EXCEL ASSIGNMENT – 2

Q.1 What does the dollar ($) sign do?

* In Excel, the dollar sign ($) is used to create absolute cell references. Absolute cell references do not change when a formula containing them is copied or filled to other cells. There are two types of absolute references: absolute column references and absolute row references.

1. **Absolute Column Reference**: If you place a dollar sign ($) before the column letter in a cell reference, such as $A1, the column reference remains fixed when the formula is copied across columns. For example, if you copy a formula containing $A1 from column B to column C, the reference will remain $A1 instead of changing to $B1.
2. **Absolute Row Reference:** If you place a dollar sign ($) before the row number in a cell reference, such as A$1, the row reference remains fixed when the formula is copied down rows. For example, if you copy a formula containing A$1 from row 1 to row 2, the reference will remain A$1 instead of changing to A$2.
3. **Absolute Cell Reference**: If you place a dollar sign ($) before both the column letter and the row number in a cell reference, such as $A$1, the reference remains fixed when the formula is copied across columns and down rows.

Q.2 How to Change the Reference from Relative to Absolute (or Mixed)?

1. **Select the cell containing the formula**: Click on the cell that contains the formula with the reference you want to change.
2. **Edit the formula**: Either double-click on the cell or press the F2 key to enter edit mode.
3. **Change the reference to absolute or mixed:**

* **Absolute Reference**: Place a dollar sign ($) before both the column letter and the row number in the cell reference. For example, change A1 to $A$1.
* **Mixed Reference with Absolute Column:** Place a dollar sign ($) before the column letter but not before the row number in the cell reference. For example, change A1 to $A1.
* **Mixed Reference with Absolute Row**: Place a dollar sign ($) before the row number but not before the column letter in the cell reference. For example, change A1 to A$1.

1. **Exit edit mode**: Press Enter on your keyboard or click outside the cell to apply the changes.

Alternatively, you can use keyboard shortcuts to quickly toggle between relative, absolute, and mixed references while editing a formula:

* F4: Pressing F4 while editing a formula toggles through various reference types (absolute row/column, mixed row/column, relative).

Q..3 Explain the order of operations in excel?

* In Excel, the order of operations, also known as the precedence of operators, determines the sequence in which mathematical operations are performed in formulas. Understanding the order of operations is crucial for ensuring that formulas produce the correct results. Excel follows the standard mathematical rules for the order of operations, which are as follows:

1. **Parentheses**: Operations inside parentheses are performed first. Excel evaluates expressions within parentheses from the innermost level outward. For example, in the expression =(A1 + B1) \* C1, Excel will first add the values in cells A1 and B1, and then multiply the result by the value in cell C1.
2. **Exponents**: Exponential calculations (raising a number to a power) are performed next. Excel evaluates expressions with exponentiation from left to right. For example, in the expression =2^3\*4, Excel will first calculate 2 raised to the power of 3 (which is 8), and then multiply the result by 4.
3. **Multiplication and Division**: Multiplication (\*) and division (/) operations are performed next, from left to right. These operations have the same precedence level, so Excel evaluates them in the order they appear in the formula. For example, in the expression =10/2\*3, Excel will first perform the division (10 divided by 2 equals 5), and then multiply the result by 3, yielding 15.
4. **Addition and Subtraction:** Addition (+) and subtraction (-) operations are performed last, from left to right. Like multiplication and division, these operations have the same precedence level, so Excel evaluates them in the order they appear in the formula. For example, in the expression =10-2+3, Excel will first subtract 2 from 10 (yielding 8), and then add 3 to the result, yielding 11.

Q.4 What, according to you, are the top 5 functions in excel and write a basic syntax for any of two?

1. **Syntax**: =SUM(number1, [number2], ...)

**Example:** =SUM(A1:A10)

1. **VLOOKUP**: Searches for a value in the first column of a table and returns a value in the same row from a specified column.

**Syntax:** =VLOOKUP(lookup\_value, table\_array, col\_index\_num, [range\_lookup])

**Example**: =VLOOKUP(A1, $B$1:$C$100, 2, FALSE)

1. **IF**: Returns one value if a condition is true and another value if it's false.

**Syntax**: =IF(logical\_test, value\_if\_true, value\_if\_false)

**Example:** =IF(A1>10, "Yes", "No")

1. **COUNTIF**: Counts the number of cells within a range that meet a single condition.

**Syntax:** =COUNTIF(range, criteria)

**Example:** =COUNTIF(A1:A10, ">10")

5.**AVERAGE**: Calculates the average of a range of numbers.

**Syntax:** =AVERAGE(number1, [number2], ...)

**Example:** =AVERAGE(A1:A10)

Q.5 **When would you use the subtotal function?**

In Excel, the SUBTOTAL function is primarily used for calculating subtotals within a range of data, especially when dealing with filtered or grouped datasets. Here are some common scenarios where you might use the SUBTOTAL function:

**Filtered Data**: When you have a large dataset and apply filters to it, the SUBTOTAL function can help calculate subtotals based on the visible rows only. This is useful when you want to perform calculations on filtered data without including the hidden rows.

**Grouped Data**: If you have grouped your data using Excel's Group feature (Data tab -> Group), you can use the SUBTOTAL function to calculate subtotals for each group. This allows you to summarize data

at different levels of granularity while ignoring the hidden or collapsed groups.

**Hierarchical Data**: When working with hierarchical data structures, such as organizational charts or product categories, the SUBTOTAL function can calculate subtotals at different levels of the hierarchy. This is particularly helpful for creating summary reports that show aggregated data at various levels.

**Dynamic Reports**: SUBTOTAL is often used in dynamic reports where the underlying data may change frequently. Since SUBTOTAL automatically adjusts its calculations based on the visibility of rows, it ensures that your reports remain accurate even as data is added, removed, or filtered.

**Avoiding Double Counting**: When using other aggregate functions like SUM or AVERAGE directly on a range that contains subtotals, you may inadvertently double-count the subtotals. SUBTOTAL avoids this issue by ignoring other subtotal functions within the range, ensuring accurate results.

Q.6 What is the syntax of the vlookup function? Explain the terms in it?

* **VLOOKUP(lookup\_value, table\_array, col\_index\_num, [range\_lookup])**

1. **Lookup\_value**: This is the value you want to search for in the first column of the table array. It can be a value, reference, or cell reference. The VLOOKUP function will look for this value in the leftmost column of the table array.
2. **Table\_array**: This is the range of cells that contains the data you want to search through. It consists of two or more columns of data. The lookup\_value is searched for in the first column of this range, and the value to be returned is located in a column to the right of the lookup column.
3. **Col\_index\_num**: This is the column number in the table\_array from which you want to retrieve the value. For example, if the value you want to return is located in the third column of the table array, you would specify 3 as the col\_index\_num.
4. **Range\_lookup (optional**): This parameter specifies whether the VLOOKUP should perform an approximate match or an exact match.

* If range\_lookup is TRUE or omitted, VLOOKUP will perform an approximate match. In this case, it searches for the closest match to the lookup\_value without exceeding it. The data in the first column of table\_array must be sorted in ascending order.
* If range\_lookup is FALSE, VLOOKUP will perform an exact match. It searches for an exact match to the lookup\_value. If an exact match is not found, VLOOKUP returns #N/A.