Advance Excel Assignment 2

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

In Excel, the dollar sign ($) is used to create absolute cell references in formulas. When you use a dollar sign before the column letter, row number, or both in a cell reference, it indicates that the reference should remain fixed or absolute when you copy the formula to other cells.

There are two types of absolute references:

1. **Absolute Column and Row Reference (A1):**
    - If you put a dollar sign before both the column letter and the row number (e.g., **A1**), it creates an absolute reference for both the column and the row. When you copy a formula containing this reference to other cells, the reference will not change. For example, if you copy a formula from cell B2 to cell C2, the reference **A1** will stay as **A1**.
2. **Mixed References ($A1 or A$1):**
    - If you put a dollar sign before either the column letter or the row number (e.g., **$A1** or **A$1**), it creates a mixed reference. When you copy a formula containing this type of reference, the absolute part (with the dollar sign) remains fixed, while the other part adjusts. For example, if you copy a formula from cell B2 to cell C2, the reference **$A1** will change to **$B1**, but the row part (**1**) will stay the same.

The dollar sign is useful when you want to lock a reference to a specific cell or range in a formula, especially when copying that formula to other cells. It provides control over how references behave, allowing you to make formulas that can be copied to multiple cells while ensuring that certain references remain constant.

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

To change a reference from relative to absolute or mixed in Excel, you can manually edit the formula or use a shortcut while editing the formula. Here's how you can do it:

Method 1: Manually Editing the Formula

1. Select the Cell with the Formula:
    - Click on the cell containing the formula that you want to modify.
2. Edit the Formula:
    - Either double-click on the cell or click in the formula bar to edit the formula.
3. Change the Reference:
    - In the formula, navigate to the cell reference that you want to change.

- Add or remove the dollar sign ($) before the column letter, row number, or both as needed.

4. Press Enter:
    - Press Enter to apply the changes.

Method 2: Using a Shortcut

1. Select the Cell with the Formula:
    - Click on the cell containing the formula.
2. Edit the Formula:
    - Press F2 to enter edit mode for the selected cell.
3. Toggle the Reference Type:
    - While in edit mode, use the arrow keys to navigate to the reference you want to change.
    - Press F4 to toggle between relative, absolute, and mixed references.
        - Pressing F4 once changes a relative reference to absolute.
        - Pressing F4 again changes it to an absolute column reference.
        - Pressing F4 again changes it to an absolute row reference.
        - Pressing F4 once more converts it back to a relative reference.
4. Press Enter:
    - Press Enter to apply the changes.

These methods allow you to manually control the type of reference in your formulas. The ability to switch between relative, absolute, and mixed references gives you flexibility when copying formulas to different locations within your worksheet.

3. Explain the order of operations in excel?

In Microsoft Excel, the order of operations, also known as the precedence of operators, determines the sequence in which Excel performs calculations in a formula. Understanding this order is crucial for getting accurate results when working with complex formulas. The order of operations in Excel follows the acronym PEMDAS:

1. **P**arentheses: Operations inside parentheses are performed first. If there are nested parentheses, Excel evaluates the innermost ones first.
2. **E**xponents: Excel calculates exponentiation (raising a number to a power) next.
3. **M**ultiplication and **D**ivision: After handling parentheses and exponents, Excel performs multiplication and division from left to right.

4. Addition and **S**ubtraction: Finally, Excel performs addition and subtraction from left to right.

It's important to note that within multiplication and division, as well as addition and subtraction, Excel follows a left-to-right calculation order. If there are multiple operators of the same type (e.g., two multiplication operators), Excel will calculate 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?

Excel offers a wide range of functions, and the "top" functions can vary based on individual needs and preferences. However, there are a few functions that are commonly considered essential and widely used. Here are five functions:

1. SUM
2. VLOOKP
3. IF
4. INDEX-MATCH
5. AVERAGE

The basic syntax for two of them are:

1. **SUM Function:**
    - Purpose: Adds up all the numbers in a range.
    - Syntax: **=SUM (number1, [number2], ...)**

2. **VLOOKUP Function:**
    - Purpose: Searches for a value in the first column of a range and returns a value in the same row from another column.
    - Syntax: **=VLOOKUP (lookup_value, table_array, col_index_num, [range_lookup])**

5. When would you use the subtotal function?

The SUBTOTAL function in Excel is typically used in scenarios where you want to perform calculations on a range of data, and you want to exclude other SUBTOTAL or similar functions from the calculation. It is particularly useful when you have a dataset with grouped or nested subtotals, and you want to calculate subtotals at different levels without including the results of nested subtotals in the higher-level calculations.

Here are some common situations when you might use the SUBTOTAL function:

1. **Grouped Data:**
    - When you have data that is grouped or sorted, and you want to calculate subtotals for each group without including subtotals from inner groups in the higher-level subtotals.
2. **Filtering Data:**
    - When you have filtered data, and you want to calculate subtotals only for the visible (filtered) rows without including hidden rows.
3. **Nested Subtotals:**
    - When you have multiple levels of subtotals in your dataset, and you want to calculate subtotals at each level without including the subtotals from lower levels in the higher-level subtotals.

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 value in the first column of a range (table or array) and retrieve a value in the same row from another column.

The syntax of the VLOOKUP function is as follows:

=VLOOKUP (lookup_value, table_array, col_index_num, [range_lookup])

Now, let's break down the terms in the syntax:

1. **lookup_value:**
    - This is the value you want to search for in the first column of the table_array. It can be a specific value, a reference to a cell containing the value, or a text string.
2. **table_array:**
    - This is the range of cells that contains the data you want to search. The first column of this range is where Excel looks for the **lookup_value**, and the data you want to retrieve is in the same row but in a different column. The **table_array** can be specified as an absolute reference (e.g., A1:B10) or a named range.
3. **col_index_num:**
    - This is the column number in the **table_array** from which to retrieve the value. The first column in the **table_array** is column 1, the second column is column 2, and so on. Choose the column number that corresponds to the data you want to return.

4. **range_lookup:**
    - This is an optional argument that specifies whether you want an exact match or an approximate match.
        - If **range_lookup** is TRUE or omitted, VLOOKUP will look for an approximate match. It assumes that the first column of the **table_array** is sorted in ascending order, and it finds the largest value less than or equal to the **lookup_value**.
        - If **range_lookup** is FALSE, VLOOKUP will look for an exact match. If an exact match is not found, it returns an error.