

Pandas Opearations

```
In [51]: import pandas as pd
import numpy as np
df=pd.read_csv("studentsnew.csv")
df
```

Out[51]:

	Rank	Name	Age	Gender	Background	Python	Machine Learning
0	Rank 1	Ravi	23	Male	Tech	89	95
1	Rank 2	Chandni	22	Female	Non-Tech	78	83
2	Rank 3	Gyanesh	25	Male	Tech	70	80
3	Rank 4	Rahul	22	Male	Tech	68	75
4	Rank 5	Kartik	23	Male	Tech	60	70
5	Rank 6	Pratiksha	24	Female	Non-Tech	58	55
6	Rank 7	Maya	22	Female	Non-Tech	55	50
7	Rank 8	Shani	21	Male	Tech	50	50
8	Rank 9	Neelam	24	Female	Non-Tech	50	47
9	Rank 10	Mangal	22	Male	Non-Tech	45	46

```
In [11]: df['Total']=df["Python"]+df['Machine Learning']
```

How delete particular column

```
In [ ]: df.drop(['Grade'],axis=1,inplace=True)
```

```
In [15]: df
```

Out[15]:

	Rank	Name	Age	Gender	Background	Python	Machine Learning	Total
0	Rank 1	Ravi	23	Male	Tech	89	95	184
1	Rank 2	Chandni	22	Female	Non-Tech	78	83	161
2	Rank 3	Gyanesh	25	Male	Tech	70	80	150
3	Rank 4	Rahul	22	Male	Tech	68	75	143
4	Rank 5	Kartik	23	Male	Tech	60	70	130
5	Rank 6	Pratiksha	24	Female	Non-Tech	58	55	113
6	Rank 7	Maya	22	Female	Non-Tech	55	50	105
7	Rank 8	Shani	21	Male	Tech	50	50	100
8	Rank 9	Neelam	24	Female	Non-Tech	50	47	97
9	Rank 10	Mangal	22	Male	Non-Tech	45	46	91

```
In [10]: df["Gender"].value_counts()
```

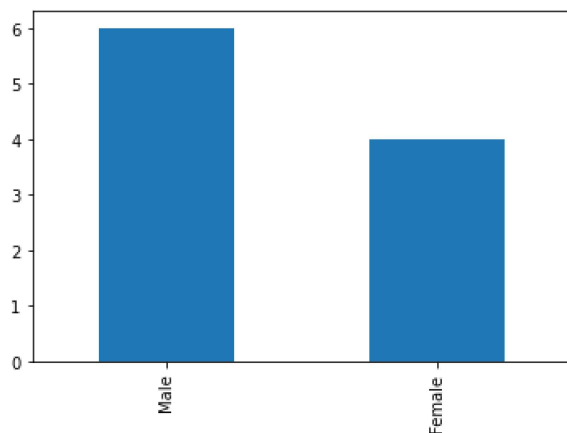
```
Out[10]: Male      6
Female    4
Name: Gender, dtype: int64
```

```
In [20]: df['Gender'].unique()
```

```
Out[20]: array(['Male', 'Female'], dtype=object)
```

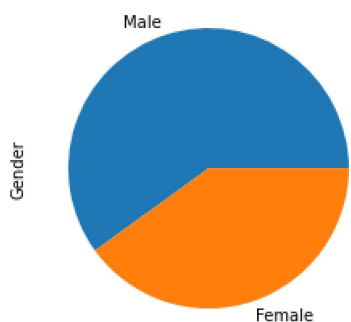
```
In [21]: df['Gender'].value_counts().plot(kind="bar")
```

```
Out[21]: <AxesSubplot:>
```



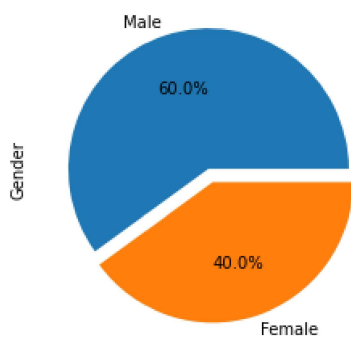
```
In [22]: df['Gender'].value_counts().plot(kind="pie")
```

```
Out[22]: <AxesSubplot:ylabel='Gender'>
```



```
In [26]: df['Gender'].value_counts().plot(kind="pie", autopct="%.1f%%", explode=(0,0.1))
```

```
Out[26]: <AxesSubplot:ylabel='Gender'>
```



What is the avg score of the students live in mumbai

```
In [27]: df[df['Gender']=="male"]['Total'].mean()
```

```
Out[27]: nan
```

```
In [31]: def getgrade(mark):
v=(mark/200)*100
if(v>75):
    return "A"
elif(v>=60 and v<75):
    return "B"
elif(v>=40 and v<60):
    return "c"
elif (v>40):
    return "D"
else:
    return "F"
```

```
In [33]: df["Grade"]=df["Total"].apply(getgrade)
```

```
In [34]: df
```

Out[34]:

	Rank	Name	Age	Gender	Background	Python	Machine Learning	Total	Grade
0	Rank 1	Ravi	23	Male	Tech	89	95	184	A
1	Rank 2	Chandni	22	Female	Non-Tech	78	83	161	A
2	Rank 3	Gyanesh	25	Male	Tech	70	80	150	D
3	Rank 4	Rahul	22	Male	Tech	68	75	143	B
4	Rank 5	Kartik	23	Male	Tech	60	70	130	B
5	Rank 6	Pratiksha	24	Female	Non-Tech	58	55	113	c
6	Rank 7	Maya	22	Female	Non-Tech	55	50	105	c
7	Rank 8	Shani	21	Male	Tech	50	50	100	c
8	Rank 9	Neelam	24	Female	Non-Tech	50	47	97	c
9	Rank 10	Mangal	22	Male	Non-Tech	45	46	91	c

```
In [35]: df[df["Gender"]=="male"]["Total"].mean()
```

Out[35]: nan

```
In [36]: df["City"]=["chennai","MUmbai","pune","chennai","delhi","karnataka","chennai","thane","trichy","Thanjai"]
```

```
In [37]: df
```

Out[37]:

	Rank	Name	Age	Gender	Background	Python	Machine Learning	Total	Grade	City
0	Rank 1	Ravi	23	Male	Tech	89	95	184	A	chennai
1	Rank 2	Chandni	22	Female	Non-Tech	78	83	161	A	MUmbai
2	Rank 3	Gyanesh	25	Male	Tech	70	80	150	D	pune
3	Rank 4	Rahul	22	Male	Tech	68	75	143	B	chennai
4	Rank 5	Kartik	23	Male	Tech	60	70	130	B	delhi
5	Rank 6	Pratiksha	24	Female	Non-Tech	58	55	113	c	karnataka
6	Rank 7	Maya	22	Female	Non-Tech	55	50	105	c	chennai
7	Rank 8	Shani	21	Male	Tech	50	50	100	c	thane
8	Rank 9	Neelam	24	Female	Non-Tech	50	47	97	c	trichy
9	Rank 10	Mangal	22	Male	Non-Tech	45	46	91	c	Thanjai

```
In [39]: avg_of_mum=df[df["City"]=="chennai"]["Total"].mean()
avg_of_mum
```

Out[39]: 144.0

```
In [41]: all_cit_avg=df.groupby("City")["Total"].mean()  
all_cit_avg
```

```
Out[41]: City  
MUmbai      161.0  
Thanjai      91.0  
chennai      144.0  
delhi        130.0  
karnataka    113.0  
pune         150.0  
thane        100.0  
trichy        97.0  
Name: Total, dtype: float64
```

To arrange the values in ascending order

```
In [43]: all_cit_avg.sort_values()
```

```
Out[43]: City  
Thanjai      91.0  
trichy        97.0  
thane        100.0  
karnataka    113.0  
delhi        130.0  
chennai      144.0  
pune         150.0  
MUmbai      161.0  
Name: Total, dtype: float64
```

To arrange the values in Descending order

```
In [44]: all_cit_avg.sort_values(ascending=False)
```

```
Out[44]: City  
MUmbai      161.0  
pune         150.0  
chennai      144.0  
delhi        130.0  
karnataka    113.0  
thane        100.0  
trichy        97.0  
Thanjai      91.0  
Name: Total, dtype: float64
```

To get Ravi's background

```
In [48]: df[df["Name"]=="Ravi"]["Background"]
```

```
Out[48]: 0    Tech  
Name: Background, dtype: object
```

DROP SOME DATA IN COLUMN

```
In [49]: df.drop("Grade",axis=1)
```

Out[49]:

	Rank	Name	Age	Gender	Background	Python	Machine Learning	Total	City
0	Rank 1	Ravi	23	Male	Tech	89	95	184	chennai
1	Rank 2	Chandni	22	Female	Non-Tech	78	83	161	Mumbai
2	Rank 3	Gyanesh	25	Male	Tech	70	80	150	pune
3	Rank 4	Rahul	22	Male	Tech	68	75	143	chennai
4	Rank 5	Kartik	23	Male	Tech	60	70	130	delhi
5	Rank 6	Pratiksha	24	Female	Non-Tech	58	55	113	karnataka
6	Rank 7	Maya	22	Female	Non-Tech	55	50	105	chennai
7	Rank 8	Shani	21	Male	Tech	50	50	100	thane
8	Rank 9	Neelam	24	Female	Non-Tech	50	47	97	trichy
9	Rank 10	Mangal	22	Male	Non-Tech	45	46	91	Thanjai

drop the row in a table

```
In [50]: df.drop(0,axis=0)
```

Out[50]:

	Rank	Name	Age	Gender	Background	Python	Machine Learning	Total	Grade	City
1	Rank 2	Chandni	22	Female	Non-Tech	78	83	161	A	Mumbai
2	Rank 3	Gyanesh	25	Male	Tech	70	80	150	D	pune
3	Rank 4	Rahul	22	Male	Tech	68	75	143	B	chennai
4	Rank 5	Kartik	23	Male	Tech	60	70	130	B	delhi
5	Rank 6	Pratiksha	24	Female	Non-Tech	58	55	113	c	karnataka
6	Rank 7	Maya	22	Female	Non-Tech	55	50	105	c	chennai
7	Rank 8	Shani	21	Male	Tech	50	50	100	c	thane
8	Rank 9	Neelam	24	Female	Non-Tech	50	47	97	c	trichy
9	Rank 10	Mangal	22	Male	Non-Tech	45	46	91	c	Thanjai

```
In [ ]:
```