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

In [2]:
```python
data = pd.read_csv('Iris.csv')
```

In [3]:
```python
data.head()
```
Out[3]:

	Id	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm	Species
0	1	5.1	3.5	1.4	0.2	Iris-setosa
1	2	4.9	3.0	1.4	0.2	Iris-setosa
2	3	4.7	3.2	1.3	0.2	Iris-setosa
3	4	4.6	3.1	1.5	0.2	Iris-setosa
4	5	5.0	3.6	1.4	0.2	Iris-setosa

In [4]:
```python
data.dtypes
```
Out[4]:
```
Id                 int64
SepalLengthCm    float64
SepalWidthCm     float64
PetalLengthCm    float64
PetalWidthCm     float64
Species           object
dtype: object
```

In [5]:
```python
def cal_mean(data):

    sum = 0;
    for i in data:
        sum += i

    return sum/(data.shape[0])
```

In [6]:
```python
def cal_median(data):
#     print(data)
    data.sort()
    print(data.shape)
    n = len(data)
    ans = 0
    if n%2!=0:
        return data[(n+1)/2]
    else:
        n=len(data)

        n = int(n/2);


        ans = data[n] + data[n+1]

        return ans/2
```

In [7]:
```python
def cal_mode(data):
#     print(data)
    data.sort()
    n = len(data)
    ans = 0
    count =0;
    md = 0
    md = 0;
    temp = data[0];
#     print(data[0]);
#     print(data.head())
#     print(data);
    for i in data:
        if i==temp:
            count=count+1;
        else:
            if ans<count:
                ans = count;
                md = temp;
                temp = i;
                count=0;

    return md
```

```python
In [8]:  def variance(data):
    ...         # Number of observations
    ...         n = len(data)
    ...         # Mean of the data
    ...         mean = sum(data) / n
    ...         # Square deviations
    ...         deviations = [(x - mean) ** 2 for x in data]
    ...         # Variance
    ...         variance = sum(deviations) / n
    ...         return variance
```

```python
In [13]: def details(s):
             d1 = data;
             for i in d1.index:
                 if(d1['Species'][i]!=s):
                     d1 =d1.drop(i,axis=0)

             print(s," SepalLength Details")
             print("----------------------------------------------------
             m = cal_mean(d1['SepalLengthCm'])
             print("Mean SepalLength in cm is : ",m)
             print("Mean SepalLength in cm is : ",d1['SepalLengthCm'].mean())
             print("Median SepalLength in cm is : ",cal_median(d1['SepalLengthCm
             print("Median SepalLength in cm is : ",d1['SepalLengthCm'].median())
             print("Mode SepalLength in cm is : ",cal_mode(d1['SepalLengthCm'].va
         #    print("Mode SepalLength in cm is : ",d1['SepalLengthCm'].mode())

             print("Std SepalLength in cm is : ",variance(d1['SepalLengthCm'].val
             print("----------------------------------------------------

             print(s," SepalWidth Details")
             print("Mean SepalWidth in cm is : ",d1['SepalWidthCm'].mean())
             print("Median SepalWidth in cm is : ",d1['SepalWidthCm'].median())
             print("Std SepalWidth in cm is : ",d1['SepalWidthCm'].std())
             print("----------------------------------------------------

             print(s," PetalLength Details")
             print("Mean PetalLength in cm is : ",d1['PetalLengthCm'].mean())
             print("Median PetalLength in cm is : ",d1['PetalLengthCm'].median())
             print("Std PetalLength in cm is : ",d1['PetalLengthCm'].std())
             print("----------------------------------------------------

             print(s," PetalWidth Details")
             print("Mean PetalWidth in cm is : ",d1['PetalWidthCm'].mean())
             print("Median PetalWidth in cm is : ",d1['PetalWidthCm'].median())
             print("Std PetalWidth in cm is : ",d1['PetalWidthCm'].std())
             print("----------------------------------------------------
```

In [14]:
```python
details("Iris-setosa")
```

```
Iris-setosa  SepalLength Details
--------------------------------------------------------------------
----
Mean SepalLength in cm is :  5.005999999999999
Mean SepalLength in cm is :  5.006
(50,)
Median SepalLength in cm is :  5.0
Median SepalLength in cm is :  5.0
Mode SepalLength in cm is :  4.4
Std SepalLength in cm is :  0.3524896872134513
Std SepalLength in cm is :  0.12176400000000004
--------------------------------------------------------------------
----
Iris-setosa  SepalWidth Details
Mean SepalWidth in cm is :  3.418
Median SepalWidth in cm is :  3.4
Std SepalWidth in cm is :  0.38102439795469095
--------------------------------------------------------------------
----
Iris-setosa  PetalLength Details
Mean PetalLength in cm is :  1.464
Median PetalLength in cm is :  1.5
Std PetalLength in cm is :  0.17351115943644546
--------------------------------------------------------------------
----
Iris-setosa  PetalWidth Details
Mean PetalWidth in cm is :  0.244
Median PetalWidth in cm is :  0.2
Std PetalWidth in cm is :  0.1072095030816784
--------------------------------------------------------------------
----
```

```
In [11]: details("Iris-versicolor")
```

```
Iris-versicolor  SepalLength Details
----------------------------------------------------------------------
----
Mean SepalLength in cm is :  5.936
Mean SepalLength in cm is :  5.936
(50,)
Median SepalLength in cm is :  5.95
Median SepalLength in cm is :  5.9
Mode SepalLength in cm is :  4.9
Std SepalLength in cm is :  0.261104
----------------------------------------------------------------------
----
Iris-versicolor  SepalWidth Details
Mean SepalWidth in cm is :  2.7700000000000005
Median SepalWidth in cm is :  2.8
Std SepalWidth in cm is :  0.3137983233784114
----------------------------------------------------------------------
----
Iris-versicolor  PetalLength Details
Mean PetalLength in cm is :  4.26
Median PetalLength in cm is :  4.35
Std PetalLength in cm is :  0.46991097723995795
----------------------------------------------------------------------
----
Iris-versicolor  PetalWidth Details
Mean PetalWidth in cm is :  1.3259999999999998
Median PetalWidth in cm is :  1.3
Std PetalWidth in cm is :  0.19775268000454405
----------------------------------------------------------------------
----
```

In [12]:
```
details("Iris-virginica")
```

```
Iris-virginica  SepalLength Details
------------------------------------------------------------------------
----
Mean SepalLength in cm is :  6.587999999999998
Mean SepalLength in cm is :  6.587999999999998
(50,)
Median SepalLength in cm is :  6.5
Median SepalLength in cm is :  6.5
Mode SepalLength in cm is :  4.9
Std SepalLength in cm is :  0.396256
------------------------------------------------------------------------
----
Iris-virginica  SepalWidth Details
Mean SepalWidth in cm is :  2.974
Median SepalWidth in cm is :  3.0
Std SepalWidth in cm is :  0.32249663817263746
------------------------------------------------------------------------
----
Iris-virginica  PetalLength Details
Mean PetalLength in cm is :  5.5520000000000005
Median PetalLength in cm is :  5.55
Std PetalLength in cm is :  0.5518946956639834
------------------------------------------------------------------------
----
Iris-virginica  PetalWidth Details
Mean PetalWidth in cm is :  2.0260000000000002
Median PetalWidth in cm is :  2.0
Std PetalWidth in cm is :  0.2746500556366674
------------------------------------------------------------------------
----
```

In [ ]: