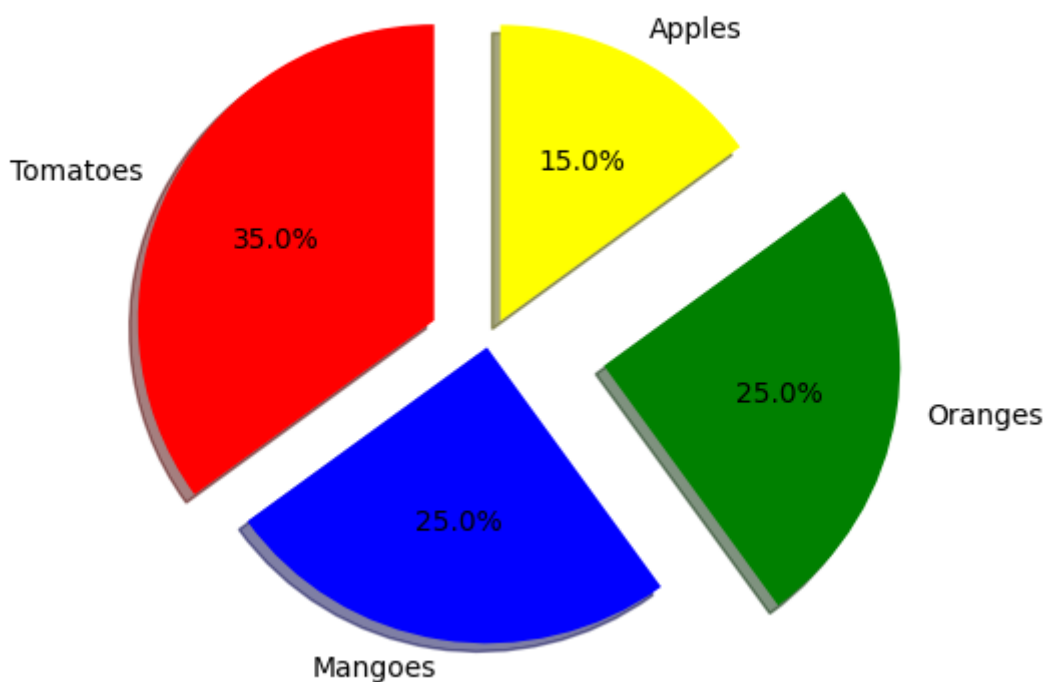
```
mylabels = ["Tomatoes", "Mangoes", "Oranges", "Apples"]
```

```
myexplode = [0.2, 0, 0.4, 0.1]
```

```
cols = ['red','blue','green','yellow']
```

```
plt.pie(slice, labels=mylabels, colors=cols, startangle=90, explode=myexplode,  
shadow=True, autopct='%.1f%%')
```

```
plt.show()
```



3. Draw a line chart

x = [1, 2, 3, 4, 5]

y = [1, 4, 9, 16, 25]

```
import matplotlib.pyplot as plt
```

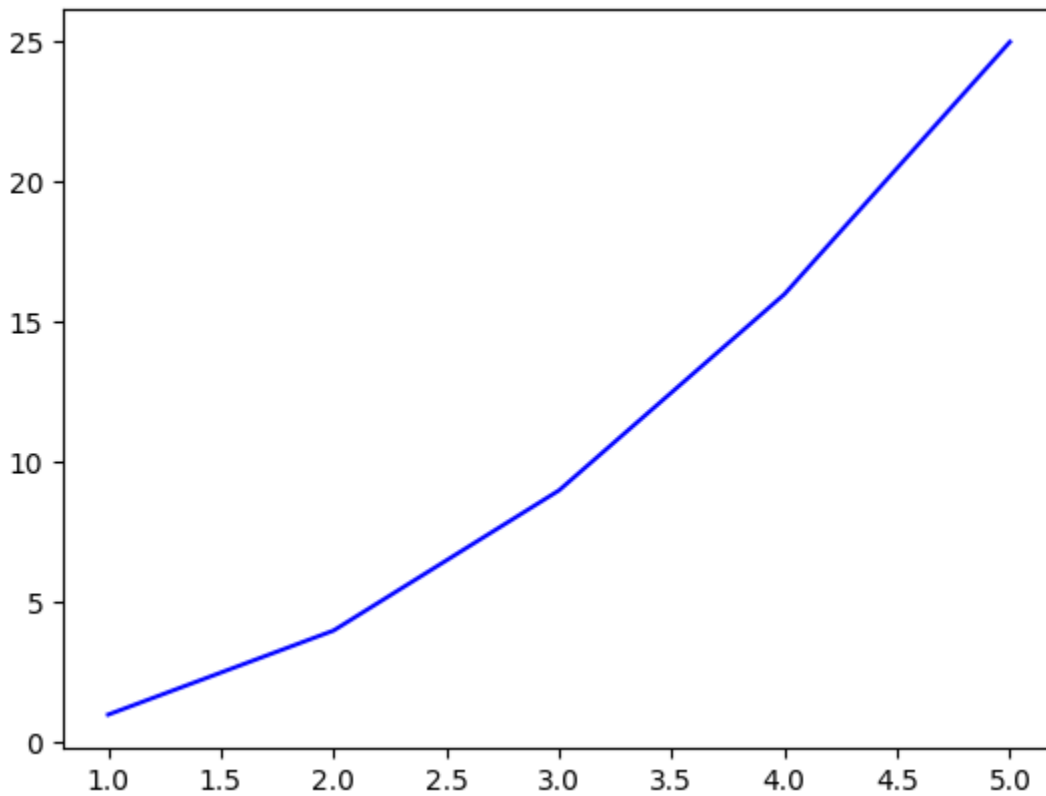
```
import numpy as np
```

```
x = [1, 2, 3, 4, 5]
```

```
y = [1, 4, 9, 16, 25]
```

```
plt.plot(x,y,'blue')
```

```
plt.show()
```



4. Draw a line chart

x = [1, 2, 3, 4, 5]

Y-axis values

y1 = [2, 3, 4.5]

Y-axis values

y2 = [1, 1.5, 5]

```
import matplotlib.pyplot as plt
```

```
import numpy as np
```

```
x = [1, 2, 3]
```

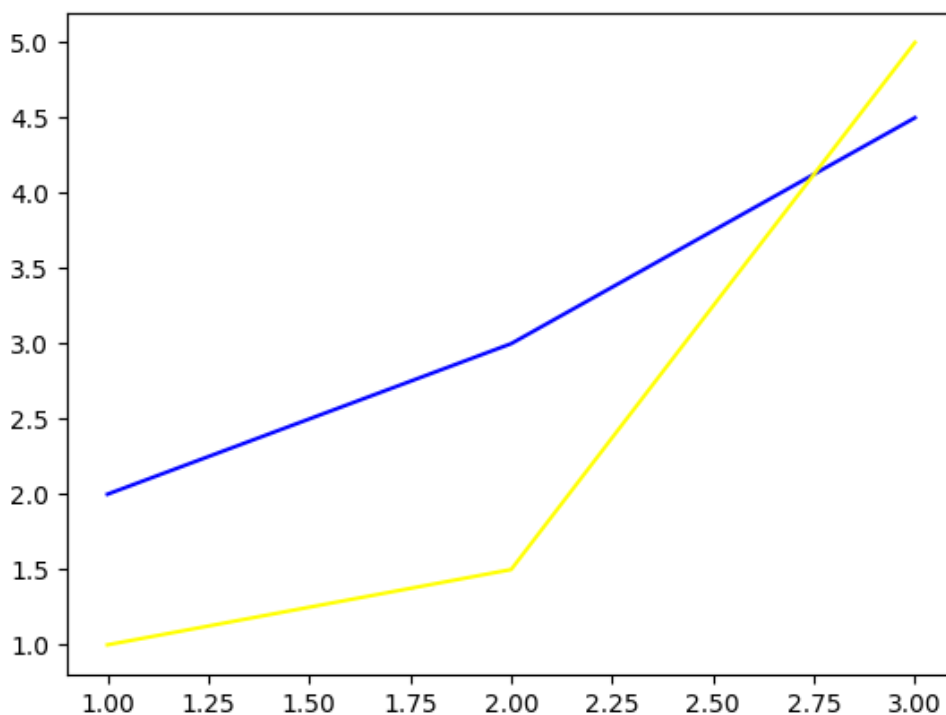
```
y1 = [2, 3, 4.5]
```

```
y2 = [1, 1.5, 5]
```

```
plt.plot(x,y1,'blue')
```

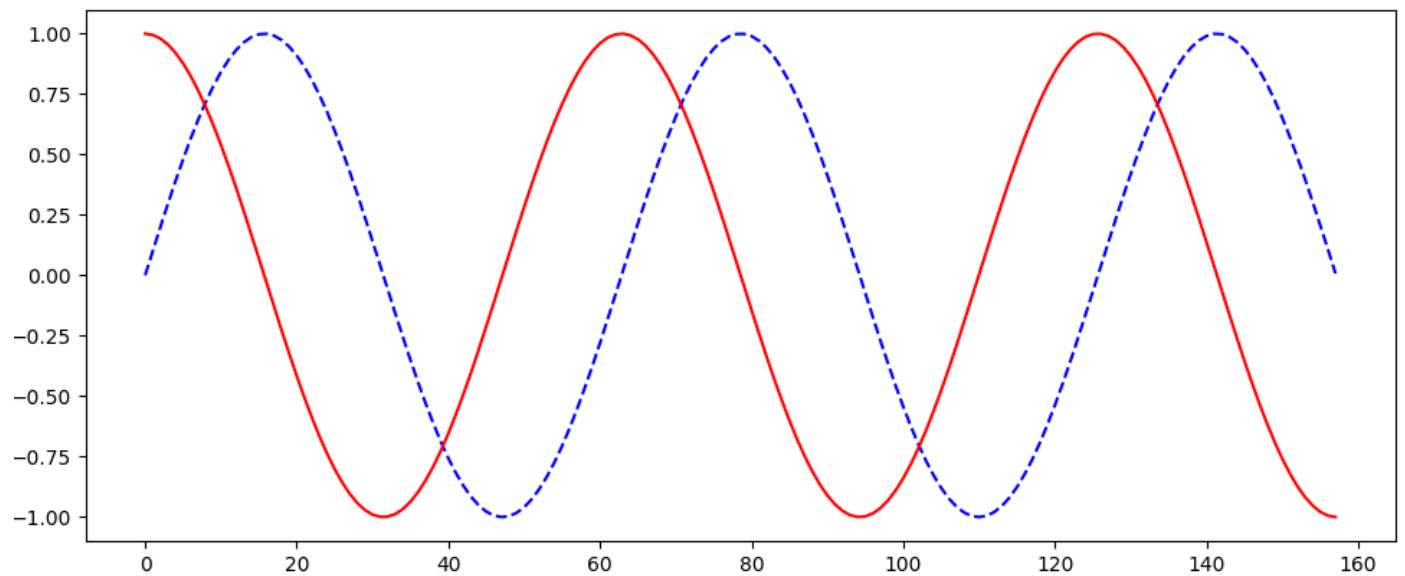
```
plt.plot(x,y2,'yellow')
```

```
plt.show()
```



5. Sine-cosine graphs:=

```
import pandas as pd
import xlrd
import matplotlib.pyplot as plt
import numpy as np
x = np.arange(0,5*np.pi,0.1)
a = np.sin(x)
b = np.cos(x)
plt.plot(a,ls='--',color='blue')
plt.plot(b,color='red')
plt.show()
```



6. Draw a line chart.

```
x = [0, 1, 2, 3, 4, 5, 6, 7, 8]
```

```
# Y-axis values
```

```
y1 = [0, 3, 6, 9, 12, 15, 18, 21, 24]
```

```
# Y-axis values
```

```
y2 = [0, 1, 2, 3, 4, 5, 6, 7, 8]
```

```
import matplotlib.pyplot as plt
```

```
import numpy as np
```

```
x = [0, 1, 2, 3, 4, 5, 6, 7, 8]
```

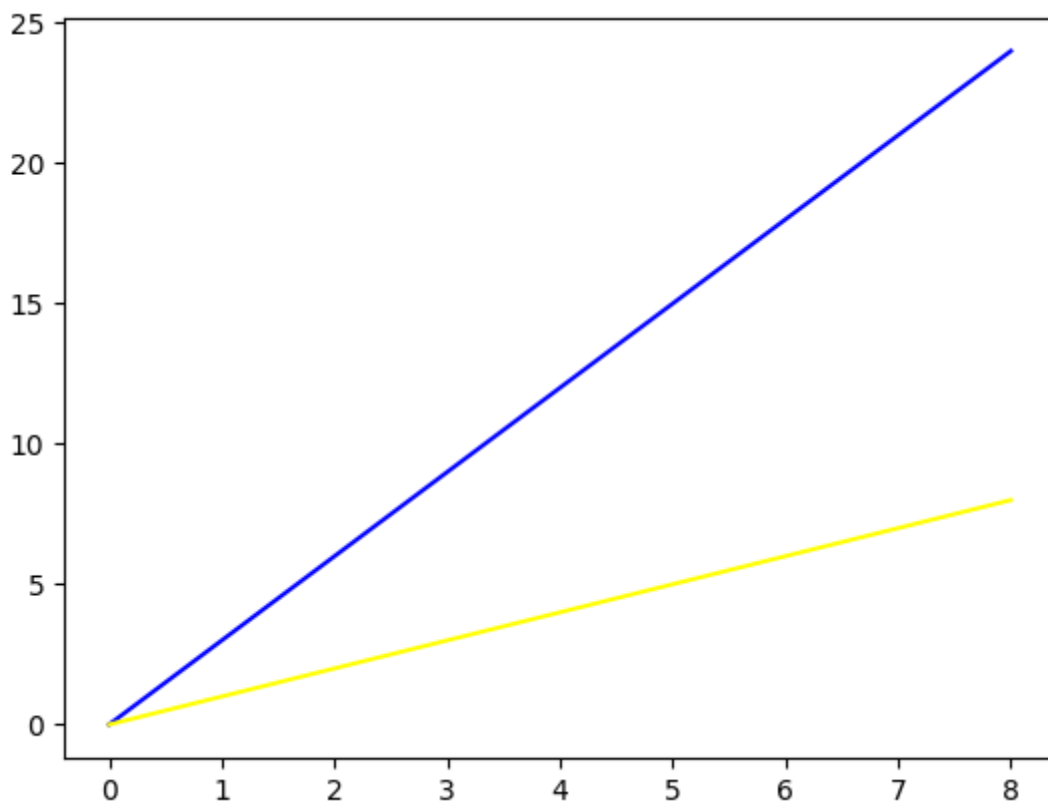
```
y1 = [0, 3, 6, 9, 12, 15, 18, 21, 24]
```

```
y2 = [0, 1, 2, 3, 4, 5, 6, 7, 8]
```

```
plt.plot(x,y1,'blue')
```

```
plt.plot(x,y2,'yellow')
```

```
plt.show()
```



7. Do exercise based on graph.

month_number	facecream	facewash	toothpaste	bathingsoap	shampoo	moisturizer	total_units	total_profit
1	2500	1500	5200	9200	1200	1500	21100	211000
2	2630	1200	5100	6100	2100	1200	18330	183300
3	2140	1340	4550	9550	3550	1340	22470	224700
4	3400	1130	5870	8870	1870	1130	22270	222700
5	3600	1740	4560	7760	1560	1740	20960	209600
6	2760	1555	4890	7490	1890	1555	20140	201400
7	2980	1120	4780	8980	1780	1120	29550	295500
8	3700	1400	5860	9960	2860	1400	36140	361400
9	3540	1780	6100	8100	2100	1780	23400	234000
10	1990	1890	8300	10300	2300	1890	26670	266700
11	2340	2100	7300	13300	2400	2100	41280	412800
12	2900	1760	7400	14400	1800	1760	30020	300200

Use the following CSV file for this exercise. Read this file using Pandas or NumPy or using in-built matplotlib function.

Exercise a: Read Total profit of all months and show it using a line plot

The line plot graph should look like this.

Exercise b : Get total profit of all months and show line plot with the following Style properties

Exercise c : Read all product sales data and show it using a multiline plot

```
import pandas as pd
```

```
import xlrd
```

```
import matplotlib.pyplot as plt
```

```
import numpy as np
```

```
df = pd.read_csv("D:\data.csv")
```

```
x = df.month_number
```



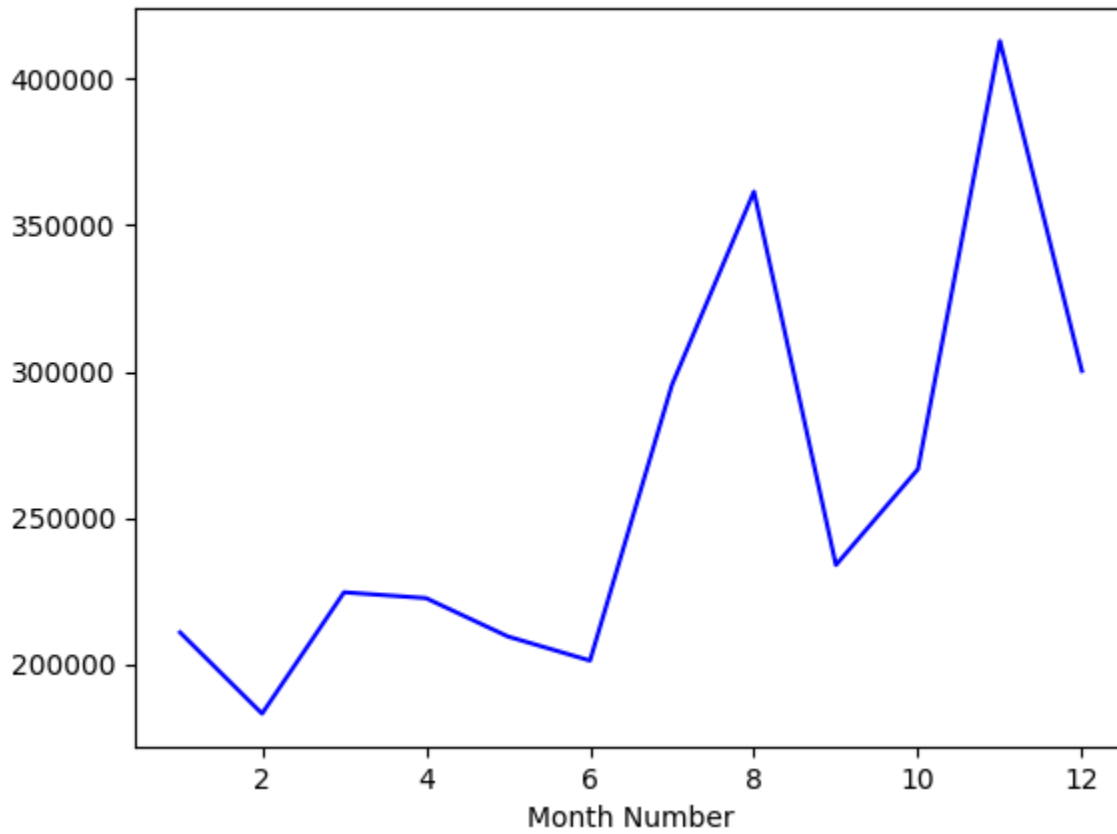
```
y = df.total_profit
plt.plot(x,y,'blue')
plt.xlabel('Month Number')
plt.ylabel('Total Profit')
plt.title('Compony profit per month')
plt.show()

plt.plot(x, y,'-ok',ls = '--', linewidth = '3',color='red')
plt.xlabel('Month Number')
plt.ylabel('Total Profit')
plt.title('Compony profit per month')
plt.show()

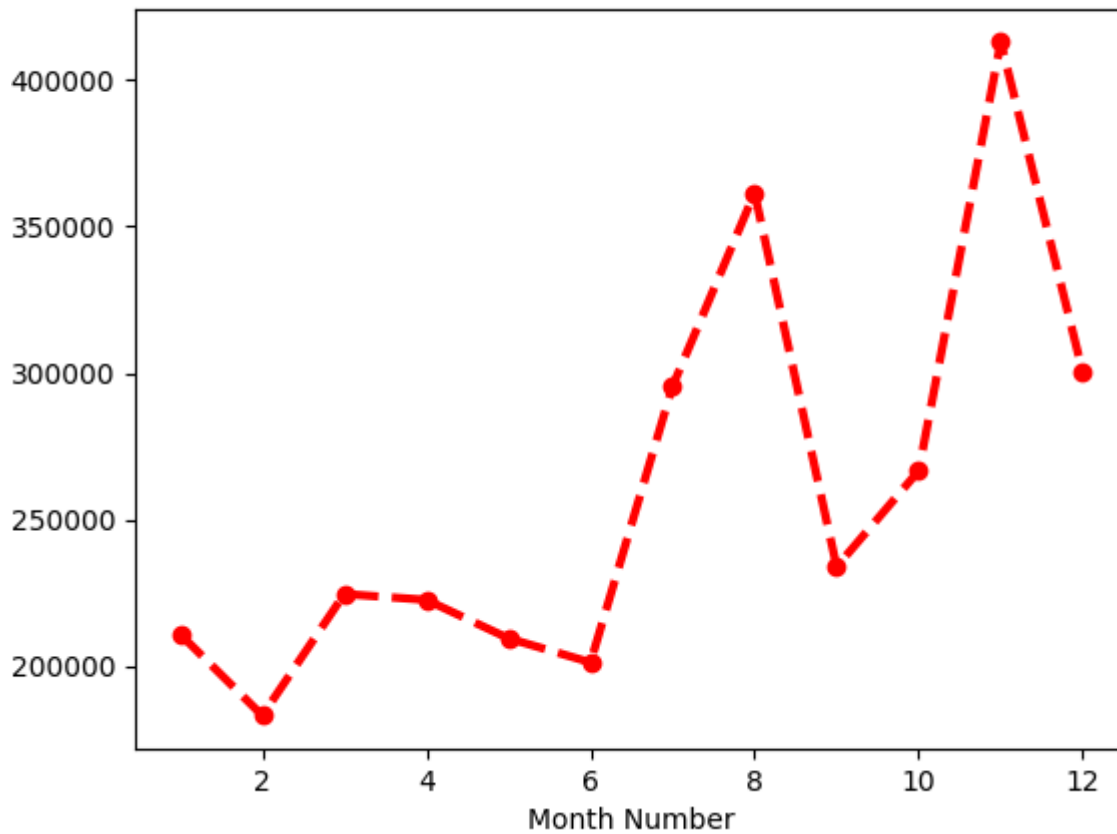
y1 = df.facecream
y2 = df.facewash
y3 = df.toothpaste
y4 = df.bathingssoap
y5 = df.shampoo
y6 = df.moisturizer

plt.plot(y1,'-ok',color='red', linewidth = '3')
plt.plot(y2 ,'-ok',color='green', linewidth = '3')
plt.plot(y3, '-ok',color='blue', linewidth = '3')
plt.plot(y4, '-ok',color='purple', linewidth = '3')
plt.plot(y5, '-ok',color='brown', linewidth = '3')
plt.plot(y6, '-ok',color='yellow', linewidth = '3')
plt.title('Sales Data')
plt.xlabel('Month Number')
plt.ylabel('Sales units in number')
plt.show()
```

Compony profit per month



Compony profit per month



Sales Data

