💡 What are Lookups in Excel?

Lookups in Excel are **functions used to search for a value in one place and return a related value from another place.**

👉 In simple words:
They help you **find and fetch data automatically** from a table or range based on a matching value.

📘 Example:

You have this data:

Product ID	Product Name	Price
101	Apple	50
102	Banana	20
103	Orange	30

If you type a Product ID (say **102**) in one cell and want Excel to show the **Product Name** ("Banana") automatically —
you use a **lookup** function.

🧩 Types of Lookups in Excel

There are mainly **4 types** of lookups:

Type	Function	Description
1	**VLOOKUP**	Searches **vertically** (top to bottom) in a column.
2	**HLOOKUP**	Searches **horizontally** (left to right) in a row.
3	**XLOOKUP** (modern Excel)	A more powerful, flexible version that replaces both VLOOKUP and HLOOKUP.
4	**INDEX + MATCH**	Combination used for advanced lookups (more flexible than VLOOKUP).

▦ Basic Syntax & Examples

1 VLOOKUP

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

Example:

=VLOOKUP(102, A2:C4, 2, FALSE)

- ◆ Looks for 102 in column A
- ◆ Returns value from 2nd column (Product Name)

2️⃣ HLOOKUP

=HLOOKUP(lookup_value, table_array, row_index_num, [range_lookup])

Used when your data is arranged **horizontally** (in rows).

3️⃣ XLOOKUP

=XLOOKUP(lookup_value, lookup_array, return_array, [if_not_found])

Example:

=XLOOKUP(102, A2:A4, B2:B4, "Not Found")

✅ Easier and more powerful — works both vertically & horizontally.

4️⃣ INDEX + MATCH

=INDEX(return_range, MATCH(lookup_value, lookup_range, 0))

Example:

=INDEX(B2:B4, MATCH(102, A2:A4, 0))

✅ More flexible — works left-to-right or right-to-left (unlike VLOOKUP).

🎯 Why We Use Lookups

Reason	Explanation
🔍 **Find data quickly**	Automatically fetch values from large tables.
⚙️ **Reduce manual work**	No need to type data repeatedly.
📊 **Create reports**	Helps create dashboards and summaries.
🔗 **Data relationships**	Connect data from multiple sheets.
✅ **Accuracy**	Avoid typing errors and mismatched data.

🧠 Quick Summary

Function	Search Direction	Can search left?	Flexible?	Modern?
VLOOKUP	Vertical	❌ No	⚪ Basic	❌ Old
HLOOKUP	Horizontal	❌ No	⚪ Basic	❌ Old
INDEX+MATCH	Both	✅ Yes	✅ Yes	⚪ Advanced

Function	Search Direction	Can search left?	Flexible?	Modern?
XLOOKUP	Both	✅ Yes	✅ Yes	✅ Modern