```python
In [1]: import pandas as pd
```

```python
In [2]: df=pd.read_csv("height.csv")
```

```python
In [3]: df
```

Out[3]:

	name	height
0	mohan	1.2
1	maria	2.3
2	sakib	4.9
3	tao	5.1
4	virat	5.2
5	khusbu	5.4
6	dmitry	5.5
7	selena	5.5
8	john	5.6
9	imran	5.6
10	jose	5.8
11	deepika	5.9
12	yoseph	6.0
13	binod	6.1
14	gulshan	6.2
15	johnson	6.5
16	donald	7.1
17	aamir	14.5
18	ken	23.2
19	Liu	40.2
20	virat1	5.2
21	khusbu1	5.4
22	dmitry1	5.5
23	selena1	5.5
24	john1	5.6
25	imran1	5.6
26	jose1	5.8
27	deepika1	5.9
28	yoseph1	6.0
29	binod1	6.1
30	gulshan1	6.2
31	johnson1	6.5
32	donald1	7.1
33	aamir1	14.5

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	name	height
34	ken1	23.2
35	Liu1	40.2

```
In [15]:   df.describe()
```

Out[15]:

	height
count	36.000000
mean	8.947222
std	8.957471
min	1.200000
25%	5.500000
50%	5.850000
75%	6.500000
max	40.200000

```
In [16]:   q1=df.height.quantile(0.25)
```

```
In [17]:   q1
```

Out[17]: 5.5

```
In [18]:   q3=df.height.quantile(0.75)
```

```
In [19]:   q3
```

Out[19]: 6.5

```
In [20]:   iqr=q3-q1
```

```
In [21]:   iqr
```

Out[21]: 1.0

```
In [22]:   ul=q3+1.5*iqr
```

```
In [23]:   ul
```

Out[23]: 8.0

```
In [30]:   df.height> ul
```

Out[30]:
```
0      False
1      False
2      False
3      False
4      False
5      False
6      False
7      False
8      False
9      False
10     False
```

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```
11          False
12          False
13          False
14          False
15          False
16          False
17           True
18           True
19           True
20          False
21          False
22          False
23          False
24          False
25          False
26          False
27          False
28          False
29          False
30          False
31          False
32          False
33           True
34           True
35           True
Name: height, dtype: bool
```

In [31]: `df[df.height> ul]`

Out[31]:

	name	height
17	aamir	14.5
18	ken	23.2
19	Liu	40.2
33	aamir1	14.5
34	ken1	23.2
35	Liu1	40.2

In [32]: `ll=q1-1.5*iqr`

In [33]: `ll`

Out[33]: `4.0`

In [34]: `df.height<ll`

Out[34]:
```
0            True
1            True
2           False
3           False
4           False
5           False
6           False
7           False
8           False
9           False
10          False
11          False
12          False
13          False
14          False
15          False
16          False
```

```
17      False
18      False
19      False
20      False
21      False
22      False
23      False
24      False
25      False
26      False
27      False
28      False
29      False
30      False
31      False
32      False
33      False
34      False
35      False
Name: height, dtype: bool
```

In [36]: `df[df.height<ll]`

Out[36]:

	name	height
0	mohan	1.2
1	maria	2.3

In [37]: `(df.height<ll)|(df.height>ul)`

Out[37]:
```
0        True
1        True
2       False
3       False
4       False
5       False
6       False
7       False
8       False
9       False
10      False
11      False
12      False
13      False
14      False
15      False
16      False
17       True
18       True
19       True
20      False
21      False
22      False
23      False
24      False
25      False
26      False
27      False
28      False
29      False
30      False
31      False
32      False
33       True
34       True
35       True
Name: height, dtype: bool
```

```
In [38]:  df[(df.height<ll)|(df.height>ul)]
```

Out[38]:

	name	height
0	mohan	1.2
1	maria	2.3
17	aamir	14.5
18	ken	23.2
19	Liu	40.2
33	aamir1	14.5
34	ken1	23.2
35	Liu1	40.2

```
In [41]:  df1=df[(df.height>ll)&(df.height<ul)]
```

```
In [42]:  df1
```

Out[42]:

	name	height
2	sakib	4.9
3	tao	5.1
4	virat	5.2
5	khusbu	5.4
6	dmitry	5.5
7	selena	5.5
8	john	5.6
9	imran	5.6
10	jose	5.8
11	deepika	5.9
12	yoseph	6.0
13	binod	6.1
14	gulshan	6.2
15	johnson	6.5
16	donald	7.1
20	virat1	5.2
21	khusbu1	5.4
22	dmitry1	5.5
23	selena1	5.5
24	john1	5.6
25	imran1	5.6
26	jose1	5.8
27	deepika1	5.9
28	yoseph1	6.0
29	binod1	6.1

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	name	height
30	gulshan1	6.2
31	johnson1	6.5
32	donald1	7.1

```
In [43]:  df3=pd.read_csv("weight-height.csv")
```

```
In [44]:  df3
```

Out[44]:

	Gender	Height	Weight
0	Male	73.847017	241.893563
1	Male	68.781904	162.310473
2	Male	74.110105	212.740856
3	Male	71.730978	220.042470
4	Male	69.881796	206.349801
...	...	...	...
9995	Female	66.172652	136.777454
9996	Female	67.067155	170.867906
9997	Female	63.867992	128.475319
9998	Female	69.034243	163.852461
9999	Female	61.944246	113.649103

10000 rows × 3 columns

```
In [77]:  df3.describe()
```

Out[77]:

	Height	Weight
count	10000.000000	10000.000000
mean	66.367560	161.440357
std	3.847528	32.108439
min	54.263133	64.700127
25%	63.505620	135.818051
50%	66.318070	161.212928
75%	69.174262	187.169525
max	78.998742	269.989699

```
In [78]:  hq3=df3.Height.quantile(0.75)
```

```
In [79]:  hq3
```

Out[79]: 69.1742617268347

```
In [80]:  hq1=df3.Height.quantile(0.25)
```

```
In [81]:  hq1
```

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```
Out[81]: 63.505620481218955

In [82]:  hiqr=hq3-hq1

In [83]:  hiqr

Out[83]: 5.668641245615746

In [84]:  hul=hq3+1.5*hiqr

In [85]:  hul

Out[85]: 77.67722359525831

In [86]:  hll=hq1-1.5*hiqr

In [87]:  hll

Out[87]: 55.00265861279534

In [88]:  df3.Height>hul

Out[88]: 0        False
         1        False
         2        False
         3        False
         4        False
                  ...
         9995     False
         9996     False
         9997     False
         9998     False
         9999     False
         Name: Height, Length: 10000, dtype: bool

In [89]:  df3[df3.Height>hul]
```

Out[89]:

	Gender	Height	Weight
994	Male	78.095867	255.690835
1317	Male	78.462053	227.342565
2014	Male	78.998742	269.989699
3285	Male	78.528210	253.889004
3757	Male	78.621374	245.733783

```
In [90]:  df3.Height<hll

Out[90]: 0        False
         1        False
         2        False
         3        False
         4        False
                  ...
         9995     False
         9996     False
         9997     False
         9998     False
         9999     False
         Name: Height, Length: 10000, dtype: bool
```

```python
In [91]: df3[df3.Height<hll]
```

Out[91]:

	Gender	Height	Weight
6624	Female	54.616858	71.393749
7294	Female	54.873728	78.606670
9285	Female	54.263133	64.700127

```python
In [93]: (df3.Height<hll)|(df3.Height>hul)
```

```
Out[93]: 0       False
         1       False
         2       False
         3       False
         4       False
                 ...
         9995    False
         9996    False
         9997    False
         9998    False
         9999    False
         Name: Height, Length: 10000, dtype: bool
```

```python
In [94]: df3[(df3.Height<hll)|(df3.Height>hul)]
```

Out[94]:

	Gender	Height	Weight
994	Male	78.095867	255.690835
1317	Male	78.462053	227.342565
2014	Male	78.998742	269.989699
3285	Male	78.528210	253.889004
3757	Male	78.621374	245.733783
6624	Female	54.616858	71.393749
7294	Female	54.873728	78.606670
9285	Female	54.263133	64.700127

```python
In [116…  df3=df3[(df3.Height>hll)&(df3.Height<hul)]
```

```python
In [117…  df3
```

Out[117…

	Gender	Height	Weight
0	Male	73.847017	241.893563
1	Male	68.781904	162.310473
2	Male	74.110105	212.740856
3	Male	71.730978	220.042470
4	Male	69.881796	206.349801
...	...	...	...
9995	Female	66.172652	136.777454
9996	Female	67.067155	170.867906
9997	Female	63.867992	128.475319
9998	Female	69.034243	163.852461

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	Gender	Height	Weight
9999	Female	61.944246	113.649103

9992 rows × 3 columns

```
In [99]:    wq3=df3.Weight.quantile(0.75)
```

```
In [100…    wq3
```

```
Out[100…    187.16952486868348
```

```
In [101…    wq1=df3.Weight.quantile(0.25)
```

```
In [102…    wq1
```

```
Out[102…    135.8180513055015
```

```
In [103…    wiqr=wq3-wq1
```

```
In [104…    wiqr
```

```
Out[104…    51.35147356318197
```

```
In [105…    wul=wq3+1.5*wiqr
```

```
In [106…    wul
```

```
Out[106…    264.19673521345646
```

```
In [107…    wll=wq1-1.5*wiqr
```

```
In [108…    wll
```

```
Out[108…    58.79084096072856
```

```
In [109…    df3.Weight>wul
```

```
Out[109…    0       False
            1       False
            2       False
            3       False
            4       False
                    ...
            9995    False
            9996    False
            9997    False
            9998    False
            9999    False
            Name: Weight, Length: 10000, dtype: bool
```

```
In [110…    df3[df3.Weight>wul]
```

Out[110…

	Gender	Height	Weight
2014	Male	78.998742	269.989699

```
In [111…    df3[df3.Weight<wll]
```

In [112…   `(df3.Weight<wul)&(df3.Weight>wll)`

Out[112…
```
0       True
1       True
2       True
3       True
4       True
        ...
9995    True
9996    True
9997    True
9998    True
9999    True
Name: Weight, Length: 10000, dtype: bool
```

In [118…   `df3=df3[(df3.Weight<wul)&(df3.Weight>wll)]`

In [119…   `df3`

Out[119…

	Gender	Height	Weight
0	Male	73.847017	241.893563
1	Male	68.781904	162.310473
2	Male	74.110105	212.740856
3	Male	71.730978	220.042470
4	Male	69.881796	206.349801
...	...	...	...
9995	Female	66.172652	136.777454
9996	Female	67.067155	170.867906
9997	Female	63.867992	128.475319
9998	Female	69.034243	163.852461
9999	Female	61.944246	113.649103

9992 rows × 3 columns

In [ ]: