In [15]:
```
import pandas as pd
dframe=pd.read_csv('StudentsPerformance.csv')
dframe
```

Out[15]:

	Name	Roll no	gender	Nationality	test preparation course	math score	reading score	writing score	Semester	age
0	Yash	223101	male	indian	none	72.0	72.0	74.0	7	21
1	Prit	223102	female	indian	completed	NaN	90.0	88.0	7	21
2	Meet	223103	female	indian	NaN	90.0	95.0	93.0	7	21
3	Drashti	223104	female	indian	none	47.0	57.0	44.0	7	20
4	Saloni	223105	female	indian	none	76.0	78.0	NaN	7	21
...	...	...	...	...	...	...	...	...	...	...
64	Mital	223165	female	indian	none	59.0	58.0	59.0	7	20
65	Nevil	223166	male	indian	none	67.0	64.0	61.0	7	21
66	Krishna	223167	male	indian	none	45.0	37.0	37.0	7	22
67	Krishna	223168	NaN	indian	none	60.0	72.0	74.0	7	20
68	Dhavni	223169	female	indian	none	61.0	58.0	56.0	7	21

69 rows × 10 columns

In [16]:
```
dframe.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 69 entries, 0 to 68
Data columns (total 10 columns):
 #   Column                   Non-Null Count  Dtype  
---  ------                   --------------  -----  
 0   Name                     69 non-null     object 
 1   Roll no                  69 non-null     int64  
 2   gender                   67 non-null     object 
 3   Nationality              68 non-null     object 
 4   test preparation course  64 non-null     object 
 5   math score               65 non-null     float64
 6   reading score            64 non-null     float64
 7   writing score            64 non-null     float64
 8   Semester                 69 non-null     int64  
 9   age                      69 non-null     int64  
dtypes: float64(3), int64(3), object(4)
memory usage: 5.5+ KB
```

In [17]:
```
dframe.isnull()
dframe
```

Out[17]:

	Name	Roll no	gender	Nationality	test preparation course	math score	reading score	writing score	Semester	age
0	Yash	223101	male	indian	none	72.0	72.0	74.0	7	21
1	Prit	223102	female	indian	completed	NaN	90.0	88.0	7	21
2	Meet	223103	female	indian	NaN	90.0	95.0	93.0	7	21
3	Drashti	223104	female	indian	none	47.0	57.0	44.0	7	20
4	Saloni	223105	female	indian	none	76.0	78.0	NaN	7	21
...	...	...	...	...	...	...	...	...	...	...
64	Mital	223165	female	indian	none	59.0	58.0	59.0	7	20
65	Nevil	223166	male	indian	none	67.0	64.0	61.0	7	21
66	Krishna	223167	male	indian	none	45.0	37.0	37.0	7	22
67	Krishna	223168	NaN	indian	none	60.0	72.0	74.0	7	20
68	Dhavni	223169	female	indian	none	61.0	58.0	56.0	7	21

69 rows × 10 columns

In [18]:
```
#deleting a column

dframe1=dframe
dframe1.drop("test preparation course",axis=1,inplace=True)

dframe1
```

Out[18]:

	Name	Roll no	gender	Nationality	math score	reading score	writing score	Semester	age
0	Yash	223101	male	indian	72.0	72.0	74.0	7	21
1	Prit	223102	female	indian	NaN	90.0	88.0	7	21
2	Meet	223103	female	indian	90.0	95.0	93.0	7	21
3	Drashti	223104	female	indian	47.0	57.0	44.0	7	20
4	Saloni	223105	female	indian	76.0	78.0	NaN	7	21
...	...	...	...	...	...	...	...	...	...
64	Mital	223165	female	indian	59.0	58.0	59.0	7	20
65	Nevil	223166	male	indian	67.0	64.0	61.0	7	21
66	Krishna	223167	male	indian	45.0	37.0	37.0	7	22
67	Krishna	223168	NaN	indian	60.0	72.0	74.0	7	20
68	Dhavni	223169	female	indian	61.0	58.0	56.0	7	21

69 rows × 9 columns

In [19]:
```
# deleting rows with missing values

df1=dframe
df2=df1.dropna()
df2
```

Out[19]:

	Name	Roll no	gender	Nationality	math score	reading score	writing score	Semester	age
0	Yash	223101	male	indian	72.0	72.0	74.0	7	21
2	Meet	223103	female	indian	90.0	95.0	93.0	7	21
3	Drashti	223104	female	indian	47.0	57.0	44.0	7	20
6	Jay	223107	male	indian	88.0	95.0	92.0	7	20
7	Darshana	223108	female	indian	40.0	43.0	39.0	7	22
9	Janvi	223110	female	indian	38.0	60.0	50.0	7	22
11	Naman	223112	female	indian	40.0	52.0	43.0	7	22
14	Minal	223115	female	indian	50.0	53.0	58.0	7	22
15	Milan	223116	female	indian	69.0	75.0	78.0	7	21
17	Smit	223118	male	indian	18.0	32.0	28.0	7	22
18	Ravina	223119	female	indian	46.0	42.0	46.0	7	21
19	Priti	223120	female	indian	54.0	58.0	61.0	7	21
20	Hetal	223121	female	indian	66.0	69.0	63.0	7	22
22	Kishan	223123	male	indian	44.0	54.0	53.0	7	21
23	Akshar	223124	male	indian	69.0	73.0	73.0	7	20
24	Akshay	223125	male	indian	74.0	71.0	80.0	7	20
25	Radhika	223126	female	indian	73.0	74.0	72.0	7	22
27	Komal	223128	female	indian	67.0	69.0	75.0	7	30
28	Mihir	223129	male	indian	70.0	70.0	65.0	7	22
29	kunjal	223130	female	indian	62.0	70.0	75.0	7	22
30	Moxil	223131	male	indian	69.0	74.0	74.0	7	20
31	Mona	223132	female	indian	63.0	65.0	61.0	7	20
32	Bhavya	223133	female	indian	56.0	72.0	65.0	7	21
33	Bhavika	223134	female	indian	40.0	42.0	38.0	7	21
34	Rina	223135	female	indian	97.0	87.0	82.0	7	22
35	Hetavi	223136	female	indian	81.0	81.0	79.0	7	20
36	Manoj	223137	male	indian	74.0	81.0	83.0	7	21
37	Raghav	223138	male	indian	50.0	64.0	59.0	7	20
38	Gopal	223139	male	indian	75.0	90.0	88.0	7	22
39	Jasmin	223140	female	indian	57.0	56.0	57.0	7	20
40	Akshay	223141	male	indian	55.0	61.0	54.0	7	21
42	Vidhi	223143	female	indian	53.0	58.0	65.0	7	22
43	Nayan	223144	female	indian	59.0	65.0	66.0	7	21

	Name	Roll no	gender	Nationality	math score	reading score	writing score	Semester	age
44	Prashant	223145	male	indian	50.0	56.0	54.0	7	29
45	Sonal	223146	female	indian	65.0	54.0	57.0	7	20
46	Bhavika	223147	female	indian	55.0	65.0	62.0	7	21
48	Manthan	223149	male	indian	57.0	74.0	76.0	7	22
49	Preet	223150	female	indian	82.0	84.0	82.0	7	20
50	Darpit	223151	male	indian	53.0	55.0	48.0	7	22
51	Harsh	223152	male	indian	77.0	69.0	68.0	7	22
53	Bhautik	223154	male	indian	88.0	78.0	75.0	7	20
54	Dhruv	223155	male	indian	71.0	84.0	87.0	7	22
55	Ishva	223156	male	indian	33.0	41.0	43.0	7	20
56	Mitesh	223157	male	indian	82.0	85.0	86.0	7	28
57	Denish	223158	male	indian	52.0	55.0	49.0	7	21
59	Jenish	223160	male	indian	0.0	17.0	10.0	7	20
60	Jenny	223161	female	indian	79.0	74.0	72.0	7	22
61	Dhruvi	223162	female	indian	39.0	39.0	34.0	7	21
62	Margi	223163	female	indian	62.0	61.0	55.0	7	20
64	Mital	223165	female	indian	59.0	58.0	59.0	7	20
65	Nevil	223166	male	indian	67.0	64.0	61.0	7	21
66	Krishna	223167	male	indian	45.0	37.0	37.0	7	22
68	Dhavni	223169	female	indian	61.0	58.0	56.0	7	21

In [20]:
```
dframe
```

Out[20]:

	Name	Roll no	gender	Nationality	math score	reading score	writing score	Semester	age
0	Yash	223101	male	indian	72.0	72.0	74.0	7	21
1	Prit	223102	female	indian	NaN	90.0	88.0	7	21
2	Meet	223103	female	indian	90.0	95.0	93.0	7	21
3	Drashti	223104	female	indian	47.0	57.0	44.0	7	20
4	Saloni	223105	female	indian	76.0	78.0	NaN	7	21
...	...	...	...	...	...	...	...	...	...
64	Mital	223165	female	indian	59.0	58.0	59.0	7	20
65	Nevil	223166	male	indian	67.0	64.0	61.0	7	21
66	Krishna	223167	male	indian	45.0	37.0	37.0	7	22
67	Krishna	223168	NaN	indian	60.0	72.0	74.0	7	20
68	Dhavni	223169	female	indian	61.0	58.0	56.0	7	21

69 rows × 9 columns

In [21]:
```
na1=dframe.copy()
na1.dropna(axis='columns',inplace=True)
na1
```

Out[21]:

	Name	Roll no	Semester	age
0	Yash	223101	7	21
1	Prit	223102	7	21
2	Meet	223103	7	21
3	Drashti	223104	7	20
4	Saloni	223105	7	21
...	...	...	...	...
64	Mital	223165	7	20
65	Nevil	223166	7	21
66	Krishna	223167	7	22
67	Krishna	223168	7	20
68	Dhavni	223169	7	21

69 rows × 4 columns

In [22]:
```
dframe
```

Out[22]:

	Name	Roll no	gender	Nationality	math score	reading score	writing score	Semester	age
0	Yash	223101	male	indian	72.0	72.0	74.0	7	21
1	Prit	223102	female	indian	NaN	90.0	88.0	7	21
2	Meet	223103	female	indian	90.0	95.0	93.0	7	21
3	Drashti	223104	female	indian	47.0	57.0	44.0	7	20
4	Saloni	223105	female	indian	76.0	78.0	NaN	7	21
...	...	...	...	...	...	...	...	...	...
64	Mital	223165	female	indian	59.0	58.0	59.0	7	20
65	Nevil	223166	male	indian	67.0	64.0	61.0	7	21
66	Krishna	223167	male	indian	45.0	37.0	37.0	7	22
67	Krishna	223168	NaN	indian	60.0	72.0	74.0	7	20
68	Dhavni	223169	female	indian	61.0	58.0	56.0	7	21

69 rows × 9 columns

In [23]:
```
dframe.fillna(0.0)
```

Out[23]:

	Name	Roll no	gender	Nationality	math score	reading score	writing score	Semester	age
0	Yash	223101	male	indian	72.0	72.0	74.0	7	21
1	Prit	223102	female	indian	0.0	90.0	88.0	7	21
2	Meet	223103	female	indian	90.0	95.0	93.0	7	21
3	Drashti	223104	female	indian	47.0	57.0	44.0	7	20
4	Saloni	223105	female	indian	76.0	78.0	0.0	7	21
...	...	...	...	...	...	...	...	...	...
64	Mital	223165	female	indian	59.0	58.0	59.0	7	20
65	Nevil	223166	male	indian	67.0	64.0	61.0	7	21
66	Krishna	223167	male	indian	45.0	37.0	37.0	7	22
67	Krishna	223168	0.0	indian	60.0	72.0	74.0	7	20
68	Dhavni	223169	female	indian	61.0	58.0	56.0	7	21

69 rows × 9 columns

In [24]:
```
dframe.fillna(method='ffill')
```

Out[24]:

	Name	Roll no	gender	Nationality	math score	reading score	writing score	Semester	age
0	Yash	223101	male	indian	72.0	72.0	74.0	7	21
1	Prit	223102	female	indian	72.0	90.0	88.0	7	21
2	Meet	223103	female	indian	90.0	95.0	93.0	7	21
3	Drashti	223104	female	indian	47.0	57.0	44.0	7	20
4	Saloni	223105	female	indian	76.0	78.0	44.0	7	21
...	...	...	...	...	...	...	...	...	...
64	Mital	223165	female	indian	59.0	58.0	59.0	7	20
65	Nevil	223166	male	indian	67.0	64.0	61.0	7	21
66	Krishna	223167	male	indian	45.0	37.0	37.0	7	22
67	Krishna	223168	male	indian	60.0	72.0	74.0	7	20
68	Dhavni	223169	female	indian	61.0	58.0	56.0	7	21

69 rows × 9 columns

In [25]:
```
dframe.fillna(method='bfill')
```

Out[25]:

	Name	Roll no	gender	Nationality	math score	reading score	writing score	Semester	age
0	Yash	223101	male	indian	72.0	72.0	74.0	7	21
1	Prit	223102	female	indian	90.0	90.0	88.0	7	21
2	Meet	223103	female	indian	90.0	95.0	93.0	7	21
3	Drashti	223104	female	indian	47.0	57.0	44.0	7	20
4	Saloni	223105	female	indian	76.0	78.0	78.0	7	21
...	...	...	...	...	...	...	...	...	...
64	Mital	223165	female	indian	59.0	58.0	59.0	7	20
65	Nevil	223166	male	indian	67.0	64.0	61.0	7	21
66	Krishna	223167	male	indian	45.0	37.0	37.0	7	22
67	Krishna	223168	female	indian	60.0	72.0	74.0	7	20
68	Dhavni	223169	female	indian	61.0	58.0	56.0	7	21

69 rows × 9 columns

In [26]:
```
dframe2=dframe

dframe2['math score'] = dframe2['math score'].fillna(dframe2['math score'].mean())
dframe2['reading score'] = dframe2['reading score'].fillna(dframe2['reading score'].me
dframe2
```

Out[26]:

	Name	Roll no	gender	Nationality	math score	reading score	writing score	Semester	age
0	Yash	223101	male	indian	72.000000	72.0	74.0	7	21
1	Prit	223102	female	indian	61.446154	90.0	88.0	7	21
2	Meet	223103	female	indian	90.000000	95.0	93.0	7	21
3	Drashti	223104	female	indian	47.000000	57.0	44.0	7	20
4	Saloni	223105	female	indian	76.000000	78.0	NaN	7	21
...	...	...	...	...	...	...	...	...	...
64	Mital	223165	female	indian	59.000000	58.0	59.0	7	20
65	Nevil	223166	male	indian	67.000000	64.0	61.0	7	21
66	Krishna	223167	male	indian	45.000000	37.0	37.0	7	22
67	Krishna	223168	NaN	indian	60.000000	72.0	74.0	7	20
68	Dhavni	223169	female	indian	61.000000	58.0	56.0	7	21

69 rows × 9 columns

In [27]:

```
dframe2 = dframe
array1=dframe['writing score']

array1.sort_values()

dframe2['writing score']=dframe2['writing score'].fillna(array1.median())

dframe2
```

Out[27]:

	Name	Roll no	gender	Nationality	math score	reading score	writing score	Semester	age
0	Yash	223101	male	indian	72.000000	72.0	74.0	7	21
1	Prit	223102	female	indian	61.446154	90.0	88.0	7	21
2	Meet	223103	female	indian	90.000000	95.0	93.0	7	21
3	Drashti	223104	female	indian	47.000000	57.0	44.0	7	20
4	Saloni	223105	female	indian	76.000000	78.0	65.0	7	21
...	...	...	...	...	...	...	...	...	...
64	Mital	223165	female	indian	59.000000	58.0	59.0	7	20
65	Nevil	223166	male	indian	67.000000	64.0	61.0	7	21
66	Krishna	223167	male	indian	45.000000	37.0	37.0	7	22
67	Krishna	223168	NaN	indian	60.000000	72.0	74.0	7	20
68	Dhavni	223169	female	indian	61.000000	58.0	56.0	7	21

69 rows × 9 columns

In [28]:
```
dframe2=dframe
dframe2['writing score'] = dframe2['writing score'].fillna(dframe2['writing score'].st

dframe2
```

Out[28]:

	Name	Roll no	gender	Nationality	math score	reading score	writing score	Semester	age
0	Yash	223101	male	indian	72.000000	72.0	74.0	7	21
1	Prit	223102	female	indian	61.446154	90.0	88.0	7	21
2	Meet	223103	female	indian	90.000000	95.0	93.0	7	21
3	Drashti	223104	female	indian	47.000000	57.0	44.0	7	20
4	Saloni	223105	female	indian	76.000000	78.0	65.0	7	21
...	...	...	...	...	...	...	...	...	...
64	Mital	223165	female	indian	59.000000	58.0	59.0	7	20
65	Nevil	223166	male	indian	67.000000	64.0	61.0	7	21
66	Krishna	223167	male	indian	45.000000	37.0	37.0	7	22
67	Krishna	223168	NaN	indian	60.000000	72.0	74.0	7	20
68	Dhavni	223169	female	indian	61.000000	58.0	56.0	7	21

69 rows × 9 columns

In [29]:
```
dframe2=dframe
dframe2['writing score']=dframe2['writing score'].fillna(dframe2['writing score'].min(
dframe2
```

Out[29]:

	Name	Roll no	gender	Nationality	math score	reading score	writing score	Semester	age
0	Yash	223101	male	indian	72.000000	72.0	74.0	7	21
1	Prit	223102	female	indian	61.446154	90.0	88.0	7	21
2	Meet	223103	female	indian	90.000000	95.0	93.0	7	21
3	Drashti	223104	female	indian	47.000000	57.0	44.0	7	20
4	Saloni	223105	female	indian	76.000000	78.0	65.0	7	21
...	...	...	...	...	...	...	...	...	...
64	Mital	223165	female	indian	59.000000	58.0	59.0	7	20
65	Nevil	223166	male	indian	67.000000	64.0	61.0	7	21
66	Krishna	223167	male	indian	45.000000	37.0	37.0	7	22
67	Krishna	223168	NaN	indian	60.000000	72.0	74.0	7	20
68	Dhavni	223169	female	indian	61.000000	58.0	56.0	7	21

69 rows × 9 columns

In [30]:
```
dframe2=dframe
dframe2['writing score']=dframe2['writing score'].fillna(dframe2['writing score'].max(
dframe2
```

Out[30]:

	Name	Roll no	gender	Nationality	math score	reading score	writing score	Semester	age
0	Yash	223101	male	indian	72.000000	72.0	74.0	7	21
1	Prit	223102	female	indian	61.446154	90.0	88.0	7	21
2	Meet	223103	female	indian	90.000000	95.0	93.0	7	21
3	Drashti	223104	female	indian	47.000000	57.0	44.0	7	20
4	Saloni	223105	female	indian	76.000000	78.0	65.0	7	21
...	...	...	...	...	...	...	...	...	...
64	Mital	223165	female	indian	59.000000	58.0	59.0	7	20
65	Nevil	223166	male	indian	67.000000	64.0	61.0	7	21
66	Krishna	223167	male	indian	45.000000	37.0	37.0	7	22
67	Krishna	223168	NaN	indian	60.000000	72.0	74.0	7	20
68	Dhavni	223169	female	indian	61.000000	58.0	56.0	7	21

69 rows × 9 columns

In [31]:
```
dframe['Total']=dframe['math score']+dframe['reading score']
dframe
```

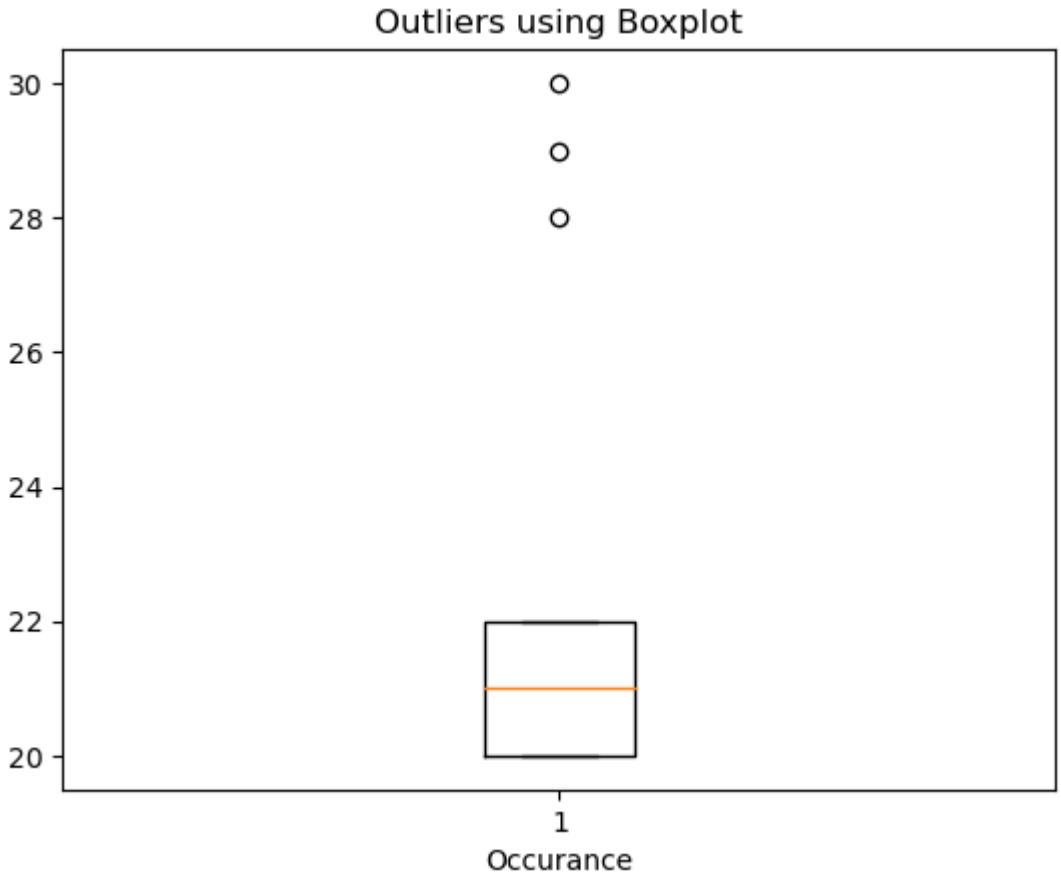
Out[31]:

	Name	Roll no	gender	Nationality	math score	reading score	writing score	Semester	age	Total
0	Yash	223101	male	indian	72.000000	72.0	74.0	7	21	144.000000
1	Prit	223102	female	indian	61.446154	90.0	88.0	7	21	151.446154
2	Meet	223103	female	indian	90.000000	95.0	93.0	7	21	185.000000
3	Drashti	223104	female	indian	47.000000	57.0	44.0	7	20	104.000000
4	Saloni	223105	female	indian	76.000000	78.0	65.0	7	21	154.000000
...	...	...	...	...	...	...	...	...	...	...
64	Mital	223165	female	indian	59.000000	58.0	59.0	7	20	117.000000
65	Nevil	223166	male	indian	67.000000	64.0	61.0	7	21	131.000000
66	Krishna	223167	male	indian	45.000000	37.0	37.0	7	22	82.000000
67	Krishna	223168	NaN	indian	60.000000	72.0	74.0	7	20	132.000000
68	Dhavni	223169	female	indian	61.000000	58.0	56.0	7	21	119.000000

69 rows × 10 columns

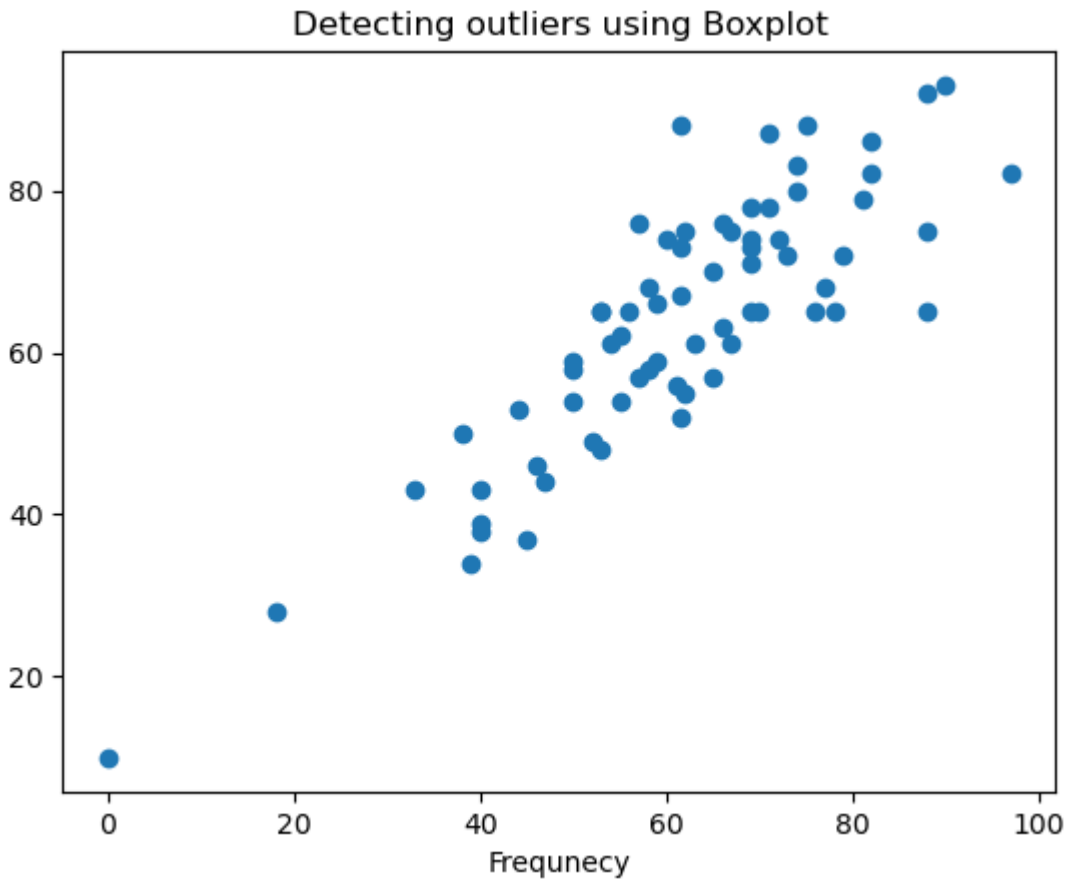
In [33]:
```
#Outlier
import pandas as pd
import matplotlib.pyplot as plt
per2=pd.read_csv('StudentsPerformance.csv')
plt.boxplot(per2['age'])
plt.title("Outliers using Boxplot")
plt.xlabel('Occurance')
```

Out[33]:
```
Text(0.5, 0, 'Occurance')
```



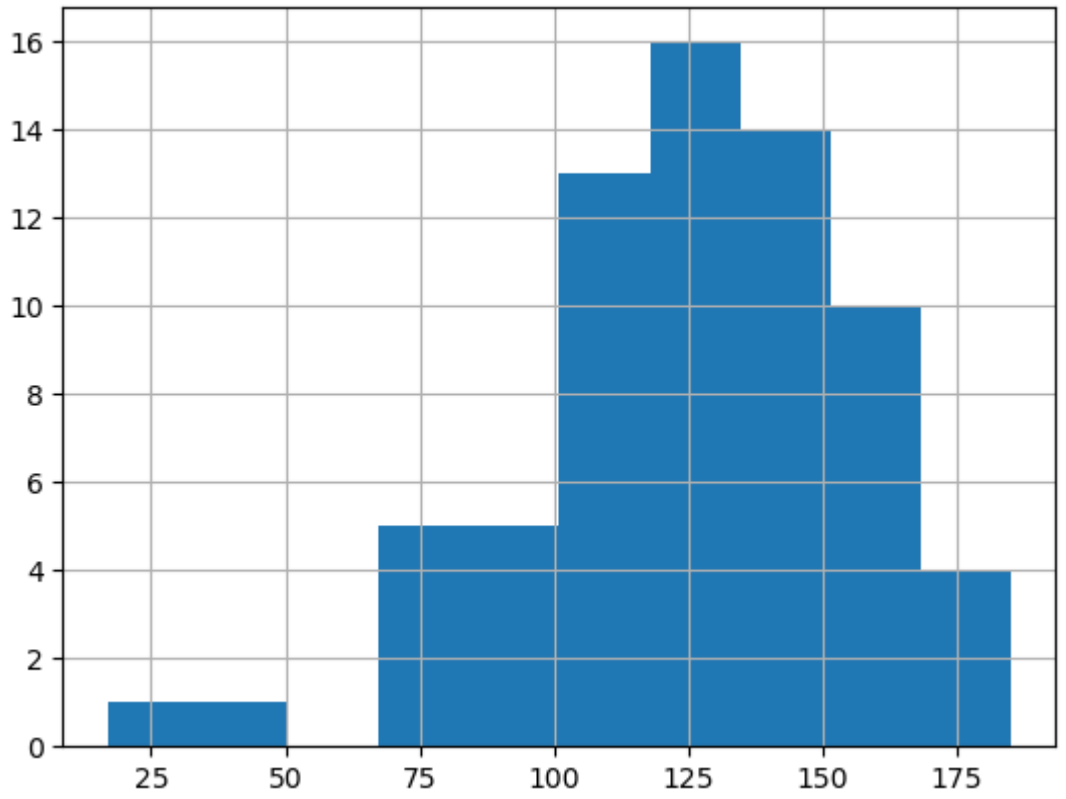
In [34]:
```
import matplotlib.pyplot as plt
plt.scatter(dframe['math score'],dframe['writing score'])
plt.title("Detecting outliers using Boxplot")
plt.xlabel('Frequnecy')
```

Out[34]:
```
Text(0.5, 0, 'Frequnecy')
```



In [37]:
```
import matplotlib.pyplot as plt
dframe.Total.hist()
```

Out[37]:
```
<AxesSubplot:>
```



In [38]:
```
from scipy import stats
import numpy as np

z = np.abs(stats.zscore(dframe['math score']))
print(z)
```

```
0     6.403294e-01
1     4.311048e-16
2     1.732436e+00
3     8.764859e-01
4     8.830199e-01
         ...
64    1.484145e-01
65    3.369664e-01
66    9.978311e-01
67    8.774193e-02
68    2.706932e-02
Name: math score, Length: 69, dtype: float64
```

In [39]:
```
print(dframe['math score'].quantile(0.10))
print(dframe['math score'].quantile(0.90))
dframe['math score'] = np.where(dframe['math score'] <38.0, 38.0,dframe['math score'])
dframe['math score'] = np.where(dframe['math score'] >68.8, 68.8,dframe['math score'])
dframe
```

```
40.0
81.2
```

Out[39]:

	Name	Roll no	gender	Nationality	math score	reading score	writing score	Semester	age	Total
0	Yash	223101	male	indian	68.800000	72.0	74.0	7	21	144.000000
1	Prit	223102	female	indian	61.446154	90.0	88.0	7	21	151.446154
2	Meet	223103	female	indian	68.800000	95.0	93.0	7	21	185.000000
3	Drashti	223104	female	indian	47.000000	57.0	44.0	7	20	104.000000
4	Saloni	223105	female	indian	68.800000	78.0	65.0	7	21	154.000000
...	...	...	...	...	...	...	...	...	...	...
64	Mital	223165	female	indian	59.000000	58.0	59.0	7	20	117.000000
65	Nevil	223166	male	indian	67.000000	64.0	61.0	7	21	131.000000
66	Krishna	223167	male	indian	45.000000	37.0	37.0	7	22	82.000000
67	Krishna	223168	NaN	indian	60.000000	72.0	74.0	7	20	132.000000
68	Dhavni	223169	female	indian	61.000000	58.0	56.0	7	21	119.000000

69 rows × 10 columns

In [40]:
```
loc = dframe[(dframe['reading score'] <=0) |(dframe['reading score'] >= 100)].index
dframe.drop(loc, inplace=True)
dframe
```

Out[40]:

	Name	Roll no	gender	Nationality	math score	reading score	writing score	Semester	age	Total
0	Yash	223101	male	indian	68.800000	72.0	74.0	7	21	144.000000
1	Prit	223102	female	indian	61.446154	90.0	88.0	7	21	151.446154
2	Meet	223103	female	indian	68.800000	95.0	93.0	7	21	185.000000
3	Drashti	223104	female	indian	47.000000	57.0	44.0	7	20	104.000000
4	Saloni	223105	female	indian	68.800000	78.0	65.0	7	21	154.000000
...	...	...	...	...	...	...	...	...	...	...
64	Mital	223165	female	indian	59.000000	58.0	59.0	7	20	117.000000
65	Nevil	223166	male	indian	67.000000	64.0	61.0	7	21	131.000000
66	Krishna	223167	male	indian	45.000000	37.0	37.0	7	22	82.000000
67	Krishna	223168	NaN	indian	60.000000	72.0	74.0	7	20	132.000000
68	Dhavni	223169	female	indian	61.000000	58.0	56.0	7	21	119.000000

69 rows × 10 columns

In [42]:
```
import numpy as np
import pandas as pd
new_frame=pd.read_csv('StudentsPerformance.csv')
new_frame
```

Out[42]:

	Name	Roll no	gender	Nationality	test preparation course	math score	reading score	writing score	Semester	age
0	Yash	223101	male	indian	none	72.0	72.0	74.0	7	21
1	Prit	223102	female	indian	completed	NaN	90.0	88.0	7	21
2	Meet	223103	female	indian	NaN	90.0	95.0	93.0	7	21
3	Drashti	223104	female	indian	none	47.0	57.0	44.0	7	20
4	Saloni	223105	female	indian	none	76.0	78.0	NaN	7	21
...	...	...	...	...	...	...	...	...	...	...
64	Mital	223165	female	indian	none	59.0	58.0	59.0	7	20
65	Nevil	223166	male	indian	none	67.0	64.0	61.0	7	21
66	Krishna	223167	male	indian	none	45.0	37.0	37.0	7	22
67	Krishna	223168	NaN	indian	none	60.0	72.0	74.0	7	20
68	Dhavni	223169	female	indian	none	61.0	58.0	56.0	7	21

69 rows × 10 columns

In [43]:
```
print(dframe['writing score'].skew())
print(dframe['writing score'].skew())
dframe['writing score'].describe()
```

```
-0.6821236062710776
-0.6821236062710776
```

Out[43]:
```
count    69.000000
mean     63.826087
std      15.966837
min      10.000000
25%      55.000000
50%      65.000000
75%      75.000000
max      93.000000
Name: writing score, dtype: float64
```

In [45]:
```
dframe['performance']=dframe['math score']+dframe['reading score']+dframe['writing sc
dframe
dframe['performance'].transform(func = lambda x : x / 3)
```

Out[45]:
```
0     71.600000
1     79.815385
2     85.600000
3     49.333333
4     70.600000
        ...
64    58.666667
65    64.000000
66    39.666667
67    68.666667
68    58.333333
Name: performance, Length: 69, dtype: float64
```