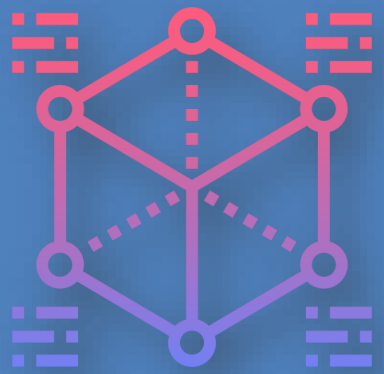


greatlearning
Power Ahead

Python for Non-Programmers

Python Matplotlib

greatlearning
Power Ahead

Matplotlib is a python library used for data visualization

You can create bar-plots, scatter-plots, histograms and a lot more with matplotlib

matplotlib

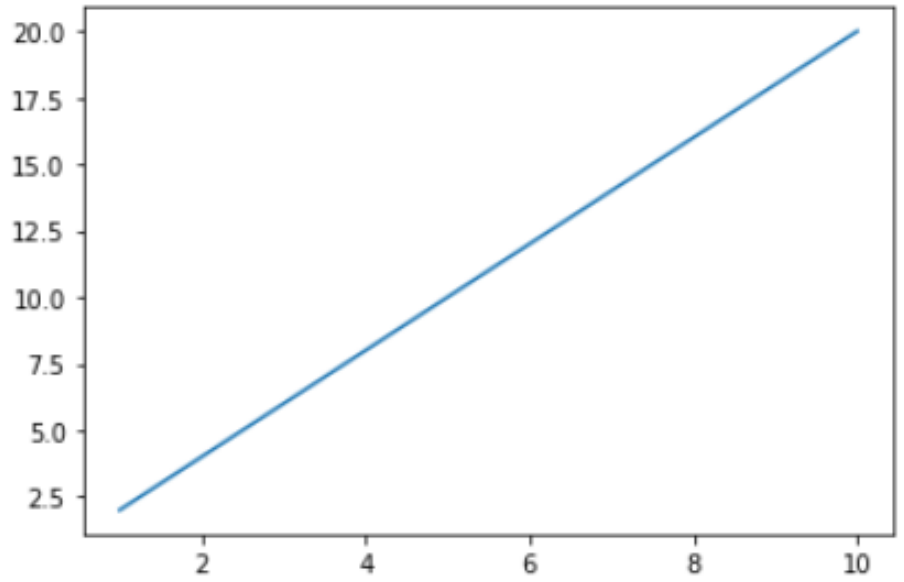
Line Plot

```
In [1]: import numpy as np
        from matplotlib import pyplot as plt
```

```
In [2]: x=np.arange(1,11)
        x
Out[2]: array([ 1,  2,  3,  4,  5,  6,  7,  8,  9, 10])
```

```
In [4]: y= 2*x
        y
Out[4]: array([ 2,  4,  6,  8, 10, 12, 14, 16, 18, 20])
```

```
In [6]: plt.plot(x,y)
        plt.show()
```

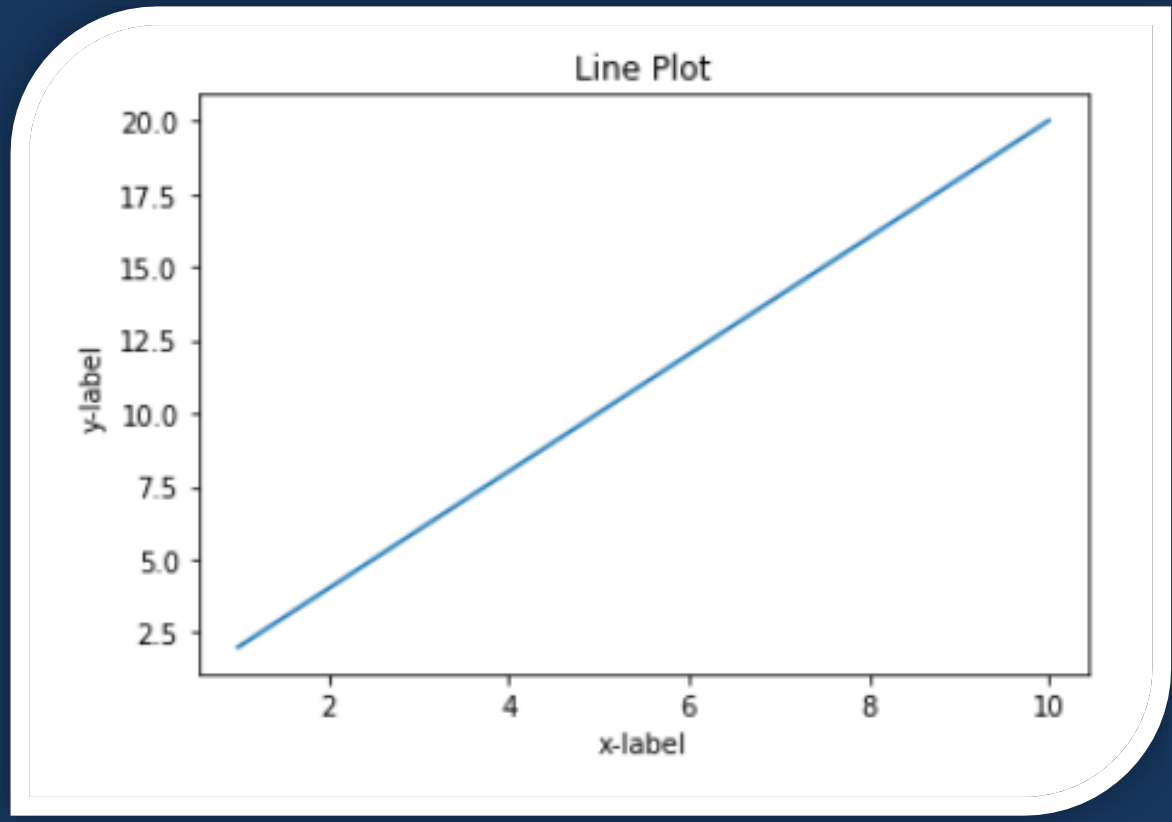


Line Plot

greatlearning
Power Ahead

Adding Title and Labels

```
In [8]: plt.plot(x,y)
        plt.title("Line Plot")
        plt.xlabel("x-label")
        plt.ylabel("y-label")
        plt.show()
```

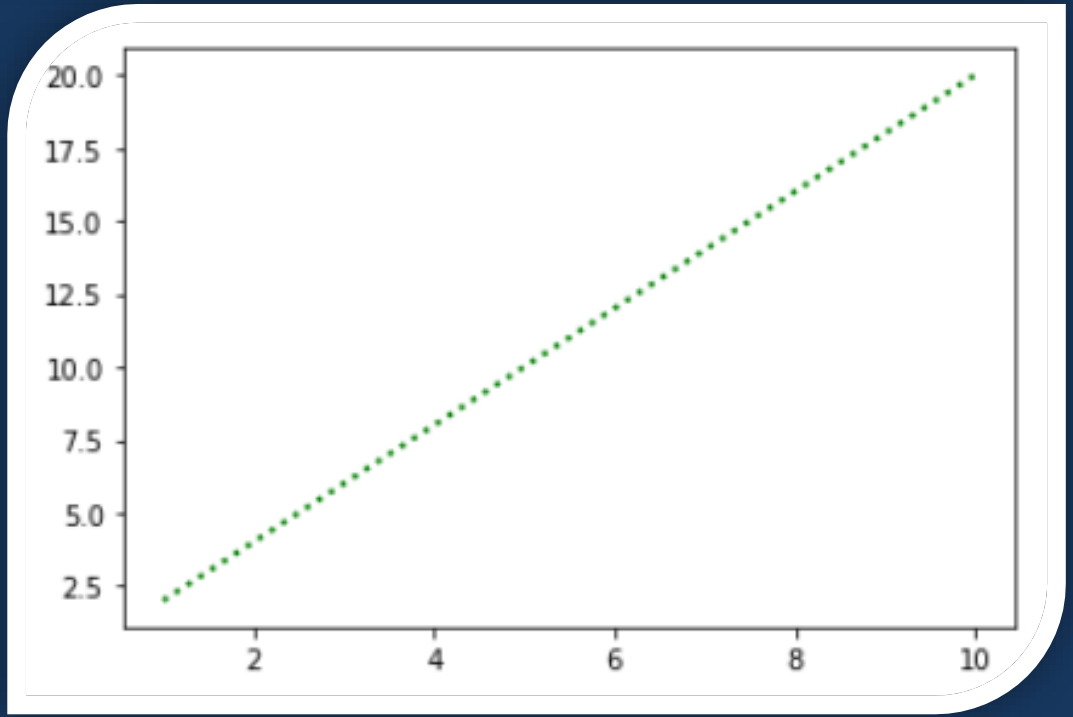


Line Plot

greatlearning
Power Ahead

Changing Line Aesthetics

```
In [10]: plt.plot(x,y,color='g',linestyle=':',linewidth=2)
         plt.show()
```

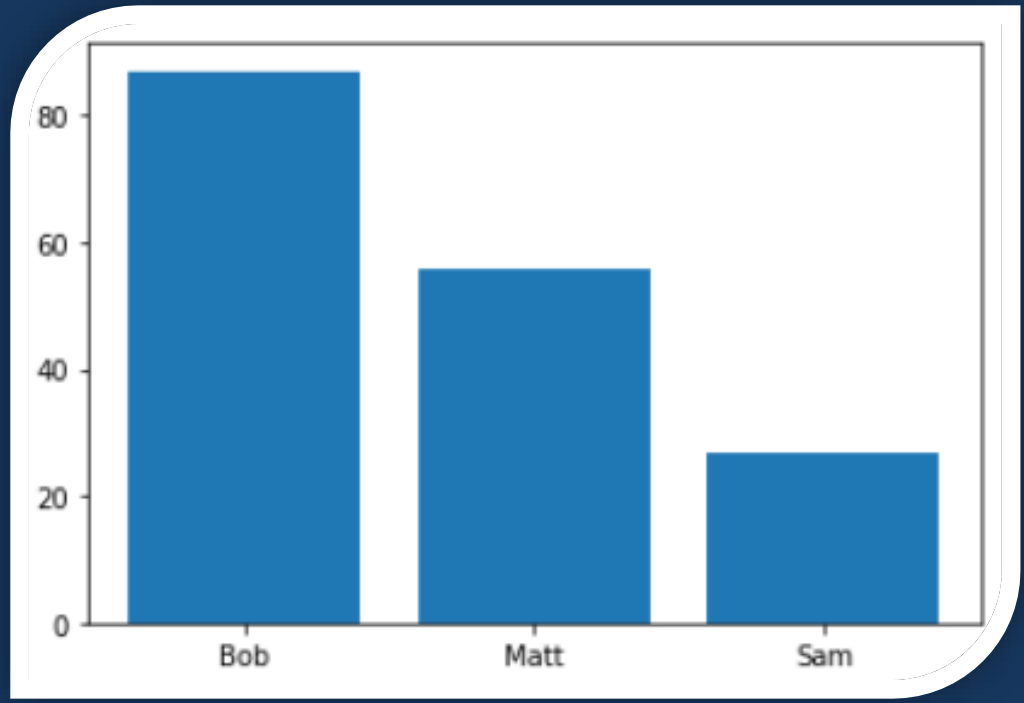


Bar Plot

```
[39]: student = {"Bob":87,"Matt":56,"Sam":27}
```

```
In [40]: names = list(student.keys())
         values = list(student.values())
```

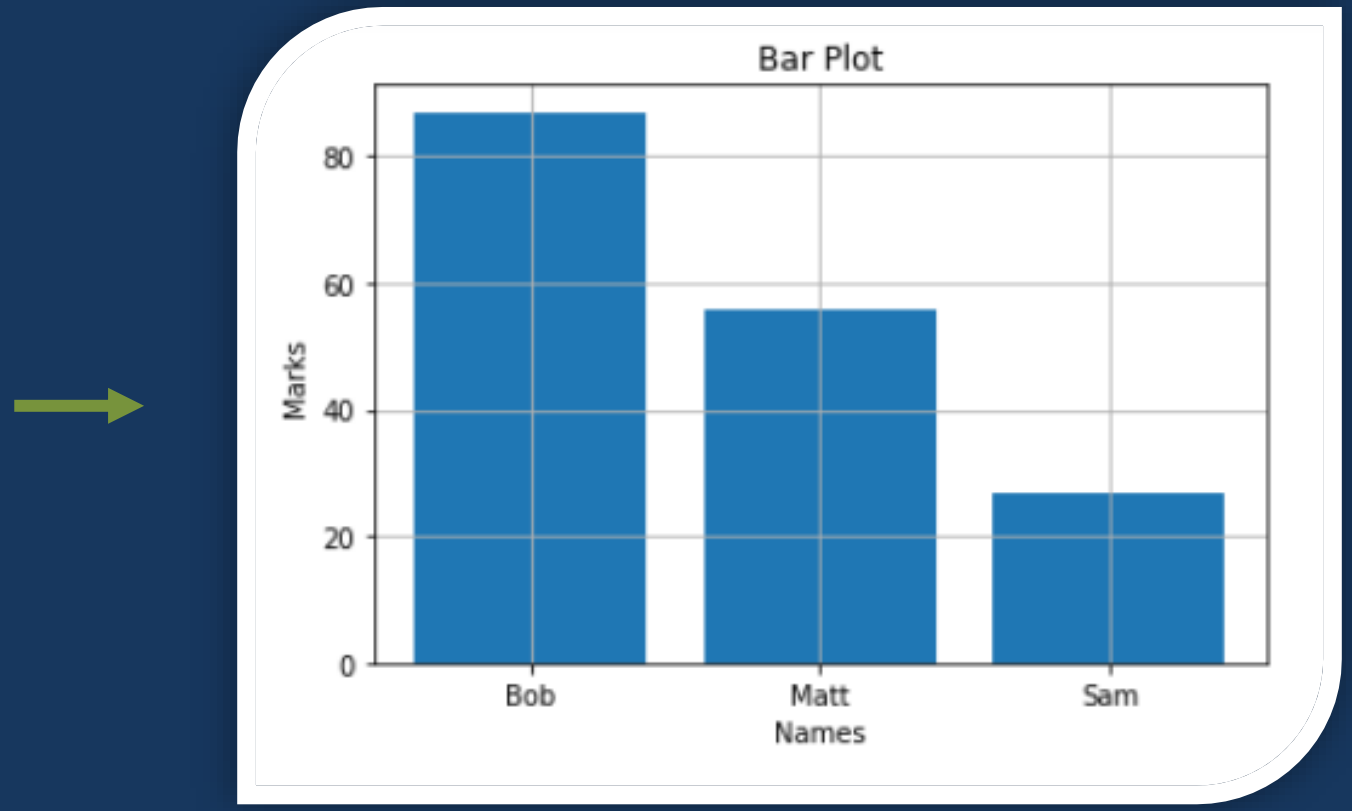
```
In [42]: plt.bar(names,values)
         plt.show()
```



Bar Plot

Adding Title and Labels

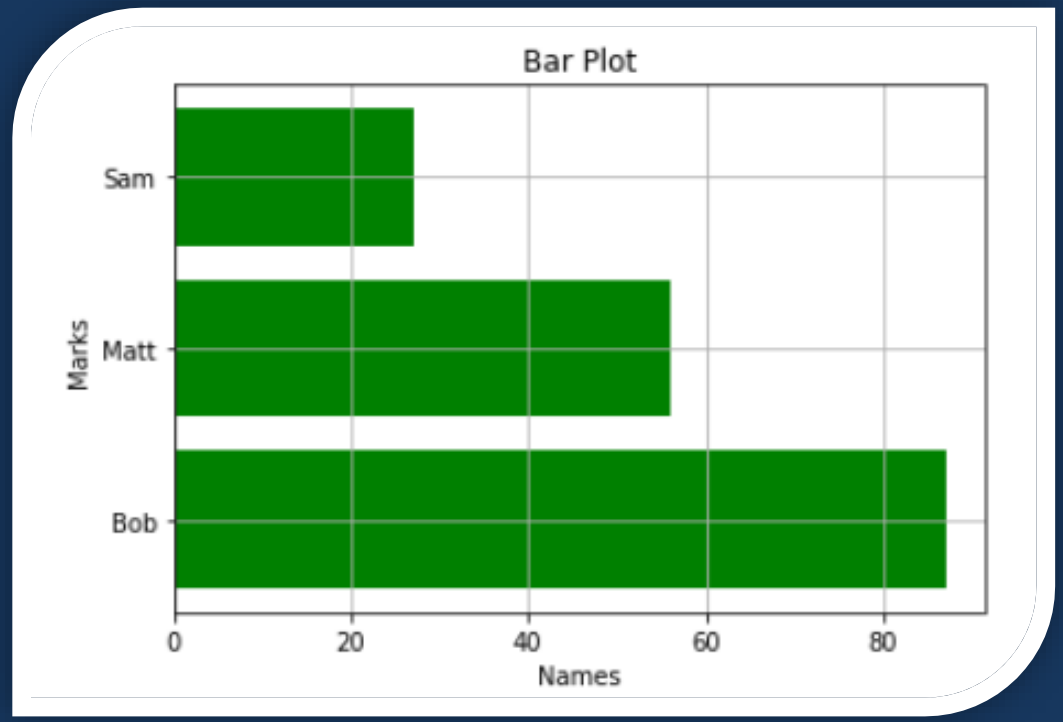
```
In [16]: plt.bar(names,values)
         plt.title("Bar Plot")
         plt.xlabel("Names")
         plt.ylabel("Marks")
         plt.grid(True)
         plt.show()
```



Horizontal Bar Plot

Horizontal Bar Plot

```
In [44]: plt.barh(names,values,color='g')
         plt.title("Bar Plot")
         plt.xlabel("Names")
         plt.ylabel("Marks")
         plt.grid(True)
         plt.show()
```



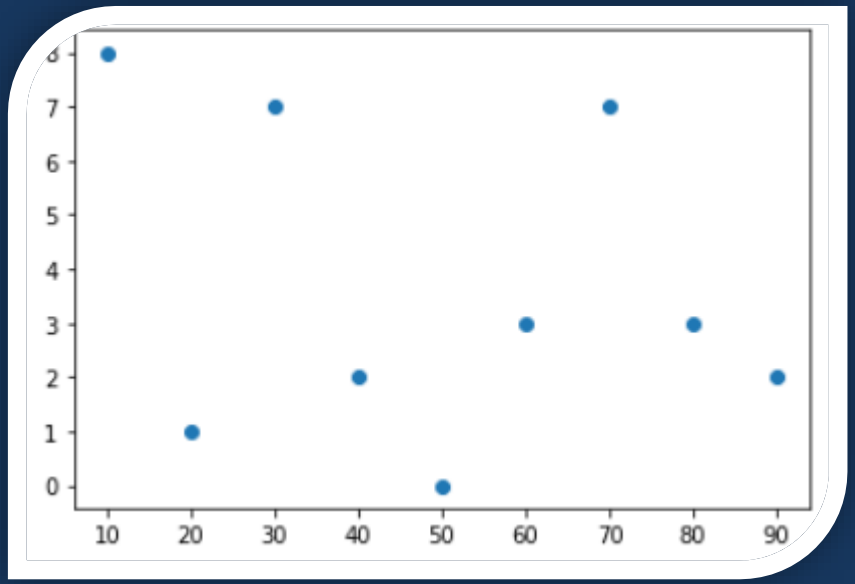
Scatter Plot

greatlearning
Power Ahead

Creating a basic scatter-plot

```
x=[10,20,30,40,50,60,70,80,90]
a=[8,1,7,2,0,3,7,3,2]

plt.scatter(x,a)
plt.show()
```

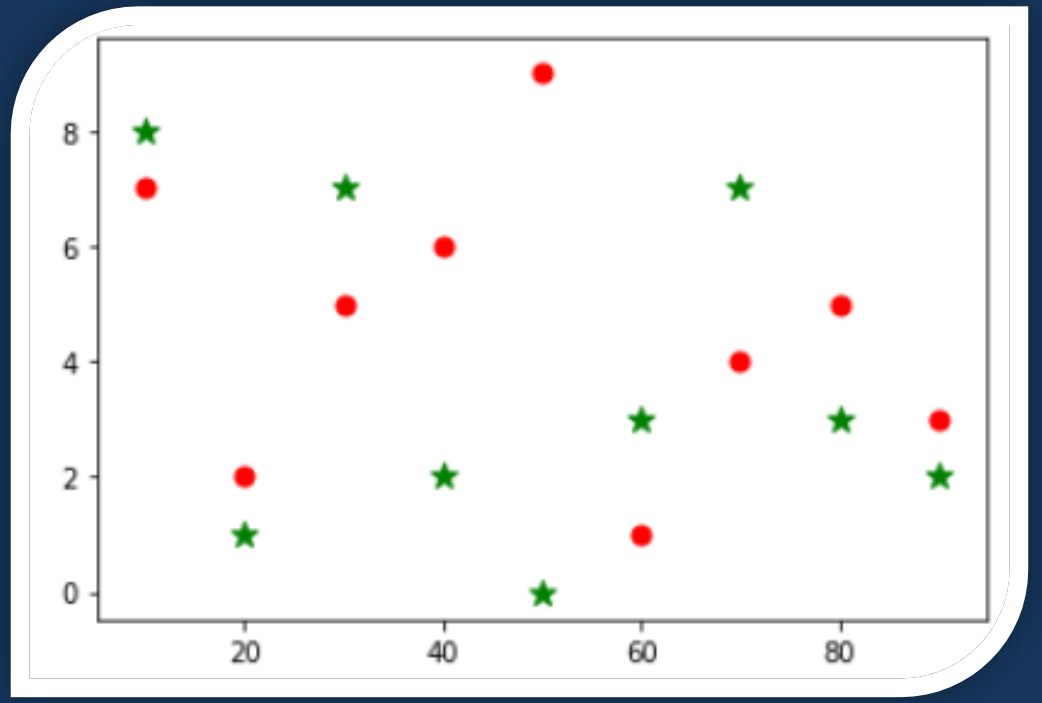


Scatter Plot

greatlearning
Power Ahead

Adding two markers in the same plot

```
In [10]: x=[10,20,30,40,50,60,70,80,90]
         a=[8,1,7,2,0,3,7,3,2]
         b=[7,2,5,6,9,1,4,5,3]
         plt.scatter(x,a,marker="*",c="g",s=100)
         plt.scatter(x,b,marker=".",c="r",s=200)
         plt.show()
```



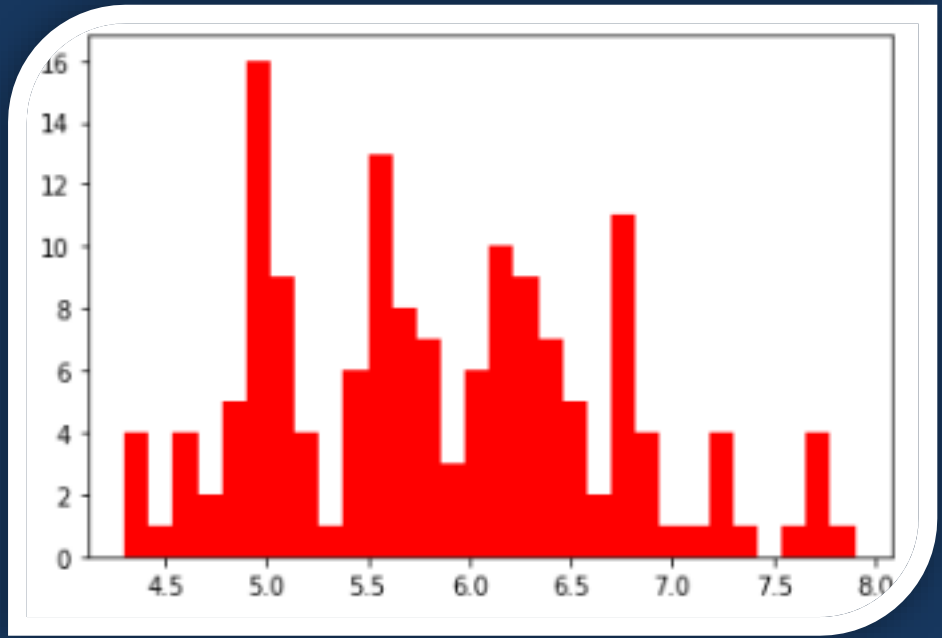
Histogram

greatlearning
Power Ahead

Working with a dataset

```
iris=pd.read_csv('iris.csv')
iris.head()
```

```
plt.hist(iris['Sepal.Length'],bins=30,color="r")
plt.show()
```



Box-Plot

greatlearning
Power Ahead

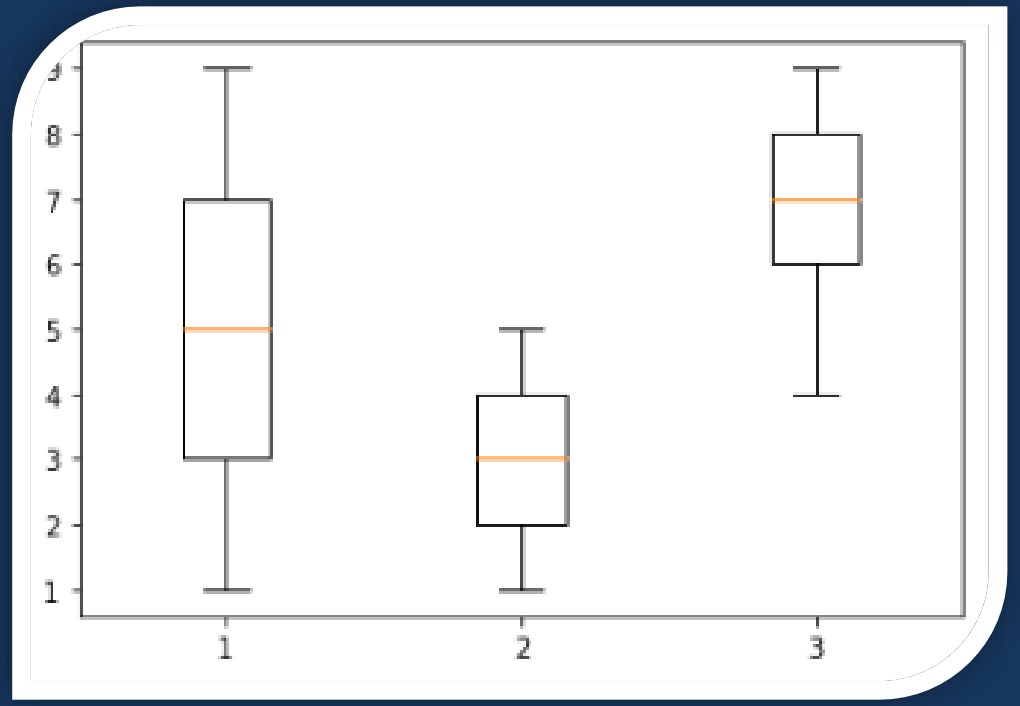
Creating data

```
one = [1,2,3,4,5,6,7,8,9]
two = [1,2,3,4,5,4,3,2,1]
three = [6,7,8,9,8,7,6,5,4]

data =  list([one,two,three])
```

Making Plot

```
plt.boxplot(data)
plt.show()
```



Pie-Chart

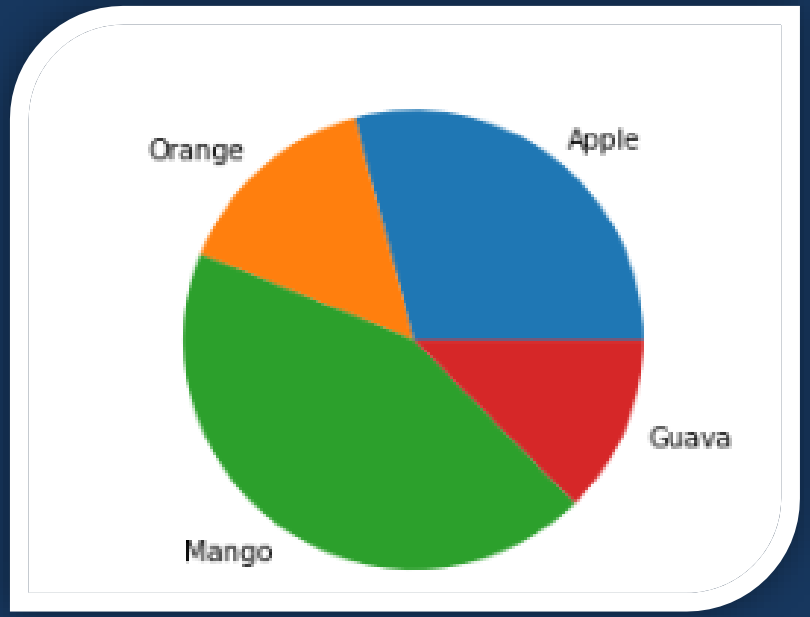
greatlearning
Power Ahead

Creating data

```
fruit = ['Apple','Orange','Mango','Guava']
quantity = [67,34,100,29]
```

Making Plot

```
plt.pie(quantity,labels=fruit)
plt.show()
```



Pie-Chart

Changing Aesthetics

```
plt.pie(quantity,labels=fruit,autopct='%0.1f%%'
        ,colors=['yellow','grey','blue','black'])
plt.show()
```