1. **If the variance of a variable/column is 0 then what does it mean? Can we use that variable for our analysis?**

Ans : If the variance of the variable is 0 (zero) means there is no change in data(All numbers are Identical). No, there is no use of variable to use in model as it is not carrying any information .

Variance is defined as spread of data, zero variance means constant data.

1. **Mean** : sum of values/no.of values

Values of column A: 7,6,7,7,8,5,8,7,7,5,5

Sum of values of A: 72

No.of values :11

Mean= 72/11

**Mean** = 6.5454

**Median** = center value in data(50th Percentile)

As there are 11 values in column A middle value is 6 (5 from top and 5 from bottom)

**Median** = 5

**Mode :**Most repeated value in given data

Value 7 in given data is most repeated so,

**Mode =7**

**Variance :** Variance is a measure of spread of data

If x is consider as a data points and M is consider as mean then

(sum of squares of difference between value and mean)/total no.of.values

Variance = (each point of x – Mean)^2 /N-1

Mean = 6.5454

**Variance** =1.57024

**Standard Deviation :**  Sqrt of variance

Standard Deviation : 1.07565

1. When the largest point is increased by 36 , it means it is an outlier due to this mean of our data is increased than normal mean value which represents negative skew of data. In such a case we should not consider mean because data is skewed. Median will be the best option when data is skewed.
2. **Data Singular :** The word which is associated with particular cell is of a sample (variable) called data singular

**Data Plural :** The values which representing whole particular variable is called Data Plural

Example : consider data set in Q2, for variable A

Data Singular is 7 (Particular cell 1st row 1st element)

Data Plural represents all the values i.e 7,6,7,7,8,5,8,7,7,5,5

1. Inferential statistics are used to make generalizations from a sample to a population. In inferential statistics we take the sample data we estimate characteristics of whole population.

Example: Survey companies takes subset of population and estimates for entire population based on sampling subset characters.