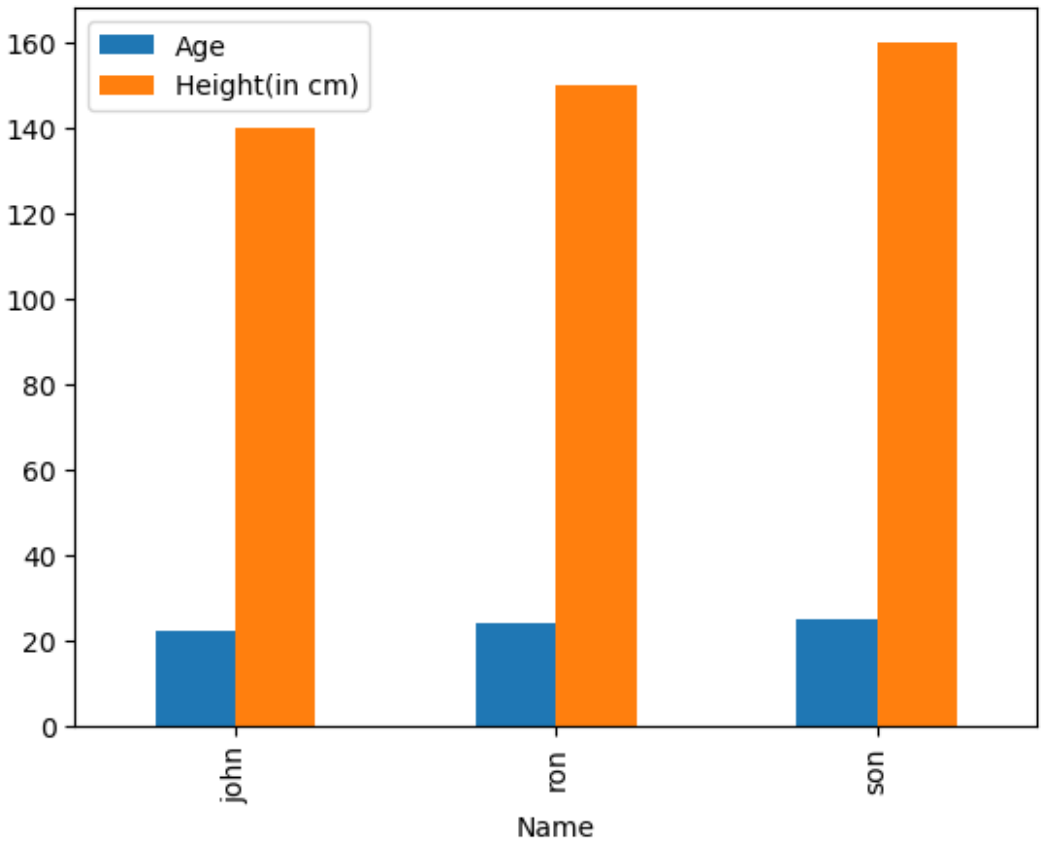
BAR CHART

```
import pandas as pd
import matplotlib.pyplot as plt
df = pd.DataFrame({
    'Name':['john','ron','son'],
    'Age':[22,24,25],
    "Height(in cm)":[140,150,160]
})
df
```

	Name	Age	Height(in cm)
0	john	22	140
1	ron	24	150
2	son	25	160

```
df.plot(x='Name',y=['Age','Height(in cm)'], kind="bar")
```

```
<Axes: xlabel='Name'>
```

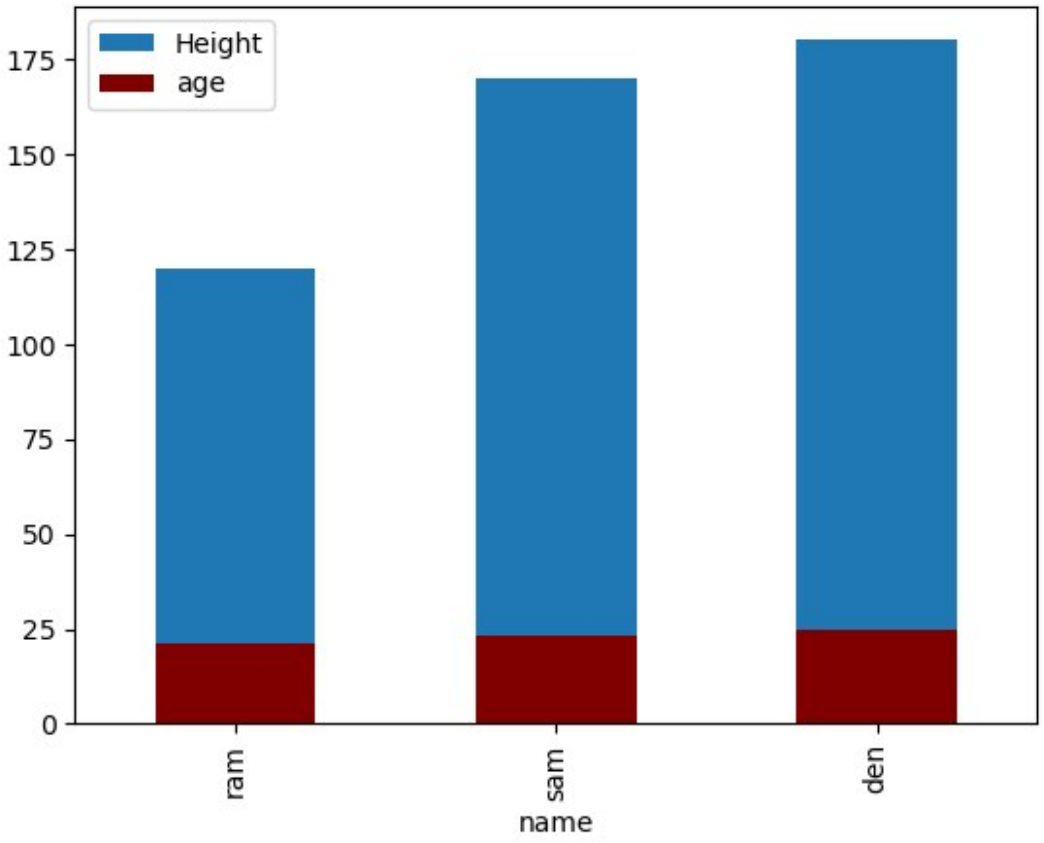


```
import pandas as pd
import matplotlib.pyplot as plt
df = pd.DataFrame({
    "name":['ram',"sam",'den'],
    "age":[21,23,25],
    "Height":[120,170,180]
})
df
```

	name	age	Height
0	ram	21	120
1	sam	23	170
2	den	25	180

```
ax=df.plot(x='name',y="Height",kind="bar")
df.plot(x="name",y='age',kind="bar",ax=ax,color="maroon")
```

```
<Axes: xlabel='name'>
```



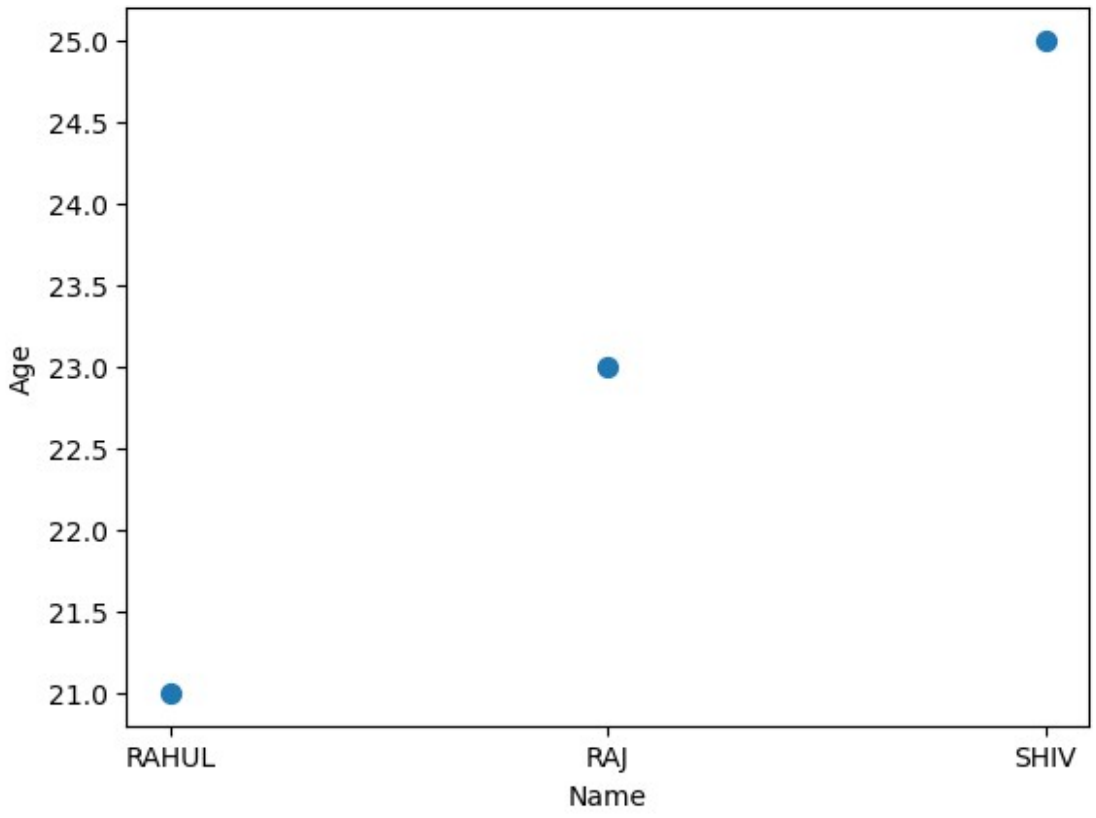
Draw a Scatter Plot

```
import pandas as pd
data = {
    "Name" : ['RAHUL','RAJ','SHIV'],
    "Age" : [21,23,25],
    "City" : ['MEERUT','DELHI','AGRA']
}
df=pd.DataFrame(data=data)
df
```

	Name	Age	City
0	RAHUL	21	MEERUT
1	RAJ	23	DELHI
2	SHIV	25	AGRA

```
df.plot.scatter(x='Name', y='Age', s=50)
```

```
<Axes: xlabel='Name', ylabel='Age'>
```



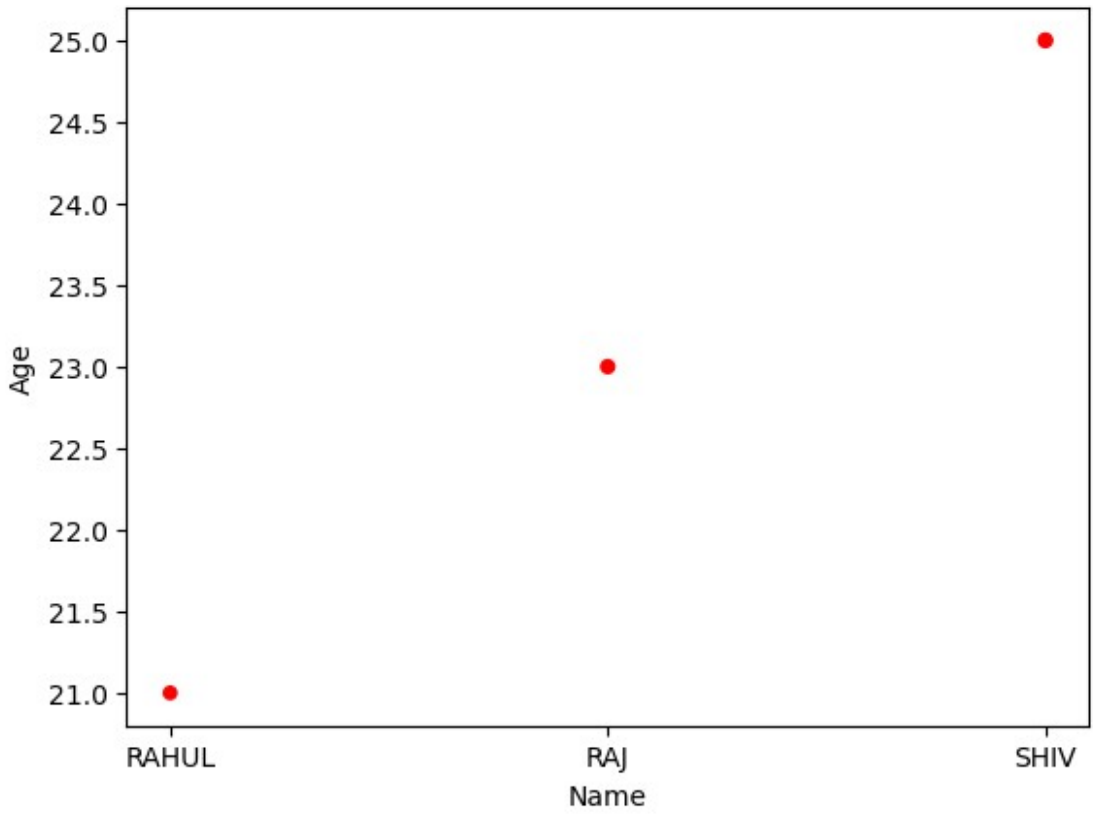

```
import pandas as pd
data = {
    "Name" : ['RAHUL','RAJ','SHIV'],
    "Age" : [21,23,25],
```

```
    "City" : ['MEERUT','DELHI','AGRA']
}
df=pd.DataFrame(data=data)
df
```

```
    Name  Age    City
0  RAHUL   21  MEERUT
1    RAJ   23   DELHI
2   SHIV   25    AGRA
```

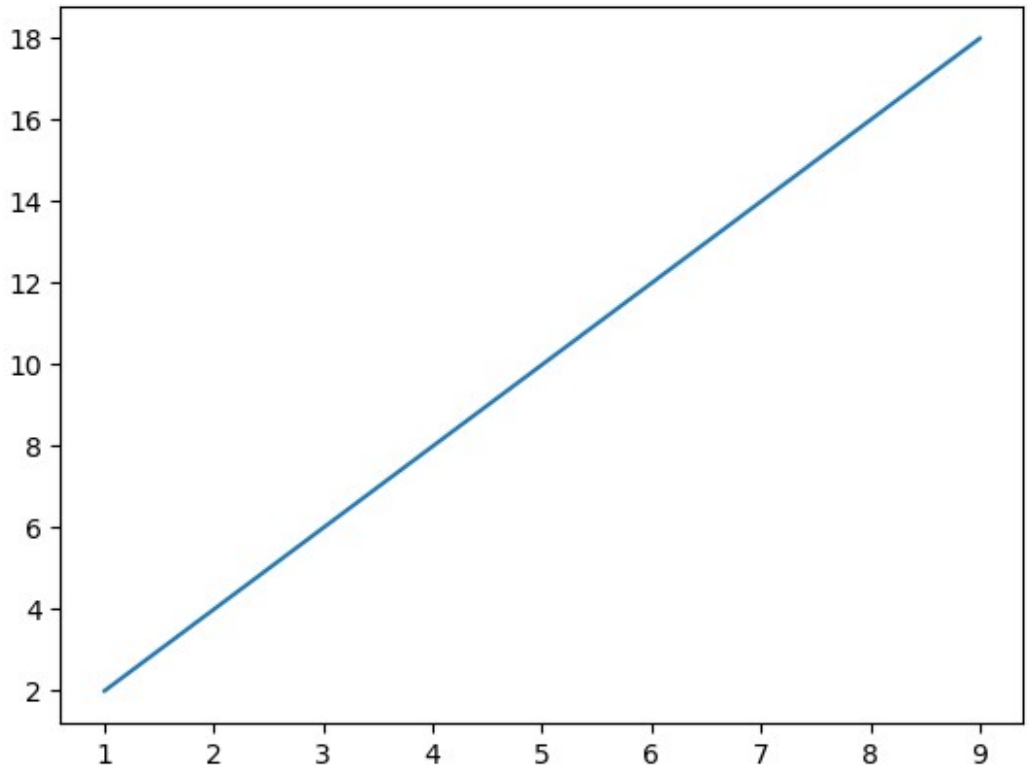
```
df.plot.scatter(x='Name', y='Age' , s='Age', c="red")
```

```
<Axes: xlabel='Name', ylabel='Age'>
```

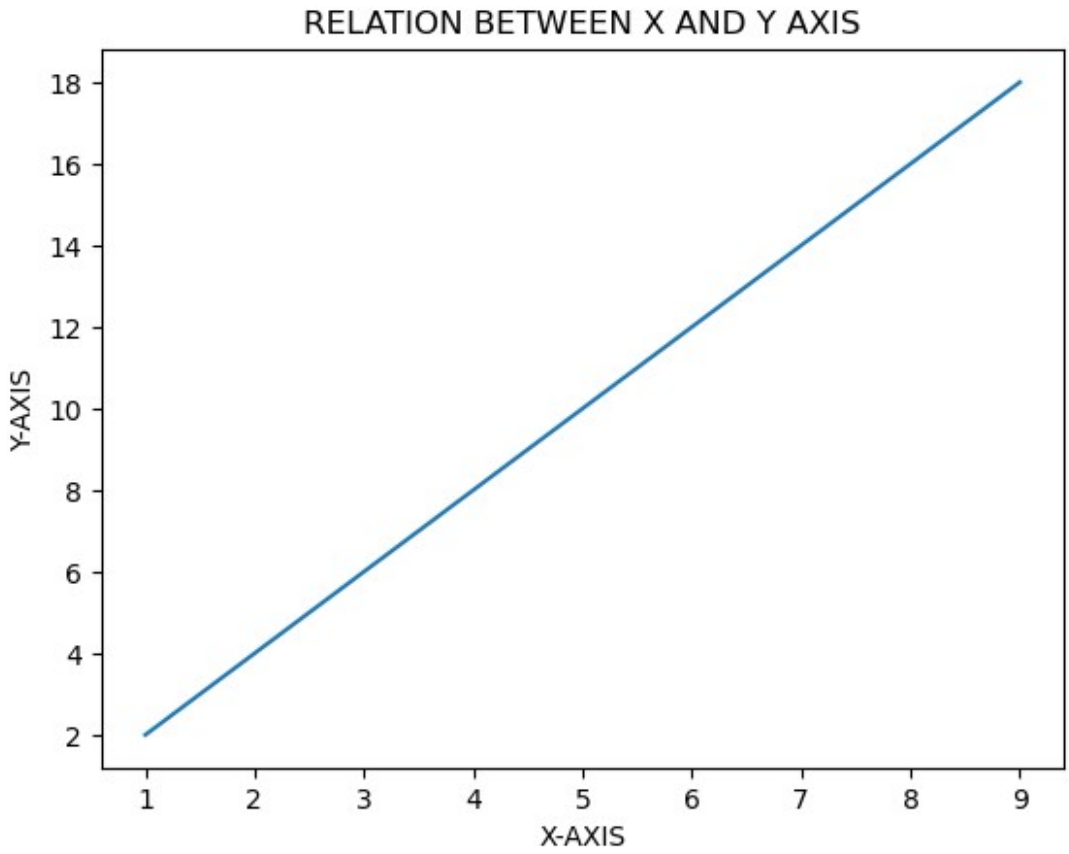


Line Plot

```
import matplotlib.pyplot as plt
import numpy as np
x = np.array([1,2,3,4,5,6,7,8,9])

y=x*2
plt.plot(x,y)
plt.show()
```




```
import matplotlib.pyplot as plt
import numpy as np
x = np.array([1,2,3,4,5,6,7,8,9])

y=x*2
plt.plot(x,y)
plt.xlabel("X-AXIS")
plt.ylabel("Y-AXIS")
plt.title("RELATION BETWEEN X AND Y AXIS")
plt.show()
```

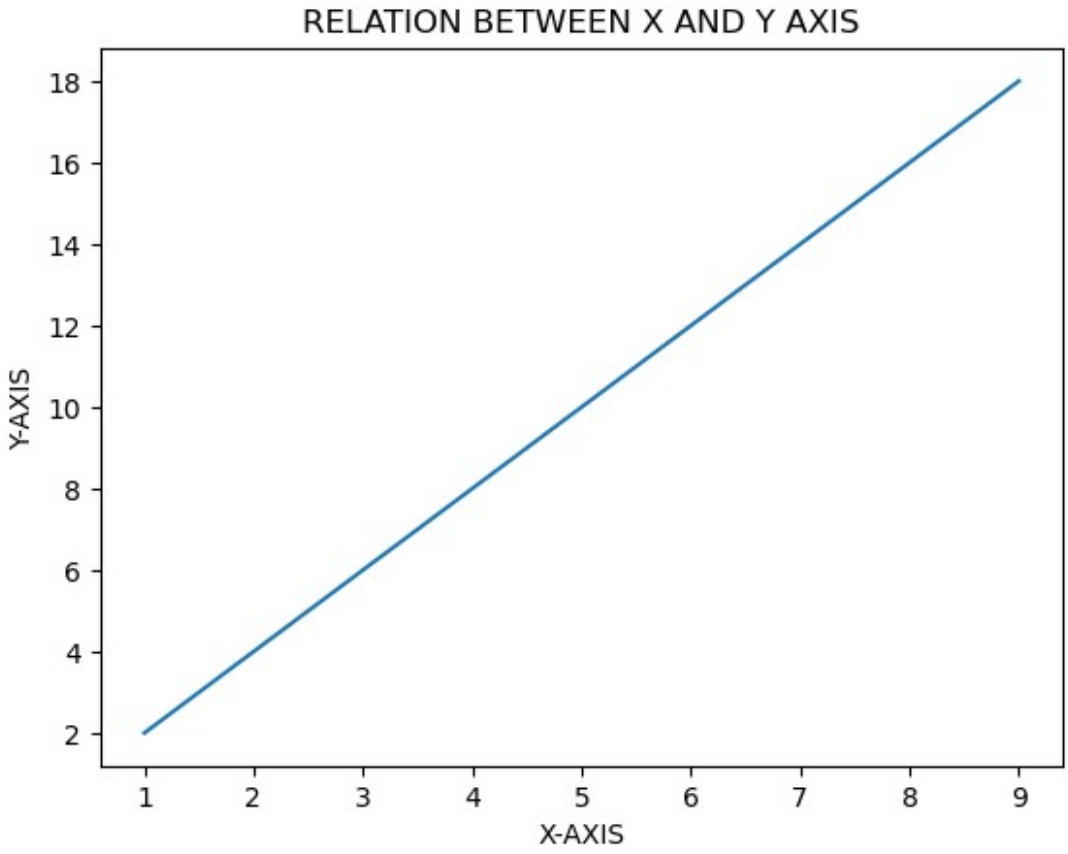


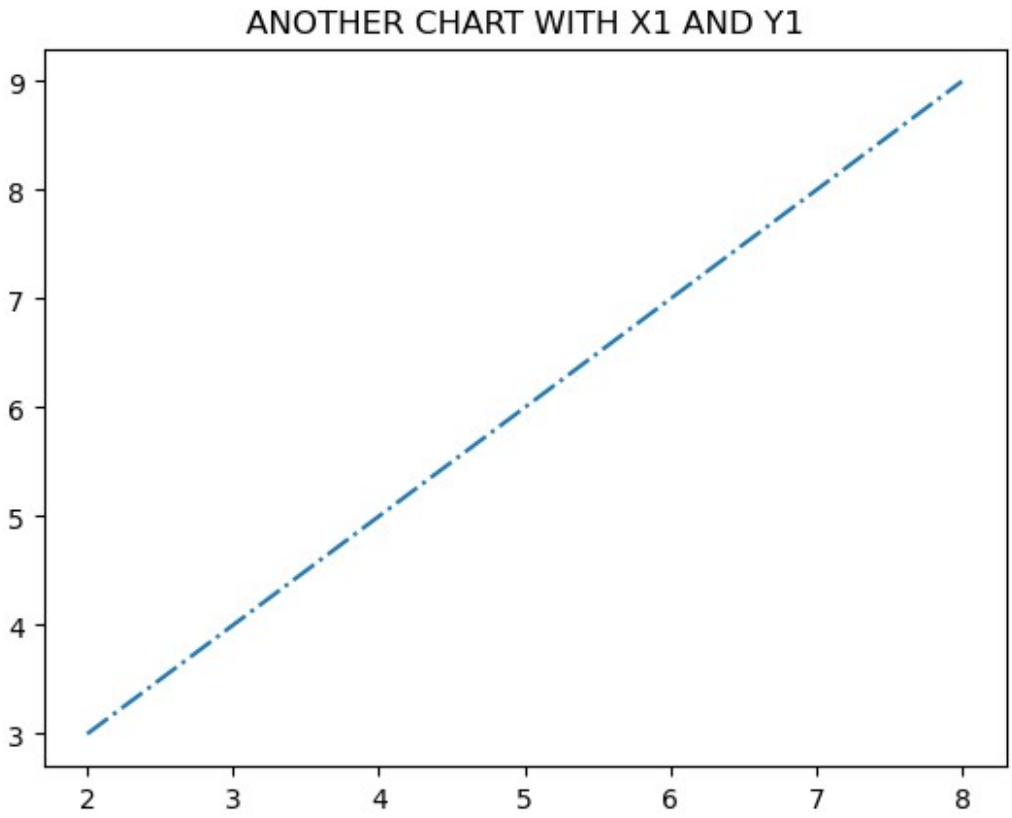
PYPLOT.FIGURE() FUNCTION

DISPLAY MORE THAN ONE CHART IN THE SAME CONTAINER

```
import matplotlib.pyplot as plt
import numpy as np
x = np.array([1,2,3,4,5,6,7,8,9])

y=x*2
plt.plot(x,y)
plt.xlabel("X-AXIS")
plt.ylabel("Y-AXIS")
plt.title("RELATION BETWEEN X AND Y AXIS")
plt.show()


plt.figure()
x1 = [2,4,6,8]
```

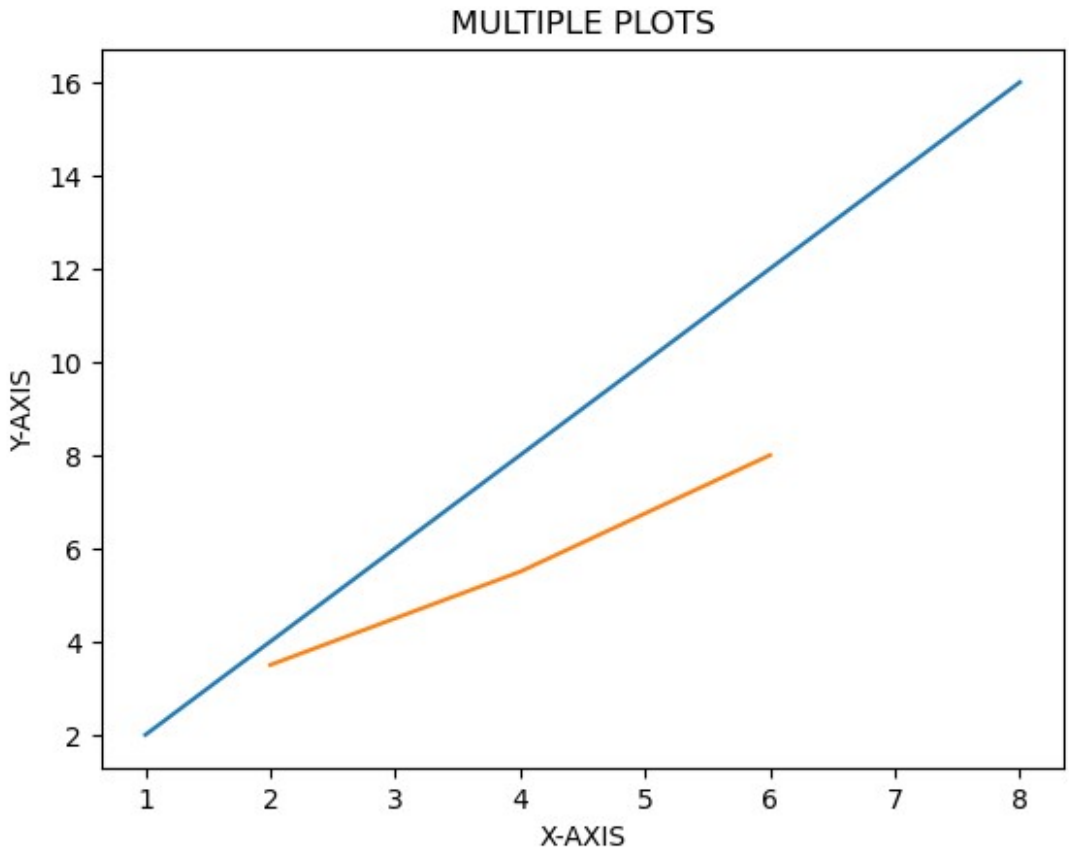
```
y1 = [3,5,7,9]

plt.plot(x1,y1, "-.")
plt.title("ANOTHER CHART WITH X1 AND Y1")
plt.show()
```





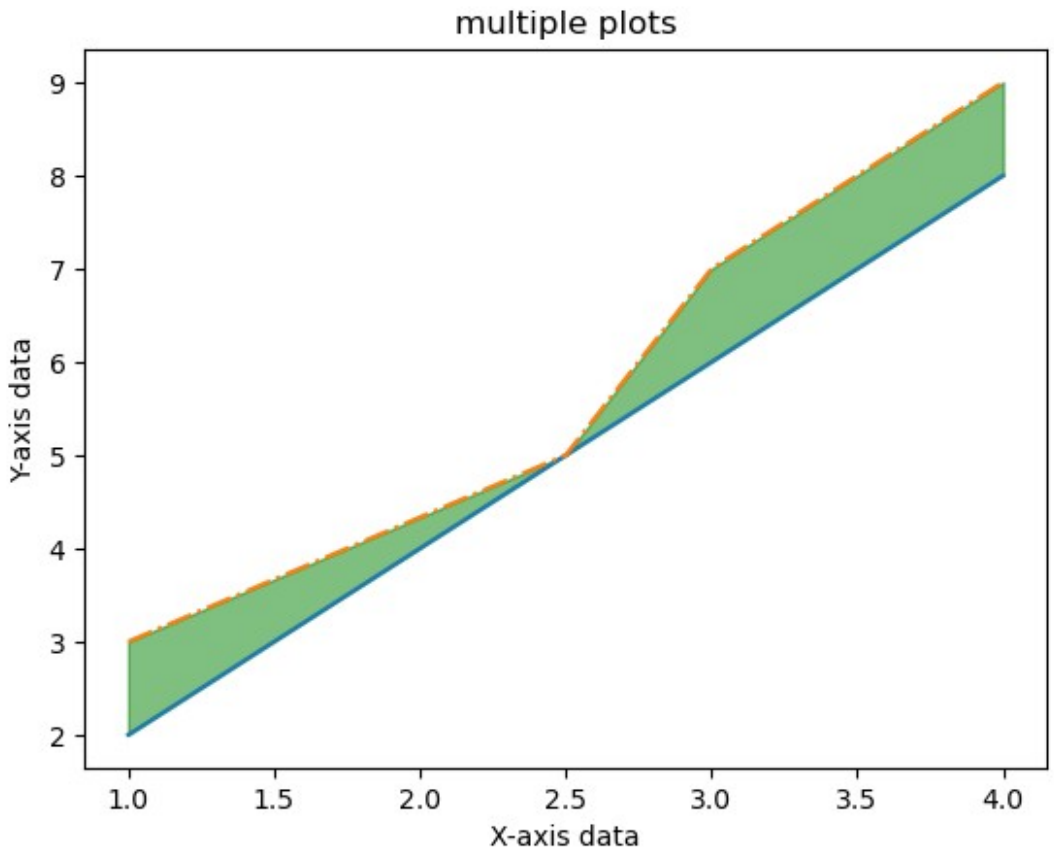
MULTIPLE PLOT ON THE SAME AXIS

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

x = np.array( [1,2.5,4.5,6,8])
y= x*2
plt.plot(x,y)

x1 = [2,4,6]
y1 = [3.5,5.5,8]
plt.plot(x1,y1)

plt.xlabel("X-AXIS")
plt.ylabel("Y-AXIS")
plt.title("MULTIPLE PLOTS")
plt.show()
```



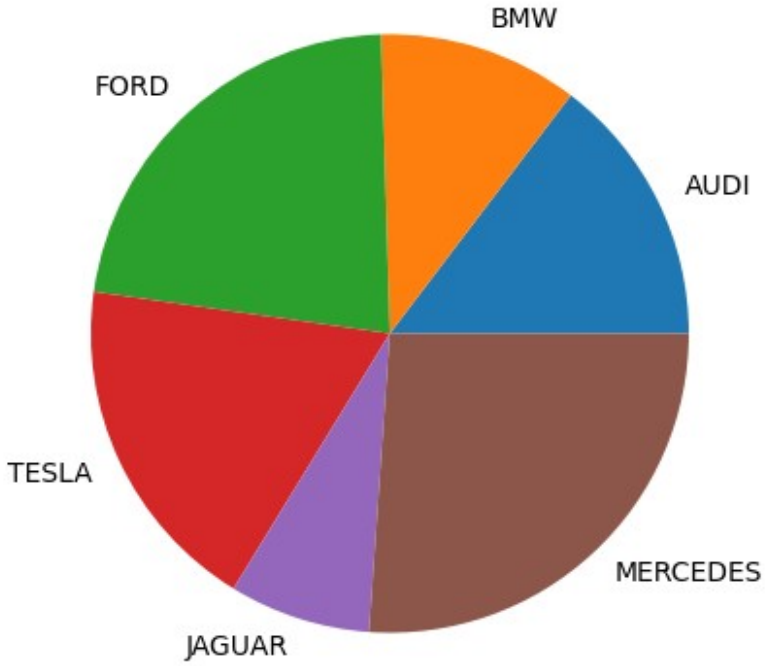
FILL THE AREA BETWEEN TWO PLOTS USING COLOR AND APLHA SIZING LIKE 0.5,1,2 etc.

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

x = np.array([1, 2.5, 3, 4])
y = x*2

plt.plot(x, y)

x1 = [2, 4, 6, 8]
y1 = [3, 5, 7, 9]

plt.plot(x, y1, '-.')
plt.xlabel("X-axis data")
plt.ylabel("Y-axis data")
plt.title('multiple plots')

plt.fill_between(x, y, y1, color='green', alpha=0.5)
plt.show()
```

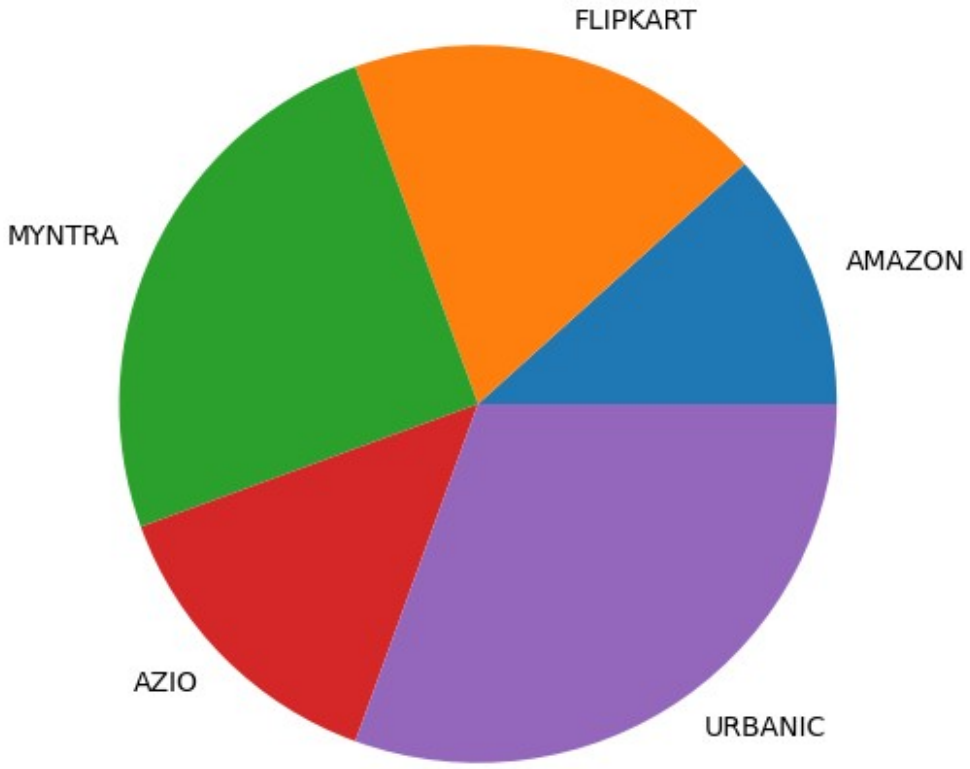


CREATING A PIE CHART

```
# Import libraries
from matplotlib import pyplot as plt
import numpy as np


# Creating dataset
cars = ['AUDI', 'BMW', 'FORD',
           'TESLA', 'JAGUAR', 'MERCEDES']

data = [23, 17, 35, 29, 12, 41]

# Creating plot
fig = plt.figure(figsize =(5, 5))
plt.pie(data, labels = cars)

# show plot
plt.show()
```




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

website =['AMAZON', 'FLIPKART', 'MYNTRA', 'AZIO', 'URBANIC']

data = [21,34,45,25,55]

fig = plt.figure(figsize=(6,6))
plt.pie(data, labels = website)

plt.show()
```

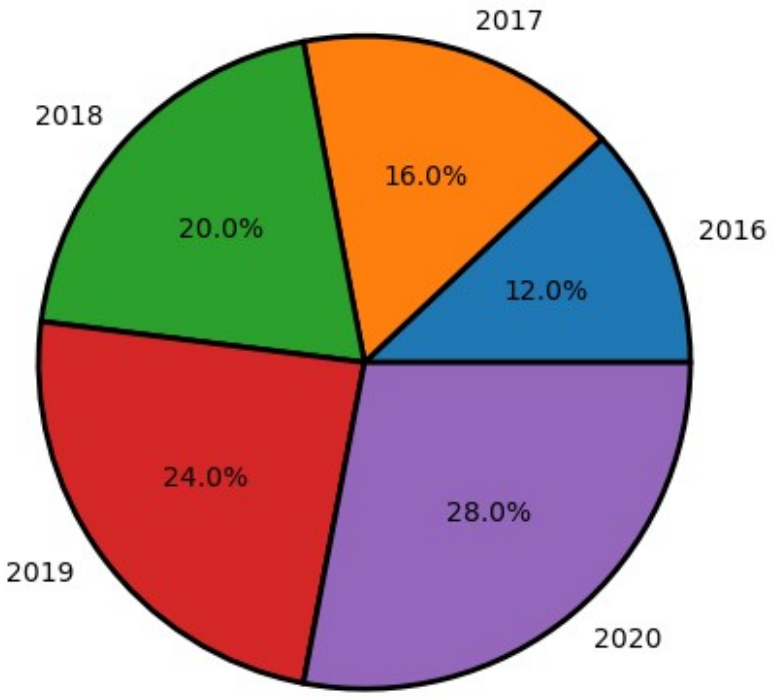


How to set border for wedges in pie chart

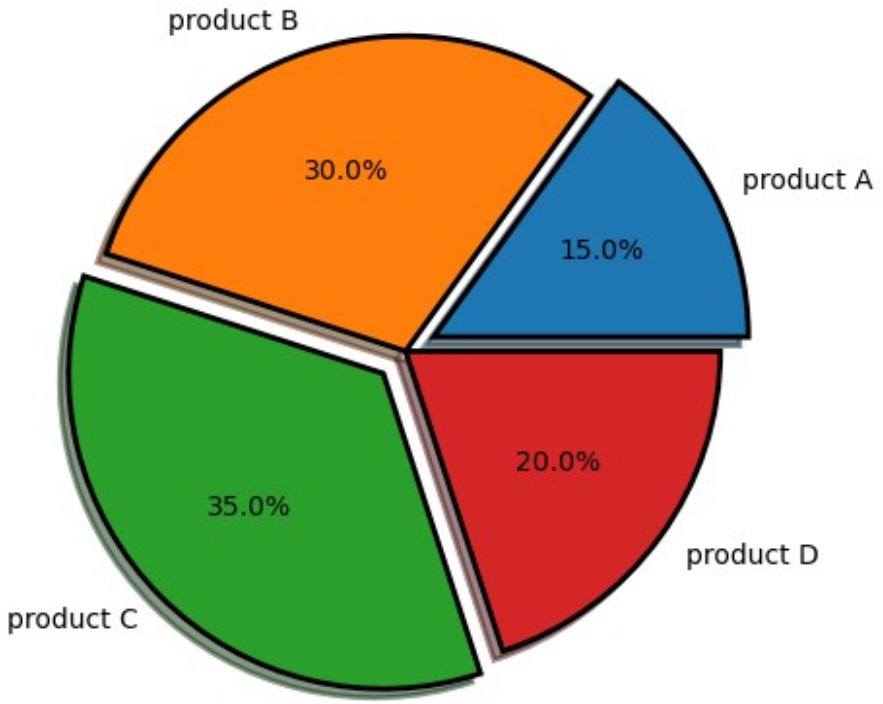
use autopct, startangle, wedgeprops, linewidth, edgecolor

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

years  = [2016, 2017, 2018, 2019, 2020]
profit = [15,20,25,30,35]

plt.pie(profit, labels = years , autopct  = '%1.1f%%',
       startangle  = 0,
       wedgeprops  = {"edgecolor" : "black",
                      'linewidth' : 2,
                      'antialiased': True})
```

```
plt.axis('equal')
plt.show()
```




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

product  = 'product A','product B', 'product C', 'product D'

stock = [15, 30, 35, 20]
explode = (0.1, 0, 0.1, 0)

plt.pie(stock, explode = explode, labels = product , autopct  = '%1.1f
%%',
       startangle  = 0,
        shadow  = True,
       wedgeprops  = {"edgecolor" : "black",
                      'linewidth' : 2,
                      'antialiased': True})
plt.axis('equal')
plt.show()
```


product B
30.0%
product A
15.0%
20.0%
35.0%
product D
product C