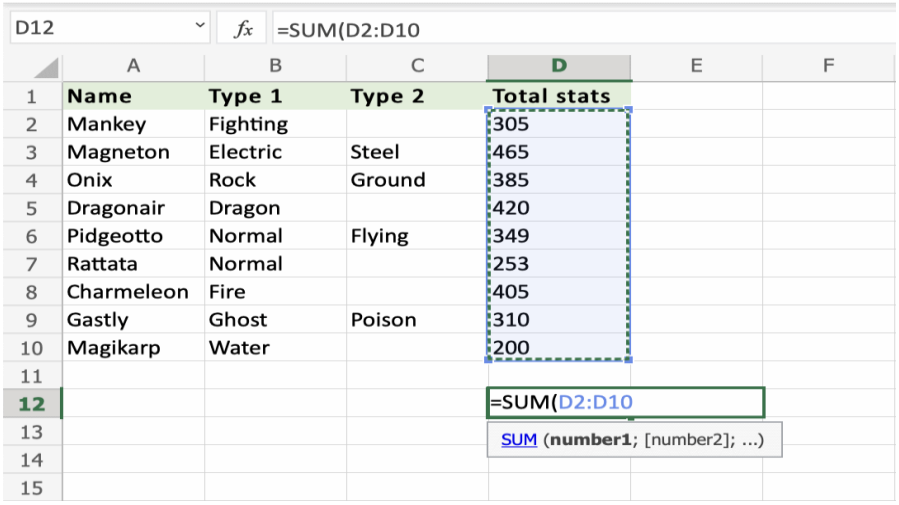
EXPRIMENT – 3

SUM Function

The **SUM** function is a premade function in Excel, which adds numbers in a range.

1. Select a cell
2. Type `=SUM`
3. Double click the **SUM** command
4. Select a range
5. Hit enter



	A	B	C	D	E	F
1	Name	Type 1	Type 2	Total stats		
2	Mankey	Fighting		305		
3	Magneton	Electric	Steel	465		
4	Onix	Rock	Ground	385		
5	Dragonair	Dragon		420		
6	Pidgeotto	Normal	Flying	349		
7	Rattata	Normal		253		
8	Charmeleon	Fire		405		
9	Gastly	Ghost	Poison	310		
10	Magikarp	Water		200		
11						
12				=SUM(D2:D10		
13						
14						
15						

SUMIFS Function

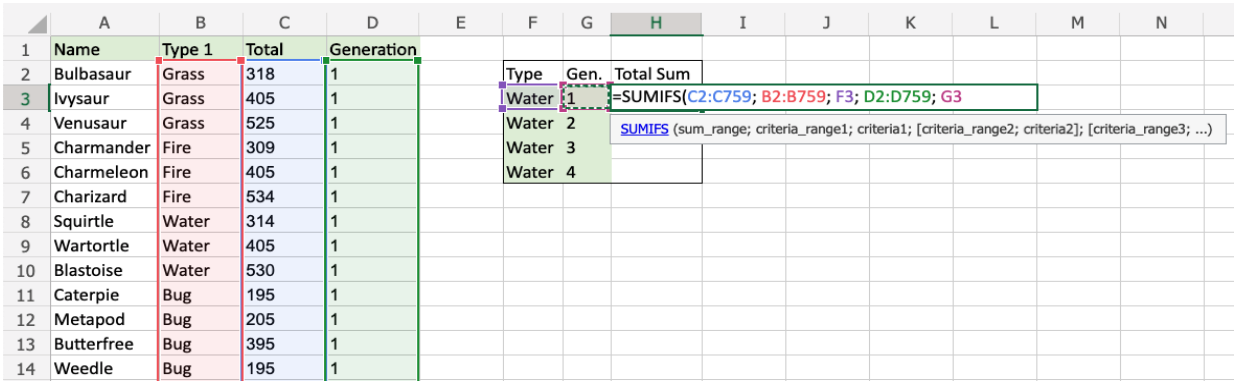
The SUMIFS function is a premade function in Excel, which calculates the sum of a range based on one or more **true** or **false condition**.

=SUMIFS(**sum_range**, **criteria_range1**, **criteria1**, **[criteria_range2, criteria2] ...**)

Find the sum of total stats for Water type 1st Generation Pokemon:

1. Select the cell H3
2. Type =SUMIFS
3. Double click the **SUMIFS** command
4. Specify the range for the sum C2:C759 (the Total values)
5. Type ,
6. Specify the range for the first conditionB2:B759 (the Type 1 values)
7. Type ,
8. Specify the criteria (the cell F3, which has the value "Water")
9. Type ,
10. Specify the range for the second conditionD2:D759 (the Generation values)
11. Type ,

12. Specify the criteria (the cell G3, which has the value "1")
13. Hit enter



	A	B	C	D
1	Name	Type 1	Total	Generation
2	Bulbasaur	Grass	318	1
3	Ivysaur	Grass	405	1
4	Venusaur	Grass	525	1
5	Charmander	Fire	309	1
6	Charmeleon	Fire	405	1
7	Charizard	Fire	534	1
8	Squirtle	Water	314	1
9	Wartortle	Water	405	1
10	Blastoise	Water	530	1
11	Caterpie	Bug	195	1
12	Metapod	Bug	205	1
13	Butterfree	Bug	395	1
14	Weedle	Bug	195	1

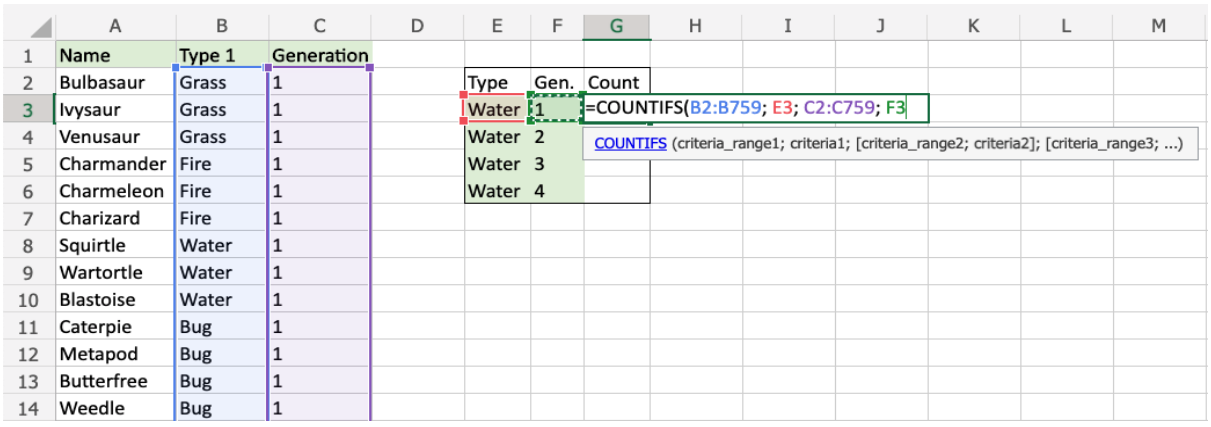
Type	Gen.	Total Sum
Water	1	
Water	2	
Water	3	
Water	4	

COUNTIFS Function

The **COUNTIFS** function is a premade function in Excel, which counts cells in a range based on one or more **true** or **false condition**.

`=COUNTIFS(criteria_range1, criteria1, [criteria_range2, criteria2], ...)`

1. Select the cell G3
2. Type =COUNTIFS
3. Double click the **COUNTIFS** command
4. Specify the range for the type B2:B759 (the Type 1 values)
5. Type ,
6. Specify the criteria (the cell E3, which has the value "Water")
7. Type ,
8. Specify the range for the second conditionC2:C759 (the Generation values)
9. Type ,
10. Specify the criteria (the cell F3, which has the value "1")
11. Hit enter



	A	B	C
1	Name	Type 1	Generation
2	Bulbasaur	Grass	1
3	Ivysaur	Grass	1
4	Venusaur	Grass	1
5	Charmander	Fire	1
6	Charmeleon	Fire	1
7	Charizard	Fire	1
8	Squirtle	Water	1
9	Wartortle	Water	1
10	Blastoise	Water	1
11	Caterpie	Bug	1
12	Metapod	Bug	1
13	Butterfree	Bug	1
14	Weedle	Bug	1

Type	Gen.	Count
Water	1	
Water	2	
Water	3	
Water	4	

VLOOKUP

Look for the value in the left most column of the table & return the same row value that column num you specify by default table must be sorted in ascending order.

FORMULA OF VLOOKUP

VLOOKUP(lookup_value, Table_array, col_index_num,[range lookup])

Arguments used are defined as:

lookup_value : This is the lookup value that should be provided by the user and the data you want to look up. This is a mandatory argument.

table_array : This is the table where the *lookup_value* and our desired output both exist. VLOOKUP() function uses this *table_array* argument to find the result. This is a mandatory argument.

col_index_num : This is the column number of the *table_array* where VLOOKUP() will search for its output. If it gets the result, it returns the specific value.This is also a mandatory argument.

[range_lookup] : The user may or may not provide this according to his or her needs. This argument's value may be **True or False.** If

'True', it means an approximate match

'False', it searches for an exact match.

How to Use the VLOOKUP Function in Excel

Step 1: Select a cell

Step 2: Apply Vlookup

Step 3: Double-click the VLOOKUP command

Step 4: Select the cell and Put a comma

Step 5: Mark table Range and Put Comma

Step 6: Type the number of columns, counted from the left

Step 7: Type 1 or 0 and Press Enter

Step 8: Preview Result

Match - index

The MATCH and INDEX functions in Excel are often used together to perform powerful lookups and data retrieval operations. Here's a breakdown of each function and how they can be combined:

MATCH Function:

The MATCH function, as described earlier, returns the relative position of a specified value within a range of cells.

It's typically used to find the position of a lookup value in a sorted or unsorted array.

```
=MATCH(lookup_value, lookup_array, [match_type])
```

INDEX Function:

The INDEX function returns the value of a cell in a specified row and column of a range.

It's often used to retrieve specific data points from a table or range based on row and column numbers.

```
=INDEX(reference, [row], [column])
```

Types of error in excel

In Excel, errors can occur for various reasons, ranging from incorrect formulas to issues with data entry. Here are some common types of errors you might encounter:

#DIV/0! - This error occurs when you attempt to divide a number by zero.

#VALUE! - This error typically appears when a function or formula uses an inappropriate data type. For example, if you try to perform mathematical operations on text values.

#REF! - This error indicates that a cell reference is not valid. It usually happens when you delete a cell that a formula is referencing.

#N/A - This error stands for "Not Available" and often occurs with lookup functions like VLOOKUP or MATCH when they can't find the specified value.

#NAME? - This error occurs when Excel doesn't recognize text in a formula. It may happen if you misspell a function name or refer to a named range that doesn't exist.

#NUM! - This error usually appears when a formula contains invalid numeric values, such as square roots of negative numbers or logarithms of zero or negative numbers.

#NULL! - This error arises when you incorrectly use a space character in a formula where Excel expects a comma or colon to separate arguments.

Circular Reference - This is not exactly an error but a warning. It occurs when a formula directly or indirectly refers to its own cell. Excel cannot resolve this circular reference and warns the user about it.