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The tutorial shows how to use VLOOKUP formula in Excel to compare two columns to return common values (matches) or find missing data (differences).When you have data in two different lists, you may often need to compare them to see what information is missing in one of the lists or what data is present in both. Comparison can be done in many different ways - which method to use depends on exactly what you want from it. When you have two columns of data and want to find out which data points from one list exist in the other list, you can use the VLOOKUP function to compare the lists for common values.To build a VLOOKUP formula in its basic form, this is what you need to do:For lookup_value (1st argument), use the topmost cell from List 1.For table_array (2nd argument), supply the entire List 2.For col_index_num (3rd argument), use 1 as there is just one column in the array.For range_lookup (4th argument), set FALSE - exact match.Suppose you have the names of participants in column A (List 1) and the names of those who have passed through the qualification rounds in column B (List 2). You want to compare these 2 lists to determine which participants from Group A made their way to the main event. To do this, use the following formula.=VLOOKUP(A2, $C$2:$C$9, 1, FALSE)The formula goes to cell E2, and then you drag it down through as many cells as there are items in List 1.Please notice that table_array is locked with absolute references ($C$2:$C$9) so that it remains constant when you copy the formula to the below cells.As you can see, the names of the qualified athletes show up in column E. For the remaining participants, a #N/A error appears indicating that their names are not available in List 2. The VLOOKUP formula discussed above perfectly fulfills its main objective - returns common values and identifies missing data points. However, it delivers a bunch of #N/A errors, which may confuse inexperienced users making them think that something is wrong with the formula.To replace errors with blank cells, use VLOOKUP in combination with the IFNA or IFERROR function in this way:=IFNA(VLOOKUP(A2, $C$2:$C$9, 1, FALSE), "")Our improved formula returns an empty string ("") instead of #N/A. You can also return your custom text such as "Not in List 2", "Not present", or "Not available". For example:=IFNA(VLOOKUP(A2, $C$2:$C$9, 1, FALSE), "Not in List 2")That is the basic VLOOKUP formula to compare two columns in Excel. Depending on your particular task, it can be modified as shown in further examples. In real life, the columns you need to compare are not always on the same sheet. In a small dataset, you can try spotting the differences manually by viewing two sheets side by side. To search in another worksheet or workbook with formulas, you have to use external reference. The best practice is to start typing the formula in your main sheet, then switch to the other worksheet and select the list using the mouse - an appropriate range reference will be added to the formula automatically.Assuming List 1 is in column A on Sheet1 and list 2 is in column A on Sheet2, you can compare two columns and find matches using this formula:=IFNA(VLOOKUP(A2, Sheet2!$A$2:$A$9, 1, FALSE), "")For more information, please see:VLOOKUP from another sheetVLOOKUP from different workbook In the previous examples, we discussed a VLOOKUP formula in its simplest form:=IFNA(VLOOKUP(A2, $C$2:$C$9, 1, FALSE), "")The result of that formula is a list of values that exist in both columns and blank cells in place of the values not available in the second column.To get a list of common values without gaps, just add auto-filter to the resulting column and filter out blanks.In Excel for Microsoft 365 and Excel 2021 that support dynamic arrays, you can make use of the FILTER function to sift out blanks dynamically. For this, utilize the IFNA VLOOKUP formula as the criteria for FILTER:=FILTER(A2:A14, IFNA(VLOOKUP(A2:A14, C2:C9, 1, FALSE), "")"")Please pay attention that in this case we supply the entire List 1 (A2:A14) to the lookup_value argument of VLOOKUP. The function compares each of the lookup values against List 2 (C2:C9) and returns an array of matches and #N/A errors representing missing values. The IFNA function replaces errors with empty strings and serves the results to the FILTER function, which filters out blanks ("") and outputs an array of matches as the final result.Alternatively, you can use the ISNA function to check the result of VLOOKUP and filter the items evaluating to FALSE, i.e. values other than #N/A errors:=FILTER(A2:A14, ISNA(VLOOKUP(A2:A14, C2:C9, 1, FALSE))=FALSE)The same result can be achieved with the XLOOKUP function, which makes the formula even simpler. Due to the ability of XLOOKUP to handle #N/A errors internally (optional if_not_found argument), we can do without the IFNA or ISNA wrapper:=FILTER(A2:A14, XLOOKUP(A2:A14, C2:C9, C2:C9,"")"") To compare 2 columns in Excel to find differences, you can proceed in this way:Write the core formula to search for the first value from List 1 (A2) in List 2 ($C$2:$C$9): VLOOKUP(A2, $C$2:$C$9, 1, FALSE)Nest the above formula in the ISNA function to check the VLOOKUP's output for #N/A errors. In case of an error, ISNA yields TRUE, otherwise FALSE: ISNA(VLOOKUP(A2, $C$2:$C$9, 1, FALSE))Use the ISNA VLOOKUP formula for the logical test of the IF function. If the test evaluates to TRUE (#N/A error), return a value from List 1 in the same row. If the test evaluates to FALSE (a match in List 2 is found), return an empty string.The complete formula takes this form:=IF(ISNA(VLOOKUP(A2, $C$2:$C$9, 1, FALSE)), A2, "")To get rid of the blanks, apply Excel's Filter as demonstrated in the above example.In Excel 365 and Excel 2021, you can have the result list filtered dynamically. For this, simply place the ISNA VLOOKUP formula in the include argument of the FILTER function:=FILTER(A2:A14, ISNA(VLOOKUP(A2:A14, C2:C9, 1, FALSE)))Another way is to use XLOOKUP for criteria - the function returns empty strings ("") for missing data points, and you filter the values in List 1 for which XLOOKUP returned empty strings (=""):=FILTER(A2:A14, XLOOKUP(A2:A14, C2:C9, C2:C9,"")="") If you want to add text labels to the first list indicating which values are available in the second list and which are not, use the VLOOKUP formula together with the IF and ISNA/ISERROR functions.For example, to identify names that are in both columns A and D and those that are only in column A, the formula is:=IF(ISNA(VLOOKUP(A2, $D$2:$D$9, 1, FALSE)), "Not qualified", "Qualified")Here, the ISNA function catches the #N/A errors generated by VLOOKUP and passes that intermediate result to the IF function for it to return the specified text for errors and another text for successful lookups.In this example, we used "Not qualified"/"Qualified" labels, which are suitable for our sample dataset. You can replace them with "Not in List 2"/"In List 2", "Not available"/"Available" or any other labels you see fit.This formula is best to be inserted in a column adjacent to List 1 and copied through as many cells as there are items in your list.One more way to identify matches and differences in 2 columns is using the MATCH function:=IF(ISNA(MATCH(A2, $D$2:$D$9, 0)), "Not in List 2", "In List 2")A few other ways to accomplish the task are described in this tutorial: Check if value exists in a range. When working with tables containing related data, you may sometimes need to compare two columns in two different tables and return a matching value from another column. In fact, it is the primary use of the VLOOKUP function, the purpose it was designed for.For example, to compare the names in columns A and D in the two tables below and return a time from column E, the formula is:=VLOOKUP(A3, $D$3:$E$10, 2, FALSE)To hide #N/A errors, use the proven solution - the IFNA function:=IFNA(VLOOKUP(A3, $D$3:$E$10, 2, FALSE), "")Instead of blanks, you can return any text you want for missing data points - just type it in the last argument. For instance:=IFNA(VLOOKUP(A3, $D$3:$E$10, 2, FALSE), "Not available")Besides VLOOKUP, the task can be fulfilled with a few other lookup functions.Personally, I'd rely on a more flexible INDEX MATCH formula:=IFNA(INDEX($E$3:$E$10, MATCH(A3, $D$3:$D$10, 0)), "")Or use the modern successor of VLOOKUP - the XLOOKUP function, available in Excel 365 and Excel 2021:=XLOOKUP(A3, $D$3:$D$10, $E$3:$E$10, "")To get the names of qualified participants from group A and their results, simply filter out blank cells in column B:=FILTER(A3:B15, B3:B15"") If you frequently do file or data comparison in Excel, these smart tools included in our Ultimate Suite can save your time immensely!Compare Tables - quick way to find duplicates (matches) and unique values (differences) in any two data sets such as columns, list or tables.Compare Two Sheets - find and highlight differences between two worksheets.Compare Multiple Sheets - find and highlight differences in multiple sheets at once. VLOOKUP in Excel to compare columns - examples (.xlsx file) The VLOOKUP function is undoubtedly the most common function of Excel. It is used to look up data vertically. It finds data from a column based on a given value that is located in another column. For some quick revision, here is what the VLOOKUP functions syntax looks like Syntax Highlighter=VLOOKUP (lookup_value, table_array, col_index_num, [range_lookup])Where: Lookup_value is the value to be looked up for. It must be situated in the leftmost column of the table_array. Table_array is the cell range where the lookup_value is located and from where the resulting value is to be returned. Column_index_number is the column number from where the values are to be returned. Range_lookup is an optional argument that defaults to TRUE or 1 (approximate match). To get an exact match, set it to FALSE or 0. Before I show you how VLOOKUP works with two spreadsheets, lets quickly brainstorm how it works within a single sheet (very simple and basic). Here is a dataset of some students marks and ages entered in Excel Close your eyes and imagine this list is not only 6 rows but thousands of rows long And out of this very huge data we need to find the grade of a student, say Alice Smith. Heres how youll set up the VLOOKUP function to fetch the grade of Alice Smith from this dataset. Step 1) Begin with writing an equal to sign and then the VLOOKUP function. Syntax Highlighter= VLOOKUP (Step 2) As the lookup value, refer to the cell that contains the student name whose grade is sought. Syntax Highlighter= VLOOKUP (A9,Step 3) Define the table array starting from the column that contains the student names. Syntax Highlighter= VLOOKUP (A9,A2:C7Step 4) As the column index number, write 3. This is because grades (that we want Excel to return) are populated in the third column starting from Column A (the first column of the table array). Step 5) For the range lookup mode, define FALSE as we want Excel to return the exact match. Step 6) Press Enter Syntax Highlighter= VLOOKUP (A9,A2:C7,3,FALSE)There it is. VLOOKUP fetches the grade for Alice Smith from the data thats A. This is how basic VLOOKUP works in Excel. Guess were done revising the basics. Lets now move to the next section that explains how you can VLOOKUP data between two sheets. Doing VLOOKUP in with two Excel sheets (actually multiple sheets) is not very different from doing VLOOKUP in a single sheet Going with the same data as above, the only difference is that this time we want to fetch the age and grade for these students. However, the ages are populated in another sheet. Surprisingly, the grades are also populated in altogether another sheet. However, we have student names present in all sheets, so taking it as the common data point, fetching all this data together in one sheet shouldnt be a problem Lets begin the looking up the dataset to find the ages of students. Step 1) Write the VLOOKUP function as follows. Syntax Highlighter= VLOOKUP (Step 2) As the lookup value, refer to the cell containing the students name. Syntax Highlighter= VLOOKUP (A2,Step 3) To define the table array, go to the sheet that contains students ages. Step 4) Select the range of cells containing this data. Excel will pick the sheet and cell reference automatically. Syntax Highlighter=VLOOKUP(A2, Ages!A2:A7, - Written by Puneet Gogia VLOOKUP is the easiest way to match two columns with each other and get result on which values match. In the below example, we have two lists of names. In the first, we have 20 names and in the second we have 10 names. Now you need to compare both columns with each other using VLOOKUP. You need to follow below steps: In column B, next to column A. In cell B2, enter the VLOOKUP. In the lookup_value, refer to the cell A2. For table_array, refer to the range D1:D11; to freeze the range, you can use a dollar sign ($D$1:$D11). Type 1 in the column_index_num. And in the range_index, enter 0 and close the function. Now, hit enter to get the result and then drop down the formula up to the last name. As you can see, four values in the column match the names in the second column. = VLOOKUP(A2,$D$1:$D$11,1,0)) And if you want to compare the second column with the first column, you can use the same formula. =VLOOKUP(C2,$A$1:$A$21,1,0) You need to freeze the range by using the dollar sign ($) in the table_array so that when you drag the formula down, it wont move the table_array along with it. As you can see, we have an #N/A error for the values not in the second column. Now to convert this error to something meaningful, you can use the below formula: =IF(ISERROR(VLOOKUP(A2,$D$1:$D$11,1,0)),"Not Available","Available") This formula uses ISERROR to check the error and then uses IF. If theres an error, it returns a value you have specified; otherwise, another value you have set. We have data from two teams that have some common members in two different worksheets named TeamA and TeamB. Well find the common names and the different names of the two teams. Method 1 Compare Two Columns in Different Excel Sheets and Return Common or Matched ValuesWe have created a new worksheet with data of Team B.Create a new column E to find the common names.Insert the following formula into cell E5: =VLOOKUP(B5,TeamA!B5:B20,1,FALSE) Drag the Fill Handle icon down.You will get the common names inserted in the column Team A. For the mismatched rows, youll get an #N/A Error. Using IFERROR with VLOOKUP Function to Treat the #N/A ErrorTo avoid the showing of #N/A Error in the column, use the following formula instead: =IFERROR(VLOOKUP(B5,TeamA!B5:B20,1,FALSE),"Not Found") Formula Breakdown:The syntax of IFERROR function: =IFERROR(value, value_if_error)As the value of IFERROR function, we have input our VLOOKUP. So, if there is no error, the output of the VLOOKUP formula will be the output of the IFERROR function.As the value_if_error argument, we have passed this value, Not Found. If the IFERROR function finds an error in the cell, it will output this text, Not Found.Heres the updated result. Using IF and ISNA with VLOOKUP Function to Handle the #N/A Error: =IF(ISNA(VLOOKUP(B5,TeamA!B5:D20,1,FALSE)),"Not Matched", "Matched") Formula Breakdown:ISNA returns a TRUE value if its argument is a N/A error, which is then used for the IF function.Heres the result of the new formula.Go back to the formula that outputs the names as results.Click on any cell of the dataset.Go to the Home tab on the top ribbon.Click on the Sort & Filter option and select Filter.You will filter drop-down arrows in each header of the dataset.Click on the Filter arrow in the Column Team A.Unmark the checkbox Not Found and press OK.You will see only the common or matched names of the two teams. Mismatched names are hidden by the Filter Feature. Method 2 Compare Two Columns in Different Worksheets and Find Missing ValuesCase 2.1 Using the Filter FeatureUse the VLOOKUP formula with the IFERROR function from Method 1.Go to the Filter option by clicking the Filter arrow in the column header of Team A.Unmark all the checkboxes except that saying Not Found.Press OK.You will see that only the mismatched names of Team B compared to Team A are shown in the dataset. Case 2.2 Using FILTER with VLOOKUP FunctionInsert the following formula into cell F5. =FILTER(B5:B20, ISNA(VLOOKUP(B5:B20, TeamA!B5:B20, 1, FALSE))) Formula Breakdown:The VLOOKUP function will find the common names between the range B5:B20 of the active worksheet and range B5:B20 of the worksheet TeamA and assign #N/A for the mismatched.The ISNA function will take only the cells that are assigned #N/A by VLOOKUP functions which means they are mismatched.The Filter function will insert only the cells from range B5:B20 which are mismatched and assigned #N/A. Method 3 Compare Two Lists in Different Worksheets and Return a Value from a Third Column+Change the column index number in the VLOOKUP. Wewant to get the age of the name James and the age values are contained in the 4th column of the selected VLOOKUP range in the TeamB worksheet.Insert the following formula into the cell E5: =FILTER(B5:B20, ISNA(VLOOKUP(B5:B20, TeamA!B5:B20, 1, FALSE))) We get the ages for the names that match the list in TeamA. For the mismatched names, we get an #N/A error.Read More: How to Compare Three Columns and Return a Value in Excel VLOOKUP for Multiple Columns in Different Sheets in Excel with One Return OnlyWere considering a situation with Item ID and Product Name of some products in a worksheet named W1 and Product Name and Price in another worksheet named W2. Well find the price of the product based on its ID.Make a new sheet and list item IDs you want to find in column B starting with B5.Insert this formula into cell C5 of that sheet: =VLOOKUP(VLOOKUP(B6,'W1'!B6:C19,2,FALSE),'W2'!B6:C19,2,FALSE) Lookup_value is VLOOKUP(B6,W1!B6:C19,2,FALSE). This second VLOOKUP will pull the Item ID from the W1table_array: is W2!B6:C19.Col_index_num is 2[range_lookup]: we want the exact match (FALSE)Drag the Fill Handle icon to apply the formula to other cells of the column. Download the Practice Workbook Compare Two Columns in Different Sheets.xlsx