In [4]:

```
import pandas as pd
df=pd.read_csv('football.csv')    #Reading a csv file and creating a data frame
df                                #printing data frame object
```

Out[4]:

	Primary Skill	Secondary Skill	Christiano Ronaldo	Lionel Messi	Neymar
0	Defence	Marking	22	13	21
1	Defence	Slide Tackle	23	26	33
2	Defence	Stand Tackle	31	28	24
3	ball skills	Ball Control	93	95	95
4	ball skills	Dribbling	92	97	96
5	Mental	Aggression	63	48	56
6	Mental	Reactions	96	95	88
7	Mental	Att. Position	94	93	90
8	Mental	Interceptions	29	22	36
9	Mental	Vision	85	90	80
10	Mental	Composure	86	94	80
11	Passing	Crossing	84	77	75
12	Passing	Short Pass	83	88	81
13	Passing	Long Pass	77	87	75
14	Shooting	Heading	85	71	62
15	Shooting	Shot Power	92	85	78
16	Shooting	Finishing	93	95	89
17	Shooting	Long Shots	90	88	77
18	Shooting	Curve	81	89	81
19	Shooting	FK Acc.	76	90	84
20	Shooting	Penalties	85	74	81
21	Shooting	Volleys	88	85	83
22	Physical	Acceleration	91	92	93
23	Physical	Stamina	92	74	79
24	Physical	Strength	80	59	53
25	Physical	Balance	63	95	82
26	Physical	Sprint Speed	92	87	90
27	Physical	Agility	90	90	96
28	Physical	Jumping	95	68	61
29	Goalkeeper	GK Positioning	14	14	15
30	Goalkeeper	GK Diving	7	6	9
31	Goalkeeper	GK Handling	11	11	9
32	Goalkeeper	GK Kicking15	15	15	15

	Primary Skill	Secondary Skill	Christiano Ronaldo	Lionel Messi	Neymar
33	Goalkeeper	GK Reflexes11	11	8	11

In [3]:

```
df['Neymar'][df['Primary Skill']=='Shooting']   #printing records using conditions
```

Out[3]:

```
14    62
15    78
16    89
17    77
18    81
19    84
20    81
21    83
Name: Neymar, dtype: int64
```

In [3]:

```
r,c=df.shape                #priting shape of the data frame
print(r)
print(c)
```

```
34
5
```

In [46]:

```
df['Neymar'].mean()   #using  math functions on columns
```

Out[46]:

```
64.05882352941177
```

In [4]:

```
df.head()       #displays first five records
```

Out[4]:

	Primary Skill	Secondary Skill	Christiano Ronaldo	Lionel Messi	Neymar
0	Defence	Marking	22	13	21
1	Defence	Slide Tackle	23	26	33
2	Defence	Stand Tackle	31	28	24
3	ball skills	Ball Control	93	95	95
4	ball skills	Dribbling	92	97	96

In [48]:

```
df.head(2)   #displays first 2 records(argument is passed as no of records)
```

Out[48]:

	Primary Skill	Secondary Skill	Christiano Ronaldo	Lionel Messi	Neymar
0	Defence	Marking	22	13	21
1	Defence	Slide Tackle	23	26	33

In [49]:

```
df.tail()
```

Out[49]:

	Primary Skill	Secondary Skill	Christiano Ronaldo	Lionel Messi	Neymar
29	Goalkeeper	GK Positioning	14	14	15
30	Goalkeeper	GK Diving	7	6	9
31	Goalkeeper	GK Handling	11	11	9
32	Goalkeeper	GK Kicking15	15	15	15
33	Goalkeeper	GK Reflexes11	11	8	11

In [50]:

```
df.tail(2)
```

Out[50]:

	Primary Skill	Secondary Skill	Christiano Ronaldo	Lionel Messi	Neymar
32	Goalkeeper	GK Kicking15	15	15	15
33	Goalkeeper	GK Reflexes11	11	8	11

In [52]:

```
df[2:5]  #slicing the dta frames
```

Out[52]:

	Primary Skill	Secondary Skill	Christiano Ronaldo	Lionel Messi	Neymar
2	Defence	Stand Tackle	31	28	24
3	ball skills	Ball Control	93	95	95
4	ball skills	Dribbling	92	97	96

In [53]:

```
df[:]
```

Out[53]:

	Primary Skill	Secondary Skill	Christiano Ronaldo	Lionel Messi	Neymar
0	Defence	Marking	22	13	21
1	Defence	Slide Tackle	23	26	33
2	Defence	Stand Tackle	31	28	24
3	ball skills	Ball Control	93	95	95
4	ball skills	Dribbling	92	97	96
5	Mental	Aggression	63	48	56
6	Mental	Reactions	96	95	88
7	Mental	Att. Position	94	93	90
8	Mental	Interceptions	29	22	36
9	Mental	Vision	85	90	80
10	Mental	Composure	86	94	80
11	Passing	Crossing	84	77	75
12	Passing	Short Pass	83	88	81
13	Passing	Long Pass	77	87	75
14	Shooting	Heading	85	71	62
15	Shooting	Shot Power	92	85	78
16	Shooting	Finishing	93	95	89
17	Shooting	Long Shots	90	88	77
18	Shooting	Curve	81	89	81
19	Shooting	FK Acc.	76	90	84
20	Shooting	Penalties	85	74	81
21	Shooting	Volleys	88	85	83
22	Physical	Acceleration	91	92	93
23	Physical	Stamina	92	74	79
24	Physical	Strength	80	59	53
25	Physical	Balance	63	95	82
26	Physical	Sprint Speed	92	87	90
27	Physical	Agility	90	90	96
28	Physical	Jumping	95	68	61
29	Goalkeeper	GK Positioning	14	14	15
30	Goalkeeper	GK Diving	7	6	9
31	Goalkeeper	GK Handling	11	11	9
32	Goalkeeper	GK Kicking15	15	15	15
33	Goalkeeper	GK Reflexes11	11	8	11

In [54]:

```
df[::-1]                #printing reverse of the data frame
```

Out[54]:

	Primary Skill	Secondary Skill	Christiano Ronaldo	Lionel Messi	Neymar
33	Goalkeeper	GK Reflexes11	11	8	11
32	Goalkeeper	GK Kicking15	15	15	15
31	Goalkeeper	GK Handling	11	11	9
30	Goalkeeper	GK Diving	7	6	9
29	Goalkeeper	GK Positioning	14	14	15
28	Physical	Jumping	95	68	61
27	Physical	Agility	90	90	96
26	Physical	Sprint Speed	92	87	90
25	Physical	Balance	63	95	82
24	Physical	Strength	80	59	53
23	Physical	Stamina	92	74	79
22	Physical	Acceleration	91	92	93
21	Shooting	Volleys	88	85	83
20	Shooting	Penalties	85	74	81
19	Shooting	FK Acc.	76	90	84
18	Shooting	Curve	81	89	81
17	Shooting	Long Shots	90	88	77
16	Shooting	Finishing	93	95	89
15	Shooting	Shot Power	92	85	78
14	Shooting	Heading	85	71	62
13	Passing	Long Pass	77	87	75
12	Passing	Short Pass	83	88	81
11	Passing	Crossing	84	77	75
10	Mental	Composure	86	94	80
9	Mental	Vision	85	90	80
8	Mental	Interceptions	29	22	36
7	Mental	Att. Position	94	93	90
6	Mental	Reactions	96	95	88
5	Mental	Aggression	63	48	56
4	ball skills	Dribbling	92	97	96
3	ball skills	Ball Control	93	95	95
2	Defence	Stand Tackle	31	28	24
1	Defence	Slide Tackle	23	26	33
0	Defence	Marking	22	13	21

In [55]:

```
df.columns     #printing all the columns
```

Out[55]:

```
Index(['Primary Skill', 'Secondary Skill', 'Christiano Ronaldo',
       'Lionel Messi', 'Neymar'],
      dtype='object')
```

In [57]:

```
df.Neymar
```

Out[57]:

```
0     21
1     33
2     24
3     95
4     96
5     56
6     88
7     90
8     36
9     80
10    80
11    75
12    81
13    75
14    62
15    78
16    89
17    77
18    81
19    84
20    81
21    83
22    93
23    79
24    53
25    82
26    90
27    96
28    61
29    15
30     9
31     9
32    15
33    11
Name: Neymar, dtype: int64
```

In [58]:

```
df['Neymar']#df.Neymar also we can use
```

Out[58]:

```
0     21
1     33
2     24
3     95
4     96
5     56
6     88
7     90
8     36
9     80
10    80
11    75
12    81
13    75
14    62
15    78
16    89
17    77
18    81
19    84
20    81
21    83
22    93
23    79
24    53
25    82
26    90
27    96
28    61
29    15
30     9
31     9
32    15
33    11
Name: Neymar, dtype: int64
```

In [59]:

```
type(df['Neymar']) #printing type of the column
```

Out[59]:

```
pandas.core.series.Series
```

In [69]:

```
df[['Secondary Skill','Lionel Messi','Christiano Ronaldo']] [df['Primary Skill']=='Shooting
```

Out[69]:

	Secondary Skill	Lionel Messi	Christiano Ronaldo
14	Heading	71	85
15	Shot Power	85	92
16	Finishing	95	93
17	Long Shots	88	90
18	Curve	89	81
19	FK Acc.	90	76
20	Penalties	74	85
21	Volleys	85	88

In [ ]:

```
# df['Neymar'][df['Lionel Messi']==df['Lionel Messi'].max()]
```

In [85]:

```
df[['Neymar','Primary Skill']][df['Lionel Messi']==df['Lionel Messi'].max()]
```

Out[85]:

	Neymar	Primary Skill
4	96	ball skills

In [86]:

```
df.tail()       #prints last five records of the data frame
```

Out[86]:

	Primary Skill	Secondary Skill	Christiano Ronaldo	Lionel Messi	Neymar
29	Goalkeeper	GK Positioning	14	14	15
30	Goalkeeper	GK Diving	7	6	9
31	Goalkeeper	GK Handling	11	11	9
32	Goalkeeper	GK Kicking15	15	15	15
33	Goalkeeper	GK Reflexes11	11	8	11

In [94]:

```
df.set_index('Primary Skill',inplace=True)
```

In [95]:

```
df
```

Out[95]:

Primary Skill	Secondary Skill	Christiano Ronaldo	Lionel Messi	Neymar
Defence	Marking	22	13	21
Defence	Slide Tackle	23	26	33
Defence	Stand Tackle	31	28	24
ball skills	Ball Control	93	95	95
ball skills	Dribbling	92	97	96
Mental	Aggression	63	48	56
Mental	Reactions	96	95	88
Mental	Att. Position	94	93	90
Mental	Interceptions	29	22	36
Mental	Vision	85	90	80
Mental	Composure	86	94	80
Passing	Crossing	84	77	75
Passing	Short Pass	83	88	81
Passing	Long Pass	77	87	75
Shooting	Heading	85	71	62
Shooting	Shot Power	92	85	78
Shooting	Finishing	93	95	89
Shooting	Long Shots	90	88	77
Shooting	Curve	81	89	81
Shooting	FK Acc.	76	90	84
Shooting	Penalties	85	74	81
Shooting	Volleys	88	85	83
Physical	Acceleration	91	92	93
Physical	Stamina	92	74	79
Physical	Strength	80	59	53
Physical	Balance	63	95	82
Physical	Sprint Speed	92	87	90
Physical	Agility	90	90	96
Physical	Jumping	95	68	61
Goalkeeper	GK Positioning	14	14	15
Goalkeeper	GK Diving	7	6	9
Goalkeeper	GK Handling	11	11	9
Goalkeeper	GK Kicking15	15	15	15
Goalkeeper	GK Reflexes11	11	8	11

In [96]:

```
df.loc['Shooting']
```

Out[96]:

Primary Skill	Secondary Skill	Christiano Ronaldo	Lionel Messi	Neymar
Shooting	Heading	85	71	62
Shooting	Shot Power	92	85	78
Shooting	Finishing	93	95	89
Shooting	Long Shots	90	88	77
Shooting	Curve	81	89	81
Shooting	FK Acc.	76	90	84
Shooting	Penalties	85	74	81
Shooting	Volleys	88	85	83

In [97]:

```
df.loc['Passing']        #printing records using loc fun
```

Out[97]:

Primary Skill	Secondary Skill	Christiano Ronaldo	Lionel Messi	Neymar
Passing	Crossing	84	77	75
Passing	Short Pass	83	88	81
Passing	Long Pass	77	87	75

In [98]:

```
df.reset_index(inplace=True)      #resetting the index for data frame
```

In [99]:

```
df
```

Out[99]:

	Primary Skill	Secondary Skill	Christiano Ronaldo	Lionel Messi	Neymar
0	Defence	Marking	22	13	21
1	Defence	Slide Tackle	23	26	33
2	Defence	Stand Tackle	31	28	24
3	ball skills	Ball Control	93	95	95
4	ball skills	Dribbling	92	97	96
5	Mental	Aggression	63	48	56
6	Mental	Reactions	96	95	88
7	Mental	Att. Position	94	93	90
8	Mental	Interceptions	29	22	36
9	Mental	Vision	85	90	80
10	Mental	Composure	86	94	80
11	Passing	Crossing	84	77	75
12	Passing	Short Pass	83	88	81
13	Passing	Long Pass	77	87	75
14	Shooting	Heading	85	71	62
15	Shooting	Shot Power	92	85	78
16	Shooting	Finishing	93	95	89
17	Shooting	Long Shots	90	88	77
18	Shooting	Curve	81	89	81
19	Shooting	FK Acc.	76	90	84
20	Shooting	Penalties	85	74	81
21	Shooting	Volleys	88	85	83
22	Physical	Acceleration	91	92	93
23	Physical	Stamina	92	74	79
24	Physical	Strength	80	59	53
25	Physical	Balance	63	95	82
26	Physical	Sprint Speed	92	87	90
27	Physical	Agility	90	90	96
28	Physical	Jumping	95	68	61
29	Goalkeeper	GK Positioning	14	14	15
30	Goalkeeper	GK Diving	7	6	9
31	Goalkeeper	GK Handling	11	11	9
32	Goalkeeper	GK Kicking15	15	15	15
33	Goalkeeper	GK Reflexes11	11	8	11

In [6]:

```
df['Neymar']           #printing with column name
```

Out[6]:

```
0     21
1     33
2     24
3     95
4     96
5     56
6     88
7     90
8     36
9     80
10    80
11    75
12    81
13    75
14    62
15    78
16    89
17    77
18    81
19    84
20    81
21    83
22    93
23    79
24    53
25    82
26    90
27    96
28    61
29    15
30     9
31     9
32    15
33    11
Name: Neymar, dtype: int64
```

In [ ]:

```

```