

ASPIRATION SOLUTIONS

SYLLABUS TO BE COMPLETED

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PANJIM

Office No: 407 Kamat Towers, EDC
Complex Patto – Panjim- Goa

Mob No: 9604749483

MAPUSA

3B/3C, RR Towers, 3rd Floor, Opposite
Comminidade Ghor, Rajwado, Mapusa Goa

Email: aspirationsolutions.career@gmail.com

1. Mathematical Function:

- a) **SUM:** It returns the sum of numeric values in a cell. You can refer to the cells where you have values or simply insert the values into the function.
- b) **MAX & MIN:** The MAX and MIN functions help in finding the maximum number and the minimum number in a range of values.
- c) **AVERAGE:** It returns the average of numeric values in a cell. You can refer to the cells where you have values or simply insert the values into the function.
- d) **COUNT:** It returns the count of numeric values in a cell. You can refer to the cells where you have values or simply insert the values into the function
- e) **COUNTA:** It is Like the COUNT function, COUNTA counts all cells in a given range. However, it counts all cells regardless of type. That is, unlike COUNT that only counts numeric, it also counts dates, times, strings, logical values, errors, empty string, or text.
- f) **COUNTBLANK:** This function is a premade function in Excel, which counts blank cells in a range.

2. Logical Function:

- a) **IF:** This function returns a value when the specific condition is TRUE and returns another value if condition is FALSE. The IF function is often used when you want to sort your data according to a given logic. The best part of the IF formula is that you can embed formulas and function in it.
- b) **SUMIF:** You use the SUMIF function to sum the values in a range that meet criteria that you specify. The SUMIF function syntax has the following arguments:
 - i. **Range:** The range of cells that you want evaluated by criteria. Cells in each range must be numbers or names, arrays, or references that contain numbers. Blank and text values are ignored.

- ii. Criteria:** The criteria in the form of a number, expression, a cell reference, text, or a function that defines which cells will be added.
 - iii. Sum Range:** The actual cells to add, if you want to add cells other than those specified in the range argument. If the sum range argument is omitted, Excel adds the cells that are specified in the range argument (the same cells to which the criteria is applied). Sum range should be the same size and shape as range.
- c) COUNTIF:** This function is used for counting cells within a specified range that meet a certain criterion, or condition. there are only 2 arguments, both of which are required:
- i. Range:** defines one or several cells to count. You put the range in a formula like you usually do in Excel.
 - ii. Criteria:** defines the condition that tells the function which cells to count. It can be a number, text string, cell reference or expression.

3. Cell Formatting:

Cell formats allow you to only change the way cell data appears in the spreadsheet. It is important to keep in mind that it only alters the way the data is presented, and does not change the value of the data. The formatting options allows for monetary units, scientific options, dates, times, fractions, and more.

4. Conditional Formatting:

As the name suggests, conditional formatting is a type of formatting that is applied to cells or ranges when certain conditions are met. These conditions are set, but can quite often be customised and edited, in rules that have been programmed into Excel.

5. Charts:

Charts are visual representations of data used to make it more understandable

6. Orientation:

Orientation is used to set the exact number of degrees that you want to rotate the selected cell text. Positive numbers rotate the text upward. Negative numbers rotate the text downward.

7. Advance Filter:

Excel's Advanced Filter is really helpful when it comes to finding data that meets two or more complex criteria such as extracting matches and differences between two columns, filtering rows that match items in another list, finding exact matches including uppercase and lowercase characters, and more.

8. Database Function:

The Excel Database functions work with an Excel Database. This typically takes the form of a large table of Data, where each row in the table stores an individual record. Each column in the Worksheet table stores a different field for each record.

9. Pivot Table:

Pivot tables are among the most useful and powerful features in Excel. We use them in summarizing the data stored in a table. They organize and rearrange statistics (or "pivot") to draw attention to the valuable facts. You can take an extremely large data set and see the relevant information you need in a clean, concise, manageable way.

10. Data Validation:

Data validation is the practice of checking the integrity, accuracy and structure of data before it is used for a business operation. Data validation operation results can provide data used for data analytics, business intelligence or training a machine learning model. It can also be used to ensure the integrity of data for financial accounting or regulatory compliance.

11. Range Names:

Range names are names used to refer to cell references, formula results, or values. They are often used to avoid hard-coded values appearing in formulas and to make formulas clearer in general. They are stored in what is known as the Name Manager in Excel.

12. Dynamic Data Range:

Dynamic Named Ranges are named ranges in Excel that automatically adjust the size of the range based on the data in it. In other words, Dynamic Named Ranges expand or contract according to the size of the data within them. Unlike static named ranges, which have a fixed range of cells, dynamic named ranges adapt to the size of the data.

13. Data Consolidation:

Data consolidation is the process of consolidating data from multiple sources into a single destination. During the consolidation of data process, different data sources are put together into a single data store. This process is sometimes also referred to as data integration

14. Text Functions:

Text functions can be used in several ways. They can return the number of characters in text strings, remove extra spaces and nonprintable characters from cells, return exact data within a string, change the case of text strings, and even combine text from other cells. If you inherit workbooks from other people, you will eventually have to clean up or manipulate the data. Text functions allow you to create consistency throughout the workbook. Because certain functions are case sensitive, it's good practice to create consistency throughout lists and tables.

15. List & Combo Box:

A list box allows the user to choose either a single item or multiple items from a collection. List boxes are similar to drop-down lists, except that list boxes are

always open—there is no compact (non-expanded) state for a list box. Items in the list can be scrolled if there isn't space to show everything

16. Lookup:

HLOOKUP is used when your comparison values are located in a row across the top of a table of data, and you want to look down a specified number of rows. VLOOKUP is used when your comparison values are located in a column to the left of the data you want to find.

The H in HLOOKUP stands for "Horizontal."

The V in VLOOKUP stands for "Vertical".

Syntax

HLOOKUP (lookup value, table array, row_index_num, [range_lookup])

VLOOKUP (lookup value, table array, column index_num, [range_lookup])

17. Macros:

Macros for Excel are instructions you can customise to complete repetitive tasks automatically. Implementing macros in different types of software can help save users time when working on repetitive tasks, like filling in cells. Software developers can create macros by using the programming language Visual Basic for Applications. Macros provide an automated input sequence that allows users to imitate keystrokes, mouse actions and other basic inputs. Generally, macros are a way to automate repetitive tasks that are the same.