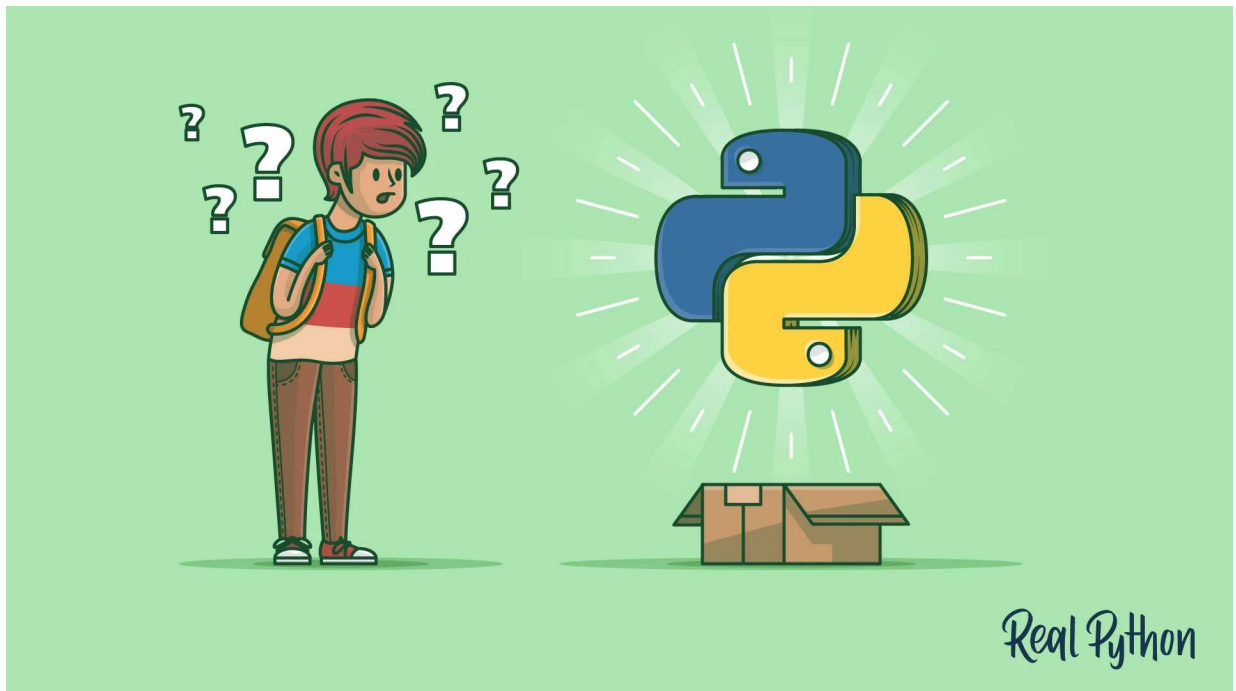


## Python Basics



```
In [94]: import numpy as np
import seaborn as sns
import statistics
import matplotlib.pyplot as plt
%matplotlib inline
print("All modules are imported.")
```

All modules are imported.

```
In [87]: #Mean,Median,Mode
df=sns.load_dataset("tips")
df
```

	total_bill	tip	sex	smoker	day	time	size
0	16.99	1.01	Female	No	Sun	Dinner	2
1	10.34	1.66	Male	No	Sun	Dinner	3
2	21.01	3.50	Male	No	Sun	Dinner	3
3	23.68	3.31	Male	No	Sun	Dinner	2
4	24.59	3.61	Female	No	Sun	Dinner	4
...	...	...	...	...	...	...	...
239	29.03	5.92	Male	No	Sat	Dinner	3
240	27.18	2.00	Female	Yes	Sat	Dinner	2
241	22.67	2.00	Male	Yes	Sat	Dinner	2
242	17.82	1.75	Male	No	Sat	Dinner	2
243	18.78	3.00	Female	No	Thur	Dinner	2

244 rows × 7 columns

```
In [88]: df.head()
```

Out[88]:

	total_bill	tip	sex	smoker	day	time	size
0	16.99	1.01	Female	No	Sun	Dinner	2
1	10.34	1.66	Male	No	Sun	Dinner	3
2	21.01	3.50	Male	No	Sun	Dinner	3
3	23.68	3.31	Male	No	Sun	Dinner	2
4	24.59	3.61	Female	No	Sun	Dinner	4

```
In [89]: np.mean(df["total_bill"])
```

Out[89]: 19.785942622950824

```
In [90]: np.median(df["total_bill"])
```

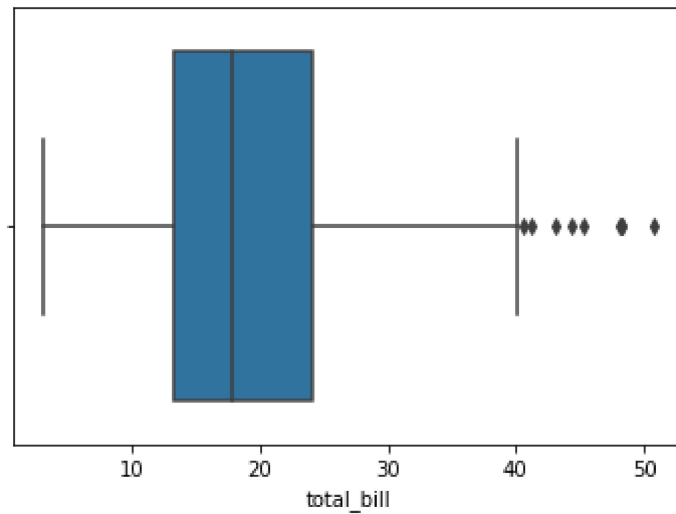
Out[90]: 17.795

```
In [91]: statistics.mode(df["total_bill"])
```

Out[91]: 13.42

```
In [92]: sns.boxplot(df["total_bill"])
```

```
Out[92]: <matplotlib.axes._subplots.AxesSubplot at 0x1ca63684d90>
```



```
In [14]: d=sns.load_dataset("iris")
d
```

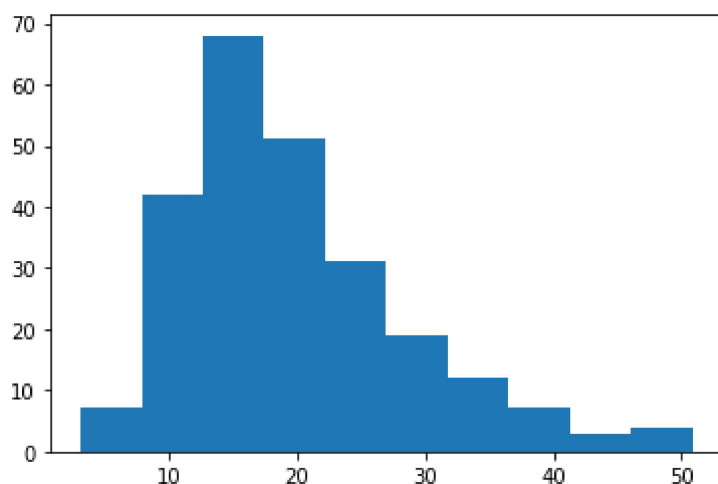
```
Out[14]:
```

	sepal_length	sepal_width	petal_length	petal_width	species
0	5.1	3.5	1.4	0.2	setosa
1	4.9	3.0	1.4	0.2	setosa
2	4.7	3.2	1.3	0.2	setosa
3	4.6	3.1	1.5	0.2	setosa
4	5.0	3.6	1.4	0.2	setosa
...	...	...	...	...	...
145	6.7	3.0	5.2	2.3	virginica
146	6.3	2.5	5.0	1.9	virginica
147	6.5	3.0	5.2	2.0	virginica
148	6.2	3.4	5.4	2.3	virginica
149	5.9	3.0	5.1	1.8	virginica

150 rows × 5 columns

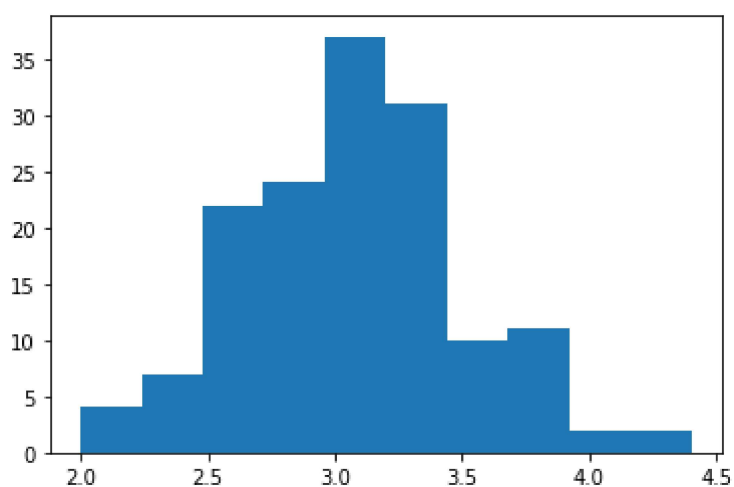
```
In [15]: plt.hist(df["total_bill"])
```

```
Out[15]: (array([ 7., 42., 68., 51., 31., 19., 12., 7., 3., 4.]),  
array([ 3.07 , 7.844, 12.618, 17.392, 22.166, 26.94 , 31.714, 36.488,  
41.262, 46.036, 50.81 ]),  
<a list of 10 Patch objects>)
```



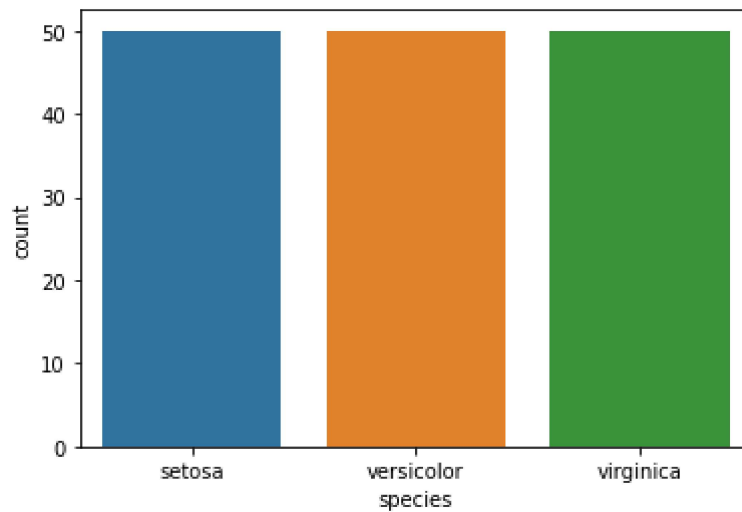
```
In [18]: plt.hist(d["sepal_width"])
```

```
Out[18]: (array([ 4., 7., 22., 24., 37., 31., 10., 11., 2., 2.]),  
array([2. , 2.24, 2.48, 2.72, 2.96, 3.2 , 3.44, 3.68, 3.92, 4.16, 4.4 ]),  
<a list of 10 Patch objects>)
```



```
In [19]: sns.countplot(d["species"])
```

```
Out[19]: <matplotlib.axes._subplots.AxesSubplot at 0x1ca63636820>
```



```
In [20]: #Percentiles  
np.percentile(d["sepal_width"],[25,75])
```

```
Out[20]: array([2.8, 3.3])
```

## IQR

```
In [24]: #define our dataset  
dataset=[11,10,12,14,12,15,14,13,15,102,12,14,17,10,107,10,13,12,14,12,108,12,11,  
dataset
```

```
Out[24]: [11,  
          10,  
          12,  
          14,  
          12,  
          15,  
          14,  
          13,  
          15,  
          102,  
          12,  
          14,  
          17,  
          10,  
          107,  
          10,  
          13,  
          12,  
          14,  
          12,  
          108,  
          12,  
          11,  
          14,  
          13,  
          15,  
          10,  
          15,  
          12]
```

```
In [ ]: outliers=[]  
def detct_outliers(data)
```

```
In [25]: list(range(-10,-3))
```

```
Out[25]: [-10, -9, -8, -7, -6, -5, -4]
```

```
In [26]: list(range(10,3,-1))
```

```
Out[26]: [10, 9, 8, 7, 6, 5, 4]
```

```
In [27]: "Aishwarya"+"Data"
```

```
Out[27]: 'AishwaryaData'
```

```
In [31]: a=input("Enter first number ")
b=input("Enter second number ")
sum=a+b
print(sum)
```

```
Enter first number 1
Enter second number 2
12
```

```
In [32]: a=int(input("Enter first number "))
b=int(input("Enter second number "))

sum=a+b
diff=a-b
prod=a*b
div=a/b
mod=a%b
flr=a//b
exp=a**b

print(sum)
print(diff)
print(prod)
print(div)
print(div)
print(div)
print(exp)
```

```
Enter first number 1
Enter second number 2
3
-1
2
0.5
0.5
0.5
1
```

```
In [35]: "aishwarya"*3
```

```
Out[35]: 'aishwaryaaishwaryaaishwarya'
```

```
In [38]: a=list("aishwarya")
a
```

```
Out[38]: ['a', 'i', 's', 'h', 'w', 'a', 'r', 'y', 'a']
```

```
In [37]: len(list("aishwarya"))
```

```
Out[37]: 9
```

```
In [39]: a[5]
```

```
Out[39]: 'a'
```

```
In [40]: a[-3]
```

```
Out[40]: 'r'
```

```
In [41]: a[::-2]
```

```
Out[41]: ['a', 's', 'w', 'r', 'a']
```

```
In [44]: a[0:9:2]
```

```
Out[44]: ['a', 's', 'w', 'r', 'a']
```

```
In [45]: a[::-1] #To reverse the list
```

```
Out[45]: ['a', 'y', 'r', 'a', 'w', 'h', 's', 'i', 'a']
```

```
In [49]: list_obj=[] #create an empty list  
list_obj
```

```
Out[49]: []
```

```
In [50]: list=["Aishwarya",23,"Mumbai"]  
list
```

```
Out[50]: ['Aishwarya', 23, 'Mumbai']
```

```
In [52]: list1=["Aishwarya",23,"Mumbai",["Data Analyst",400,19.43]]  
list1
```

```
Out[52]: ['Aishwarya', 23, 'Mumbai', ['Data Analyst', 400, 19.43]]
```

```
In [54]: list1[-1][2]
```

```
Out[54]: 19.43
```

```
In [57]: list1.append("Richard Feynman")
```



```
In [58]: list1
```

```
Out[58]: ['Aishwarya',  
          23,  
          'Mumbai',  
          ['Data Analyst', 400, 19.43],  
          'Suraj',  
          'Richard Feynman']
```

```
In [60]: list1.insert(3,"Nano")
```

```
In [62]: list1
```

```
Out[62]: ['Aishwarya',  
          23,  
          'Mumbai',  
          'Nano',  
          ['Data Analyst', 400, 19.43],  
          'Suraj',  
          'Richard Feynman']
```

```
In [63]: a="Aishwarya"  
a
```

```
Out[63]: 'Aishwarya'
```

```
In [64]: a.find("a")
```

```
Out[64]: 5
```

```
In [65]: b="kahshgshgsodiuiipsoigjrj "  
b
```

```
Out[65]: 'kahshgshgsodiuiipsoigjrj '
```

```
In [66]: b.split("g") #it will split for all the occurrences of j.
```

```
Out[66]: ['kahsh', 'sh', 'sodiuiipsoi', 'jrj ']
```

```
In [68]: b.partition("g") #it will partition by considering the first occurrence
```

```
Out[68]: ('kahsh', 'g', 'shgsodiuiipsoigjrj ')
```

```
In [69]: I="India is my Country."  
I
```

```
Out[69]: 'India is my Country.'
```

```
In [70]: I.center(50,"*")
```

```
Out[70]: '*****India is my Country.*****'
```

```
In [71]: #What is the difference between append and extend  
list1.append([3,4,5])
```

```
In [72]: list1
```

```
Out[72]: ['Aishwarya',  
          23,  
          'Mumbai',  
          'Nano',  
          ['Data Analyst', 400, 19.43],  
          'Suraj',  
          'Richard Feynman',  
          [3, 4, 5]]
```

```
In [75]: list1.extend(["Seema","Meenakshi"])
```

```
In [76]: list1
```

```
Out[76]: ['Aishwarya',  
          23,  
          'Mumbai',  
          'Nano',  
          ['Data Analyst', 400, 19.43],  
          'Suraj',  
          'Richard Feynman',  
          [3, 4, 5],  
          'Seema',  
          'Seema',  
          'Meenakshi']
```

```
In [77]: var=input("Please input your name")  
var
```

Please input your nameAishwarya Borkar

```
Out[77]: 'Aishwarya Borkar'
```

```
In [80]: "My name is {}".format(var)
```

```
Out[80]: 'My name is Aishwarya Borkar'
```

```
In [81]: list_num=[24,12,14,20]  
list_num
```

```
Out[81]: [24, 12, 14, 20]
```

In [ ]: