Name: Shubham Vinod Pandey
Subject: DATA SCIENCE WITH EXCEL

1) What are charts and Different Types of Charts?

Ans : A chart or graph is a graphical representation for data visualization, in which "the data is represented by symbols, such as bars in a bar chart, lines in a line chart, or slices in a pie chart". A chart can represent tabular numeric data, functions or some kinds of quality structure and provides different info.

Types of Charts:

Histogram Chart consists of tabular frequencies, shown as adjacent rectangles, erected over discrete intervals (bins), with an area equal to the frequency of the observations in the interval.

Bar Chart is a chart with rectangular bars with lengths proportional to the values that they represent. The bars can be plotted vertically or horizontally.

Pie Chart shows percentage values as a slice of a pie.

Line Chart is a two-dimensional scatterplot of ordered observations where the observations are connected following their order.

Waterfall Chart also known as a "Walk" chart, is a special type of floating-column chart.

Gantt chart helps in scheduling complex projects.

2)What are pivot Tables in Excel and their implementations?

Ans : A pivot table is a statistics tool that summarizes and reorganizes selected columns and rows of data in a spreadsheet or database table to obtain a desired report. The tool does not actually change the spreadsheet or database itself, it simply “pivots” or turns the data to view it from different perspectives.

Pivot tables are especially useful with large amounts of data that would be time-consuming to calculate by hand. A few data processing functions a pivot table can perform include identifying sums, averages, ranges or outliers. The table then arranges this information in a simple, meaningful layout that draws attention to key values.

Working of Pivot Tables

When users create a pivot table, there are four main components:

Columns- When a field is chosen for the column area, only the unique values of the field are listed across the top.

Rows- When a field is chosen for the row area, it populates as the first column. Similar to the columns, all row labels are the unique values and duplicates are removed.

Values- Each value is kept in a pivot table cell and display the summarized information. The most common values are sum, average, minimum and maximum.

Filters- Filters apply a calculation or restriction to the entire table.

For example, a store owner might list monthly sales totals for a large number of merchandise items in an Excel spreadsheet. If they wanted to know which items sold better in a particular financial quarter, they could use a pivot table. The sales quarters would be listed across the top as column labels and the products would be listed in the first column as rows. The values in the worksheet would show the sum of sales for each product in each quarter. A filter could then be applied to only show specific quarters, specific products or averages.

3)What is Conditional Formatting? Distinguish 5 types of Conditional Formatting.

Ans : Conditional formatting makes it easy to highlight certain values or make particular cells easy to identify. This changes the appearance of a cell range based on a condition (or criteria). You can use conditional formatting to highlight cells that contain values which meet a certain condition. Or you can format a whole cell range and vary the exact format as the value of each cell varies.

Types of Conditional Formatting:

Background Color Shading (of cells)
Foreground Color Shading (of fonts)
Data Bars.
Icons
Values.

4)How to Clear Formatting in Excel without actually removing the Cell Content?

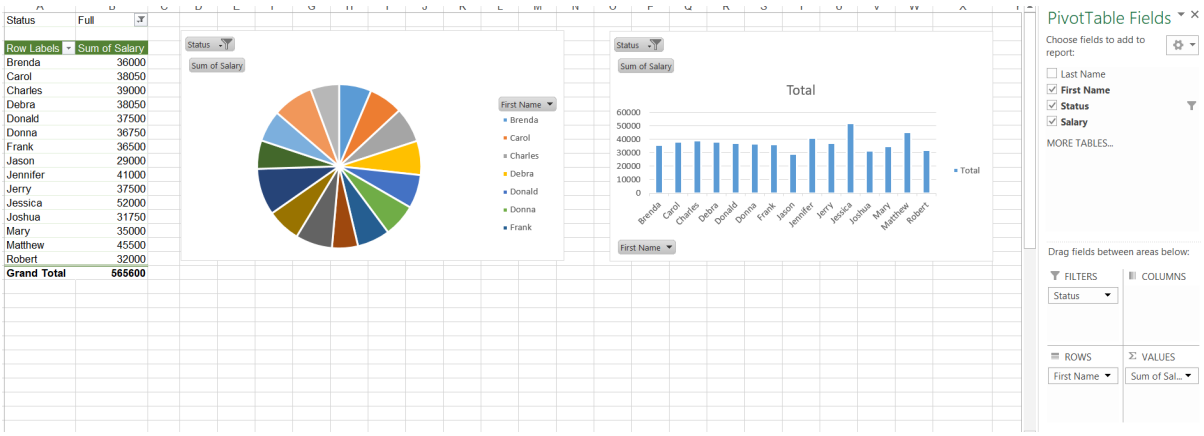
Ans : The easiest way to remove formatting from selected cells is using a keyboard shortcut.

First, select the formatted cells.
Then, press ALT+H+E+F

As a result, you will see all the formatting of the selected cells are removed.

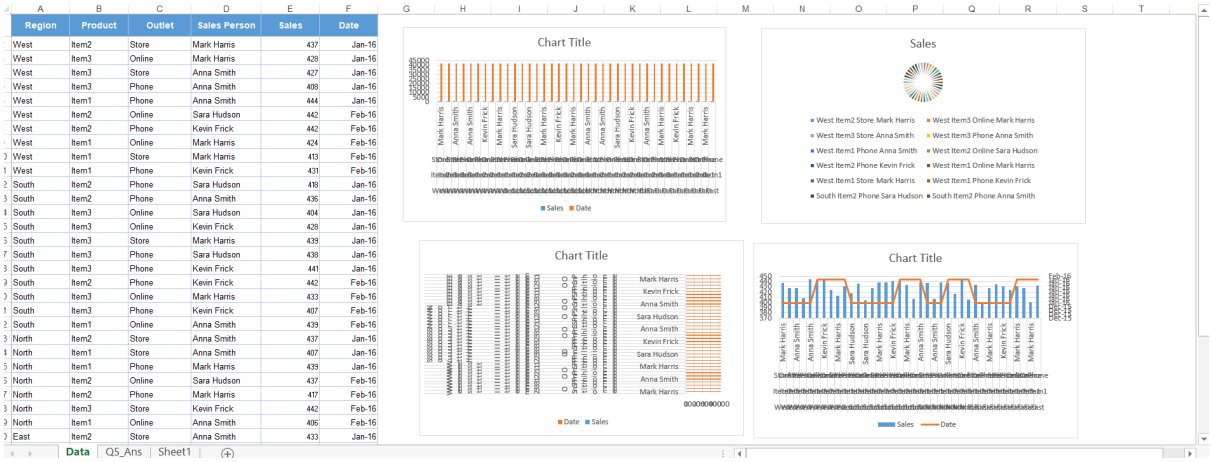
5)Create a Pivot Table and Chart for the Given Table?

Ans : Below is created Pivot table on sample data with couple of charts.



6) Create a Dashboard for the attached Excel Sheet .

Ans : Here you go with Dashboard for shared data.



7) Define Statistics?

Ans : Statistics is a branch that deals with every aspect of the data. Statistical knowledge helps to choose the proper method of collecting the data and employ those samples in the correct analysis process in order to effectively produce the results.

8) Explain about any two Data Analysis Tool Pak?

Ans : The Analysis ToolPak is a built-in add-in program that offers data analysis tools for various financial, statistical and engineering problems.

Analysis ToolPak fetches the result in an output table by using the relevant statistical or engineering macro functions. This remarkable tool surely saves time and effort by providing the data and parameters for every analysis.

Correlation = Correlation determines the degree to which two paired variables are in relationship to each other.

Covariance = Covariance measures the change in one variable when the other variable changes. Covariance can be positive or negative.

Descriptive Statistics = This tool calculates a range of statistical computations and compiles them into an excel table. This table includes calculations for mean, mode, median, sum, standard deviation, error, largest, smallest, sample variance, kurtosis, count, range, min, max etc.

9) Explain about Histogram

Ans : A histogram is a graphical representation of a grouped frequency distribution with continuous classes. It is an area diagram and can be defined as a set of rectangles with bases along with the intervals between class boundaries and with areas proportional to frequencies in the corresponding classes. In such representations, all the rectangles are adjacent since the base covers the intervals between class boundaries. The heights of rectangles are proportional to corresponding frequencies of similar classes and for different classes, the heights will be proportional to corresponding frequency densities.