VLOOK UP

🔍 VLOOKUP in Excel

📘 What is VLOOKUP?

VLOOKUP (Vertical Lookup) is an Excel function used to **search for a value in the first column of a table** and return a value in the **same row from another column**.

📏 Syntax of VLOOKUP

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

Parameter	Description
lookup_value	The value you want to search for
table_array	The range of cells that contains the data
col_index_num	The column number (starting from 1) from which to return the value
range_lookup	Optional: TRUE = approximate match (default), FALSE = exact match

✅ Steps to Implement VLOOKUP

Example Scenario: You have a list of student names and roll numbers in one sheet, and you want to fetch the student's department based on their roll number from another sheet.

👣 Step-by-Step:

1. Place your **main table** (e.g., list of roll numbers) in one sheet.

2. Create a **reference table** with all data (e.g., roll numbers with departments) in another sheet or area.

3. Click on the cell where you want the result (e.g., department).

4. Use the formula:

=VLOOKUP(A2, Sheet2!A2:C100, 3, FALSE)

⬚ A2 = value to look up (roll number)

⬚ Sheet2!A2:C100 = range where data is stored

⬚ 3 = column number from which to return value (department is 3rd column)

⬚ FALSE = exact match

🧩 Use Cases of VLOOKUP

Use Case	Description
📊 Employee Lookup	Find employee name or department based on Employee ID
🎓 Student Records	Get marks, grades, or details from student roll numbers
📦 Product Information	Get product price or stock by entering product ID
📄 Invoice/Orders	Fetch item descriptions or rates using product codes
🗓️ Merging Data from Different Sheets	Combine customer names and orders stored in separate sheets

⚠️ Limitations of VLOOKUP

- Only searches **left to right** (lookup column must be first).

- Can become slow with very large datasets.

- If structure of the table changes, formula may break.

✅ **Tip:** Use XLOOKUP (available in Excel 365 and Excel 2019+) for more flexibility.

Let me know if you'd like me to generate a complete **Word document with all your Excel notes so far**:

- Data Cleaning

- Sorting

- Filtering

- VLOOKUP

I'll create a well-formatted .docx file ready for download.

MATCH

🎯 **MATCH Function in Excel**

📘 **What is MATCH?**

The MATCH function is used to **find the position** of a specific value **within a range** (row or column).

It **returns the position number**, not the value itself.

🧪 **Syntax of MATCH**

=MATCH(lookup_value, lookup_array, [match_type])

Argument	Description
lookup_value	The value you want to find
lookup_array	The range of cells to search in (must be one row or one column)
match_type	Optional: 0 = exact match, 1 = less than, -1 = greater than

✅ Best Practice: Use 0 to ensure an exact match.

✅ **Steps to Use MATCH**

👣 **Example:**

You have a list of employee names in cells **A2:A10**, and you want to find the **position of "John"** in that list.

=MATCH("John", A2:A10, 0)

This will return something like 4 if "John" is the fourth value in the list.

🧩 Use Cases of MATCH

Use Case	Description
🔢 Find Item Position in a List	Find which row/column a name, ID, or value appears in
🔗 Use with INDEX	Combined with INDEX to fetch values dynamically
📊 Dynamic Formula Logic	Create dynamic references in advanced formulas
📝 Interactive Dashboards	Build formulas that update based on user selection

🔄 Example: Using MATCH with INDEX

=INDEX(B2:B10, MATCH("John", A2:A10, 0))

- MATCH("John", A2:A10, 0) → finds John's position

- INDEX(B2:B10, …) → fetches value from the same position in column B

📌 This returns **John's salary**, if column B holds salary data.

⚠️ Notes

- MATCH is **case-insensitive**

- Returns **#N/A** if no match is found

- Works only on **1D ranges** (rows or columns)

Would you like to include this in the Word document along with VLOOKUP and other Excel topics? I can prepare the .docx file for download with everything organized neatly.

INDEX

What is INDEX?

The INDEX function returns the **value at a specific position** (row and/or column) in a given range or array.

It's very useful when you want to **fetch data from a specific location**, especially when combined with MATCH.

📏 **Syntax of INDEX**

=INDEX(array, row_num, [column_num])

Argument	Description
array	The range of cells or array from which to return a value
row_num	The row number in the array to return data from
column_num	*(Optional)* The column number (if the array has multiple columns)

✅ **Steps to Use INDEX**

👣 **Example 1: Simple Vertical INDEX**

Suppose A2:A6 contains:

A

Apple

Banana

Mango

Grapes

Guava

Formula:

=INDEX(A2:A6, 3)

Output: Mango (the 3rd item in the list)

👣 Example 2: 2D INDEX

Suppose A2:C4 contains:

Name	Dept	Salary
John	IT	40000
Mary	HR	42000
Steve	Finance	39000

Formula:

=INDEX(A2:C4, 2, 3)

- ◆ Output: 42000 (2nd row, 3rd column)

🧩 Use Cases of INDEX

Use Case	Description
📍 Lookup with row and column	Find a specific value from a data table
🔗 Combine with MATCH	Create powerful, flexible lookups
📊 Dynamic Dashboards	Fetch values based on user selections
🗒️ Alternative to VLOOKUP	More flexible than VLOOKUP (works left or right)

🔄 INDEX + MATCH Combo Example

You want to **find Steve's salary**, but his row may change.

=INDEX(C2:C4, MATCH("Steve", A2:A4, 0))

- MATCH("Steve", A2:A4, 0) returns 3 (Steve is 3rd row)

- INDEX(C2:C4, 3) returns 39000 (Steve's salary)

✅ This is a powerful alternative to VLOOKUP, and **doesn't require the lookup column to be the first**.

⚠️ Notes

- INDEX returns the **value**, not the position

- Works both **vertically and horizontally**

- If you omit column_num in a single-column range, that's fine