Learn about XMATCH: Excel function is much smarter than VLOOKUP

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XMATCH works in any direction you want

The most annoying thing about VLOOKUP is that it requires a left-to-right search. If your lookup column isn't on the leftmost side of the range, you're stuck. You have to rearrange your data or find a workaround. Rearranging your spreadsheet just to get VLOOKUP to work properly can be time-consuming.

Excel's XMATCH function eliminates this headache. Unlike the rigid structure of VLOOKUP, XMATCH searches any array in any direction. You can search for data to the left of the lookup column. You can also search vertically down a column or horizontally across a row; XMATCH handles both with ease.

Here is the basic syntax:

```
=XMATCH(lookup_value, lookup_array, [match_mode], [search_mode])
```

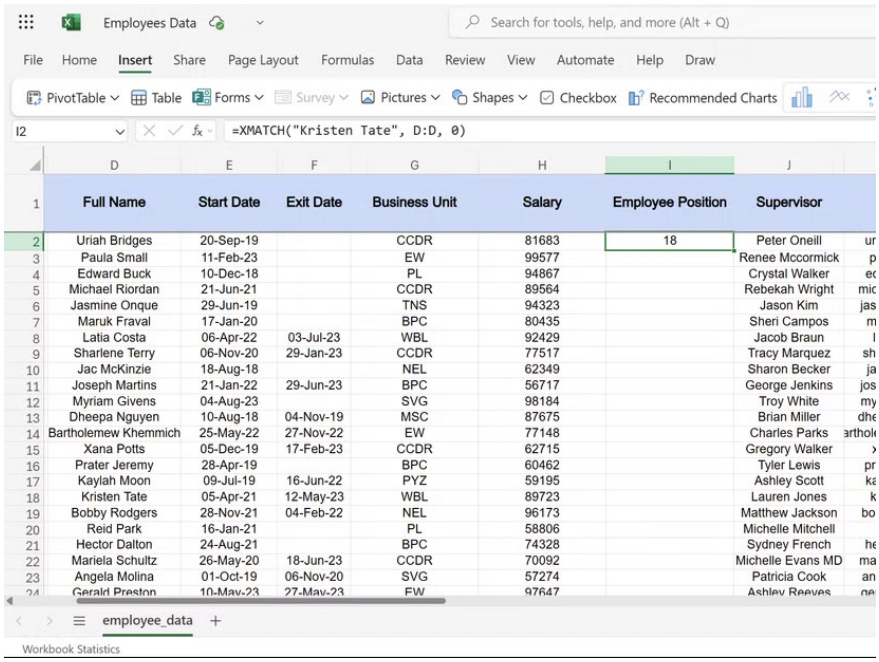
Let's analyze these parameters:

1. **lookup_value** : The value you are looking for.
2. **lookup_array** : Search range.
3. **match_mode** : The level of precision required for the search results (0 is exact, -1 is exact or next smallest, 1 is exact or next largest).
4. **search_mode** : Search direction (1 is from start to end, -1 is from end to start, 2 is binary search).

Here's a real-world example from an employee database. Let's say you need to find what department "Kristen Tate" works in, but the employee name is in column D and the department is in column B. With VLOOKUP in an Excel spreadsheet, this setup would force you to rearrange the data because you can't look to the left.

But you can use the XMATCH function to return her position in the name column as shown in the following formula:

```
=XMATCH("Kristen Tate", D:D, 0)
```



Full Name	Start Date	Exit Date	Business Unit	Salary	Employee Position	Supervisor
Uriah Bridges	20-Sep-19		CCDR	81683	18	Peter Oneill
Paula Small	11-Feb-23		EW	99577		Renee Mccormick
Edward Buck	10-Dec-18		PL	94867		Crystal Walker
Michael Riordan	21-Jun-21		CCDR	89564		Rebekah Wright
Jasmine Onque	29-Jun-19		TNS	94323		Jason Kim
Maruk Fraval	17-Jan-20		BPC	80435		Sheri Campos
Latia Costa	06-Apr-22	03-Jul-23	WBL	92429		Jacob Braun
Sharlene Terry	06-Nov-20	29-Jan-23	CCDR	77517		Tracy Marquez
Jac McKinzie	18-Aug-18		NEL	62349		Sharon Becker
Joseph Martins	21-Jan-22	29-Jun-23	BPC	56717		George Jenkins
Myriam Givens	04-Aug-23		SVG	98184		Troy White
Dheepa Nguyen	10-Aug-18	04-Nov-19	MSC	87675		Brian Miller
Bartholemew Khemmich	25-May-22	27-Nov-22	EW	77148		Charles Parks
Xana Potts	05-Dec-19	17-Feb-23	CCDR	62715		Gregory Walker
Prater Jeremy	28-Apr-19		BPC	60462		Tyler Lewis
Kaylah Moon	09-Jul-19	16-Jun-22	PYZ	59195		Ashley Scott
Kristen Tate	05-Apr-21	12-May-23	WBL	89723		Lauren Jones
Bobby Rodgers	28-Nov-21	04-Feb-22	NEL	96173		Matthew Jackson
Reid Park	16-Jan-21		PL	58806		Michelle Mitchell
Hector Dalton	24-Aug-21		BPC	74328		Sydney French
Mariela Schultz	26-May-20	18-Jun-23	CCDR	70092		Michelle Evans MD
Angela Molina	01-Oct-19	06-Nov-20	SVG	57274		Patricia Cook
Gerald Preston	10-May-23	27-May-23	EW	97647		Ashley Reeves

It changed the workflow because you no longer had to count columns. With VLOOKUP in Excel, you had to keep counting to determine the column index number. If you added a new column to your data, your formula would suddenly fail because the index number changed.

XMATCH gives you more control over matching

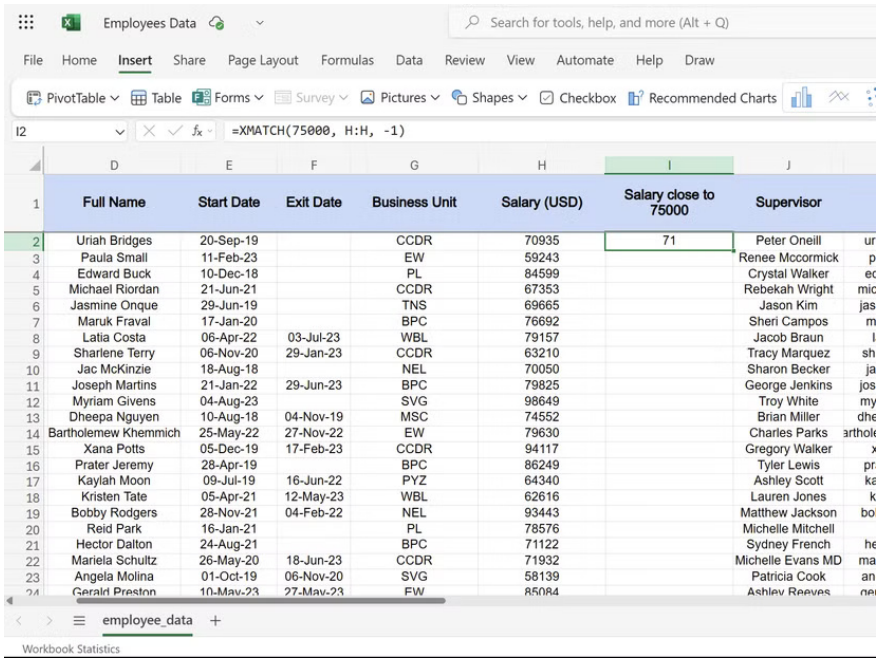
VLOOKUP's matching options are limited to exact or approximate matches - that's it. If your data isn't perfectly clean, you'll have to spend time cleaning up a messy Excel spreadsheet before you can start your lookup.

XMATCH makes this easy with the **match_mode parameter.** Setting this to **0** for exact matches, just like VLOOKUP's FALSE parameter. But this is where things get interesting. You can use **-1** to find an exact match or the next smallest value, and **1** to find an exact match or the next largest value.

Consider the salaries in the employee dataset. To find the employee with the closest salary but not exceeding $75,000, you would use:

```
=XMATCH(75000, H:H, -1)
```

This formula returns the location of the highest salary from column H that does not exceed your target value - something VLOOKUP has trouble with unless the data is perfectly sorted.



	Full Name	Start Date	Exit Date	Business Unit	Salary (USD)	Salary close to 75000	Supervisor
2	Uriah Bridges	20-Sep-19		CCDR	70935	71	Peter Oneill
3	Paula Small	11-Feb-23		EW	59243		Renee Mccormick
4	Edward Buck	10-Dec-18		PL	84599		Crystal Walker
5	Michael Riordan	21-Jun-21		CCDR	67353		Rebekah Wright
6	Jasmine Onque	29-Jun-19		TNS	69665		Jason Kim
7	Maruk Fraval	17-Jan-20		BPC	76692		Sheri Campos
8	Latia Costa	06-Apr-22	03-Jul-23	WBL	79157		Jacob Braun
9	Sharlene Terry	06-Nov-20	29-Jan-23	CCDR	63210		Tracy Marquez
10	Jac McKinzie	18-Aug-18		NEL	70050		Sharon Becker
11	Joseph Martins	21-Jan-22	29-Jun-23	BPC	79825		George Jenkins
12	Myriam Givens	04-Aug-23		SVG	98649		Troy White
13	Dheepa Nguyen	10-Aug-18	04-Nov-19	MSC	74552		Brian Miller
14	Bartholemew Khemmich	25-May-22	27-Nov-22	EW	79630		Charles Parks
15	Xana Potts	05-Dec-19	17-Feb-23	CCDR	94117		Gregory Walker
16	Prater Jeremy	28-Apr-19		BPC	86249		Tyler Lewis
17	Kaylah Moon	09-Jul-19	16-Jun-22	PYZ	64340		Ashley Scott
18	Kristen Tate	05-Apr-21	12-May-23	WBL	62616		Lauren Jones
19	Bobby Rodgers	28-Nov-21	04-Feb-22	NEL	93443		Matthew Jackson
20	Reid Park	16-Jan-21		PL	78576		Michelle Mitchell
21	Hector Dalton	24-Aug-21		BPC	71122		Sydney French
22	Mariela Schultz	26-May-20	18-Jun-23	CCDR	71932		Michelle Evans MD
23	Angela Molina	01-Oct-19	06-Nov-20	SVG	58139		Patricia Cook
24	Gerald Preston	10-May-23	27-May-23	EW	85084		Ashley Reeves

The search_mode parameter adds an extra layer of control. While **1** searches from start to finish (default), **-1** searches from end to start. This is important when you have duplicate values and need the most recent entry.

For example, if "John Smith" appears multiple times in column D of the data set, we can use the following formula to find his last occurrence.

```
=XMATCH("John Smith", D:D, 0, -1)
```

Understanding these parameters will help you look up data more efficiently. This level of control means fewer auxiliary columns and data manipulations. Your formulas become more powerful and your spreadsheets become cleaner.

XMATCH goes perfectly with INDEX

XMATCH becomes even more useful when you combine it with the INDEX function . While XMATCH finds the position, INDEX retrieves the actual value from that position. This is one of those Excel functions that is useful for quickly looking up data, but when combined together, they create a more flexible lookup combination.

Here is the basic syntax when you combine the two:

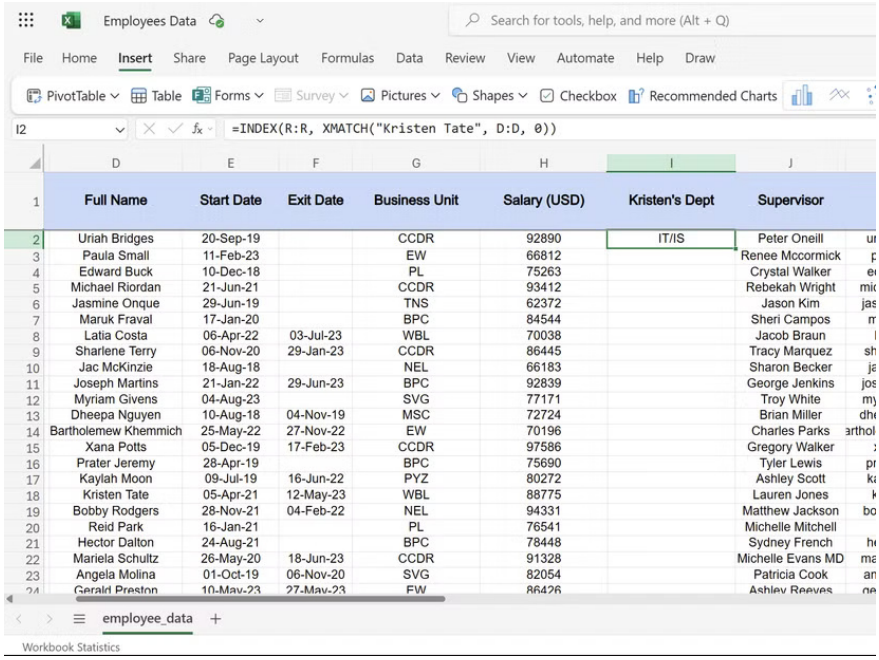
```
=INDEX(return_array, XMATCH(lookup_value, lookup_array, [match_mode]))
```

This combination eliminates the column counting nightmare of VLOOKUP. Instead of having to remember that salary is the 8th column, you can just specify the salary column directly. So you won't run into formula errors when adding or removing columns.

Let's say you need to find Kristen Tate's department from employee data using INDEX and XMATCH:

```
=INDEX(R:R, XMATCH("Kristen Tate", D:D, 0))
```

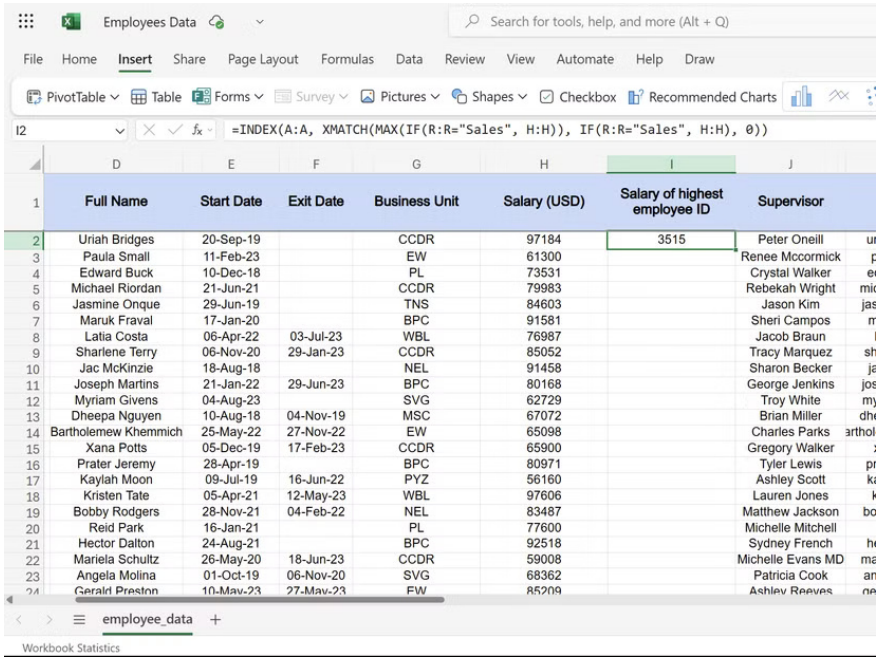
The above formula reads naturally and returns a value from column R at the position where "Kristen Tate" appears in column D.



This combination also handles complex lookups, such as when you need the salary of the employee in the Sales department with the highest employee ID:

```
=INDEX(A:A, XMATCH(MAX(IF(R:R="Sales", H:H)), IF(R:R="Sales", H:H), 0))
```

This array formula finds the largest employee ID in the Sales department, then returns that person's salary. If you tried to do this with VLOOKUP, you would need multiple support columns and other workarounds.



XMATCH has completely replaced VLOOKUP in my workflow. Its directional flexibility, precise matching control, and easy INDEX integration make it the lookup function I've always needed. Once I've experienced this level of control, going back to VLOOKUP seems impractical.