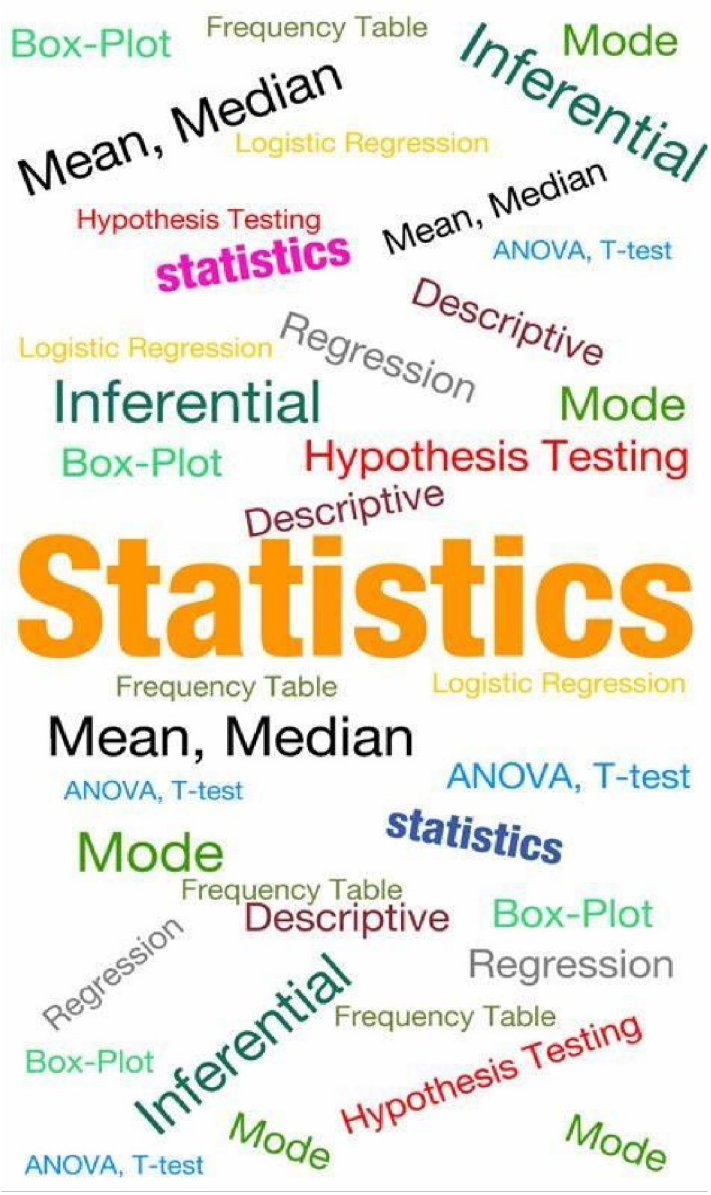
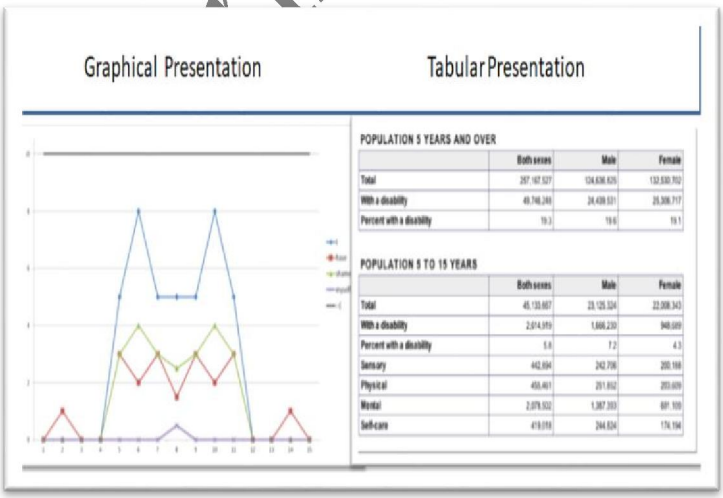

Box-Plot
Frequency Table
Mode
Inferential
Mean, Median
Logistic Regression
Hypothesis Testing
statistics
Mean, Median
ANOVA, T-test
Descriptive
Logistic Regression
Regression
Inferential
Mode
Box-Plot
Hypothesis Testing
Descriptive
Statistics
Frequency Table
Logistic Regression
Mean, Median
ANOVA, T-test
ANOVA, T-test
statistics
Mode
Frequency Table
Descriptive
Box-Plot
Regression
Regression
Inferential
Frequency Table
Box-Plot
Hypothesis Testing
Mode
Mode
ANOVA, T-test

DESRIPTIVE STATISTICS

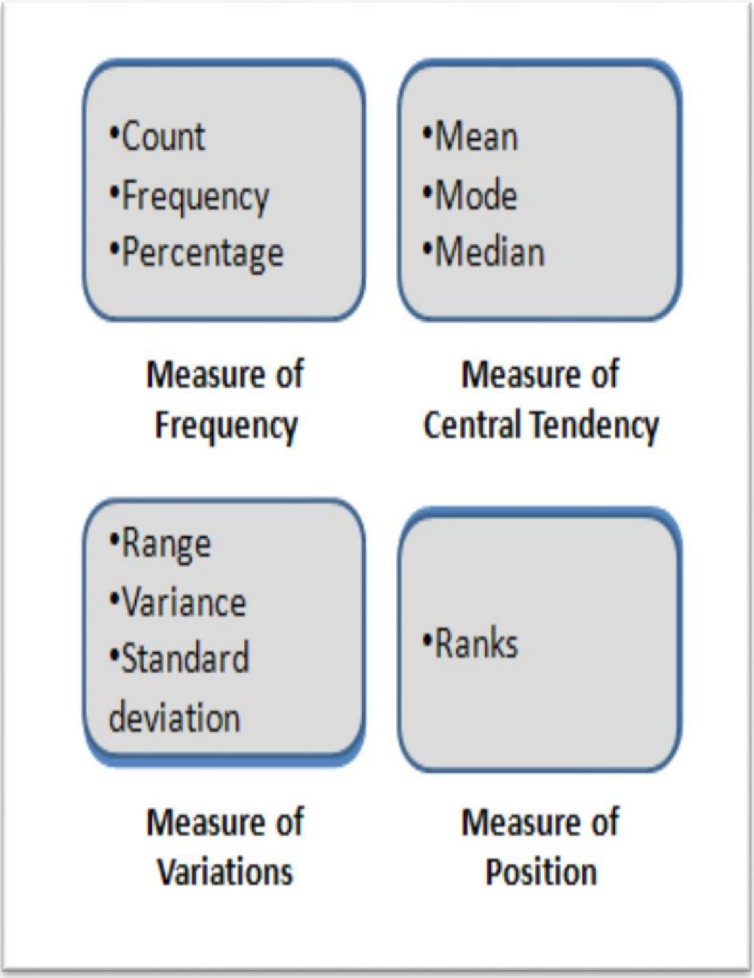
DESRIPTIVE STATISTICS- Explanation

It is a statistical technique to summarize data. Summarization of data can be presented in tabular and graphical format, which provides insight of information related to the data. Data can be presented in various ways by using central tendency of the data, frequency, dispersion, position et.al.



TYPES OF DISCRIPTIVE STATISTICS

Essentially, we can apply four types of descriptive statistics:



MEASURE OF FREQUENCY

- Count – Used to total the number of entities in the selected range.
- Frequency – Used to count the discrete values in the selected range.
- Percentage – Used to find the number of categories in the selected range / group. Percentage is calculated taking the frequency in the selected range.

MEASURE OF CENTRAL TENDENCY

- Mean – Sum of the selected values and divide by the total number of values.
- Mode – The value that appears most often.
- Median – Middle value of the selected range of values.

MEASURE OF VARIATIONS

- Range - Difference between lowest and highest number from the group of values.
- Variance – A measurement of the spread between values in a selected group. It is a

value used to indicate how widely individuals are spread in a group.

- Standard deviation – Square root of the variance is standard deviation.

MEASURE OF POSITION

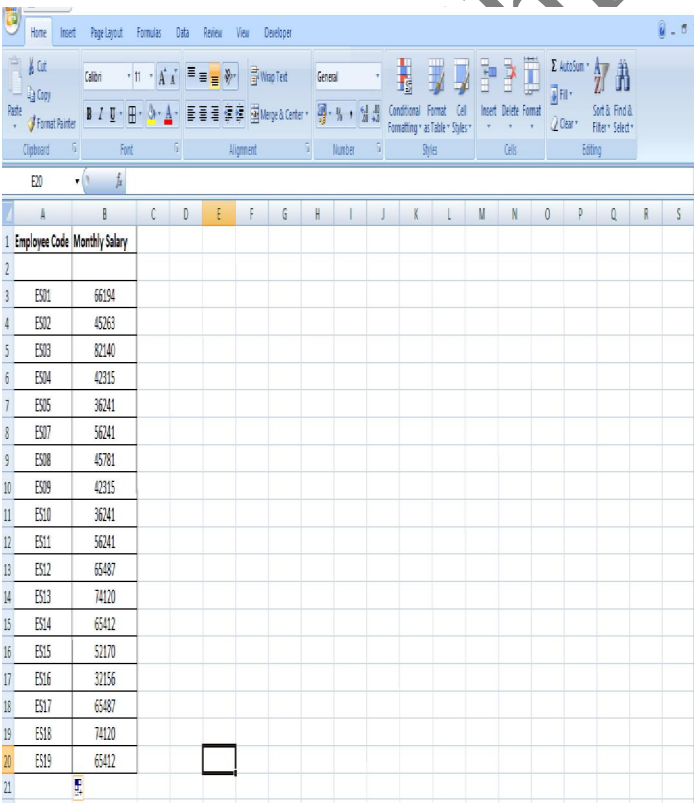
- Rank – Number transformation in which number or ordinal values are replaced by their rank when the selected group of number is sorted.

DESCRIPTIVE STATISTICS IN EXCEL

EXCEL is one of the applications that offers descriptive statistics tool.

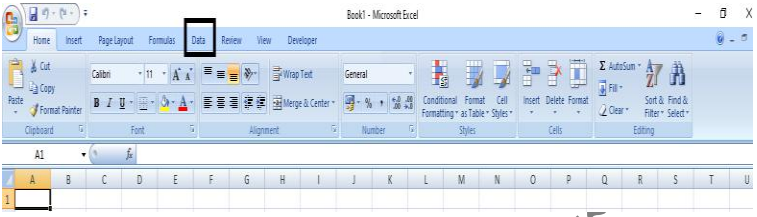
Steps:

1. Create a worksheet with the contents as given – Employee Name/Code, Salary.



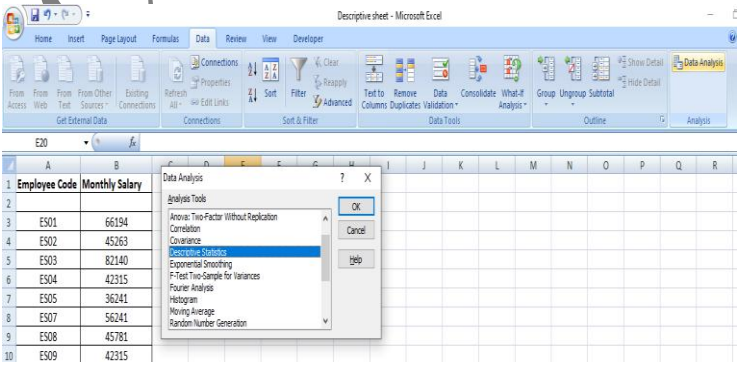
	A	B
1	Employee Code	Monthly Salary
2		
3	ES01	66194
4	ES02	45263
5	ES03	82140
6	ES04	42315
7	ES05	36241
8	ES07	56241
9	ES08	45781
10	ES09	42315
11	ES10	36241
12	ES11	56241
13	ES12	65487
14	ES13	74120
15	ES14	65412
16	ES15	52170
17	ES16	32156
18	ES17	65487
19	ES18	74120
20	ES19	65412
21		

2. Open Excel sheet and click on DATA menu.



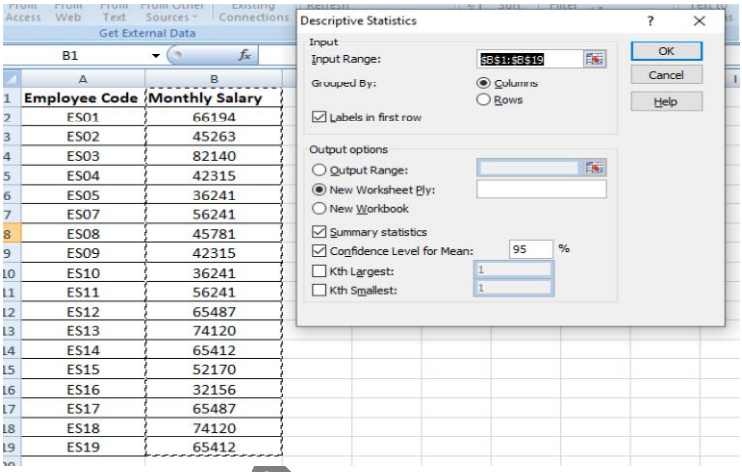
3. Check on the ribbon that contains function called DATA ANALYSIS.

4. Click on DATA ANALYSIS and select Descriptive Statistics option from the Analysis Tool box.

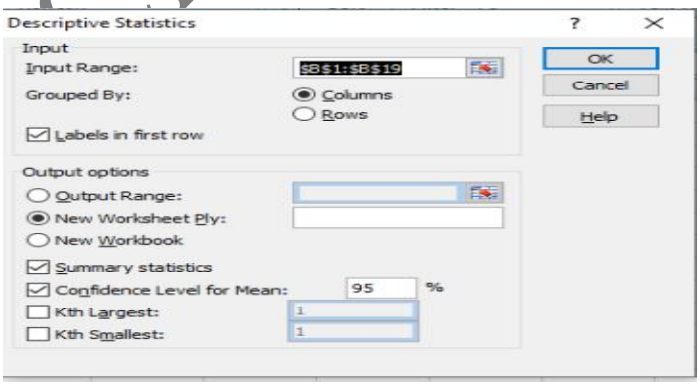


Employee Code	Monthly Salary
ES01	66194
ES02	45263
ES03	82140
ES04	42315
ES05	36241
ES07	56241
ES08	45781
ES09	42315

5. Select the data input range from the worksheet. For example - $B$1:$B$19 is a range as per the sheet shown below.



6. Ensure that some of the options clicked from the descriptive statistics dialog box as per the image shown below.



Labels in first row – Select this option to display column headers on a output sheet.

New Worksheet Ply – Select this option to display the output / result on a new worksheet.

Summary Statistics – Select this option to display statistics i.e. mean, mode, median, standard deviation, sum, kurtosis, count etc.

Confidence level – It shows that Mean is set for 90% or 95% as case may be.

7. As shown above image, Output option is selected as New Worksheet Ply, Result will display on new worksheet. Hence output will be-

Monthly Salary	
Mean	55740.88889
Standard Error	3504.564021
Median	56241
Mode	42315
Standard Deviation	14868.60591
Sample Variance	221075441.6
Kurtosis	-1.130778853
Skewness	0.012984976
Range	49984
Minimum	32156
Maximum	82140
Sum	1003336
Count	18
Confidence Level(95.0%	7393.983698

OUTCOME	MEANING
Mean	Shows the arithmetic mean of the sample data.
Standard Error	Shows the standard error of the data set (a measure of the difference between the predicted value and the actual value).
Median	Shows the middle value in the data set (the value that separates the largest half of the values from the smallest half of the values).
Mode	Shows the most common value in the data set.
Standard Deviation	Shows the sample standard deviation measure for the data set.
Sample Variance	Shows the sample variance for the data set (the squared standard deviation).
Kurtosis	Shows the kurtosis of the distribution.
Skewness	Shows the skewness of the data set's distribution.
Range	Shows the difference between the largest and smallest values in the data set.
Minimum	Shows the smallest value in the data set.
Maximum	Shows the largest value in the data set.
Sum	Adds all the values in the data set together to calculate the sum.
Count	Counts the number of values in a data set.
Largest(X)	Shows the largest X value in the data set.
Smallest(X)	Shows the smallest X value in the data set.
Confidence Level(X) Percentage	Shows the confidence level at a given percentage for the data set values.

It is difficult to explain raw data. Descriptive statistics enables the data in a meaningful form, which one can easily interpret the outcome of the same.

It is a very basic stage of data insight which helps to understand what has happened? Meaning: past impact and future influence. For example business data related to financials, operations, sales, inventory, production to get an historical view for strategy formulation, reports etc.

Evaluate your learning

1. What do you understand by descriptive statistics?
2. Name the type of descriptive statistics.
3. Collect and summarize data by using Excel tool :
   - Analyze the performance data of each player of various IPL team.
   - Analyze patrol price data of three months.
   - Analyze the credit card statement data of six months.

Interpret the data dimensions in your own words.