In [10]:

```
n1=[17,36,33,12,12,36,36,19]
```

In [14]:

```
def mean(lis):
    k=0
    for i in range(len(lis)):
        k+=lis[i]
    avg=k/len(lis)
    return avg
```

In [15]:

```
mean(n1)
```

Out[15]:

```
25.125
```

In [5]:

```
def median_num(n1):
    n1.sort()
    i=0
    if(len(n1)%2==0):
        mid=(len(n1)-1)//2
        mid1=len(n1)//2
        median=(n1[mid]+n1[mid1])//2
        return median
    else:
        i=(len(n1)-1)//2
        return n1[i]
```

In [6]:

```
median_num(n1)
```

Out[6]:

```
19
```

In [11]:

```
dict={}
for i in n1:
    if(i in dict):
        dict[i]+=1
    else:
        dict[i]=1
elem=0
max1=0
for key,value in dict.items():
    if(value>max1):
        max1=value
        elem=key
print(f"MODE is {elem}")
```

```
MODE is 36
```

In [25]:

```
import math
def std_dev(n1,mean):
    variance=0
    for i in range(len(n1)):
        variance=variance+(n1[i]-mean)**2
    variance=variance/len(n1)
    return math.sqrt(variance)
mean=mean(n1)
std_dev(n1,mean)
```

Out[25]:

```
10.397565820902505
```

In [28]:

```
def std_nor(n1):
    max_num=max(n1)
    min_num=min(n1)
    normal=[]
    for a in n1:
        norm=(a-min_num)/(max_num-min_num)
        normal.append(norm)
    return(normal)
```

In [29]:

```
std_nor(n1)
```

Out[29]:

```
[0.20833333333333334, 1.0, 0.875, 0.0, 0.0, 1.0, 1.0, 0.29166666666666
67]
```

In [32]:

```
import numpy as np
def stdsn(n1):
    meannum=np.mean(n1)
    std_dev=np.std(n1)
    normal=[]
    for x in n1:
        normalx=(x-meannum)/std_dev
        normal.append(normalx)
    return normal
stdsn(n1)
```

Out[32]:

```
[-0.7814328988104211,
 1.0459178799462558,
 0.7573888096162542,
 -1.262314682693757,
 -1.262314682693757,
 1.0459178799462558,
 1.0459178799462558,
 -0.5890801852570866]
```

In [ ]: