Advance Excel Assignment 2

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

   Solution: In Excel, the dollar sign ($) is used to create an absolute reference in a cell reference.

   By default, cell references in Excel are relative references, which means that they adjust based on the location of the formula. For example, if you have a formula in cell B1 that references cell A1, and you copy and paste the formula into cell B2, the cell reference will change to A2 because it is relative to the formula's location.

   However, if you add dollar signs to the cell reference, you create an absolute reference that does not change when the formula is copied or moved to a new location. Here are some examples:

   A1: Absolute reference to cell A1
   A$1: Mixed reference that is absolute for column A and relative for row 1
   $A1: Mixed reference that is absolute for row 1 and relative for column A
   When you use an absolute or mixed reference with a dollar sign, you are telling Excel to always refer to that specific cell or range, regardless of where the formula is located.

   The dollar sign is also used in formatting currency and numbers in Excel, where it is used to fix the decimal point or currency symbol in a specific position in a cell.

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

   Solution: To change a cell reference from relative to absolute or mixed, you need to add dollar signs ($) to the reference. Here's how:

   1) Select the cell containing the formula with the relative reference you want to change.

   2) Click on the cell reference in the formula bar. Alternatively, you can use the F2 key to edit the formula directly in the cell.

   3) Place the cursor where you want to add the dollar signs to make the reference absolute or mixed.

   4) Add a dollar sign ($) before the column letter to make the column reference absolute.

   5) Add a dollar sign ($) before the row number to make the row reference absolute.

   6) To create a mixed reference, add a dollar sign before the column letter or row number, depending on which part of the reference you want to make absolute.

   7) Press Enter to apply the changes and update the formula.

   Alternatively, you can use the keyboard shortcut to quickly add dollar signs to a cell reference:

   a) To add dollar signs to make a cell reference absolute, press the F4 key after selecting the reference in the formula bar or in the cell.
   b) To create a mixed reference, press the F4 key after selecting the part of the reference that you want to make absolute.

By changing a cell reference from relative to absolute or mixed, you can ensure that the formula will always reference the same cell or range, even if it is copied or moved to a new location in the worksheet.

3. Explain the order of operations in excel?

Solution: The order of operations in Excel determines the sequence in which mathematical and logical operations are performed in a formula. Excel follows the same order of operations as most programming languages, which is commonly known as "PEMDAS" or "BEDMAS" (depending on where you learned it). Here's the breakdown:

1) Parentheses: Excel calculates expressions within parentheses first. If a formula contains nested parentheses, Excel calculates the innermost expressions first and then works outward.

2) Exponents: Excel calculates expressions with exponents (i.e., raised to a power) next.

3) Multiplication and Division: Excel performs multiplication and division operations next, from left to right, based on the order in which they appear in the formula.

4) Addition and Subtraction: Excel performs addition and subtraction operations last, from left to right, based on the order in which they appear in the formula.

It is important to note that if multiple operations have the same precedence (e.g., addition and subtraction), Excel performs the operation from left to right. For example, in the formula "3+4-2", Excel will perform the addition first (3+4=7) and then the subtraction (7-2=5).

To change the order of operations in a formula, you can use parentheses to group operations and force Excel to calculate them in a specific order. By using parentheses to control the order of operations, you can ensure that your formulas are calculated correctly and produce the desired results.

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

Solution: The five commonly used functions in Excel:

(1) SUM: The SUM function is used to add up a range of numbers in a worksheet.
Syntax: =SUM(range)

Example: =SUM(A1:A10) will add up the values in cells A1 through A10.

(2) AVERAGE: The AVERAGE function is used to calculate the arithmetic mean of a range of numbers.
Syntax: =AVERAGE(range)

Example: =AVERAGE(A1:A10) will calculate the average of the values in cells A1 through A10.

(3) COUNT: The COUNT function is used to count the number of cells in a range that contain numerical values.
Syntax: =COUNT(range)

Example: =COUNT(A1:A10) will count the number of cells in the range A1 through A10 that contain numerical values.

(4) IF: The IF function is used to perform a logical test and return one value if the test is true and another value if the test is false.

Syntax: =IF(logical_test, value_if_true, value_if_false)

Example: =IF(A1>10, "Yes", "No") will test if the value in cell A1 is greater than 10, and return "Yes" if true and "No" if false.

(5) VLOOKUP: The VLOOKUP function is used to search for a value in the first column of a table and return a value in the same row from a specified column.

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

Example: =VLOOKUP(A1, B1:C10, 2, FALSE) will search for the value in cell A1 in the first column of the range B1 through C10, and return the value in the second column of the same row.

These are just a few of the many functions available in Excel, but they are commonly used in a variety of applications.

Here is a basic syntax example for two of these functions:

a) SUM: =SUM(A1:A10) adds up the values in cells A1 through A10.

b) IF: =IF(A1>10, "Yes", "No") tests if the value in cell A1 is greater than 10, and returns "Yes" if true and "No" if false.

5. When would you use the subtotal function?

Solution: The SUBTOTAL function in Excel is used to calculate subtotals for a range of data based on a specified function, such as SUM, AVERAGE, COUNT, MIN, MAX, etc. The function is particularly useful when working with large datasets or when you need to quickly calculate subtotals for different groups within a dataset.

Here are some scenarios where you might use the SUBTOTAL function:

1) Creating a summary table: If you have a large dataset and you want to create a summary table that shows subtotals for different groups, you can use the SUBTOTAL function to quickly calculate subtotals for each group.

2) Filtering data: If you have a large dataset and you want to filter the data to show only certain records, you can use the SUBTOTAL function to calculate subtotals for the filtered data. This can be useful for creating reports or for analyzing specific subsets of data.

3) Conditional formatting: If you want to apply conditional formatting to a range of cells based on the values in another column, you can use the SUBTOTAL function to calculate subtotals for the values in that column. This can be useful for highlighting cells that meet certain criteria or for visualizing patterns in the data.

Overall, the SUBTOTAL function is a versatile tool that can help you quickly calculate subtotals for a range of data in Excel, and it can be particularly useful when working with large datasets or when you need to calculate subtotals for different groups within a dataset.

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

Solution: The VLOOKUP function is one of the most commonly used functions in Excel. It is used to search for a value in the first column of a table and return a value in the same row from a specified column. Here is the syntax for the VLOOKUP function:

Syntax: VLOOKUP(lookup_value, table_array, col_index_num, [range_lookup])
Let's break down the terms in this syntax:

lookup_value: This is the value that you want to look up in the first column of the table. This can be a value, a reference to a cell, or a formula that returns a value.

table_array: This is the range of cells that contains the table you want to search. The first column of this range must contain the lookup value, and the other columns can contain any additional data you want to return. This can be specified using an absolute or relative cell reference, or it can be specified as a named range.

col_index_num: This is the number of the column within the table_array that contains the data you want to return. The first column in the table_array is column 1, the second column is column 2, and so on.

range_lookup: This is an optional argument that specifies whether you want an exact match or an approximate match for the lookup_value. If you set this argument to TRUE or omit it, Excel will search for an approximate match based on the closest match to the lookup_value. If you set this argument to FALSE, Excel will only return an exact match.

Here is an example of how you might use the VLOOKUP function:

Suppose you have a table of student grades with names in the first column, and you want to look up the grade for a specific student. You could use the VLOOKUP function to do this as follows:

Syntax: =VLOOKUP("John", A1:B10, 2, FALSE)
In this example, "John" is the lookup value, A1:B10 is the table array, 2 is the column index number (since the grades are in the second column of the table), and FALSE specifies an exact match. The VLOOKUP function would search for "John" in the first column of the table, and return the grade in the second column of the same row.