**Advance Excel Assignment – 2**

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

Ans: In Excel, the dollar($) sign is used to create an absolute reference in a formula. Absolute reference means the cell or range of cells that do not change when a formula is copied to other cells, and hence reference remains fixed regardless of the location of the formula. By simply placing the dollar sign before the column letter or before the row number (or on both) of the cell reference we can create an absolute reference.

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

Ans: By default, any cell reference is always in the relative reference. When entering any cell reference in the formula, we can quickly add a dollar sign using the ‘F4’ key.

Place the cursor on the cell reference where you want to add the dollar sign, and then by pressing this shortcut key multiple times, we can easily switch between relative reference to absolute or to a mixed reference.

We can also add a dollar sign manually before any column name or row number to change the references based on our needs.

3. Explain the order of operations in Excel?

Ans: The order of operation in Excel is a set of rules that determines the sequence in which mathematical operations are performed within a formula containing multiple operators. A proper order of operations enables Excel to understand and evaluate complex expressions. If the order is incorrect, then the calculation results will be incorrect or unexpected.

Excel follows a specific hierarchy of operations when evaluating formulas, which is as follows:

1. **Parentheses** – In Excel, any expressions within parentheses are evaluated first. Parentheses override the normal order of operations to ensure specific operations occur before others. Usually, Excel uses round brackets () as parentheses.
2. **References** - Excel resolves any cell references (e.g. A1) by replacing them with the corresponding cell values. Range references (e.g. A1:A5) become arrays of values.
3. **Exponents** – Then, Excel calculates any exponents (e.g. 3^4) in the expression.
4. **Negation** - The negation operator is used to negate a single number but it is not subtraction; Subtraction works just between two numbers. In other words, the negative values are handled.
5. **Percent** – Then any percentage conversions are performed.
6. **Multiplication and Division** – Excel performs multiplication and division operations. In the absence of parentheses (the same precedence level), these operations are performed from left to right.
7. **Addition and Subtraction** – Finally, Excel evaluates addition and subtraction from left to right.

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

Ans: Excel offers numerous functions to suit various needs, but the following are the most commonly used functions:

* Basic Math functions – SUM, COUNT, AVERAGE, etc.

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

* Text functions – LEN, MID, CONCAT, etc.

Syntax for LEN: =LEN(text)

* Date and Time functions – DATE, TIME, NOW, TODAY, etc.

Syntax for DATE: =DATE(year, month, day)

* Logical functions – IF, AND, OR, NOT, etc.
* Lookup and Reference functions – VLOOKUP, XLOOKUP, MATCH, INDEX, etc.

5. When would you use the subtotal function?

Ans: The SUBTOTAL function is designed to run a given calculation on a range of cells while ignoring cells that should not be included. That means, the subtotal function calculates values only in visible cells/rows and ignores values in filtered-out rows (hidden rows). We can use it to create a dynamic data summary where subtotal values are re-calculated automatically according to the filtered values. Subtotal can perform many calculations, including SUM, AVERAGE, COUNT, MAX, MIN, and others.

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

Ans: The VLOOKUP function looks for a value in the leftmost column of a table, and then returns a value in the same row from a column you specify.

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

The Function arguments are:

**lookup\_value** (required) - The value that you want to search for.

**table\_array** (required) - The array of data (table) that is to be searched for the lookup\_value.

**col\_index\_num** (required) - An integer, specifying the column number of the supplied table\_array, that you want to return a value from.

**[range\_lookup]** (optional) - It describes what the function should return in the result if it does not find an exact match to the lookup\_value.

The [range\_lookup] can be set to TRUE or FALSE, meaning:

TRUE - If an exact match is not found, return the closest match below the lookup\_value. It is indicated by 1

FALSE - It returns an exact match and is indicated by 0. If an exact match to the lookup\_value is not found, then returns an error.

If the [range\_lookup] value is omitted, it uses the default value of TRUE.