

Special Functions

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Special Functions

IFERROR Function:

The `IFERROR` function in Google Sheets is used to handle errors that might occur in a formula. It allows you to specify a value or action to take if an error is encountered, and another value or action if no error occurs.

Syntax:

```
=IFERROR(value, value_if_error)
```

- **value:** The expression or formula you want to evaluate.
- **value_if_error:** The value to return if the expression or formula results in an error.

A	B	C	D
Item	price	sale quantity	cost per kg
apple	1050	15	70
mango	1800	10	180
banana	500	22	23
orange	2000	0	Division by 0 Error
litchi	1270	30	42
guava	750	0	Division by 0 Error

A	B	C	D
Item	price	sale quantity	cost per kg
apple	1050	15	70
mango	1800	10	180
banana	500	22	23
orange	2000	0	#DIV/0!
litchi	1270	30	42
guava	750	0	#DIV/0!

Division by Zero error. So instead of showing red mark in your table rather choose IFERROR function.

XLOOKUP

```
=XLOOKUP(  
  XLOOKUP(  
    search_key, lookup_range,  
    result_range, [missing_value],  
    [match_mode], [search_mode])
```

match_mode - [optional]
How to find a match for the search_key. 0 is for an exact match, 1 for an exact match or the next value that is bigger than the search_key, -1 for an exact match or the next value that is lower than the search_key, and 2 for a wildcard match. If unspecified, this defaults to finding an exact match.

[match_mode], [search_mode])

match of the first value that is lower than the search_key, and 2 for a wildcard match. If unspecified, this defaults to finding an exact match.

- 0 - exact match
- 1 - exact match or next greater value
- 1 - exact match or next smaller value.
- 2 - wildcard.

search_mode - [optional]

How to search through the look-up range. 1 is to search from the first entry to the last one, -1 to search from the last entry to the first, 2 to search through the range using binary search and assuming the range is sorted in ascending order, and -2 to search through the range using binary search and assuming the range is sorted in descending order. If unspecified, this defaults to searching through the range from the first entry to the last one.

0:exact match
1: exact match or next bigger
-1:exact match or next smaller
2:wildcard characters

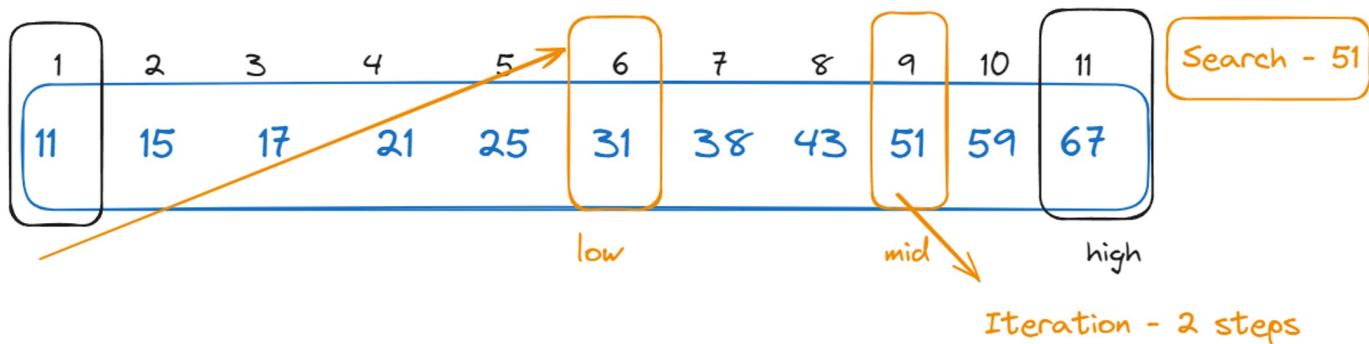
1:search first to last
-1: search last to first

→ Linear search.

2 : search first to last in binary search mode.
-2 : search last to first in binary search mode

"Sorted order"

Binary Search - Sorted



Iteration - 2 steps

$$mid = (low + high) / 2$$

$$mid = (1 + 11) = 12/2 = 6.$$

$$= 6 + 11 = 17 / 2 = 8.5 \sim 9$$

9 steps
Linear Search

2 Search
Binary Search

sorted

=XLOOKUP(A9,\$A\$2:\$A\$7,B2:B7,"Missing",0,1)

A	B	C	D
vertical xlookup			
Product	Price		
Samsung	3970		
Nokia	3646		
Moto	3741		
Oppo	3270		
Vivo	1025		
Moto	3741		

Vivo	1025
Moto	3741

=XLOOKUP(A9,\$A\$2:\$A\$7,\$B\$2:\$B\$7,"Missing",0,1)

```
=XLOOKUP(search_key, lookup_range,  
        result_range, [missing_value],  
        [match_mode], [search_mode])
```

Linear Search in Top to Bottom approach.

A	B	C	D	E	F
horizontal xlookup					
Product	Samsung	Nokia	Moto	Oppo	Vivo
Price	3970	3646	3741	3270	1025
Nokia	3646				

A	B	C	D
left xlookup			
Rank		Product	Price
1	Samsung	3970	
2	Nokia	3646	
3	Moto	3741	
4	Oppo	3270	
5	Vivo	1025	
Product	Rank		
Moto	3		

I	J	K	L	M	N
approx xlookup					
Score	Grade		Student	Score	Grade
90	A		Anumeet	98	A
80	B		Mikul	60	D
70	C		Niharika	48	E
60	D		Bhaskar	71	C
0	E		Swati	82	B

0:exact match

1: exact match or next bigger

-1:exact match or next smaller

?wildcard characters

- 1: exact match or next bigger
- 1: exact match or next smaller
- 2: wildcard characters

▼ | fx =XLLOOKUP(M15,\$I\$16:\$I\$21,\$K\$16:\$K\$21,"NA",0,-1)

I	J	K	L	M	N
Reverse xlookup			Salesperson	Amount	
salesperson	item	amount	Rishabh	10000	
Vibhuti	Samsung	15000			
Rishabh	Nokia	17000			
Karamjeet	Oppo	14000			
Rishabh	Vivo	10000			
Karamjeet	Moto	15000			
Vibhuti	Apple	18000			

1: search first to last

-1: search last to first

Row and Column xlookup		
salesperson	product	amount
rohit	samsung	15000
mitali	nokia	17000
bhaskar	oppo	14000
anumeet	samsung	10000
raunak	nokia	15500
suhail	lava	16000

salesperson	product	amount
anumeet	=XLOOKUP(M28,I28:I33,J28:J33)	=XLOOKUP(M28,\$I\$28:\$I\$33,\$K\$28:\$K\$33,"NA",0,1)
salesperson	raunak	
product	=XLOOKUP(N30,\$I\$28:\$I\$33,\$J\$28:\$J\$33,"NA",0,1)	
amount	=XLOOKUP(N30,\$I\$28:\$I\$33,\$K\$28:\$K\$33,"NA",0,1)	

OFFSET

OFFSET:

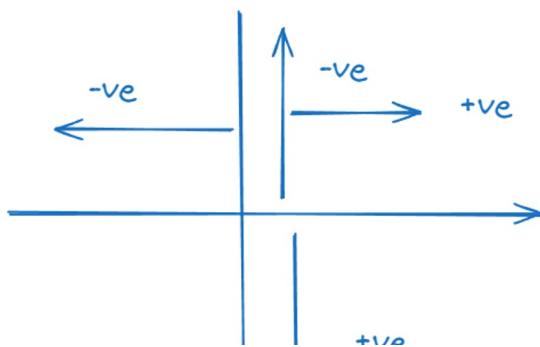
The OFFSET function in Google Sheets has the following syntax:

Plain Text

```
=OFFSET(reference, rows, columns, [height], [width])
```



To find/ fetch a matrix of n*m from a particular table.



H8:K12 | J12 =OFFSET(F15,-12,-5,5,4)

	A	B	C	D	E	F	G	H	I	J	K
1	Product Name	Sales Record					Result				
2		2016	2017	2018	2019	2020					
3	Desktop	150	189	102	287	391					
4	Laptop	264	542	665	303	217					
5	Smartphone	984	1207	1553	832	776					
6	Landphone	128	65	89	198	101					
7	Telephone	288	387	456	693	359					
8	Refrigerator	572	561	532	476	598					
9	Television	489	499	503	772	1212					
10	Table Fan	965	1301	1567	1309	1234					
11	Microwave Oven	773	1007	1047	1597	2150					
12	DVD	102	86	88	53	45					
13	Radio	42	32	39	12	17					
14	Private Car	531	632	629	978	771					
15	Motorcycle	1014	965	1129	1609	1374					
16											

+ve

Result		
499	503	772
1301	1567	1309
1007	1047	1597

Desktop	150	189	102
Laptop	264	542	665
Smartphone	984	1207	1553
Landphone	128	65	89
Telephone	288	387	456

L =OFFSET(K1,8,-8,3,3)

F	G	H	I	J	
20		Result			
91	499	503	772		
17	1301	1567	1309		
76	1007	1047	1597		