**Advance Excel Assignment 2**

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

In Microsoft Excel, the dollar sign ($) is used as a shortcut to create an absolute reference to a specific cell or range of cells. When a cell reference contains a dollar sign in front of the row or column identifier, it means that the reference is fixed and will not change if the formula or function is copied or moved to another cell.

There are two ways to use the dollar sign in Excel:

1. **Absolute column or row reference:** When you add a dollar sign before the column letter or row number in a cell reference, it fixes that part of the reference. For example, if you want to fix the column reference as A, you can use $A1 or $A$1 to indicate that the reference should always point to column A, regardless of where the formula is copied or moved.
2. **Mixed reference:** A mixed reference allows you to fix either the column or row reference while allowing the other part of the reference to change when the formula is copied or moved. For example, if you want to fix the column reference as A, but allow the row reference to change, you can use $A1 in the formula.

In Excel, **you can easily add the dollar sign to a cell reference by typing it manually or by using the F4 key**. When you select a cell reference and press the F4 key, Excel will automatically add the appropriate dollar sign(s) to the reference to make it absolute, mixed or relative, depending on the context.

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

To change the reference from relative to absolute or mixed in Excel, you can add or remove the dollar sign ($) from the cell reference. Here's how:

1. To make a reference absolute, add a dollar sign ($) before the column letter and row number in the reference. For example, if your reference is A1, you can change it to $A$1 to make it an absolute reference. If you want to fix only the column or row, you can use $A1 or A$1 respectively.
2. To make a reference mixed, add or remove the dollar sign ($) as needed. For example, if you want to fix the column but not the row, you can use $A1 in the reference. Similarly, if you want to fix the row but not the column, you can use A$1.
3. You can also change the reference type using the F4 key. When you select a cell reference and press the F4 key, Excel will cycle through the reference types: absolute, mixed with absolute column, mixed with absolute row, and relative. This is a quick way to toggle between reference types without having to manually add or remove the dollar sign.

Once you have changed the reference type, you can copy or move the formula to other cells, and the reference will remain fixed (for absolute references) or partially fixed (for mixed references) as you have specified. This is useful when you want to create formulas that refer to specific cells, but need to copy or move them to different locations in the worksheet.

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

The order of operations in Excel, also known as the precedence of operators, specifies the sequence in which Excel evaluates mathematical and logical expressions. The order of operations in Excel is as follows:

1. Parentheses: Excel evaluates expressions inside parentheses first.
2. Exponents: Excel evaluates exponentiation operations (using the caret symbol ^) next, from left to right.
3. Multiplication and Division: Excel evaluates multiplication (\*) and division (/) operations next, from left to right.
4. Addition and Subtraction: Excel evaluates addition (+) and subtraction (-) operations last, from left to right.

If there are multiple operators of the same level, Excel evaluates them from left to right. For example, in the expression 2 + 3 \* 4, Excel multiplies 3 and 4 first because of the precedence rule, then adds 2 to the result, resulting in 14.

If you want to change the order of operations, you can use parentheses to group the expressions in the order you want Excel to evaluate them. For example, if you want Excel to add 2 and 3 before multiplying the result by 4, you can use parentheses to group the addition operation: (2 + 3) \* 4, which will give you a result of 20.

It's important to follow the order of operations in Excel when creating complex formulas, to ensure that the calculations are accurate and give you the desired result.

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

1. **SUM:** Adds up a range of cells or values.

Syntax: =SUM(range)

Example: =SUM(A1:A10)

1. **IF:** Evaluates a condition and returns one value if the condition is true and another value if the condition is false.

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

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

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

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

Example: =VLOOKUP(A1,Sheet2!A1:B10,2,FALSE)

1. **COUNT:** Counts the number of cells in a range that contain numbers.

Syntax: =COUNT(range)

Example: =COUNT(A1:A10)

1. **CONCATENATE:** Joins two or more text strings into one string.

Syntax: =CONCATENATE(text1,text2,...)

Example: =CONCATENATE("Hello"," ","world")

Here are the basic syntax examples for SUM and IF functions respectively:

SUM:

=SUM(A1:A10)

This formula adds the values in cells A1 through A10.

IF:

=IF(A1>10,"Yes","No")

This formula checks if the value in cell A1 is greater than 10. If it is, it returns "Yes". If it isn't, it returns "No".

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

The SUBTOTAL function in Excel is used to calculate a subtotal of a range of values in a table. It is often used in large data sets to summarize data and provide totals or subtotals of specific columns or rows.

The SUBTOTAL function is particularly useful when working with filtered data, as it can be set to ignore the values that are hidden by the filter. This makes it a useful tool for creating reports and analyzing data.

Here are some scenarios where the SUBTOTAL function can be useful:

Subtotalling a range of values: If you have a large data set with multiple columns of data, you can use the SUBTOTAL function to calculate the sum, average, count, or other aggregate functions for a specific range of values.

Creating a summary report: If you need to create a summary report that shows totals or subtotals for specific categories or groups, you can use the SUBTOTAL function to calculate the values for each group.

Filtering data: If you have filtered data and you want to calculate the subtotal of the visible data only, you can use the SUBTOTAL function with the "Ignore hidden rows" option to exclude the hidden rows from the calculation.

Overall, the SUBTOTAL function is a powerful tool that can be used to analyze and summarize large data sets quickly and easily, and is particularly useful when working with filtered data.

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

The VLOOKUP function in Excel is used to search for a specific value in the first column of a table and then return a corresponding value from a specified column in the same row. The syntax of the VLOOKUP function is as follows:

=VLOOKUP(lookup\_value,table\_array,col\_index\_num,range\_lookup)

lookup\_value: This is the value that you want to look up in the first column of the table.

table\_array: This is the range of cells that contains the table of data. The table\_array should include the lookup\_value column and the column(s) that contain the value(s) that you want to return.

col\_index\_num: This is the column number of the table\_array that contains the value that you want to return. The leftmost column in the table\_array is column 1.

range\_lookup: This is an optional argument that specifies whether you want an exact match or an approximate match. If you set this argument to FALSE or 0, the function will return an exact match. If you set it to TRUE or 1, the function will return an approximate match.

Here's an example of the VLOOKUP function:

Suppose you have a table of sales data with three columns: Product, Salesperson, and Sales. You want to look up the sales for a specific product and salesperson. Here's how you could use the VLOOKUP function:

=VLOOKUP("ProductA",A2:C10,3,FALSE)

In this example:

"ProductA" is the lookup value that you want to find in the first column of the table (column A).

A2:C10 is the range of cells that contains the table of data.

3 is the column number of the table that contains the sales data that you want to return (column C).

FALSE tells the function to look for an exact match.

The VLOOKUP function would search for "ProductA" in the first column of the table, and if it finds a match, it would return the value in column C (Sales) for that row.