

Introduction to Excel



Basic Information

- Cell

- Row

- Column



The diagram shows an Excel spreadsheet with columns A through H and rows 1 through 18. Column C is highlighted in light blue with a thick blue border, representing a column selection. Row 16 is highlighted in light red with a thick red border, representing a row selection. The intersection of the highlighted row and column, cell C16, is highlighted in green, representing a single cell selection.

	A	B	C	D	E	F	G	H
1								
2								
3								
4								
5								
6								
16								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								

Planning Your Spreadsheet

- The first row of your spreadsheet is always the titles of your columns
- Each row after that is meant to represent a single data point of one category.
- Figuring out what each row is meant to represent, before you even put anything in, is fundamental to building a spreadsheet that displays your data as clearly and as accessibly as possible

Formulas

- Every formula must start with an = sign
- When a formula references other cells:
 - Use a , to reference a list multiple individual cells
 - Use a : to reference a range of cells

Total (Sum)

- Format:
=SUM(RANGE_START:RANGE_END)
- Example: =SUM(B2:B11)

	A	B
1	Name	Cookie Boxes Sold
2	Mark	3
3	Lucy	6
4	Agatha	1
5	Jeremy	8
6	Bridget	7
7	Charlie	1
8	Zoey	6
9	Josh	3
10	Justin	3
11	Elijah	11
12		
13	TOTAL	
14	=SUM(B2:B11)	49

Average (Mean)

► Format:
=AVERAGE(RANGE_START:RANGE_END)

► Example: =AVERAGE(B2:B11)

	A	B
1	Name	Cookie Boxes Sold
2	Mark	3
3	Lucy	6
4	Agatha	1
5	Jeremy	8
6	Bridget	7
7	Charlie	1
8	Zoey	6
9	Josh	3
10	Justin	3
11	Elijah	11
12		
13	TOTAL	
14	=AVERAGE(B2:B11)	4.9

Mode

► Format:
=MODE(RANGE_START:RANGE_END)

► Example: =MODE(B2:B11)

	A	B
1	Name	Cookie Boxes Sold
2	Mark	3
3	Lucy	6
4	Agatha	1
5	Jeremy	8
6	Bridget	7
7	Charlie	1
8	Zoey	6
9	Josh	3
10	Justin	3
11	Elijah	11
12		
13	TOTAL	
14	=MODE(B2:B11)	3

Median

► Format:
=MEDIAN(RANGE_START:RANGE_END)

► Example: =MEDIAN(B2:B11)

	A	B
1	Name	Cookie Boxes Sold
2	Mark	3
3	Lucy	6
4	Agatha	1
5	Jeremy	8
6	Bridget	7
7	Charlie	1
8	Zoey	6
9	Josh	3
10	Justin	3
11	Elijah	11
12		
13	TOTAL	
14	=MEDIAN(B2:B11)	4.5

Maximum

- ▶ Format:
=MAX(RANGE_START:RANGE_END)

- ▶ Example: =MAX(B2:B11)

	A	B
1	Name	Cookie Boxes Sold
2	Mark	3
3	Lucy	6
4	Agatha	1
5	Jeremy	8
6	Bridget	7
7	Charlie	1
8	Zoey	6
9	Josh	3
10	Justin	3
11	Elijah	11
12		
13	TOTAL	
14	=MAX(B2:B11)	11

Minimum

- ▶ Format:
=MIN(RANGE_START:RANGE_END)

- ▶ Example: =MIN(B2:B11)

	A	B
1	Name	Cookie Boxes Sold
2	Mark	3
3	Lucy	6
4	Agatha	1
5	Jeremy	8
6	Bridget	7
7	Charlie	1
8	Zoey	6
9	Josh	3
10	Justin	3
11	Elijah	11
12		
13	TOTAL	
14	=MIN(B2:B11)	1

Square Root

► Format: =SQRT(number)

► Example: =SQRT(B2)

	A	B	C	D
1	Name	Cookie Boxes Sold	Square Root	
2	Mark	3	1.73205081	=SQRT(C2)
3	Lucy	6	2.44948974	=SQRT(C3)
4	Agatha	1	1	=SQRT(C4)
5	Jeremy	9	3	=SQRT(C5)
6	Bridget	7	2.64575131	=SQRT(C6)
7	Charlie	1	1	=SQRT(C7)
8	Zoey	6	2.44948974	=SQRT(C8)
9	Josh	3	1.73205081	=SQRT(C9)
10	Justin	3	1.73205081	=SQRT(C10)
11	Elijah	11	3.31662479	=SQRT(C11)

Operators

	A	B
1	91	56

Operation	Symbol	Purpose	Example	Return Value
Plus	+	Add values	=A1+B1	147
Minus	-	Subtract values	=A1-B1	35
Times	*	Multiply values	=A1*B1	5096
Divide	/	Divide a value by another value	=A1/B1	1.625
Is equal to	=	Check if a value is equal to a different value	=A1=B1	FALSE
Is not equal to	<>	Check if a value is NOT equal to a different value	=A1<>B1	TRUE
Is greater than	>	Check if a value is greater than a different value	=A1>B1	TRUE
Is greater than or equal to	>=	Check if a value is greater than or equal to a different value	=A1>=B1	TRUE
Is less than	<	Check if a value is less than a different value	=A1<B1	FALSE
Is less than or equal to	<=	Check if a value is less than or equal to a different value	=A1<=B1	FALSE

IF... THEN... ELSE...

- Format: =IF(logical_test, value_if_true, value_if_false)
 - Example: If you want to find out which of the kids sold 5 or more boxes of cookies, you can put an IF() formula in a cell in the same row as their name and boxes sold. The logic of the formula goes like this: IF the amount of boxes a person sold is greater than or equal to 5 is TRUE, then write "YES" in this cell, but if it is FALSE, then write "NO" in this cell. If you apply the formula to all the rows for that column, this gives you a column that lists whether each child sold 5 or more boxes
- This is one of the most useful formulas in all of excel because it can be used in many situations, to do many things
- You can arrange IF() formulas to give you very specific answers about your data
 - This requires you being very creative about how to get those answers using this type of logic

	A	B	C	D
1	Name	Cookie Boxes Sold	5 or More Boxes Sold	
2	Mark	3	NO	=IF(B2>=5,"YES","NO")
3	Lucy	6	YES	=IF(B3>=5,"YES","NO")
4	Agatha	1	NO	=IF(B4>=5,"YES","NO")
5	Jeremy	9	YES	=IF(B5>=5,"YES","NO")
6	Bridget	7	YES	=IF(B6>=5,"YES","NO")
7	Charlie	1	NO	=IF(B7>=5,"YES","NO")
8	Zoey	6	YES	=IF(B8>=5,"YES","NO")
9	Josh	3	NO	=IF(B9>=5,"YES","NO")
10	Justin	3	NO	=IF(B10>=5,"YES","NO")
11	Elijah	11	YES	=IF(B11>=5,"YES","NO")

LEFT() and RIGHT()

- Format: =LEFT(cell_with_text,number_of_letters)
 - Example: If you have a patient's first name followed by a column with the patient's last name, like this: and you want to make a formula that automatically extracts the first letter of their first and last names to get their initials, you can tell the formula: "Look at the cell with their first name, and look only at the first letter, and put it in this cell here." Then you can do the same thing with the last name!
- You can use these formulas to extract specific portions of text from other cells.

	A	B	C	D	E	F
1	First Name	Last Name	First Initial		Last Initial	
2	Mark	Phillips	M	=LEFT(A2,1)	P	=LEFT(B2,1)
3	Lucy	Johnson	L	=LEFT(A3,1)	J	=LEFT(B3,1)
4	Agatha	Christie	A	=LEFT(A4,1)	C	=LEFT(B4,1)
5	Jeremy	Fletcher	J	=LEFT(A5,1)	F	=LEFT(B5,1)
6	Bridget	Jones	B	=LEFT(A6,1)	J	=LEFT(B6,1)
7	Charlie	Smith	C	=LEFT(A7,1)	S	=LEFT(B7,1)
8	Zoey	Barton	Z	=LEFT(A8,1)	B	=LEFT(B8,1)
9	Josh	Harding	J	=LEFT(A9,1)	H	=LEFT(B9,1)
10	Justin	Dratch	J	=LEFT(A10,1)	D	=LEFT(B10,1)
11	Elijah	Washington	E	=LEFT(A11,1)	W	=LEFT(B11,1)

CONCATENATE

- Format: =CONCAT(text_1, text_2, text_3,...)
 - Example: Say you just used the LEFT() formulas to get the initials of the patients in two separate cells, but now you want them to be put together in one cell as one piece of text. You can join them together using the CONCAT() function. This formula takes the contents of the cells that you specify and joins them together in one cell.

	A	B	C	D	E	F
1	First Name	Last Name	First Initial	Last Initial	Initials	
2	Mark	Phillips	M	P	MP	=CONCAT(C2,D2)
3	Lucy	Johnson	L	J	LJ	=CONCAT(C3,D3)
4	Agatha	Christie	A	C	AC	=CONCAT(C4,D4)
5	Jeremy	Fletcher	J	F	JF	=CONCAT(C5,D5)
6	Bridget	Jones	B	J	BJ	=CONCAT(C6,D6)
7	Charlie	Smith	C	S	CS	=CONCAT(C7,D7)
8	Zoey	Barton	Z	B	ZB	=CONCAT(C8,D8)
9	Josh	Harding	J	H	JH	=CONCAT(C9,D9)
10	Justin	Dratch	J	D	JD	=CONCAT(C10,D10)
11	Elijah	Washington	E	W	EW	=CONCAT(C11,D11)