

Programming Estimators

Mean

#Complete the mean function to make it return the mean of a list of numbers

```
data1=[49., 66, 24, 98, 37, 64, 98, 27, 56, 93, 68, 78, 22, 25, 11]
```

```
def mean(data):  
    #Insert your code here  
    return sum(data)/len(data)
```

Median

#Complete the median function to make it return the median of a list of numbers

```
data1=[1,2,5,10,-20]
```

```
def median(data):  
    #Insert your code here  
    return sorted(data)[len(data)/2]
```

Mode

#Complete the mode function to make it return the mode of a list of numbers

```
data1=[1,2,5,10,-20,5,5]
```

```
def mode(data):  
    #Insert your code here  
    counts = {}  
    for i in data:  
        counts[i] = counts.get(i, 0) + 1  
    return max(counts, key=counts.get)
```

Variance

#Complete the variance function to make it return the variance of a list of numbers

```
data3=[13.04, 1.32, 22.65, 17.44, 29.54, 23.22, 17.65, 10.12, 26.73, 16.43]
```

```
def mean(data):  
    return sum(data)/len(data)  
def variance(data):  
    #Insert your code here  
    return sum([(x-mean(data))**2 for x in data])/len(data)
```

Standard Deviation

```
#Complete the stddev function to make it return the standard deviation
#of a list of numbers
from math import sqrt

data3=[13.04, 1.32, 22.65, 17.44, 29.54, 23.22, 17.65, 10.12, 26.73, 16.43]

def mean(data):
    return sum(data)/len(data)
def variance(data):
    mu=mean(data)
    return mean([(x-mu)**2 for x in data])
def stddev(data):
    #Insert your code here
    return sqrt(variance(data))
```