Name - Sarvesh Karanjkar
PRN - 20210812002 (BDA LAB 02)

In [5]:

```
## import required libraries

import pandas as pd
import numpy as np
from scipy import stats
from statsmodels.stats import weightstats as stests
```

In [2]:

```
## NOTE = WE USED IRIS DATA SET FOR THIS EXPERIMENT... ##

## Create DataFrame

data  = pd.read_csv(r"E:\DYPIU\SEM 6\BDA\BDA LABS\Data Set - Copy.csv")
data
```

Out[2]:

	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
...	...	...	...	...	...	...
145	146	6.7	3.0	5.2	2.3	Iris-virginica
146	147	6.3	2.5	5.0	1.9	Iris-virginica
147	148	6.5	3.0	5.2	2.0	Iris-virginica
148	149	6.2	3.4	5.4	2.3	Iris-virginica
149	150	5.9	3.0	5.1	1.8	Iris-virginica

150 rows × 6 columns

In [6]:

```
## Select Column for Z-test
sepal_width = data['SepalWidthCm']
sepal_width
```

Out[6]:

```
0      3.5
1      3.0
2      3.2
3      3.1
4      3.6
      ...
145    3.0
146    2.5
147    3.0
148    3.4
149    3.0
Name: SepalWidthCm, Length: 150, dtype: float64
```

In [8]:

```
## calculated mean for selected column.
mean = np.mean(sepal_width)
mean
```

Out[8]:

```
3.0540000000000007
```

In [26]:

```
#Null Hypothesis
## conduct Z-Test and calculate P-Value
ztest,pval = stests.ztest(data['SepalWidthCm'],value = 3.10)
print(f'P-Value  = {float(pval)}')
```

```
P-Value  = 0.19383027251566998
```

In [27]:

```
# Check pval for Null Hypothesis
if pval<0.05:
    print("Null Hypothesis rejected")
else:
    print("Null Hypothesis Accepted")
```

```
Null Hypothesis Accepted
```

Conclusion - Z test performed successfully using python.