MATHEMATICS PRESENTATION-1

TOPIC : MEASUREMENT OF CENTRAL TENDENCY

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MEAN

Mean : Simply to do average of data values.

Eg: Data set =[1,2,3,4,5]

Formula is Mean = (sum of all the elements / total no. of elements)

Sum = 15, no. of elements = 5

Mean = 15/5 = 3

Mode

- Mode : Data value which occurred for most number of times.
  - Eg : Data set =[1,1,2,3,5,94,47,5,4,8,9,1]
  - The most no. of time occurred element is 1 (i,e 3 times)

Median

- Median : Data value which is exactly in the middle of the sorted data set, if there are 2 values, then we go for average of those 2.

  - Eg 1 : Dataset = [6,1,2,3,5,7,4]

  - The element exactly in the middle after sorting it is 4

  - So median =4

  - Eg 2: Dataset = [1,2,3,4]

  - There are 2 elements in the middle, they are 2,3

  - So median is average of those 2 numbers, I,e 2.5

  - So median =2.5

STANDARD DEVIATION & VARIANCE

- Standard Deviation :

- It is one more statistical term used to measure central tendency.

- The more std. dev is the wider is the values

- The lesser the value of std.dev is the closer the values

- Variance :

- Also indicates same as Std.Dev how the values are situated.

- Variance = Square of Std. Dev

ASSIGNMENT -1

1)Mean: Average of all the data values.

Median : The exact middle value of sorted data, if there are 2 values we go for their average.

Mode: The most occurred data value is called the mode.

2) Standard Deviation : It is one more statistical term used to measure central tendency.

Variance : Also indicates same as Standard Deviation how the values are situated.

4) FIND MEAN, MEDIAN, MODE AND STANDARD DEVIATION FOR EACH DATA SET.

A.) 7,11,16, 14, 11, 13, 19, 13,13

B.) 16, 15, 16, 17, 19, 12, 14, 9

C.) 27, 66, 24, 81, 50, 40, 74, 81, 97

- A) MEAN = 117/9 =13

- MODE = 13

- MEDIAN = 13

- SORTED VALUES = [7,11,11,13, **13** ,13,14,16,19]

- B) MEAN = 118/8 =14.75

- MODE = 16

- MEDIAN = 15.5

- SORTED VALUES = [9,12,14, **15,16**, 16,17,19]

- C) MEAN = 535/9= 59.44

- MODE= 81

- MEDIAN= 66

- SORTED VALUES = [24,27, 40, **66** ,81,81,97]

ADDITIONAL

- STD. DEV:

- Sample data = [1,2,3,4,5]

- Mean= 3

- Std. Dev = Square root [[{(1-3)^2} + {(2-3)^2} + {(3-3)^2} + {(4-3)^2} + {(5-3)^2}]/5]

- = Square root [10/5]

- = Square root [2]

- Variance = Square [Square root [2]]

- = 2

SAMPLE MEAN

- Population(Total Employees) in a company = 2 lakhs

- No. of employees filled a survey on their monthly travelling expenses to & from to company = 25,000

- Sample Mean = (Total sum of expenses by all those 25K employees / 25,000)

Let Total sum of expenses by all those 25K employees = 7.5 Crores

 Then sample mean = (7.5 Crores /25,000)

                        = 3000