In [1]:
```python
import numpy as np
```

In [2]:
```python
data = np.loadtxt("anomaly_detection.txt", dtype='float')
```

In [3]:
```python
data
```

Out[3]:
```
array([ 99.5697438 ,  94.47019021,  55.        , 106.86672855,
       102.78730151, 131.85777845,  88.25376895,  96.94439838,
        83.67782174, 115.57993209, 118.97651966,  94.40479467,
        79.63342207,  77.88602065,  96.59145004,  99.50145353,
        97.25980235,  87.72010069, 101.30597215,  87.3110369 ,
       110.0687946 , 104.71504012,  89.34719772, 160.        ,
       110.61519268, 112.94716398, 104.41867586])
```

In [4]:
```python
print(type(data))
```

```
<class 'numpy.ndarray'>
```

In [5]:
```python
def anomaly_detection(data):
    ind = True
    while(ind):
        for idx, val in enumerate(data):
            temp = np.delete(data,idx)
            mean = np.mean(temp)
            std = np.std(temp)
            diff = abs(val - mean)
            if(diff > (3*std)):
                ind = True
                data = np.copy(temp)
                print(f"Remove {format(val,'.2f')} from the list because it's {round(di
                print(f"{format(val,'.2f')} is removed from the list!")
                print(f"\n")
                break
            else:
                ind = False

    print(f'No more anomaly is detected!')
```

In [6]:
```python
anomaly_detection(data)
```

```
Remove 160.00 from the list because it's 4.14 times of standard deviation of the list wi
thout it.
160.00 is removed from the list!


Remove 55.00 from the list because it's 3.57 times of standard deviation of the list wit
hout it.
55.00 is removed from the list!


Remove 131.86 from the list because it's 3.08 times of standard deviation of the list wi
thout it.
131.86 is removed from the list!
```

No more anomaly is detected!

In [ ]: