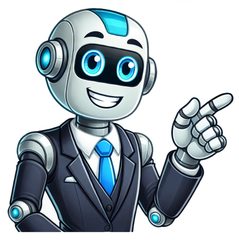
Click to verify



Use the INDIRECT function in Excel to convert a text string into a valid reference. You can use the & operator to create text strings. Cell Reference Use the INDIRECT function in Excel to convert a text string into a valid cell reference. 1. For example, take a look at the INDIRECT function below. Explanation: =INDIRECT(A1) reduces to =INDIRECT("D1"). The INDIRECT function converts the text string "D1" into a valid cell reference. In other words, =INDIRECT("D1") reduces to =D1. 2. The simple INDIRECT function below produces the exact same result. 3. Do we really need the INDIRECT function? Yes. Without using the INDIRECT function, this would be the result. 4. Use the & operator to join the string "D" with the value in cell A1. Explanation: the formula above reduces to =INDIRECT("D1"). Again, =INDIRECT("D1") reduces to =D1. Range Reference Use the INDIRECT function in Excel to convert a text string into a valid range reference. For example, use SUM and INDIRECT. Explanation: the formula above reduces to =SUM(INDIRECT("D3:D6")). The INDIRECT function converts the text string "D3:D6" into a valid range reference. In other words, =SUM(INDIRECT("D3:D6")) reduces to =SUM(D3:D6). Use the INDIRECT function in Excel to convert a text string into a valid named range. 1. For example, the AVERAGE function below uses the named range Scores. Explanation: the named range Scores refers to the range D1:D3. 2. However, the AVERAGE function below returns an error. Explanation: =AVERAGE("Scores") returns an error because Excel cannot calculate the average of a text string! 3. The INDIRECT function below does the trick. Explanation: =AVERAGE(INDIRECT("Scores")) reduces to =AVERAGE(Scores). Worksheet Reference Use the INDIRECT function in Excel to create a dynamic worksheet reference. 1. This is what a simple worksheet reference looks like. Note: cell A1 on Sheet1 contains the value 10. Cell A1 on Sheet2 contains the value 20. Cell A1 on Sheet3 contains the value 30. 2. On the Summary sheet, enter the INDIRECT function shown below. Use the & operator to join the sheet name in cell A1 with "!A1". Explanation: the formula above reduces to =INDIRECT("Sheet1!A1"). The INDIRECT function converts the text string "Sheet1!A1" into a valid worksheet reference. In other words, =INDIRECT("Sheet1!A1") reduces to =Sheet1!A1. 3. If your sheet names contain spaces or other special characters, enclose the sheet name in single quotation marks. Modify the INDIRECT function as shown below. We are now in Sheet 1 of the same workbook. To create an indirect reference to Cell A1 from Sheet2: Activate a cell (Cell A2) and write the sheet reference below: Sheet2!A1 In another cell, write the INDIRECT function as follows: = INDIRECT (A2) Hit Enter and you have your indirect reference to another sheet all set We have the value from cell A1 of Sheet 2 in Sheet 1. Yay! If you find it hard to write the cell reference from another sheet like that, you may use the CONCATENATE function as below: Write the name of the sheet and cell reference in different cells. And merge them with an exclamation mark in between to get the sheet reference like below. = CONCATENATE (A2,!, B2) Must not forget to enclose the exclamation mark in double quotation marks Wrap the above function in the INDIRECT function. = INDIRECT (CONCATENATE (A2,!, B2)) Hit Enter to reach the same results again. Fun, isnt it Performing functions on Named Ranges The INDIRECT function can not only recognize cell references and ranges but named ranges too. See for yourself. Here is a list of some expenses (yeah, many of them) Turn them into a named range by following these steps: Select the list of expenses (the numbers only). Go to the Formulas tab > Name Manager. From the Name Manager dialog box, select New. Set a name for the defined range (we are setting it to Expenses). The range is saved by the name Expenses Close the Name Manager. Activate any cell (Cell D2) and write the name of the range (Expenses) in it. Make sure not to make any spelling mistakes. In another cell write the INDIRECT function as follows: = INDIRECT (D2) Hit Enter to see that the INDIRECT function will return the whole range that you saved by the name Expenses Cool! But we will take it a step ahead. Now wrap the INDIRECT function in the SUM function as below: = SUM (INDIRECT (D2)) Viola! We have the sum of the range Expenses. Thats how you can use the INDIRECT function to create an indirect reference to ranges You may try any function with that. For example, wrap the INDIRECT function above in the AVERAGE function to get the average of the said range. = AVERAGE (INDIRECT (D2)) This Excel INDIRECT tutorial explains the function's syntax, basic uses and provides a number of formula examples that demonstrate how to use INDIRECT in Excel.A great lot of functions exist in Microsoft Excel, some being easy-to-understand, other requiring a long learning curve, and the former being used more often than the latter. And yet, Excel INDIRECT is one of the kind. This Excel function does not perform any calculations, nor does it evaluate any conditions or logical tests.Well then, what is the INDIRECT function in Excel and what do I use it for? This is a very good question and hopefully you will get a comprehensive answer in a few minutes when you've finished reading this tutorial. As its name suggests, Excel INDIRECT is used to indirectly reference cells, ranges, other sheets or workbooks. In other words, the INDIRECT function lets you create a dynamic cell or range reference instead of hard-coding them. As a result, you can change a reference within a formula without changing the formula itself. Moreover, these indirect references won't change when some new rows or columns are inserted in the worksheet or when you delete any existing ones.All this may be easier to understand from an example. However, to be able to write a formula, even the simplest one, you need to know the function's arguments, right? So, let's have a quick look at Excel INDIRECT syntax first. The INDIRECT function in Excel returns a cell reference from a text string. It has two arguments, the first is required and the second is optional:INDIRECT(ref_text, [a1])ref_text - is a cell reference, or a reference to a cell in the form of a text string, or a named range.a1 - is a logical value that specifies what type of reference is contained in the ref_text argument:If TRUE or omitted, ref_text is interpreted as an A1-style cell reference.If FALSE, ref_text is treated as a R1C1 reference.While the R1C1 reference type might be useful in certain situations, you'll probably want to use the familiar A1 references most of the time. Anyway, nearly all INDIRECT formulas in this tutorial will use A1 references, so we will be omitting the second argument. To get into the function's insight, let's write a simple formula that demonstrates how you use INDIRECT in Excel.Suppose, you have number 3 in cell A1, and text A1 in cell C1. Now, put the formula =INDIRECT(C1) in any other cell and see what happens:The INDIRECT function refers to the value in cell C1, which is A1.The function is routed to cell A1 where it picks the value to return, which is number 3.So, what the INDIRECT function actually does in this example is converting a text string into a cell reference.If you think this still has very little practical sense, please bear with me and I will show you some more formulas that reveal the real power of the Excel INDIRECT function. As demonstrated in the above example, you can use the Excel INDIRECT function to put the address of one cell into another as a usual text string, and get the value of the 1st cell by referencing the 2nd. However, that trivial example is no more than a hint at the INDIRECT capabilities.When working with real data, the INDIRECT function can turn any text string into a reference including very complex strings that you build using the values of other cells and results returned by other Excel formulas. But let's not put the cart before the horse, and run through several Excel Indirect formulas, one at a time. As you remember, the Excel INDIRECT function allows for A1 and R1C1 reference styles. Usually, you cannot use both styles in a single sheet at a time, you can only switch between the two reference types via File > Options > Formulas > R1C1 check box. This is the reason why Excel users rarely consider using R1C1 as an alternative referencing approach.In an INDIRECT formula, you can use either reference type on the same sheet if you want to. Before we move any further, you may want to know the difference between A1 and R1C1 reference styles.A1 style is the usual reference type in Excel that refers to a column followed by a row number. For example, B2 refers to the cell at the intersection of column B and row 2.R1C1 style is the opposite reference type - rows followed by columns, which does take some time getting used to :) For example, R4C1 refers to cell A4 which is in row 4, column 1 in a sheet. If no number comes after the letter, then you are referring to the same row or column.And now, let's see how the INDIRECT function handles A1 and R1C1 references:As you see in the screenshot above, three different Indirect formulas return the same result. Have you already figured out why? I bet you have :)Formula in cell D1: =INDIRECT(C1)This is the easiest one. The formula refers to cell C1, fetches its value - text string A2, converts it into a cell reference, heads over to cell A2 and returns its value, which is 222.Formula in cell D3: =INDIRECT(C3,FALSE)FALSE in the 2nd argument indicates that the referred value (C3) should be treated like a R1C1 cell reference, i.e. a row number followed by a column number. Therefore, our INDIRECT formula interprets the value in cell C3 (R2C1) as a reference to the cell at the conjunction of row 2 and column 1, which is cell A2. Similarly to how we created references from cell values, you can combine a text string and a cell reference within your INDIRECT formula, tied together with the concatenation operator (&).In the following example, the formula: =INDIRECT("B"&C2) returns a value from cell B2 based on the following logical chain:The INDIRECT function concatenates the elements in the ref_text argument - text B and the value in cell C2 -> the value in cell C2 is number 2, which makes a reference to cell B2 -> the formula goes to cell B2 and returns its value, which is number 10. Apart from making references from cell and text values, you can get the Excel INDIRECT function to refer to named ranges.Suppose, you have the following named ranges in your sheet:Apples - B2:B6Bananas - C2:C6Lemons - D2:D6To create an Excel dynamic reference to any of the above named ranges, just enter its name in some cell, say G1, and refer to that cell from an Indirect formula =INDIRECT(G1).And now, you can take a step further and imbed this INDIRECT formula into other Excel functions to calculate the sum and average of the values in a given named range, or find the maximum / minimum value within the rage:=SUM(INDIRECT(G1))=AVERAGE(INDIRECT(G1))=MAX(INDIRECT(G1))=MIN(INDIRECT(G1))Now that you've got the general idea of how to use the INDIRECT function in Excel, we can experiment with more powerful formulas. The usefulness of the Excel INDIRECT function is not limited to building "dynamic" cell references. You can also utilize it to refer to cells in other worksheets "on the fly", and here's how.Suppose, you have some important data in Sheet 1, and you want to pull that data in Sheet 2. The following screenshot demonstrates how an Excel Indirect formula can handle this task:Let's break apart the formula you see in the screenshot and understand.As you know, the usual way to reference another sheet in Excel is writing the sheet's name followed by the exclamation mark and a cell / range reference, like SheetName!Range. Since a sheet name often contains a space(s), you'd better enclose it (the name, not a space :) in single quotes to prevent an error, for example 'My Sheet!'$A$1.And now, all you have to do is to enter the sheet name in one cell, the cell address in another, concatenate them in a text string, and feed that string to the INDIRECT function. Remember that in a text string, you have to enclose each element other than a cell address or number in double quotes and link all elements together using the concatenation operator (&).Given the above, we get the following pattern:INDIRECT("'" & Sheet's name & "'!" & Cell to pull data from)Going back to our example, you put the sheet's name in cell A1, and type the cell addresses in column B, as demonstrated in the screenshot above. As the result, you get the following formula:INDIRECT("'" & $A$1 & "'!" & B1)Also, please pay attention that if you are copying the formula into multiple cells, you have to lock the reference to the sheet's name using the absolute cell references like $A$1.NotesIf either of the cells that contain the 2nd sheet's name and cell address (A1 and B1 in the above formula) is empty, your Indirect formula will return an error. To prevent this, you can wrap the INDIRECT function in the IF function:IF(OR($A$1="",B1=""), "", INDIRECT("'" & $A$1 & "'!" & B1))For the INDIRECT formula that refers to another sheet to work correctly, the referred sheet should be open, otherwise the formula will return a #REF error. To avoid the error, you can use the IFERROR function, which will display an empty string, whatever error occurs:IFERROR(INDIRECT("'" & $A$1 & "'!" &B1), "") The Indirect formula that refers to a different Excel workbook is based on the same approach as a reference to another spreadsheet. You just have to specify the workbook's name is addition to the sheet name and cell address.To make things easier, let's start with making a reference to another book in the usual way (apostrophes are added in case your book and/or sheet names contain spaces):'[Book_name.xlsx]Sheet_name'!RangeAssuming that the book name is in cell A2, the sheet name is in B2, and the cell address is in C2, we get the following formula:=INDIRECT("'[" & $A$2 & "]" & $B$2 & "'!" & C2)Since you don't want the cells containing the book's and sheet's names to change when copying the formula to other cells, you lock them by using absolute cell references, $A$2 and $B$2, respectively.And now, you can easily write your own dynamic reference to another Excel workbook by using the following pattern:=INDIRECT("'[" & Book name & "]" & Sheet name & "'!" & Cell address)Note. The workbook your formula refers to should always be open, otherwise the INDIRECT function will throw a #REF error. As usual, the IFERROR function can help you avoid it:=IFERROR(INDIRECT("'[" & A2 & "]" & $A$1 & "'!" & B1), "") Normally, Microsoft Excel changes cell references when you insert new or delete existing rows or columns in a sheet. To prevent this from happening, you can use the INDIRECT function to work with cell references that should remain intact in any case.To illustrate the difference, please do the following:Enter any value in any cell, say, number 20 in cell A1.Refer to A1 from two other cells in different ways: =A1 and =INDIRECT("A1")Insert a new row above row 1.See what happens? The cell with the equal to logical operator still returns 20, because its formula has been automatically changed to =A2. The cell with the INDIRECT formula now returns 0, because the formula was not changed when a new row was inserted and it still refers to cell A1, which is currently empty:After this demonstration, you may be under the impression that the INDIRECT function is more a nuisance than help. Okay, let's try it another way.Suppose, you want to sum the values in cells A2:A5, and you can easily do this using the SUM function:=SUM(A2:A5)However, you want the formula to remain unchanged, no matter how many rows are deleted or inserted. The most obvious solution - the use of absolute references - won't help. To make sure, enter the formula =SUM($A$2:$A$5) in some cell, insert a new row, say at row 3, and find the formula converted to =SUM($A$2:$A$6).Of course, such courtesy of Microsoft Excel will work fine in most cases. Nevertheless, there may be scenarios when you don't want the formula to get changed automatically. The solution is to use the INDIRECT function, like this:=SUM(INDIRECT("A2:A5"))Since Excel perceives "A1:A5" as a mere text string rather than a range reference, it won't make any changes when you insert or delete a row(s). Apart from SUM, INDIRECT is frequently used with other Excel functions such as ROW, COLUMN, ADDRESS, VLOOKUP, SUMIF, to name a few. Quite often, the ROW function is used in Excel to return an array of values. For example, you can use the following array formula (remember it requires pressing Ctrl + Shift + Enter) to return the average of the 3 smallest numbers in the range A1:A10:=AVERAGE(SMALL(A1:A10,ROW(1:3)))However, if you insert a new row in your worksheet, anywhere between rows 1 and 3, the range in the ROW function will get changed to ROW(1:4) and the formula will return the average of the 4 smallest numbers instead of 3.To prevent this from happening, nest INDIRECT in the ROW function and your array formula will always remain correct, no matter how many rows are inserted or deleted:=AVERAGE(SMALL(A1:A10,ROW(INDIRECT("1:3"))))Here's a couple more examples of using INDIRECT and ROW in conjunction with the LARGE function: How to sum N largest numbers in a range. You can use Excel INDIRECT together with the ADDRESS function to get a value in a certain cell on the fly.As you may remember, the ADDRESS function is used in Excel to get a cell address by the row and column numbers. For example, the formula =ADDRESS(1,3) returns the string $C$1 since C1 is the cell at the intersection of the 1st row and 3rd column.To create an indirect cell reference, you simply embed the ADDRESS function into an INDIRECT formula like this: =INDIRECT(ADDRESS(1,3))Of course, this trivial formula only demonstrates the technique. And here are a few examples that may prove really useful: You can use the Excel INDIRECT function with Data Validation to create cascading drop down lists that display different choices depending on what value the user selected in the first dropdown.A simple dependent drop-down list is really easy to make. All it takes is a few named ranges to store the dropdown's items and a simple =INDIRECT(A2) formula where A2 is the cell displaying your first drop-down list.To make more complex 3-level menus or drop-downs with multi-word entries, you will need a bit more complex INDIRECT formula with a nested SUBSTITUTE function.For the detailed step-by-step guidance on how to use INDIRECT with Excel Data Validation, please check out this tutorial: How to make a dependent drop down list in Excel. As demonstrated in the above examples, the INDIRECT function is quite helpful when dealing with cell and range references. However, not all Excel users eagerly embrace it mostly because extensive use of INDIRECT in Excel formulas results in lack of transparency. The INDIRECT function is difficult to review since the cell it refers to is not the ultimate location of the value used in the formula, which is pretty confusing indeed, especially when working with large complex formulas.In addition to the above said, like any other Excel function, INDIRECT may throw an error if you misuse the function's arguments. Here's a list of most typical mistakes: Most often, the INDIRECT function returns a #REF! error in three cases:ref_text is not a valid cell reference. If the ref_text parameter in your Indirect formula is not a valid cell reference, the formula will result in the #REF! error value. To avoid possible issues, please check the INDIRECT function's arguments.Range limit is exceeded. If the ref_text argument of your Indirect formula refers to a range of cells beyond the row limit of 1,048,576 or the column limit of 16,384, you will also get the #REF error in Excel 2007, 2010 and Excel 2013. Earlier Excel versions ignore the exceeded limit and do return some value, though often not the one you'd expect.The referred sheet or workbook is closed. If your Indirect formula refers to another Excel workbook or worksheet, that other workbook / spreadsheet must be open, otherwise INDIRECT returns the #REF! error. This is the most obvious case, implying that there is some error in the function's name, which leads us to the next point :) You may be curious to know that the English name of the INDIRECT function has been translated into 14 languages, including:Danish - INDIREKTEFinnish - EPSUORAGerman - INDIREKTHungarian - INDIREKTItalian - INDIRETTONorwegian - INDIREKTEPolish - ADR.PORSpanish - INDIRECTOSwedish - INDIREKTTurkish - DOLAYLIIf you are interested to get the full list, please check out this page.A common problem with non-English localizations is not the INDIRECT function's name, but rather different Regional Settings for the List Separator. In the standard Windows configuration for North America and some other countries, the default List Separator is a comma. While in European countries, the comma is reserved as the Decimal Symbol and the List Separator is set to semicolon.As a result, when copying a formula between two different Excel locales, you may get the error message "We found a problem with this formula" because the List separator used in the formula is different from what is set on your machine. If you run into this error when copying some INDIRECT formula from this tutorial into your Excel, simply replace all commas (,) with semicolons (;) to get it fixed.To check which List Separator and Decimal Symbol are set on your machine, open the Control Panel, and go to Region and Language > Additional Settings.Hopefully, this tutorial has shed some light on using INDIRECT in Excel. Now that you know its strengths and limitations, it's time to give it a shot and see how the INDIRECT function can simplify your Excel tasks. Thank you for reading! You may be well-accustomed to using cell references in Excel, but did you know you could go one step further and create your own cell references? This is where the INDIRECT function comes in handy. What Does the INDIRECT Function Do? Excel's INDIRECT function turns a text string into a reference. This function has several practical benefits: It allows you to create dynamic references. For example, you can change a reference to a cell within a formula without changing the formula itself. The INDIRECT function is a great way to create links between worksheets within a workbook. You can use information you already have in your spreadsheet to create a reference. The reference created using the INDIRECT function will stay the same, even if your sheet's structure changes. By default, references in Excel use the A1 reference style, which means that it refers to the column first, and then the row number. However, the INDIRECT function enables you to switch these around. This inverted order is known as the R1C1 reference style, where the "R" refers to a row, and the "C" refers to a column. For this reason, the INDIRECT function contains two arguments. Here is the syntax: =INDIRECT(x,y) where x is the reference text, and y (optional) is the reference style. More specifically, x (the reference text) can be an A1-style reference, an R1C1-style reference, a predefined name, or a cell reference. If x refers to another workbook, that second workbook must be open. It's also worth noting that you cannot reference another workbook if you're using Excel for the web. y (the reference style) is an optional argument. If you choose not to include this argument, Excel will automatically use the default A1-style reference, though you can also type TRUE here to force Excel to use this reference style. Typing FALSE will tell Excel to use the R1C1 reference style. In this article, I will use A1-style references to show you how the INDIRECT function works. Once you've grasped its concepts, you can experiment using R1C1-style references. The outcome of the INDIRECT function is a reference. There are a few things you should know before you start working with INDIRECT in your spreadsheet: So that you can get your head around how you can use INDIRECT in practise, let's see how it works in its most basic form. Basic Examples In this example, typing =INDIRECT(A1) into cell B2 turns cell A1 into a reference to cell D1. This is why the result is 5. In this example, typing =SUM(INDIRECT(A2)) into cell B2 first turns A2 into a cell reference, and then sums the cells in that reference. This is because the INDIRECT function is embedded within the SUM function. Now, let's look at using the INDIRECT function to reference a cell in another sheet. Cell A1 of Sheet2 contains the number 100, and we want to create an INDIRECT reference to that cell in the current sheet. First, we need to type Sheet2!A1 into cell A3, and then we need to turn this into a reference using the INDIRECT function by typing =INDIRECT(A3) into cell B3. However, we can make this much easier by using a named reference. For example, if we were to rename cell A1 of Sheet2 TOTAL, we could use this within our INDIRECT reference. This is particularly handy if you're creating a reference to another sheet, as it helps you avoid having to remember the exclamation point in the syntax. Also, if your sheet name changes, the INDIRECT reference will not adapt to this change, so using a named reference is a more secure and permanent alternative. Real-world Example 1 Now that we understand how INDIRECT works, let's explore how we can use it to make our worksheets tick in the real world. As is often the case in Excel, there is more than one way to achieve the same outcome. For example, you could include the TAKE function to make the following process even more dynamic. However, our aim here is to exemplify the use of the INDIRECT function, so that you can then go ahead and use it in your own way. Here, we're tracking the number of goals a football team scores in each game, and we want to work out the average for the previous three games. First, we will use the COUNT function to work out how many games the team has played so far. Typing =COUNT(B:B) into cell E1 will count the total number of cells in column B containing numbers, thus telling us how many games have been played. Now, we're ready to use the INDIRECT function to turn the data in cell E1 into a reference. At this point, our aim is to find the average of the values in cells B6 to B8. Here's how the INDIRECT function will help us to do this. Start by typing =AVERAGE(INDIRECT in cell E2, because we're telling Excel that we ultimately want to find an average, and we're also using the INDIRECT function to tell Excel where to look to calculate this average. The first cell we will reference in our AVERAGE calculation is B8, so we will add =AVERAGE(INDIRECT("B"&E1) to our formula. Notice how we've used quotes around the column reference, as we're using that text to create a cell reference. The next cell we will reference in our AVERAGE calculation is B7, which is one cell upwards from B8. So, adding =AVERAGE(INDIRECT("B"&E1),INDIRECT("B"&E1-1) to our formula means that Excel will create a cell reference that starts in column B, and then minuses 1 from the value in E1. Finally, we want to reference cell B6, which is two cells upwards from B8 in our AVERAGE calculation, and then add the closing parenthesis: =AVERAGE(INDIRECT("B"&E1),INDIRECT("B"&E1-1),INDIRECT("B"&E1-2)) This correctly calculates the average of 3, 1, and 1, which is the total number of goals scored in the last three games. Now, when we add more data into column B, the value in cell E1 will increase, as the COUNT function recognizes that there are more values in column B, and the INDIRECT references will update accordingly to always capture the last three values in our AVERAGE formula. All this happens without having to change the formula we typed into cell E2. Real-world Example 2 Let's look at one more example. This time, we will use named references so that we can use INDIRECT with Excel's VLOOKUP function. We want Excel to tell us how much money each of the four individuals made in either week 1 or week 2, with the option to change that week number if needed. To begin, we need to name cells B1 to C5 as "week_1," and cells B7 to B11 as "week_2." Then, in cell G2, we will type =VLOOKUP(E2,INDIRECT("week_"&F2),2,0) because we want Excel to look up Tom's value in the range we named "week_1," and return the corresponding value in the second column of that range as an exact match. We can then use the fill handle to complete the data for the other three individuals, knowing that the references we created are both relative to their respective rows and also secure due to our use of named references. Then, any changes to the values in columns C or F would automatically apply to the formula we have just written. To complete the process of making your spreadsheet fully dynamic and tidy, you could add drop-down menus using Excel's Data Validation tool. In the example above, you could have the individuals' names accessible through a drop-down menu, so that the lookup table takes up only a single row. View synonyms for indirectnot in a direct course or path; deviating from a straight line; roundabout.an indirect course in sailing.coming or resulting otherwise than directly or immediately, as effects or consequences.Synonyms: secondary, unintentional, incidentalnot direct in action or procedure.His methods are indirect but not dishonest.not straightforward; devious; deceitful.He is known as a shady, indirect fellow.not direct in bearing, application, force, etc..Grammar.of, relating to, or characteristic of indirect discourse.not descending in a direct line of succession, as a title or inheritance.deviating from a direct course or line; roundabout; circuitousnot coming as a direct effect or consequence; secondarynot straightforward, open, or fair; devious or evasive(of a title or an inheritance) not inherited in an unbroken line of succession from father to sonCollins English Dictionary Complete & Unabridged 2012 Digital Edition William Collins Sons & Co. Ltd. 1979, 1986 HarperCollins Publishers 1998, 2000, 2003, 2005, 2006, 2007, 2009, 2012indirectly adverbindirectness nounsemi-indirect adjectivesemi-indirectness nounOrigin of indirect1First recorded in 13501400; a Middle English word from the Medieval Latin word indrctus; in- 3, directExamples have not been reviewed."Without a shadow of a doubt, our tax dollars are being used," she told the New York Times, arguing that indirect costs such as US training missions and contributions to Nato qualify as US involvement.Since last Sunday, Israeli and Hamas negotiators have attended eight rounds of indirect "proximity" talks in separate buildings in Doha.She told the committee she had received warnings from "agents of the regime" through indirect channels and her lawyers.However, a Palestinian official told the BBC that the indirect negotiations in Qatar were stalled, with sticking points including aid distribution and Israeli troop withdrawals.Forty direct and 55 indirect jobs are also promised over the wind farms' 35-year operational lifetime.ambiguousancillarycircuitousimpliedincidentalobliquetortuousGandhi, Indiraindirect addressBrowse#aabbccddeeffgghhiijjkkllmmnnooppqqrrssttuuvvwwxxyyzzAboutCareersContact usCookies, terms, & privacyHelpFollow usGet the Word of the Day every day! 2025 Dictionary.com, LLC This is an overview: The INDIRECT Function Storing data from the reference specified by a text string. =INDIRECT(ref_text, [a1]) ArgumentCompulsory/OptionalExplanationref_textCompulsoryReference of a cell with A1 or R1C1 format.[a1]OptionalFormat of the cell to select- A1 or R1C1 The function returns the value(s) present in the stored reference. Example 1 Using the INDIRECT Function to Convert a Text String into Cell ReferenceTo find the value of B5, enter the formula inB8: Example 2 Using the Ampersand to Define the Row and Column Index with the INDIRECT FunctionTo find the value of C8, enter the formula in E7: Example 3 Using the ROW Function inside the INDIRECT Function to Define a Cell Reference Example 4 Calculations with Cell References Defined by the INDIRECT Function Method 5 Locking Cell References with the INDIRECT Function in ExcelTo see the output inD5, enter the formula to lock a cell reference in C5:Press Enter and drag down the Fill Handle to autofill the rest of the cells. Example 6 Using a Cell Reference from Another Worksheet with the INDIRECT FunctionA chart containing the names of donors and the donation amounts on day 1 is present in Sheet 1.Sheet 2 represents the chart for day 2. =MAX(INDIRECT(C5&"!C5:C9")) Youll get the value for the first day. Apply the formula to the next output cell to see the maximum amount on the second day.Read More: How to Use the INDIRECT Function to Get Values from Different Sheet in Excel Example 7 Using a Cell Reference from Another Workbook with the INDIRECT FunctionTo extract the value ofC7 to another workbook:Step 1:Open a new workbook.In B4, enter = and click C7 in the Donation Data workbook.Step 2:Press Enter.($1200 is displayed)To keep B4 in text format, remove the Equal(=) symbol.In C6 and C7, enter the names of the Excel workbook and the spreadsheet from which data will be extracted.Step 3: =INDIRECT("'["&C6&".xlsx]"&C7&"'!$C$7") Press Enter to see the extracted data. Example 8 Using the INDIRECT Function to Refer an Array in the VLOOKUP FunctionExtract prices to another chart based on the shops.Define fish names and prices in the two different shops. Here, B6:C9 as Shop_1 and B13:C16 as Shop_2.In G9, extract the price of Tetra in shop 2 using the VLOOKUP function.The syntax of the VLOOKUP function is:=VLOOKUP(lookup_value, table_array, col_index_number, [range_lookup]) =VLOOKUP(E9,INDIRECT("Shop_"&F9),2,FALSE) Press Enter and auto-fill the rest of the cells. Example 9 Using the INDIRECT Function to Refer Another Cell Reference from a Specific CellTo display the number of B11 in the output cell F10, enter the following formula:Press Enter to see the result. Example 10 Referring to a Named Range with the INDIRECT Function in ExcelDefine the name of this entire table. Step 1:Select the entire table.In the Name Box, enter the name of the table: Height_data. Step 2:In E8, define the name of the table.Select a random blank cell. Here, G4 and enter:Press Enter and the entire table will be displayed. Example 11 Transposing a Table with the INDIRECT and the ADDRESS Functions in ExcelThe syntax of this function is:=ADDRESS(row_num, column_num, [abs_num], [a1], [sheet_text])The dataset below showcases name, height, and age.To transpose the entire table: Step 1:Select the output cellB14 and enter: =INDIRECT(ADDRESS(COLUMN(B4) - COLUMN($B$4) + ROW($B$4), ROW(B4) - ROW($B$4) + COLUMN($B$4))) Press Enter and the formula will return Name. Step 2:Drag the Fill Handle to the right. Step 3:Drag down the Fill Handle.This is the output. Read More: How to Use INDIRECT ADDRESS Functions in Excel Example 12 Using the INDIRECT Function for Data Validation in ExcelThe dataset showcases 3 smartphone brands, and model names. To create drop-down lists for all smartphone brands: Step 1:Select B5:B10 (model names of Apple products).In the Name Box, define the name of this range of cell: Apple. Step 2:In B12, enter Apple.SelectB12.Go to the Data tab and choose Data Validation in Data Tools. Step 3:In Allow, chooseList.In Source, enter:Press Enter to see the result.Go to Cell B12 and youll find the drop-down for all Apple products. Follow the same procedure to create drop-downs for the other brands. The INDIRECT Function Is Not Working in Excel1. #REF! Error#REF! Error may be displayed in 3 cases:Invalid Cell Reference as ref_text: check the arguments of the function to make sure cell reference valid.Exceeding Range Limit: Excel 2007, 2010, and 2013 have a row limit of 1,048,576 and a column limit of 16,384. If you exceed this limit, #REF! Error may occur.Using Closed Worksheets or Workbooks: Open the worksheets or workbooks before using them in the function.2. #NAME? ErrorThis error occurs for misspelled functions. Things to Keep in MindIf you dont use double-quotes( ) while referring to a cell or a range of cells as a text string, the function will return a #REF error.Unless you define the format of the cell reference in the 2nd argument, the default format will be A1 style. Download Practice WorkbookDownload the Excel workbook. Use of INDIRECT Function.xlsx Excel INDIRECT Function: Knowledge Hub Create from Selection). After selecting the cell range B1:G6 and choosing the top row as the naming criteria, we have the named ranges for all the students.Now we can simply replace the cell ranges with the named ranges.To make it more convenient, we can add a Data Validation list in cell B8.In this case, all the data was in the same sheet. What happens when each student's data is stored in a separate worksheet? In the next example, let's explore how to use the INDIRECT function to create dynamic references to a worksheet.Example 3 Creating Dynamic Worksheet Reference with INDIRECT FunctionIn this scenario, the same students' data is now stored in separate worksheets. The data includes marks obtained in different subjects, total marks, and grade obtained.Each worksheet is named after the student's name making it easier to recognize.Now, in the Scorecard sheet, we wish to extract information such as total marks scored, and the highest marks obtained by each student. The formula used will be as follows.=SUM(Emily!C2:C6)=MAX(Emily!C2:C6)The idea is to construct a text string that represents the complete reference and then utilize the INDIRECT function to convert that textual representation into an actual reference.Now as we can see, the format used is as follows.=INDIRECT(sheetname!cell range)As Excel automatically adds single quotes around the sheet name if it contains spaces, we must concatenate the sheet name with a single quote at the start and a single quote plus an exclamation mark at the end. We will also enclose the cell reference in double quotes as we are building a text string. So, the format used will be as follows.=INDIRECT("'"&sheetname&"'!"&"cell range")Let's take cell C4 where we can enter the student's name. The formula is as follows.=SUM(INDIRECT("'"&$C$4&"'!"&"C2:C6"))=MAX(INDIRECT("'"&$C$4&"'!"&"C2:C6"))Now instead of manually changing the worksheet reference, we just need to enter the student's name (worksheet name) in cell C4, and we will get the desired data.Now you know how to create dynamic cell references and references of different worksheets using the INDIRECT function.Example 4 Creating Fixed Ranges with INDIRECT FunctionSuppose you maintain daily sales data in Excel. The dataset contains every sale that occurs on a day along with the product name. Using this data, we can easily calculate total sales to date. The easiest and most straightforward way is to use the SUM function, where the formula will be as follows.=SUM(C2:C10)Now, upon rechecking, we realized that there is a missing entry for the first day, as the sheet was not set up until that date. We can easily insert a row on the top. Upon doing that, Excel automatically accommodated the changes in the formula, bringing it to the following.=SUM(C3:C11)This will skip the top entry and we will not get the correct sum. To ensure that Excel maintains a specific cell range irrespective of such changes, we can use the INDIRECT function to create dynamic cell references that remain fixed. The formula used will be as follows.=SUM(INDIRECT("C2"):C10)Here Excel considers "C2" as a string and therefore does not change even when there are updates in the dataset. By using INDIRECT, we create a fixed cell reference for "C2," while the end cell range C10 can still adjust automatically based on any changes to the dataset. We'll apply the formula to the original dataset without the additional entry.Let's check what happens when we insert a new row in the beginning. The formula automatically gets updated to the following.=SUM(INDIRECT("C2"):C10)A simple comparison highlights the use of the INDIRECT function where this dynamic approach allows the formula to adapt to new data while maintaining the desired starting point defined by the fixed cell reference.Example 5 Using INDIRECT Function with R1C1 ReferencingIn this scenario, we have the sales data spreadsheet which contains department-wise sales for each day. At the end of each day, all the sales are added in a new column. The aim is to retrieve the total sales of the latest day without manually entering the last column's cell reference.Using the INDIRECT function with R1C1 referencing, we can dynamically fetch the latest sales. We require the row number and the column number to extract the data. We already know that the row number remains constant which is R7 (total sales) whereas the column number varies as a new column is added each day.To calculate the column number dynamically, we can use the COUNTA function. It will count the number of non-empty cells in row 7 which will translate to the last column number. The formula used will be as follows.=COUNTA(7:7)Now, the INDIRECT formula to retrieve the last value of the last column will be as follows.=INDIRECT("R7C"&COUNTA(7:7),FALSE)The input value of the second argument of the INDIRECT function is set to FALSE indicating that the type of reference used is R1C1 style. R7C refers to row 7 while the column reference is determined by the COUNTA function. The column reference is concatenated to R7C using the & operator.Now when a column is added for the next day, let's see if the formula returns the correct value.We have the correct value. With the help of the INDIRECT function in R1C1 style, we can dynamically update the last column even if more days are added to the sales data table.Try and use this logic when the data is in a different worksheet.Example 6 Using INDIRECT with Data Validation in ExcelAnother excellent use of the INDIRECT function is to create multi-level dependent drop-down lists through data validation. Suppose we have a dataset containing team names for an upcoming sports event along with team members in each team.Now we wish to create a drop-down list to first choose the team name and then dynamically choose the team member name. The first step is to create named ranges for all columns. We can do this either by adding a new name in the Name Manager (Formulas tab > Name Manager > New) or typing the name directly in the Name Box.To create the first drop-down list, we can navigate to the Data tab and select Data Validation. Now choose List under Allow and enter the range name in the Source box as follows.=Team_NameNow we have a drop-down list that includes all the data in the named range 'Team_Name'.Now, to create a dependent drop-down, repeat the process to create a data validation; however, instead of the range name, enter the following formula.=INDIRECT($A$10)It is important to use the cell reference that contains the first drop-down list. It will dynamically fetch the data from the range referenced in cell A10 and populate the dependent drop-down menu accordingly.So, this process allows users to select a 'Team Name' from the first drop-down list and then choose 'Team Members' from the second list which dynamically changes the options available based on the selection made in the previous one. Now, try to create another drop-down list based on the second input.INDIRECT Function with VLOOKUP FunctionSuppose you have a dataset that represents sales of six store locations for specific months. As such datasets are large, we wish to dynamically look up the total sales for a specific product from a selected month.One way is to use the VLOOKUP function with a nested IF function. The logic used will be if you require January sales, the formula will refer to the "Jan_sales" dataset, or if it's February sales, refer to "Feb_sales", and so on. It is clearly not the most efficient way to extract data, especially when dealing with more than two datasets.The best approach would be to use a combination of INDIRECT and VLOOKUP functions. To make things simpler, we will first use named ranges for all the given datasets. So, cell range !$A$3:$B$8 is named 'Jan_Sales', and a similar pattern is followed for all other months.Our next step involves creating a summary table that offers users the flexibility to select both the month and store location of interest. By doing so, they can obtain the total sales for the specific combination they choose.So, in this case, Cell B10 will store the user input for 'Store Location' and B11 contains the value of 'Month'.To create a dynamic referencing for datasets, the formula used will be as follows. As the naming convention of the datasets is fixed (Month_Sales), the user can just enter the month reference and the function returns the relevant dataset. Here, we concatenate the input month with the fixed suffix naming convention.=INDIRECT(B11&"_Sales")Now we can use the VLOOKUP function to look for total sales of the value in cell B10 (Store Location) from the dataset returned by the INDIRECT function. The formula used will be as follows.=VLOOKUP(B10,INDIRECT(B11&"_Sales"),2,FALSE)With this formula, we are looking up the entered store location in B10. The lookup array is defined by the dataset extracted by the INDIRECT function for the month mentioned in B11. 2 in the formula is the column number (of the extracted dataset) the value is to be returned from. FALSE indicates that VLOOKUP is to search for an exact match.To make things more efficient, we can use Data Validation to create a list to choose Store Location.Indeed, the combination of the INDIRECT and VLOOKUP functions empowers dynamic lookups based on user-provided inputs. This flexibility allows for efficient data analysis and summary based on the user's specific requirements. Using the same logic, try to retrieve data when the same data is spread across separate worksheets and the worksheet names align with the dataset names.Now that you have added the INDIRECT function to your Excel arsenal, create dynamic and interactive spreadsheets. Practice and explore more applications, while we bring to you another useful Excel function.The INDIRECT function in Excel can be used when you have the reference of a cell or a range as a text string and you want to get the values from those references.In short you can use the indirect formula to return the reference specified by the text string.In this Excel tutorial, I will show you how to use the indirect function in Excel using some practical examples.But before I get into the examples, lets first have a look at its syntax.INDIRECT FUNCTION Syntax=INDIRECT(ref_text, [a1])Input Argumentsref_text A text string that contains the reference to a cell or a named range. This must be a valid cell reference, or else the function would return a #REF! error[a1] A logical value that specifies what type of reference to use for ref text. This could either be TRUE (indicating A1 style reference) or FALSE (indicating R1C1-style reference). If omitted, it is TRUE by default.Additional NotesINDIRECT is a volatile function. This means that it recalculates whenever the excel workbook is open or whenever a calculation is triggered in the worksheet. This adds to the processing time and slows down your workbook. While you can use the indirect formula with small datasets with little or no impact on the speed, you may see it making your workbook slower when using it with large datasetsThe Reference Text (ref_text) could be:A reference to a cell that in-turn contains a reference in A1-style or R1C1-style reference format.A reference to a cell in double-quotes.A named range that returns a referenceExamples of How to Use Indirect Function in ExcelNow lets dive in and have a look at some examples on how to use the INDIRECT function in Excel.Example 1: Use a Cell reference to Fetch the ValueIt takes the cell reference as a text string as input and returns the value in that reference (as shown in the example below):The formula in cell C1 is:=INDIRECT("A1")The above formula takes the cell reference A1 as the input argument (within double quotes as a text string) and returns the value in this cell, which is 123.Now if youre thinking, why dont I simply use =A1 instead of using the INDIRECT function, you have a valid question.Here is whyWhen you use =A1 or =$A$1, it gives you the same result. But when you insert a row above the first row, you would notice that the cell references would automatically change to account for the new row.You can also use the INDIRECT function when you want to lock the cell references in such a way that it does not change when you insert rows/columns in the worksheet.Example 2: Use Cell Reference in a Cell to Fetch the ValueYou can also use this function to fetch the value from a cell whose reference is stored in a cell itself.In the above example, cell A1 has the value 123.Cell C1 has the reference to the cell A1 (as a text string).Now, when you use the INDIRECT function and use C1 as the argument (which in turn has a cell address as a text string in it), it would convert the value in cell A1 into a valid cell reference.This, in turn, means that the function would refer to cell A1 and return the value in it.Note that you dont need to use double quotes here as the C1 has the cell reference stored in the text string format only.Also, in case the text string in cell C1 is not a valid cell reference, the Indirect function would return the #REF! error.Example 3: Creating a Reference Using Value in a CellYou can also create a cell reference using a combination of the column alphabet and the row number.For example, if cell C1 contains the number 2, and you use the formula =INDIRECT(A&C1) then it would refer to cell A2.A practical application of this could be when you want to create dynamic reference to cells based on the value in some other cell.In case the text string you use in the formula gives a reference that Excel doesnt understand, it will return the ref error (#REF!).Example 4: Calculate the SUM of a Range of CellsYou can also refer to a range of cells the same way you refer to a single cell using the INDIRECT function in Excel.For example, =INDIRECT(A1:A5) would refer to the range A1:A5.You can then use the SUM function to find the total or the LARGE/SMALL/MIN/MAX function todo other calculations.Just like the SUM function, you can also use functions such as LARGE, MAX/MIN, COUNT, etc.Example 5: Creating Reference to a Sheet Using the INDIRECT FunctionThe above examples covered how to refer a cell in the same worksheet. You can also use the INDIRECT formula to refer to a cell in some other worksheet or another workbook as well.Here is something you need to know about referring to other sheets:Lets say you have a worksheet with the name Sheet1, and within the sheet in thecell A1, you have the value 123. If you go to another sheet (lets say Sheet2) and refer to cell A1 in Sheet1, the formula would be:=Sheet1!A1But..If you have a worksheet that contains two or more than two words (with a space character in between),and you refer to cell A1 in this sheet from another sheet, the formula would be:=Data Set!A1In case, of multiple words, Excel automatically inserts single quotation marks at the beginning and end of the Sheet name.Now lets see how to create an INDIRECT function to refer to a cell in another worksheet.Suppose you have a sheet named Dataset and cell A1 in it has the value 123.Now to refer to this cell from another worksheet, use the following formula:=INDIRECT("'Data Set'!A1")As you can see, the reference to the cell needs to contain the worksheet name as well.If you have the name of the worksheet in a cell (lets say A1), then you can use the following formula:=INDIRECT("'"&A1&"'!A1")If you have the name of the worksheet in cell A1 and cell address in cell A2, then the formula would be:=INDIRECT("'"&A1&"'!"&A2)Similarly, you can also modify the formula to refer to a cell in another workbook.This could be useful when you trying to create a summary sheet that pulls the data from multiple different sheets.Also remember, when using this formula to refer to another workbook, that workbook must be open.Example 6: Referring to a Named Range Using INDIRECT FormulaIf you have created a named range in Excel, you can refer to that named range using the INDIRECT function.For example, suppose you have the marks for 5 students in three subjects as shown below:In this example, lets name the cells:B2:B6: MathC2:C6: PhysicsD2:D6: ChemistryTo name a range of cells, simply select the cells and go to the name box, enter the name and hit enter.Now you can refer to these named ranges using the formula:=INDIRECT("Named Range")For example, if you want to know the average of the marks in Math, use the formula:=AVERAGE(INDIRECT("Math"))If you have thenamed range name in a cell (F2 in the example below has the name Math), you can use this directly in the formula.The below example shows how to calculate the average using the named ranges.Example 7: Creating a Dependent Drop Down List Using Excel INDIRECT FunctionThis is one excellent use of this function. You can easily create a dependent drop-down list using it (also called the conditional drop-down list).For example, suppose you have a list of countries in a row and the name of cities for each country as shown below:Now to create a dependent drop-down list, you need to create two named ranges, A2:A5 with the name US and B2:B5 with the name India.Now select cell D2 and create a drop-down list for India and the US. This would be the first drop-down list where the user gets the option to select a country.Now to create a dependent drop-down list:Select cell E2 (the cell in which you want to get the dependent drop-down list).Click the Data tabClick on Data validation.Select List as the Validation Criteria and use the following formula in the source field:=INDIRECT($D$2)Click OK.Now, when you enter the US in cell D2, the drop-down in cell E2 will show the states in the US.And when you enter India in cell D2, the drop-down in cell E2 will show the states in India.So these are some examples to use the INDIRECT function in Excel. These examples would work on all the versions of Excel (Office 365, Excel 2019/2016/2013/2013)I hope you found this tutorial useful.Related Microsoft Excel Functions: You May Also Like the Following Excel Tutorials:

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