Vlookup

**Understanding VLOOKUP in Excel**

**VLOOKUP** is a powerful function in Excel that helps you find specific information in a table or a range of cells. The "V" stands for "vertical" because it searches for data in a column and moves across to find the corresponding value in another column. Think of it as a way to look up a piece of information and then get a related piece of information back.

Here's a breakdown of the four key parts, or "arguments," you need to provide to the VLOOKUP function:

* **lookup\_value**: This is the piece of information you are looking for. It's the unique identifier that VLOOKUP will use to find a match in your table. For example, if you want to find an employee's salary, your lookup\_value would be the employee's ID number.
* **table\_array**: This is the entire range of cells that contains your data. VLOOKUP will search for your lookup\_value in the **first column** of this range.
* **col\_index\_num**: This is the column number in your table\_array that contains the data you want to retrieve. The first column of your table\_array is always 1, the second is 2, and so on. If you want to find the price of a product, and the price is in the third column of your data table, your col\_index\_num would be 3.
* **range\_lookup**: This tells VLOOKUP whether you want an exact match or an approximate match.
  + **FALSE** or **0**: This is used for an **exact match**. You'll use this most of the time. It means VLOOKUP will only return a value if it finds the exact lookup\_value you specified.
  + **TRUE** or **1**: This is for an **approximate match**. It's useful for things like finding a grade based on a score range. It's important to remember that for this to work correctly, the first column of your table\_array must be sorted in ascending order.

**An Example**

Let's say you have a list of products with their IDs and prices.

| Product ID | Product Name | Price |
| --- | --- | --- |
| A101 | Laptop | $1200 |
| A102 | Mouse | $25 |
| A103 | Keyboard | $75 |

If you want to find the price of the "Mouse," you would use this VLOOKUP formula:

=VLOOKUP("A102", A2:C4, 3, FALSE)

Here's how the formula works:

* "A102" is your lookup\_value (the Product ID you're searching for).
* A2:C4 is your table\_array (the entire data table).
* 3 is the col\_index\_num (the **Price** is in the 3rd column of the table).
* FALSE tells VLOOKUP to find an exact match for "A102."

The result of this formula would be $25.

**VLOOKUP** is a very useful function for many tasks, such as merging data from different tables, automating data entry, and creating dynamic reports. It's a fundamental skill to learn for anyone who works with data in Excel.

Hlookup

Of course. Here is an explanation of the HLOOKUP function in Excel.

**Understanding HLOOKUP in Excel**

**HLOOKUP** is a function in Excel used to find and retrieve data from a table based on a specific value. The "H" stands for "horizontal" because it searches for data in a **row** and then moves down to find the corresponding value in another row. It's the horizontal counterpart to VLOOKUP.

Think of it as looking up a piece of information and then getting a related piece of information back, but instead of using columns, you are using rows.

Just like with VLOOKUP, HLOOKUP requires four key pieces of information, called "arguments," to work correctly:

* **lookup\_value**: This is the piece of information you are looking for. HLOOKUP will search for this value in the **first row** of your data table. For example, if you want to find the sales for a specific month, your lookup\_value would be the name of that month (e.g., "January").
* **table\_array**: This is the entire range of cells that contains your data. HLOOKUP will search for your lookup\_value in the **first row** of this range.
* **row\_index\_num**: This is the row number in your table\_array that contains the data you want to retrieve. The first row of your table\_array is always 1, the second is 2, and so on. If you want to find the total sales, and the sales data is in the third row of your table, your row\_index\_num would be 3.
* **range\_lookup**: This tells HLOOKUP whether you want an exact match or an approximate match.
  + **FALSE** or **0**: This is used for an **exact match**. You'll use this most of the time. It means HLOOKUP will only return a value if it finds the exact lookup\_value you specified.
  + **TRUE** or **1**: This is for an **approximate match**. It's used for finding values within a range. For this to work correctly, the first row of your table\_array must be sorted in ascending order.

**An Example**

Let's say you have a table with monthly sales data arranged horizontally.

|  | **January** | **February** | **March** |
| --- | --- | --- | --- |
| **Sales** | $12000 | $15000 | $18000 |
| **Expenses** | $8000 | $9500 | $10000 |

If you want to find the **sales** for **February**, you would use this HLOOKUP formula:

=HLOOKUP("February", B1:D3, 2, FALSE)

Here's how the formula works:

* "February" is your **lookup\_value** (the month you're searching for).
* B1:D3 is your **table\_array** (the entire data table).
* 2 is the **row\_index\_num** (**Sales** is in the 2nd row of the table).
* FALSE tells HLOOKUP to find an exact match for "February."

The result of this formula would be $15000.

While VLOOKUP is more commonly used because data is often arranged in columns, HLOOKUP is just as useful when your data is structured horizontally.