Finding and removing outliers

Importing necessary libraries

In [39]:
```
import pandas as pd
import numpy as np
```

Taking input from the user

In [44]:
```
n = int(input('Enter the number of elements: '))

print('Enter the element names in comma separated manner: ')
names= input()
X_names = names.split(',')

print('Enter the values in comma separated manner: ')
values = input()
X_values = map(int,values.split(','))

X = {'Name': X_names,
     'Values': X_values}
df = pd.DataFrame(X)
df

# 45,37,59,150,47,39,5,43,52,100
# A,B,C,D,E,F,G,H,I,J
```

```
Enter the number of elements: 10
Enter the element names in comma separated manner:
A,B,C,D,E,F,G,H,I,J
Enter the values in comma separated manner:
45,37,59,150,47,39,5,43,52,100
```

Out[44]:

	Name	Values
0	A	45
1	B	37
2	C	59
3	D	150
4	E	47
5	F	39
6	G	5
7	H	43
8	I	52
9	J	100

Calculating quartiles

In [45]:
```
quartiles = df.Values.quantile([0.25,.5,.75])
quartiles = np.array(quartiles)
quartiles
```

Out[45]:
```
array([40.  , 46.  , 57.25])
```

Calculating valid range

In [46]:
```
iqr = quartiles[2] - quartiles[0]
low = quartiles[0] - (1.5*iqr)
high = quartiles[2] + (1.5*iqr)

print("Lowest Value = {}".format(low))
print("Highest Value = {}".format(high))
print("Interquartile Range (Q3-Q1) = {}".format(iqr))
```

```
Lowest Value = 14.125
Highest Value = 83.125
Interquartile Range (Q3-Q1) = 17.25
```

Removing Outliers

In [67]:
```
print("------------ With Outliers ------------")
df
```

```
------------ With Outliers ------------
```

Out[67]:

	Name	Values
0	A	45
1	B	37
2	C	59
3	D	150
4	E	47
5	F	39
6	G	5
7	H	43
8	I	52
9	J	100

In [68]:
```
print("------------ Without Outliers ------------")
df_without_outliers = df[(df.Values >= low) & (df.Values <= high)]
df_without_outliers
```

```
------------ Without Outliers ------------
```

Out[68]:

	Name	Values
0	A	45
1	B	37
2	C	59
4	E	47
5	F	39
7	H	43
8	I	52

In [69]:
```
print("------------ Only Outliers ------------")
df_outliers = df[(df.Values < low) | (df.Values > high)]
df_outliers
```

```
------------ Only Outliers ------------
```

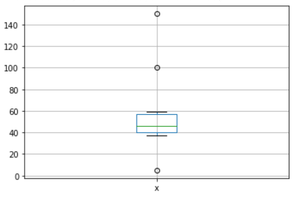
Out[69]:

	Name	Values
3	D	150
6	G	5
9	J	100

Plotting the results

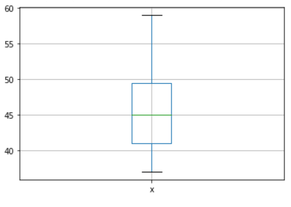
In [65]:
```
print ("--------------------- With outliers ---------------------")
print(pd.plotting.boxplot(df.Values))
```

```
--------------------- With outliers ---------------------
AxesSubplot(0.125,0.125;0.775x0.755)
```



In [66]:
```
print ("--------------------- Without outliers ---------------------")
print(pd.plotting.boxplot(df_without_outliers.Values))
```

```
--------------------- Without outliers ---------------------
AxesSubplot(0.125,0.125;0.775x0.755)
```



In [ ]:
```

```