**Data Analysis Using Excel**

**Week-2**

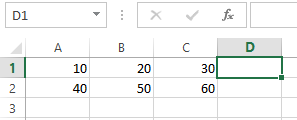
**Long Descriptive Questions**

**1, How do you remove a name error in excel? Explain with an example**

In Excel, a "Name Error" typically occurs when a formula or function refers to a named range, cell, or function that doesn't exist or cannot be recognized by Excel. You can resolve a Name Error by correcting the reference to a valid cell or range name or by ensuring that the named range or function is defined correctly. Here's how to remove a Name Error in Excel with an example:

Example:

Suppose you have a simple Excel worksheet with the following data:



You want to create a formula in cell D1 to sum the values in column A and column B and display the result in cell D1. So, you enter the following formula in cell D1:

**=Sum(A1, B1)**

However, when you press Enter, you get a Name Error because you used the "Sum" function incorrectly. Excel doesn't recognize "Sum" as a valid function.

Here's how to remove the Name Error:

**Use the Correct Function:**

In Excel, the correct function for summing values is "SUM," not "Sum." So, you should use the correct function as follows:

In cell D1, enter the formula:

**=SUM(A1, B1)**

Press Enter, and Excel will correctly calculate and display the sum of values in cells A1 and B1 (i.e., 10 + 20 = 30).

**Check Named Ranges:**

Sometimes, Name Errors can occur if you've defined named ranges and you mistype the name in a formula. To check and correct named ranges, follow these steps:

* Go to the "Formulas" tab in the Excel ribbon.
* Click on "Name Manager" in the "Defined Names" group.
* In the Name Manager dialog box, review the list of named ranges.
* If you find any incorrectly defined named ranges, you can edit or delete them as needed.

**Check for Typos and Syntax Errors:**

Name Errors can also occur due to typos or syntax errors within a formula. Double-check your formula for any typos, missing parentheses, or incorrect cell references.

**Use Cell References:**

Ensure that you are using correct cell references (e.g., A1) in your formula. If you reference a non-existent cell or a cell with an error, it can lead to a Name Error

**2, How to assign a name to a range of cells in excel? Explain**

* Choose the cell range (a group of cells) that you want to name. This can be a single column, row, or a rectangular block of cells.
* Go to the "Formulas" tab in the Excel ribbon. This is where you'll find the tools related to range names.
* In the "Defined Names" group, click on the "Name Manager" button. This will open the Name Manager Dialog box.
* In the Name Manager Dialog box, click the "New" button. This will open the "New Name" dialog box.
* In the "Name" field, enter the name you want to assign to the selected range. Make sure the name is meaningful and descriptive.
* Choose the "Scope" for the name. There are two options:
* The name is available throughout the entire workbook.
* The name is available only on the current worksheet.
* In the "Refers to" field, you'll see the formula that references the selected range. By default, it will be something like Sheet1!$A$1:$A$10 (depending on the sheet and range you selected).
* You can directly edit the formula in the "Refers to" field if needed. You can refer to a different range or formula if desired.
* Click the "OK" button in the "New Name" dialog box to create the named range.
* Close

**3, what are the various categories of functions available in Excel? Explain with an example.**

Excel provides a wide range of functions for performing calculations and operations on your data. These activities are divided into several categories based on their specific purpose. Here are some of the main types of functions in Excel, with examples

**Math Functions:**

* These functions are used for basic mathematical and trigonometric calculations.
* Example: The SUM function adds up a range of numbers

**=SUM(A1:A5)**

**Statistical Functions:**

* Statistical functions are used for analyzing and summarizing data statistically.
* Example: The AVERAGE function calculates the average of a range of numbers.

**=AVERAGE(B1:B10)**

**Date and Time Functions:**

* These functions help you work with date and time values.
* Example: The TODAY function returns the current date.

**=TODAY()**

**Logical Functions:**

* Logical functions are used for making decisions based on logical tests.
* Example: The IF function performs a conditional test and returns one value if the test is true and another if false**.**

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

**Lookup and Reference Functions:**

* These functions help you search for and retrieve data from a table or range.
* Example: The VLOOKUP function searches for a value in a table and returns a corresponding value from a specified column.

**=VLOOKUP("Product A", A1:B10, 2, FALSE)**

**Financial Functions:**

* Financial functions are used for financial calculations, such as loan payments and future value.
* Example: The PMT function calculates the monthly payment for a loan.

**=PMT(0.05/12, 5\*12, -25000)**

**Database Functions:**

* Database functions are used for working with database-like lists and tables.
* Example: The DSUM function calculates the sum of values in a database based on specified criteria.

**=DSUM(Database, "Sales", Criteria)**

**Engineering Functions:**

* Engineering functions are used for specialized engineering calculations.
* Example: The BIN2DEC function converts a binary number to decimal.

**=BIN2DEC("1101")**

**Information Functions:**

* Information functions provide information about cell contents and formatting.
* Example: The ISNUMBER function checks if a value is a number.

**=ISNUMBER(A1)**

**4, Differentiate sum and sum if functions**

|  |  |  |
| --- | --- | --- |
|  | **SUM Function** | **SUMIF Function:** |
| **Purpose:** | The SUM function is used to add up a range of numbers or values. It calculates the total of all the numbers in a specified range, regardless of any conditions or criteria. | The SUMIF function is used to sum values in a range based on a specific condition or criteria. It allows you to add up only those numbers that meet a specified condition |
| **Syntax:** | The basic syntax of the SUM function is:  **=SUM(number1, number2, ...)**  You provide a list of numbers as arguments, and the function adds them together. | The basic syntax of the SUMIF function is:  **=SUMIF(range, criteria, [sum range])**  **Range:** The range of cells that you want to evaluate against the criteria.  **Criteria:** The condition that must be met for a cell to be included in the sum.  **sum range (optional):** The range of cells containing the values you want to sum. If not provided, Excel will use the range for summation. |
| **Example:** | To calculate the total sales for a list of products in cells A1 through A10, you can use the SUM function like this:  **=SUM(A1:A10)** | To calculate the total sales for products that have "Apples" in the adjacent column (criteria) in cells A1 through A10 and their corresponding sales values in cells B1 through B10 (sum range), you can use the SUMIF function like this:  **=SUMIF(A1:A10, "Apples", B1:B10** |