Mean

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Mean is the average value of any distribution or set of data. It is one of the most common way to measure <mark>central tendency</mark>.
(Central tendency is the descriptive summary of a dataset or a single value that represents data.)

- Statistical speaking it the area under the curve having most of the points are available.
- Formula for mean is :

$$\mu = \sum_{i=1}^{n} \frac{x_i}{n} \quad \text{or} \quad \mu = \frac{x_1 + x_2 + x_3 + \ldots \ldots x_n}{n}$$

Calculate mean using <mark>*python*</mark> for a given data set as below:

- <mark>Without using predefined functions:</mark>

```python
def manual_mean(l1):
    sum_l1=0
    for i in l1:
        sum_l1=sum_l1+i
        mean=sum_l1/len(l1)

    return mean




l1=[1,2,3,45,6,66,7,8,9,10]
cal_mean=manual_mean(l1)
print("The mean for the dataset is :",cal_mean)
```

- With <mark>statistics</mark> library:
```python
import statistics as st
l1=[1,2,3,45,6,66,7,8,9,10]
```

```python
mean_l1=st.mean(l1)
print("The mean for the dataset is :",mean_l1)
```

- With <mark>Numpy</mark> library:
```python
import numpy as np
l1=np.array([1,2,3,45,6,66,7,8,9,10])
l2=np.array([[1,2],[3,4]])
print("Mean for l1 dataset is :", np.mean(l1))
print("Mean for l2 dataset is :",
np.mean(l2,axis=0))
print("Mean for l2 dataset is :",
np.mean(l2,axis=1))
```