# ASSIGNMENT 3

In [1]:

```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import statistics as st

data = pd.read_csv(r"iris.csv")
```

In [2]:

```
data.head()
```

Out[2]:

| | Sepal Length | Sepal Width | Petal Length | Petal Width | Species |
|---|---|---|---|---|---|
| **0** | 5.1 | 3.5 | 1.4 | 0.2 | Iris-setosa |
| **1** | 4.9 | 3.0 | 1.4 | 0.2 | Iris-setosa |
| **2** | 4.7 | 3.2 | 1.3 | 0.2 | Iris-setosa |
| **3** | 4.6 | 3.1 | 1.5 | 0.2 | Iris-setosa |
| **4** | 5.0 | 3.6 | 1.4 | 0.2 | Iris-setosa |

In [3]:

```
data.describe()
```

Out[3]:

| | Sepal Length | Sepal Width | Petal Length | Petal Width |
|---|---|---|---|---|
| **count** | 150.000000 | 150.000000 | 150.000000 | 150.000000 |
| **mean** | 5.843333 | 3.054000 | 3.758667 | 1.198667 |
| **std** | 0.828066 | 0.433594 | 1.764420 | 0.763161 |
| **min** | 4.300000 | 2.000000 | 1.000000 | 0.100000 |
| **25%** | 5.100000 | 2.800000 | 1.600000 | 0.300000 |
| **50%** | 5.800000 | 3.000000 | 4.350000 | 1.300000 |
| **75%** | 6.400000 | 3.300000 | 5.100000 | 1.800000 |
| **max** | 7.900000 | 4.400000 | 6.900000 | 2.500000 |

In [4]:

```
a=data.groupby("Species")["Sepal Width"].mean()
print("Mean values for-",a)
```

```
Mean values for- Species
Iris-setosa        3.418
Iris-versicolor    2.770
Iris-virginica     2.974
Name: Sepal Width, dtype: float64
```

In [5]:

```
b=data.groupby("Species")["Sepal Length"].mean()
print("Mean values for-",b)
```

```
Mean values for- Species
Iris-setosa        5.006
Iris-versicolor    5.936
Iris-virginica     6.588
Name: Sepal Length, dtype: float64
```

In [6]:

```
c=data.groupby("Species")["Petal Length"].max()
print("Maximum values for-",c)
```

```
Maximum values for- Species
Iris-setosa        1.9
Iris-versicolor    5.1
Iris-virginica     6.9
Name: Petal Length, dtype: float64
```

In [7]:

```
sd1=data.groupby("Species")["Sepal Width"].std()
print("Standard Deviation :",sd1)
```

```
Standard Deviation : Species
Iris-setosa        0.381024
Iris-versicolor    0.313798
Iris-virginica     0.322497
Name: Sepal Width, dtype: float64
```

In [8]:

```
sd2=st.stdev(data["Sepal Width"])
print(sd2)
```

```
0.43359431136217363
```

In [9]:

```
#calculating occurance
occurance=data["Species"].value_counts()
print("Occurance of Species for each attribute",occurance)
```

```
Occurance of Species for each attribute Iris-setosa        50
Iris-versicolor    50
Iris-virginica     50
Name: Species, dtype: int64
```

In [ ]:

```

```