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## Advance Excel Assignment 2

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

**Ans:-** In Microsoft Excel, the dollar sign (\$) is used as a special character in cell references to create an absolute reference.

By default, when a formula or function is copied and pasted to other cells in Excel, the cell references in the formula will change relative to the new location. However, by using the dollar sign, you can lock the cell reference to a specific row or column, preventing it from changing as you copy and paste the formula.

Here's how the dollar sign works in Excel:

- `$A$1`: Absolute reference for cell A1 (both column and row are locked).
- `$A1`: Absolute column reference for column A (only column is locked).
- `A$1`: Absolute row reference for row 1 (only row is locked).

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

**Ans:-** To change a cell reference from relative to absolute or mixed in Excel, you need to use the dollar sign (\$) to lock the row and/or column. Here are the steps to do so:

- Select the cell with the formula containing the reference you want to change.
- Click on the reference in the formula that you want to make absolute or mixed.
- Add the dollar sign (\$) in front of the row and/or column that you want to lock.

For example, if you want to change the cell reference from relative to absolute in cell B2, where the formula refers to cell A2, you would do the following:

- Select cell B2.
- Click on the reference to cell A2 in the formula bar.
- Add the dollar sign (\$) in front of both the column and row reference, so that it reads `$A$2`.

This will make the reference absolute, meaning that it will not change when the formula is copied or moved to another cell.

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To make a mixed reference, where either the row or column is locked but not both, you would add the dollar sign (\$) in front of the row or column that you want to lock, but not both. For example, to lock the column but not the row in cell B2, you would change the reference to \$A2.

Once you have made the changes, press Enter or click outside the formula bar to apply the changes. The cell reference will now be absolute or mixed, depending on how you modified it.

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

**Ans:** The order of operations in Excel refers to the sequence in which mathematical operations are performed in a formula. Excel uses a specific order of operations to ensure that calculations are performed correctly and consistently. The order of operations in Excel is as follows:

- Parentheses: Operations inside parentheses are performed first. If a formula has multiple sets of parentheses, the innermost set is calculated first.
- Exponents: Operations involving exponents (raising a number to a power) are performed second.
- Multiplication and Division: Multiplication and division operations are performed next, from left to right.
- Addition and Subtraction: Addition and subtraction operations are performed last, from left to right.

It is important to note that Excel also follows the left-to-right rule when two operators have the same precedence level. For example, if a formula has both multiplication and division operations, the operation on the left will be performed first.

It is important to remember the order of operations when creating complex formulas in Excel to ensure that your calculations are accurate.

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

**Ans:** In my opinion, the top 5 functions in Excel are:

- **SUM**: Adds a range of cells.
  - Syntax: =SUM(range)
  - Example: =SUM(A1:A10)
- **AVERAGE**: Calculates the average of a range of cells.
  - Syntax: =AVERAGE(range)
  - Example: =AVERAGE(A1:A10)
- **IF**: Tests whether a condition is true or false, and performs a specified action based on the result.
  - Syntax: =IF(logical\_test, value\_if\_true, value\_if\_false)
  - Example: =IF(A1>10, "Pass", "Fail")

- VLOOKUP: Searches for a value in the first column of a table array and returns a corresponding value in the same row from another column in the table array.
  - Syntax: =VLOOKUP(lookup\_value, table\_array, col\_index\_num, [range\_lookup])
  - Example: =VLOOKUP(A1, B1:C10, 2, FALSE)
- COUNTIF: Counts the number of cells within a range that meet a specified condition.
  - Syntax: =COUNTIF(range, criteria)
  - Example: =COUNTIF(A1:A10, ">10")

Here are basic syntax examples for two of these functions:

- SUM:
  - Syntax: =SUM(range)
  - Example: =SUM(A1:A10)

In this example, the SUM function is used to add up the values in cells A1 through A10.

- IF:
  - Syntax: =IF(logical\_test, value\_if\_true, value\_if\_false)
  - Example: =IF(A1>10, "Pass", "Fail")

In this example, the IF function is used to test whether the value in cell A1 is greater than 10. If it is, the formula will return "Pass", and if it is not, the formula will return "Fail".

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

**Ans:-** The SUBTOTAL function in Excel is used to calculate a subtotal of a range of values, while also allowing you to ignore any other subtotals that may be present within that range. This can be particularly useful when working with large data sets or tables that have multiple levels of grouping.

Here are some situations when you may want to use the SUBTOTAL function:

- When you want to calculate a total or subtotal for a specific group of items within a larger data set, such as sales by region or product category.
- When you want to ignore any other subtotals that may be present within that range, in order to avoid double-counting or other errors in your calculations.
- When you want to easily switch between different types of calculations, such as sum, average, or maximum, without having to modify your formulas each time.
- When you want to insert subtotals or grand totals into a table or report, in order to provide a summary of the data and make it easier to understand.

To use the SUBTOTAL function, you first need to select the range of cells that you want to subtotal, and then enter the function into a cell outside of that range. The function takes two arguments: the first is the type of calculation you want to perform (such as sum, average, or count), and the second is the range of cells to be included in the calculation. You can also specify whether you want to include or exclude any other subtotals in the range.

For example, if you have a table of sales data with multiple regions and products, you could use the SUBTOTAL function to calculate the total sales for each region, while also ignoring any subtotals for each product category. This would allow you to get an accurate subtotal for each region, without double-counting any of the sales data.

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

**Ans:-** The syntax of the VLOOKUP function in Excel is as follows:

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

Let's break down each of the terms in this syntax:

- **lookup\_value:** This is the value that you want to find in the first column of the table array. This can be a value, a cell reference, or a formula that returns a value.
- **table\_array:** This is the range of cells that contains the data you want to search. The first column of this range must contain the lookup\_value, and the data you want to return must be to the right of this column.
- **col\_index\_num:** This is the column number in the table\_array that contains the data you want to return. For example, if you want to return the data from the third column of the table\_array, you would enter 3 as the col\_index\_num.
- **range\_lookup:** This is an optional argument that specifies whether you want an exact match (FALSE) or an approximate match (TRUE or omitted). If you enter FALSE, the function will only return results where the lookup\_value exactly matches a value in the first column of the table\_array. If you enter TRUE or omit this argument, the function will return the closest match that is less than or equal to the lookup\_value.

In simpler terms, the VLOOKUP function allows you to search for a value in a table, and then return a corresponding value from a specified column in that table. It is commonly used to lookup and retrieve information from large data sets, such as customer records or sales data.

For example, suppose you have a table of customer information that includes their names, email addresses, and phone numbers. You could use the VLOOKUP function to search for a specific customer's email address based on their name. The lookup\_value would be the customer's name, the table\_array would be the range of cells containing the customer data, the col\_index\_num would be the column number containing the email addresses, and the range\_lookup would typically be set to FALSE to ensure an exact match.

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