Microsoft Excel

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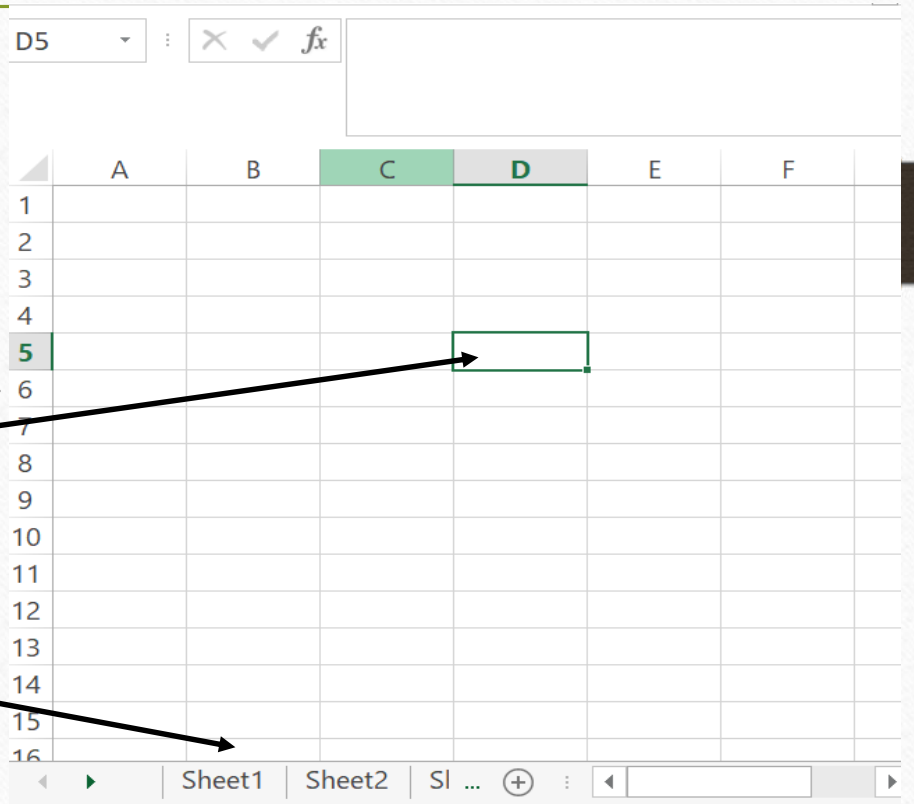
Introducing Microsoft Excel

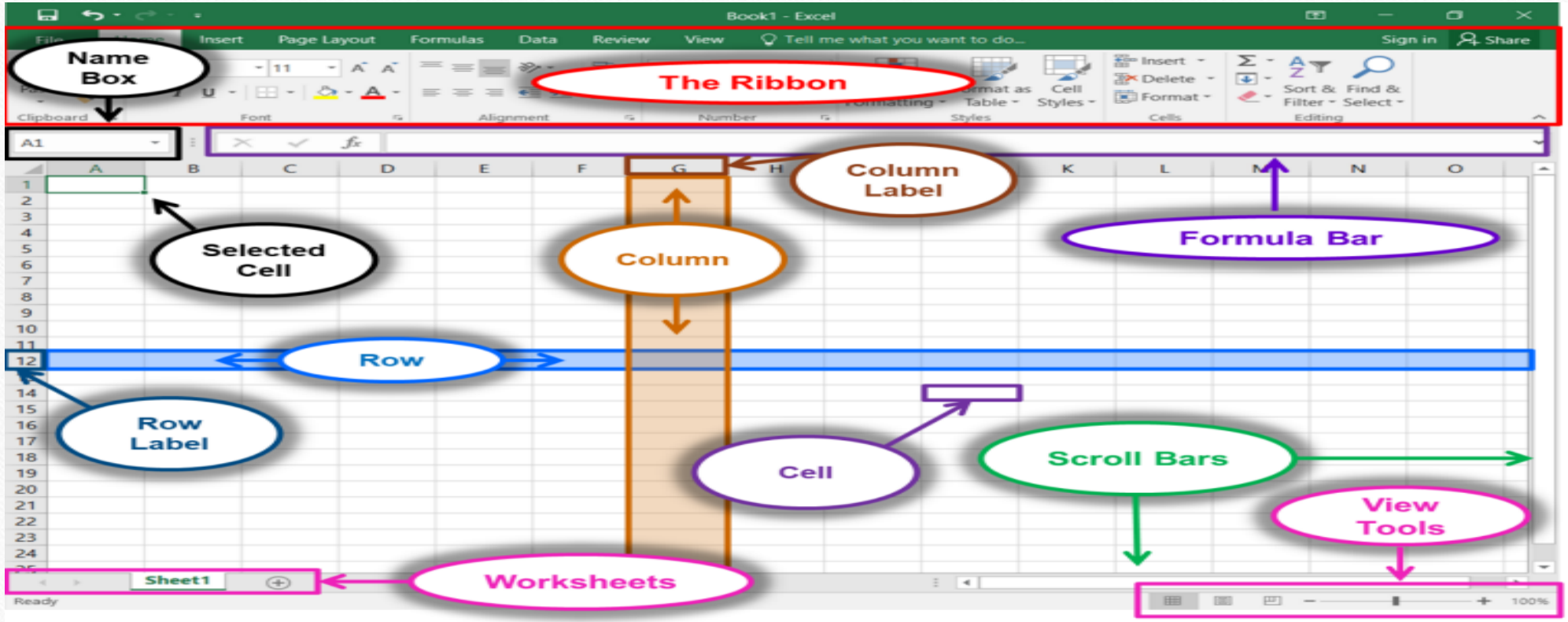
- Computer program used to enter, store, analyze, and present quantitative data
- Creates electronic versions of **spreadsheets**
  - Collection of text and numbers laid out in a grid
- Displays values calculated from data
- Allows **what-if analysis**
  - Ability to change values in a spreadsheet and assess the effect they have on calculated values

Overview of excel

- Microsoft excel consists of **workbooks**. Within each workbook, there is an infinite number of **worksheets.**
- Each worksheet contains **columns and rows**.
- Where a column and row intersect is called **cell** for e.g. **cell D5** is located where column d and row 5 meet.
- The tabs at the bottom of screen represent different worksheets within a workbook.



Overview of excel



Overview of excel

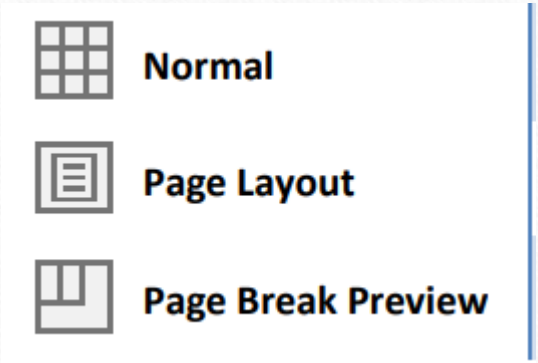
- Name Box: Displays the currently selected sell.
- Formula Bar: Displays the number, text, or formula that is in the currently selected cell, and allows you to edit it.
- Selected Cell: The selected cell has a dark border around it.
- Column: Columns run vertically (top to bottom).
- Column Label: Identifies each column with a letter. Clicking on a column label selects the entire column.
- Row: Rows run horizontally (left to right).

Overview of excel

- Row Label: Identifies each row with a number. Clicking on a row label selects the entire row.
- Cell: The intersection of a row and column.
- Worksheets: The worksheets contained in the workbook are displayed at the bottom-left of the screen. Click on a worksheet to view it.
- Scroll Bars: Used to view other parts of a worksheet when the entire worksheet cannot fit on the screen.
- View Tools: See Status Bar next

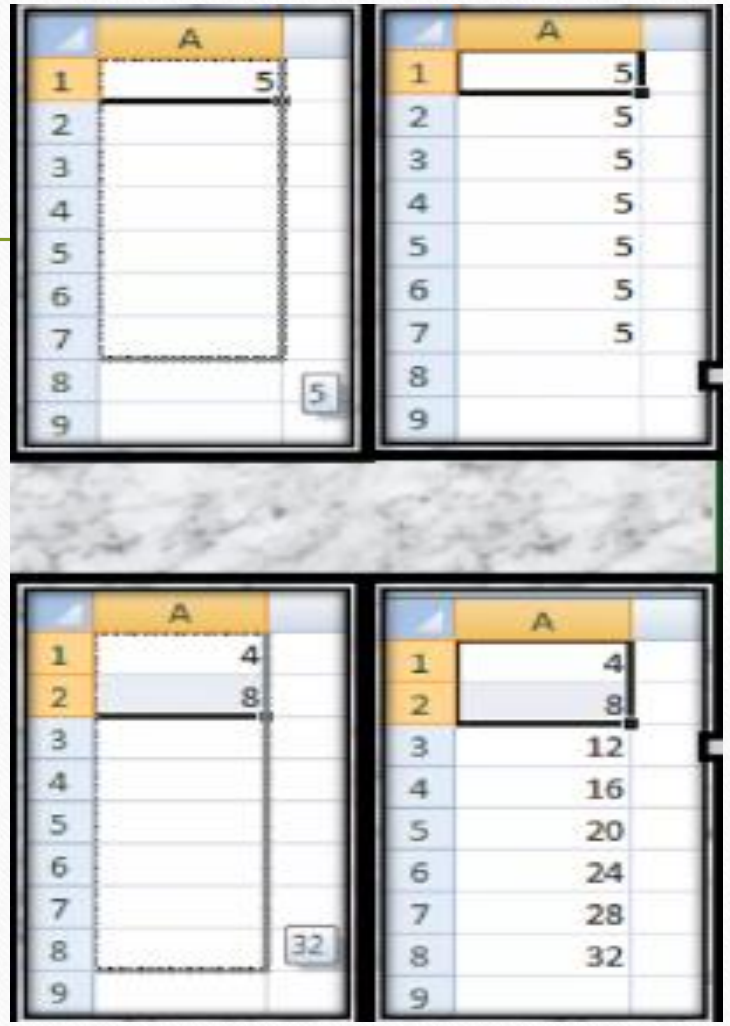
Overview of excel

- Status Bar The status bar is located below the document window area.
- At the right end are shortcuts to the different views that are available.
- Each view displays the spreadsheet in a different way, allowing you to carry out various tasks more efficiently.
- Normal “”This is the view we will be working in throughout this course. It simply displays the grid of cells that make up your spreadsheet””.
- Page Layout “”Shows what your spreadsheet will look like when printed on paper””
- Page Break “”Preview Allows you to add page breaks to your spreadsheet so you can better control what parts of the spreadsheet are printed on each page.””



Editing -fill

- in the lower right hand corner of the active cell is excels "fill handle". When you hold your mouse over the top of it you cursor will turn to across hair.
- If you have just one cell selected. If you click and drag to fill down a column of across a row it will copy that number or text to each of the other cells.
- If you have two cells selected, excel will fill in a series.it will complete the pattern. For example if you put 4 and 8 in two cells select them, click and drag the fill handle, excel will continue the pattern 12,16,20..etc
- Excel can also auto-fill series of dates ,times, days of week, month

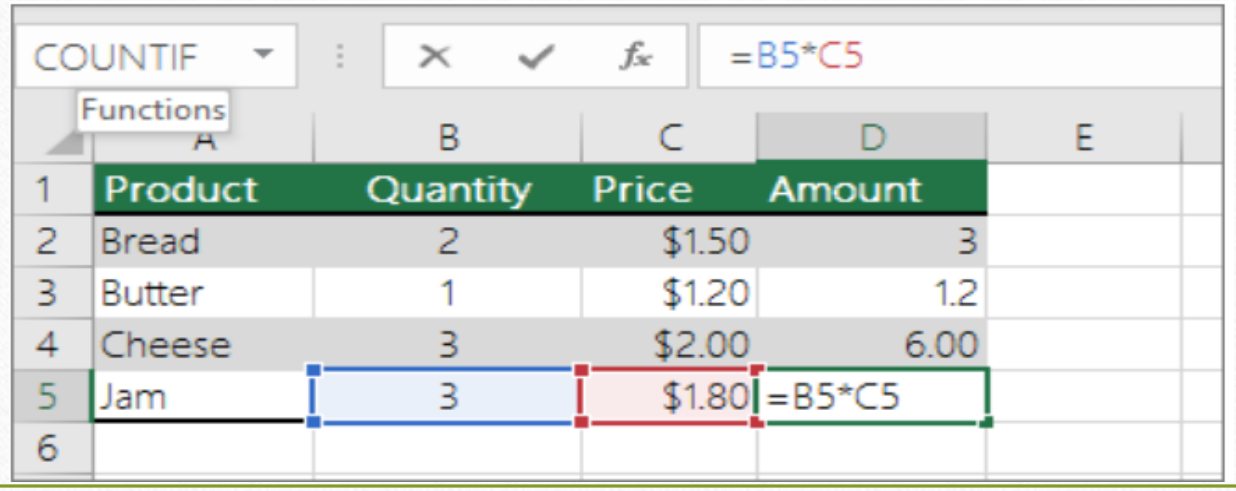


Sorting

- To sort in alphabetical order:
  - select cell in the column you want to sort
  - then click the sort & filter command in the editing group on home tab
  - Select sort A to Z
- To sort from smallest to largest:
  - select cell in the column you want to sort
  - then click the sort & filter command in the editing group on home tab
  - Select from smallest to largest

Cell reference

- By default, a cell reference is a relative reference, which means that the reference is relative to the location of the cell. If, for example, you refer to cell A2 from cell C2, you are actually referring to a cell that is two columns to the left (C minus A)—in the same row (2). When you copy a formula that contains a relative cell reference, that reference in the formula will change.



MS excel Function

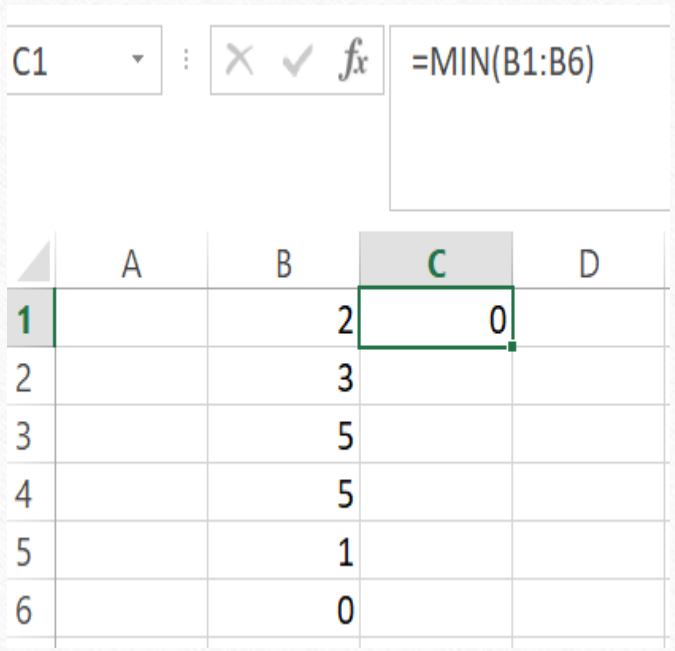
- Let's look at some of the most commonly used functions in MS excel formulas. We will start with statistical functions.

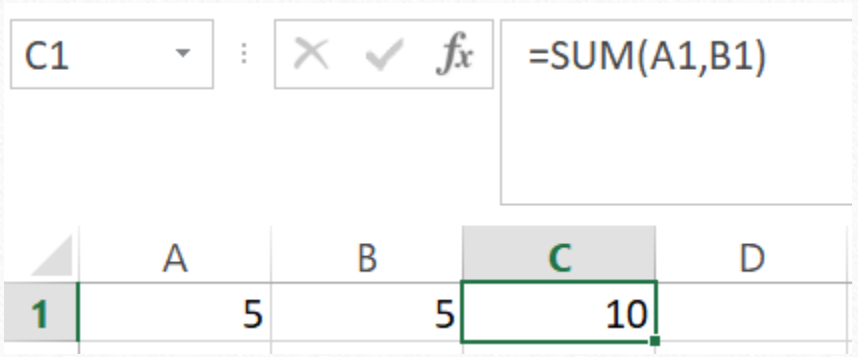
S/N	FUNCTION	CATEGORY	DESCRIPTION	USAGE
01	SUM	Math & Trig	Adds all the values in a range of cells	=SUM(E4:E8)
02	MIN	Statistical	Finds the minimum value in a range of cells	=MIN(E4:E8)
03	MAX	Statistical	Finds the maximum value in a range of cells	=MAX(E4:E8)
04	AVERAGE	Statistical	Calculates the average value in a range of cells	=AVERAGE(E4:E8)
05	COUNT	Statistical	Counts the number of cells in a range of cells	=COUNT(E4:E8)
06	LEN	Text	Returns the number of characters in a string text	=LEN(B7)

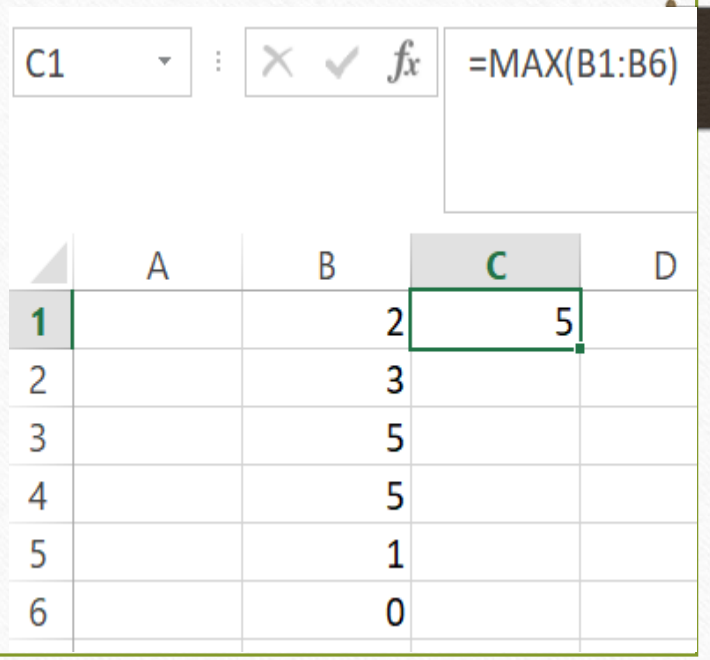
MS excel Function

07	SUMIF	Math & Trig	Adds all the values in a range of cells that meet a specified criteria. =SUMIF(range,criteria,[sum_range])	=SUMIF(D4:D8,”>=1000”,C4:C8)
08	AVERAGEIF	Statistical	Calculates the average value in a range of cells that meet the specified criteria. =AVERAGEIF(range,criteria, [average_range])	=AVERAGEIF(F4:F8,”Yes”,E4:E8)
09	DAYS	Date & Time	Returns the number of days between two dates	=DAYS(D4,C4)
10	NOW	Date & Time	Returns the current system date and time	=NOW()

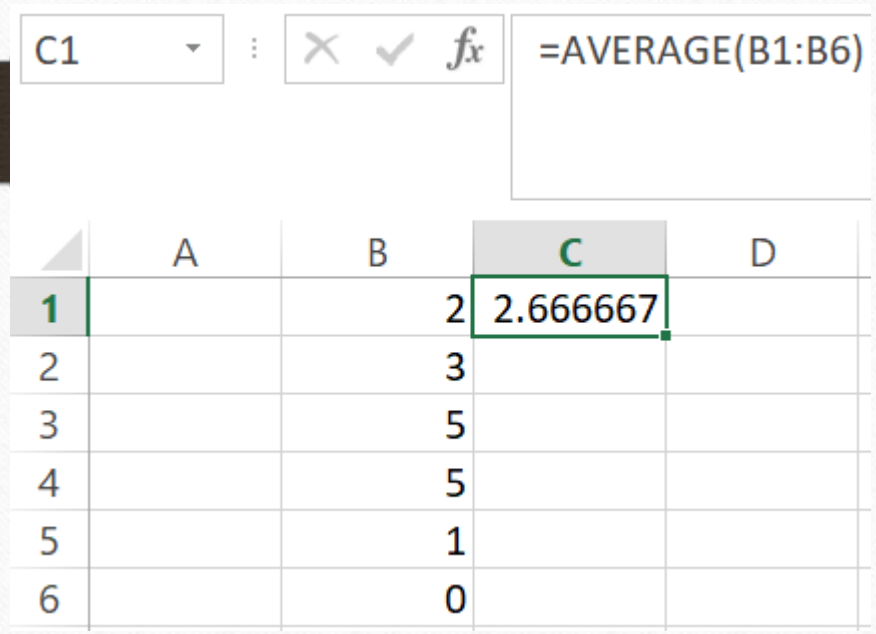
Example “sum ,min ,max”

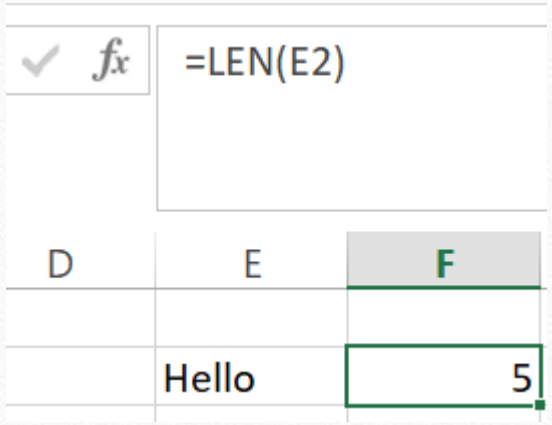


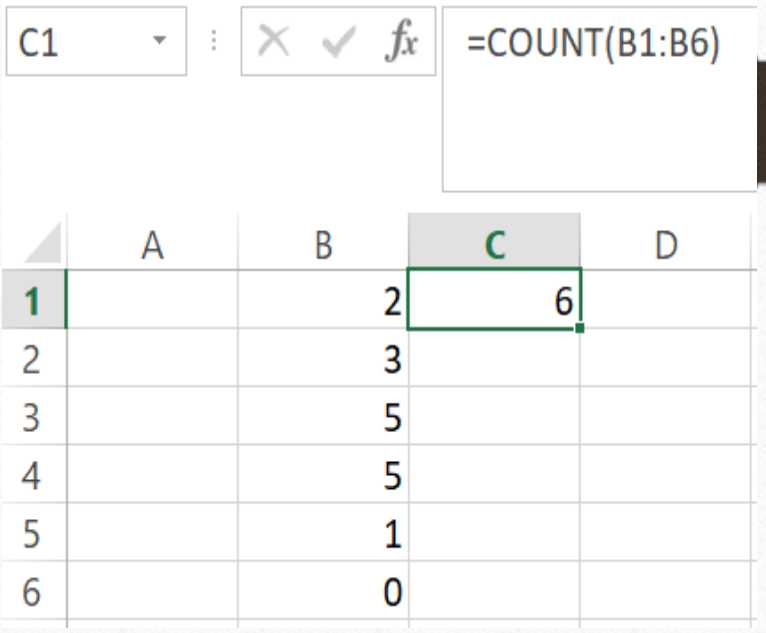




Example “count ,len ,average”



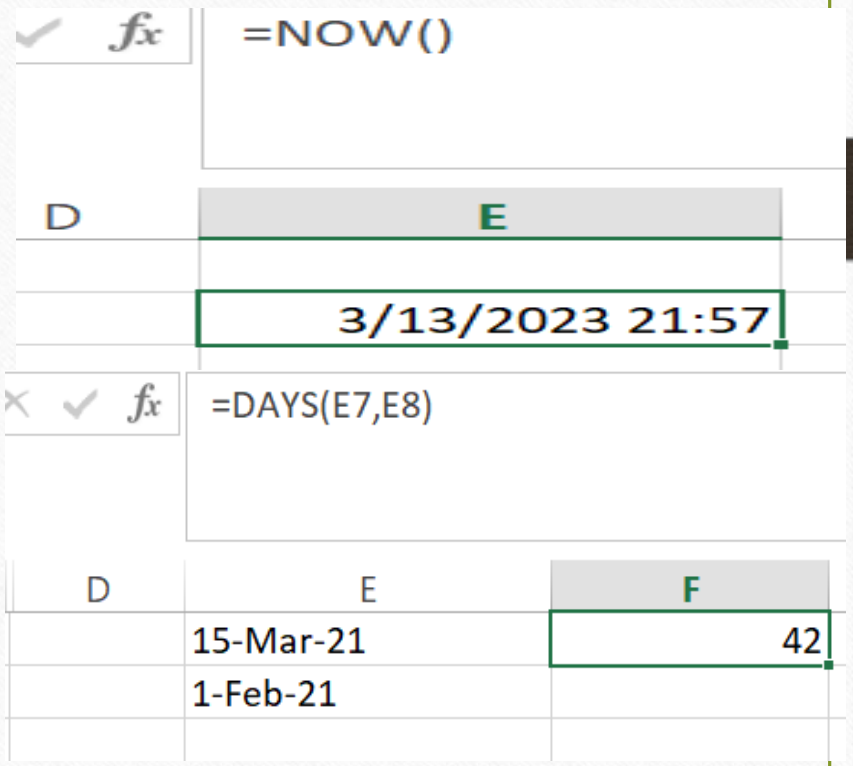




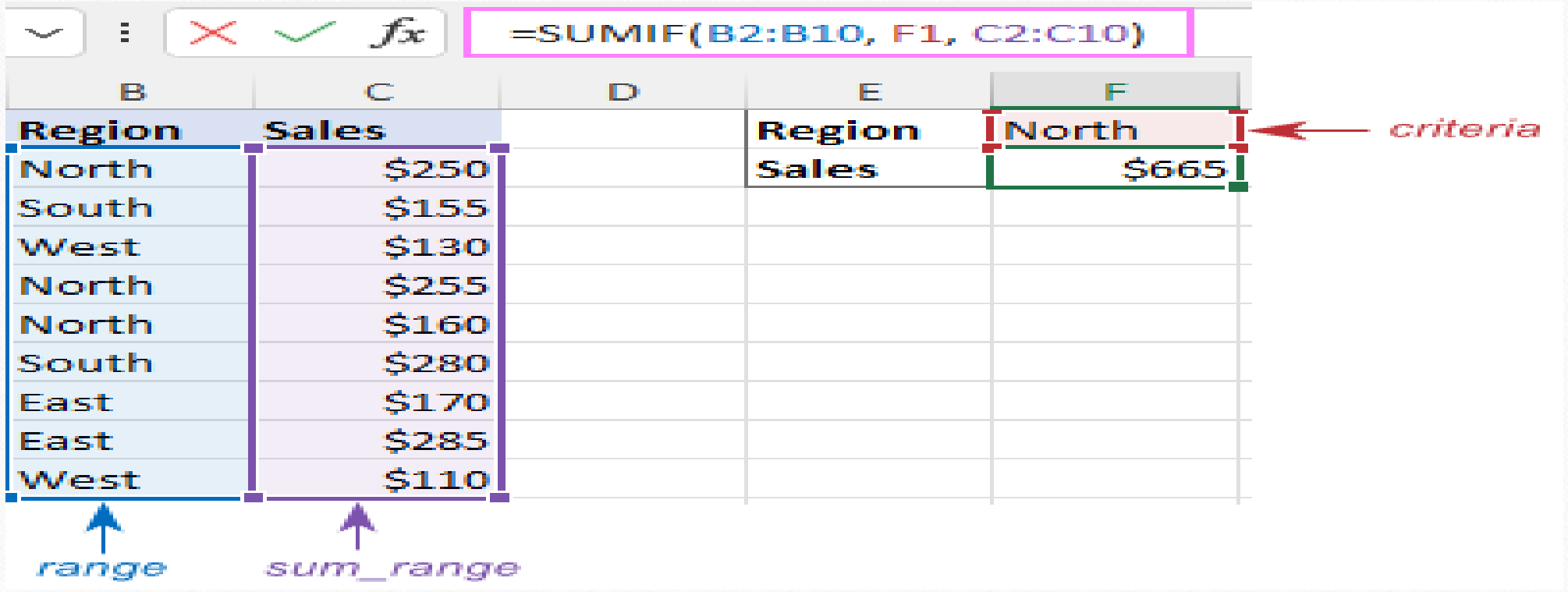
Example ”sumif ,now, days”

- **Note:** If sum range isn’t used then range is used for sum

A	B
5	3
1	7
7	4
3	1
9	8
4	6
2	2
FUNCTION	**RESULT**
=SUMIF(A1:A7,"<5")	**10**
=SUMIF(A1:A7,"<5",B1:B7)	**16**



Example ”sumif ”



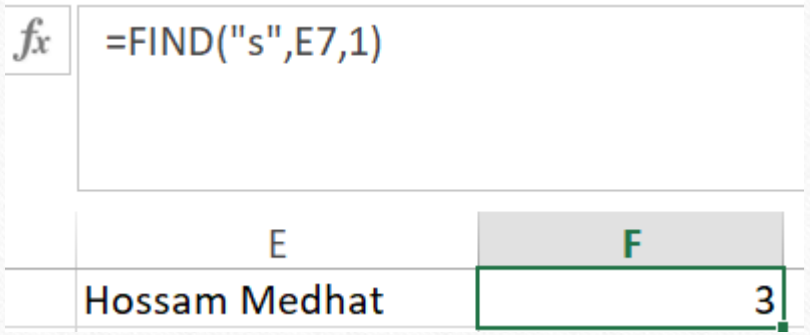
Additional functions

	A	B	C	D
1	**Base**	**Second**	**Combined**	**Formula**
2	Base	ball	Baseball	=CONCATENATE(A2,B2)
3	Base	ball	Baseball	=A3&B3
4	Mary	Jones	Mary Jones	=CONCATENATE(A4," ",B4)
5	Joe	Smith	Joe Smith	=A5&" "&B5
6	Thompson	Holt	Thompson & Holt	=CONCATENATE(A6," & ",B6)
7	123	456	123456	=A7&B7
8				

Additional functions

- **FIND Function**
  - FIND function returns a number which is the starting position of a substring in a string. In simple words, by using the find function you can find (case sensitive) a string's starting position from another string.
- **Syntax:**

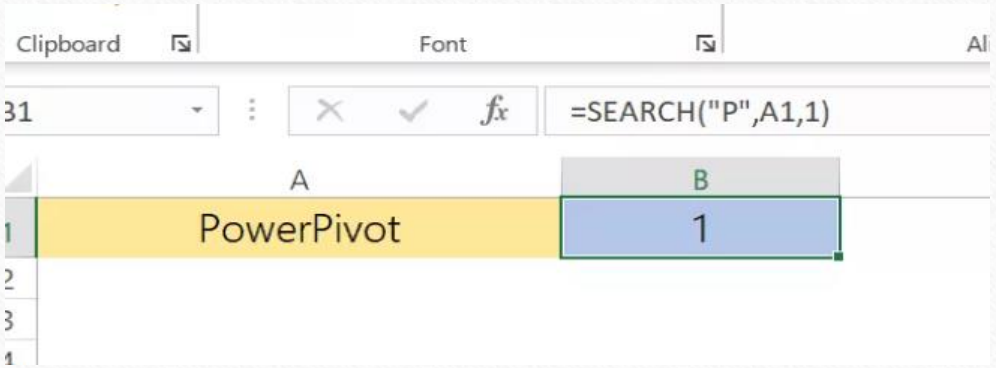
  FIND(find_text, within_text,[start_num])



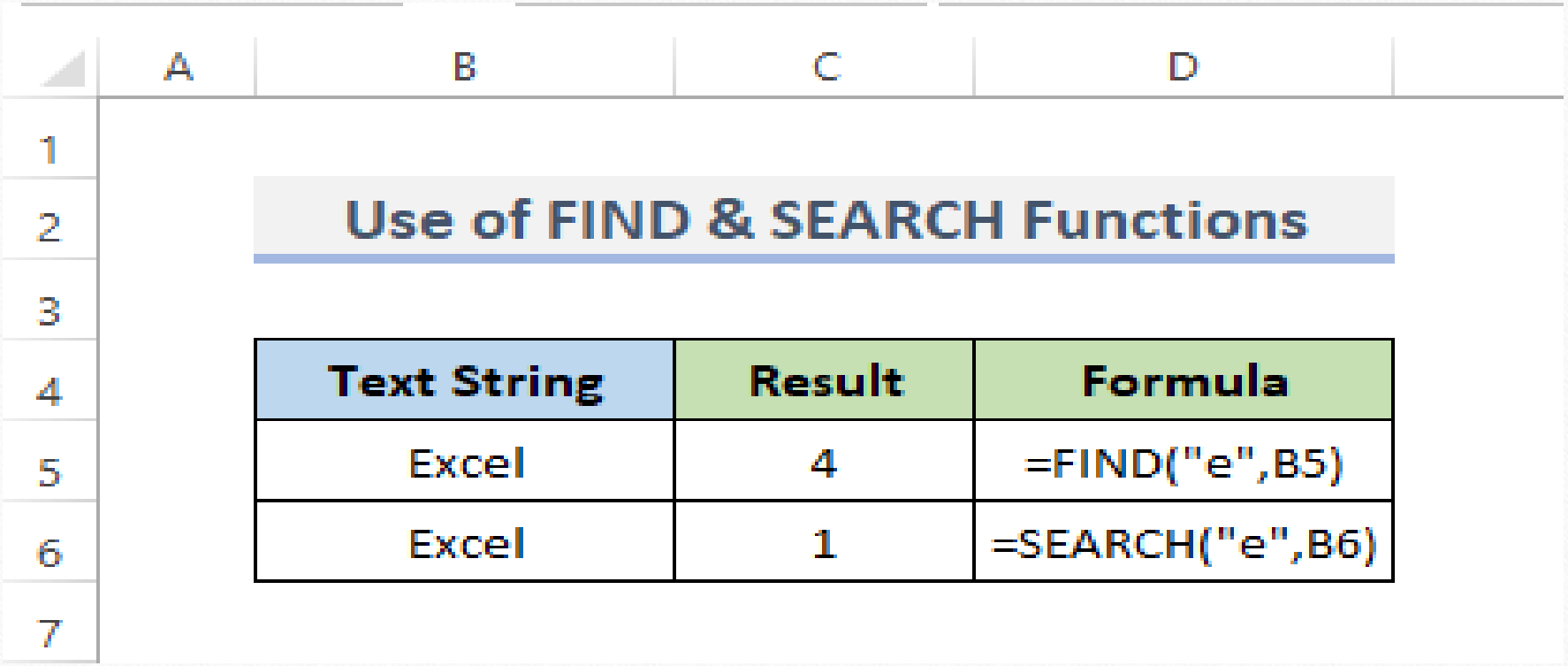
Additional functions

- **SEARCH function**
  - returns a number which is the starting position of a substring in a string. In simple words, with the SEARCH function, you can search (non-case sensitive) for a text string's starting position from another string.
- **Syntax:**

  SEARCH(find_text, within_text, [start_num])



Additional functions



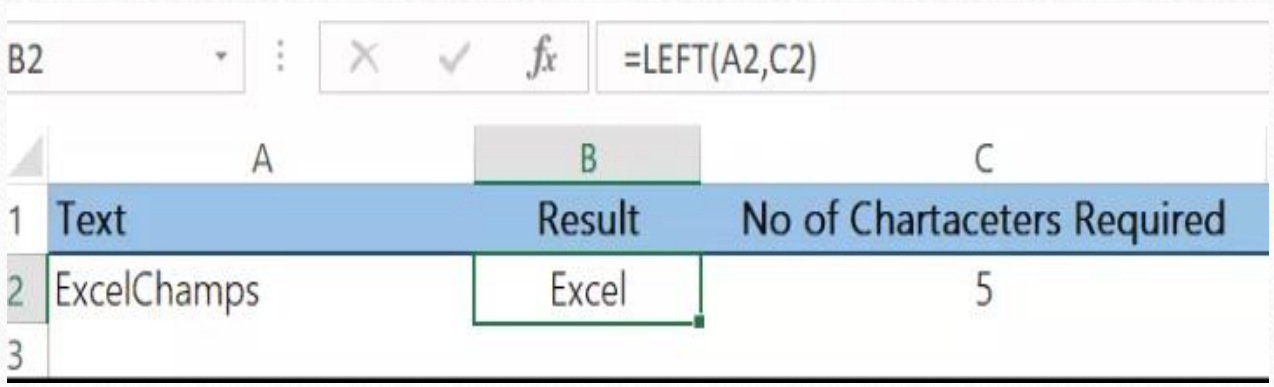
Use of FIND & SEARCH Functions

Text String	Result	Formula
Excel	4	=FIND("e",B5)
Excel	1	=SEARCH("e",B6)

Additional functions

- **LEFT Function**
  - **LEFT Functions return sequential characters from a string starting from the left side (starting).** In simple words, with the LEFT function, you can extract characters from a string from its left side.
- **Syntax:**

  LEFT(text, num_chars)



Additional functions

- **RIGHT Function**
  - The RIGHT function returns sequential characters from a string starting from the right side (ending). In simple words, with the RIGHT function, you can extract characters from a string from its left side.
- **Syntax:**

  RIGHT(text, num_chars)

Additional functions

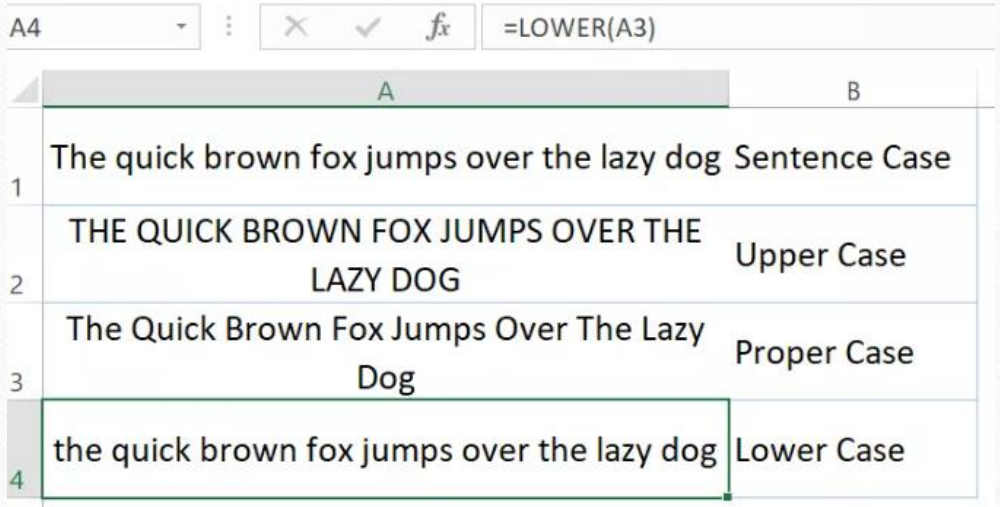
- **MID Function**
- MID returns a substring from a string using a specific position and number of characters.
- **Syntax:**

  MID(text, start_num, num_chars)

	A	B	C	D
1	Text String	Result	Formauls Syntax	Remarks
2	ExcelChamps.com	Champs	=MID(A2,6,6)	A Valid Syntax
3	ExcelChamps.com	Champs.com	=MID(A3,6,10)	A Valid Syntax
4	ExcelChamps.com	#VALUE!	=MID(A4,-1,6)	start_num is negative
5	ExcelChamps.com		=MID(A5,6,0)	num_char is zero
6	ExcelChamps.com	#VALUE!	=MID(A6,6,-1)	num_char is negative
7	ExcelChamps.com	#VALUE!	=MID(A7,0,6)	start_num is Zero
8	ExcelChamps.com	Champs	=MID("ExcelChamps",6,6)	Text defined with in the function

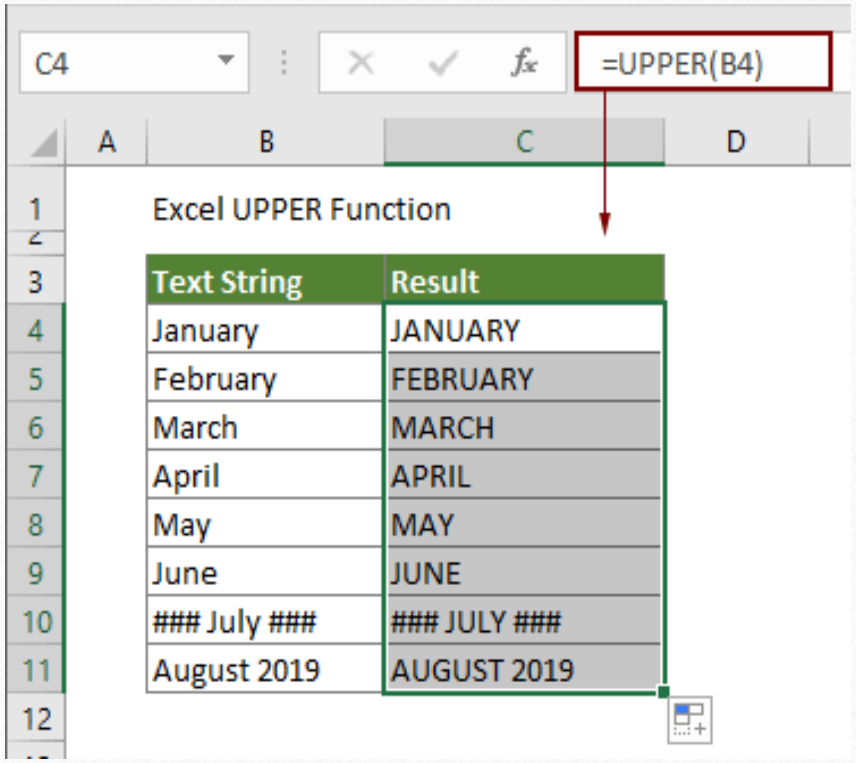
Additional functions

- **LOWER Function**
- LOWER returns the string after converting all the letters in small. In simple words, it converts a text string where all the letters you have are in small letters, numbers will stay intact.
- **Syntax**
- *LOWER(text)*



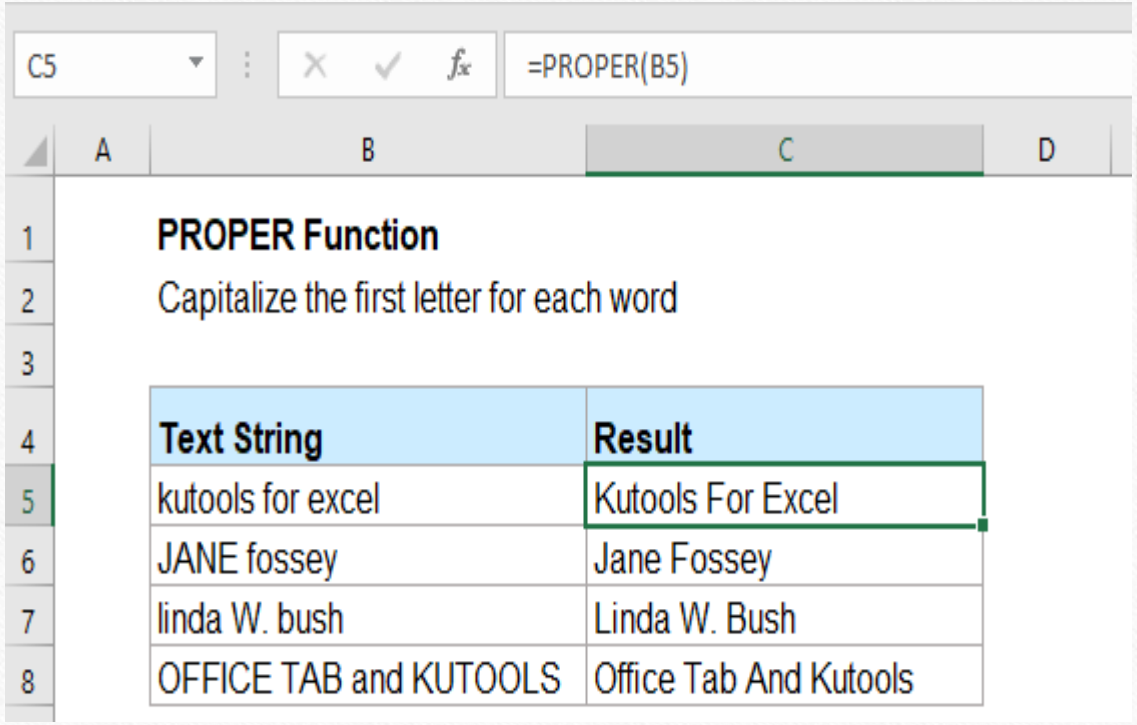
Additional functions

- **UPPER Function**
- The UPPER function converts a text string to all uppercase letters.
- **Syntax**
- *UPPER(text)*



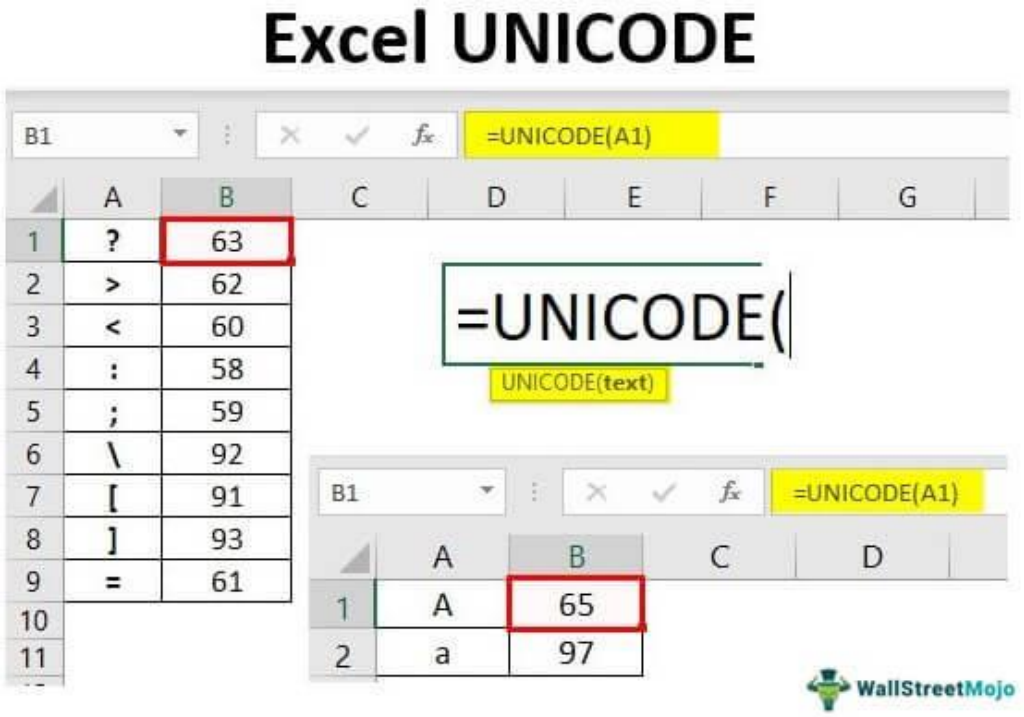
Additional functions

- **PROPER Function**
- The PROPER function capitalizes each word in a given text string.
- **Syntax**
- *PROPER(text)*



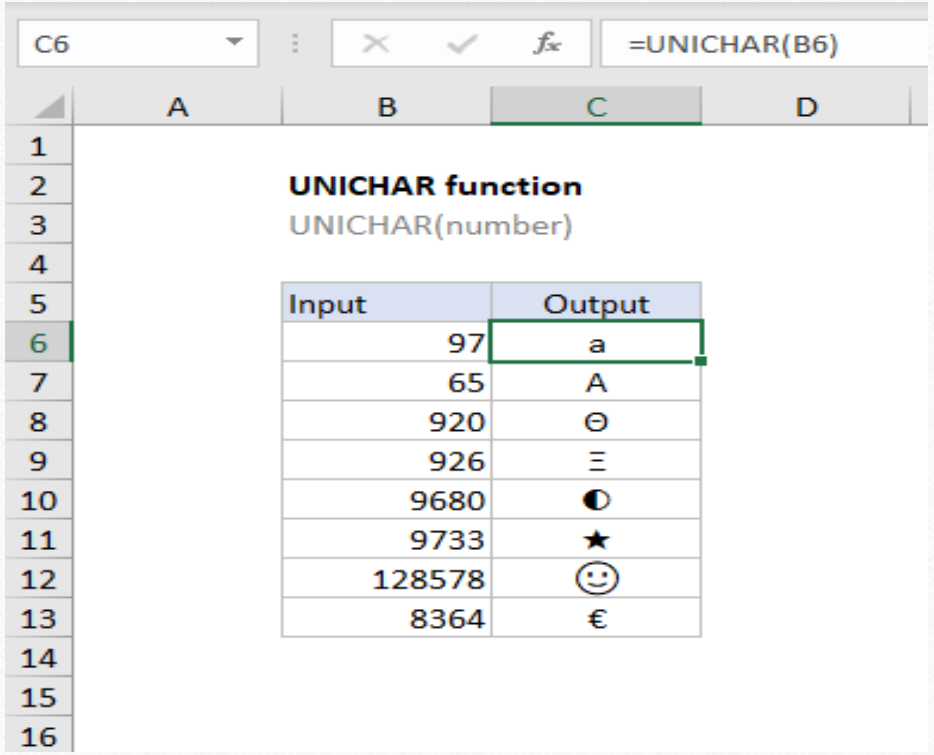
Additional functions

- **UNICODE Function**
- The Excel UNICODE function returns a number (code point) corresponding to a Unicode character.
- **Syntax**
- *UNICODE(text)*



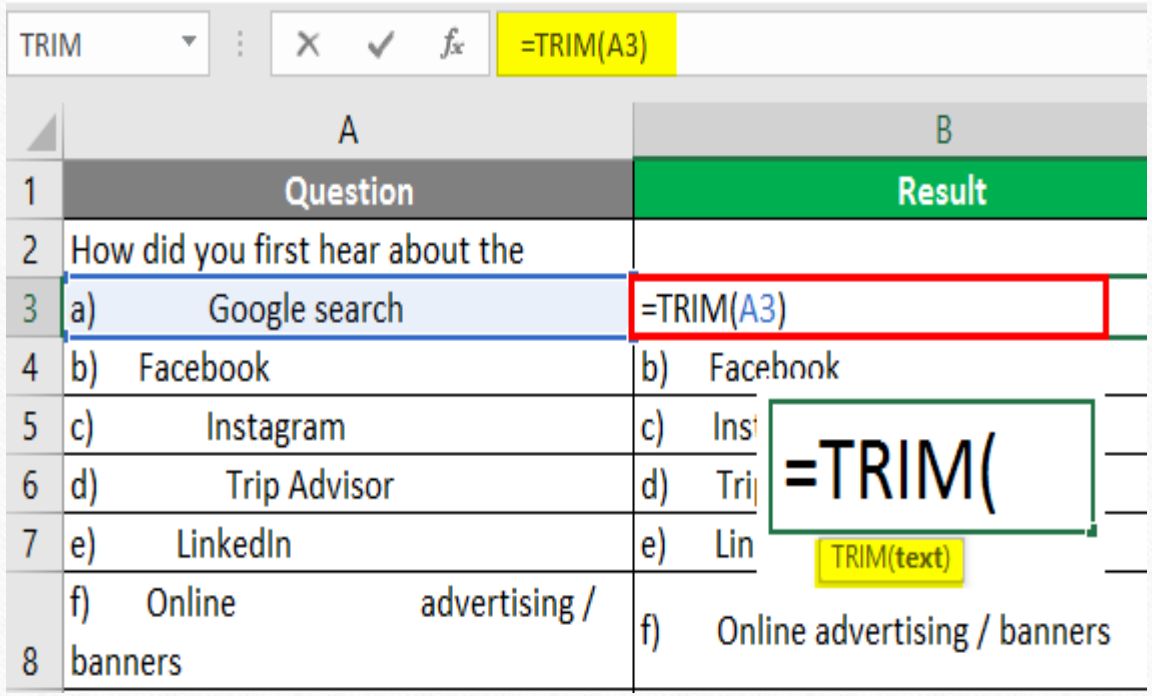
Additional functions

- **UNICHAR Function**
- The UNICHAR function returns the Unicode character at a given code point, provided as a number.
- **Syntax**
- *UNICHAR(number)*



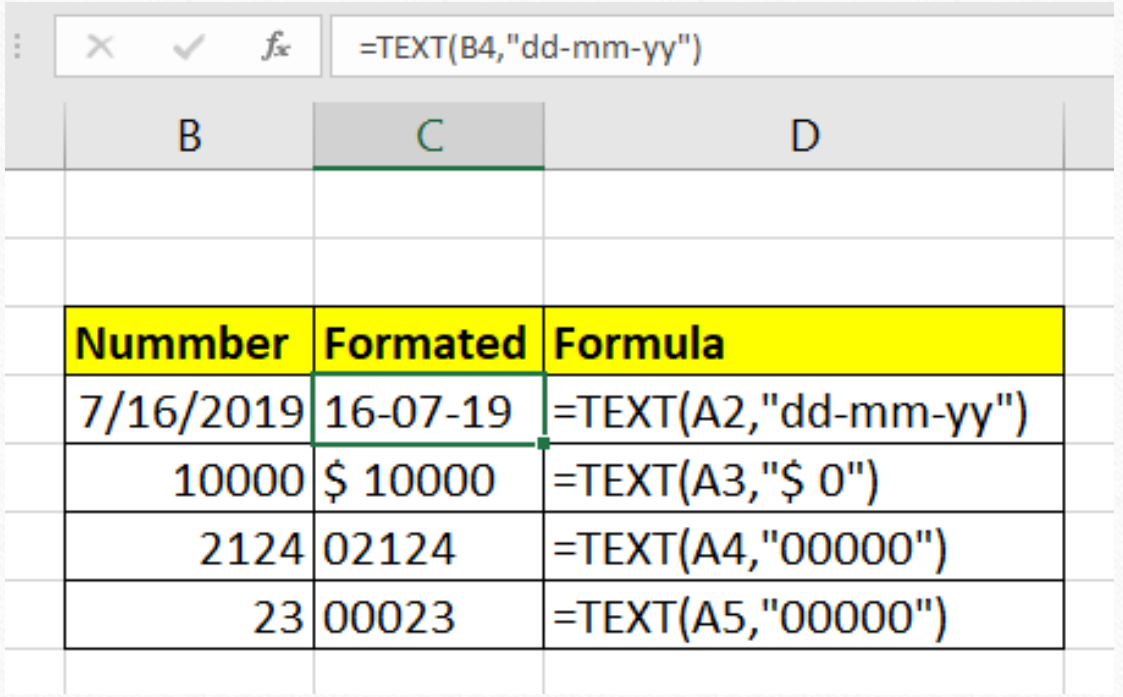
Additional functions

- **TRIM function**
- The **TRIM function** removes all spaces from text except for single spaces between words.
- **Syntax**
- *TRIM(text)*



Additional functions

- **TEXTJOIN function**
- TEXT function returns a number in a given number format, as text.
- **Syntax**
- *TEXT(Value, "Format code")*



Additional functions

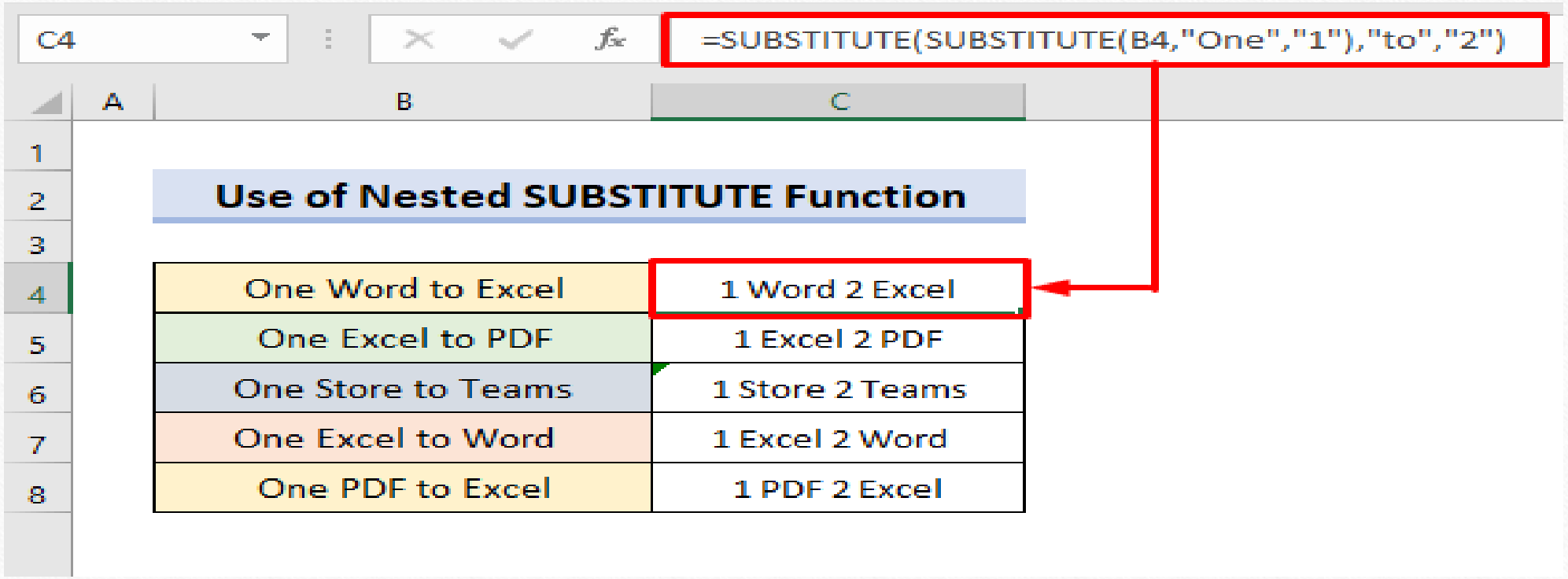
- **SUBSTITUTE function**
- SUBSTITUTE function can replace text by matching.

=SUBSTITUTE(A2,"White","Black")

	A	B	C
1	Input	Result	Formula
2	White white	Black white	=SUBSTITUTE(A2,"White","Black")
3	CAT CAT CAT	BAT BAT BAT	=SUBSTITUTE(A3,"C","B")
4	CAT CAT CAT	BAT CAT CAT	=SUBSTITUTE(A4,"C","B",1)
5	CAT CAT CAT	CAT BAT CAT	=SUBSTITUTE(A5,"C","B",2)
6	CAT CAT CAT	CAT CAT BAT	=SUBSTITUTE(A6,"C","B",3)

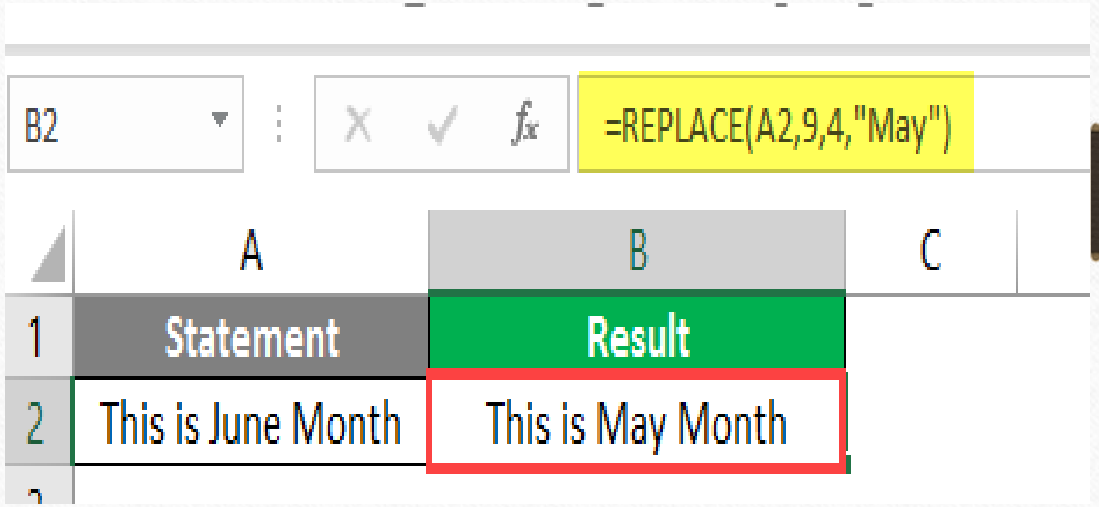
- **Syntax**
- *SUBSTITUTE(text, old_text, new_text, [instance_num])*

Additional functions



Additional functions

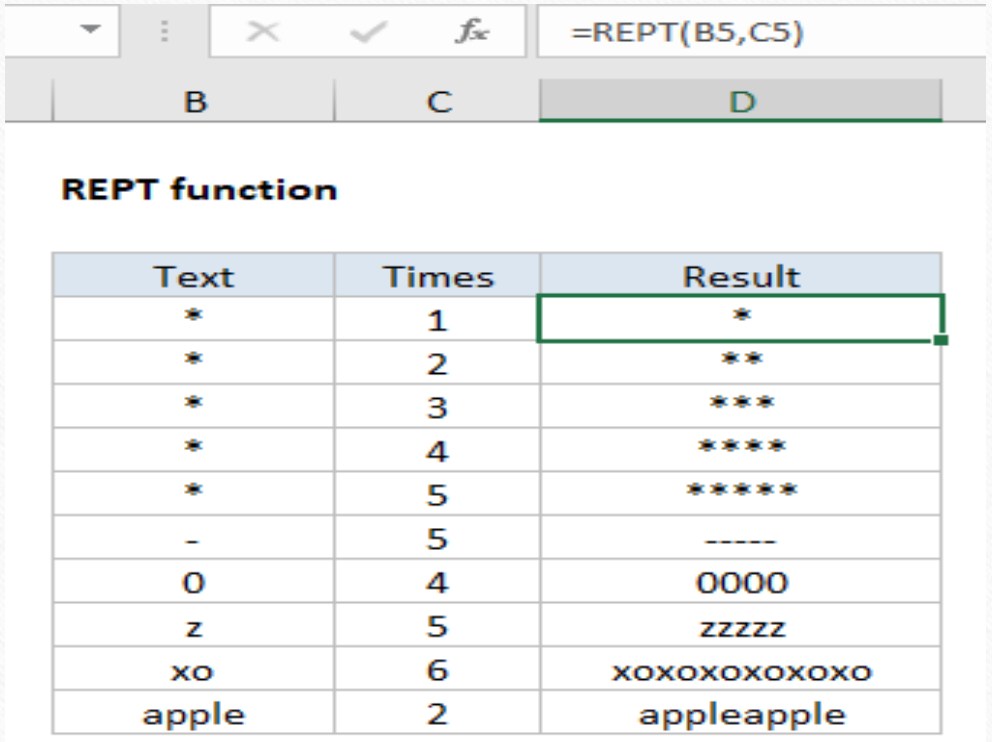
- **REPLACE function**
- REPLACE function changes one set of characters for another in a string.



- **Syntax**
- *REPLACE(old text, starting number, number of characters, new text)*

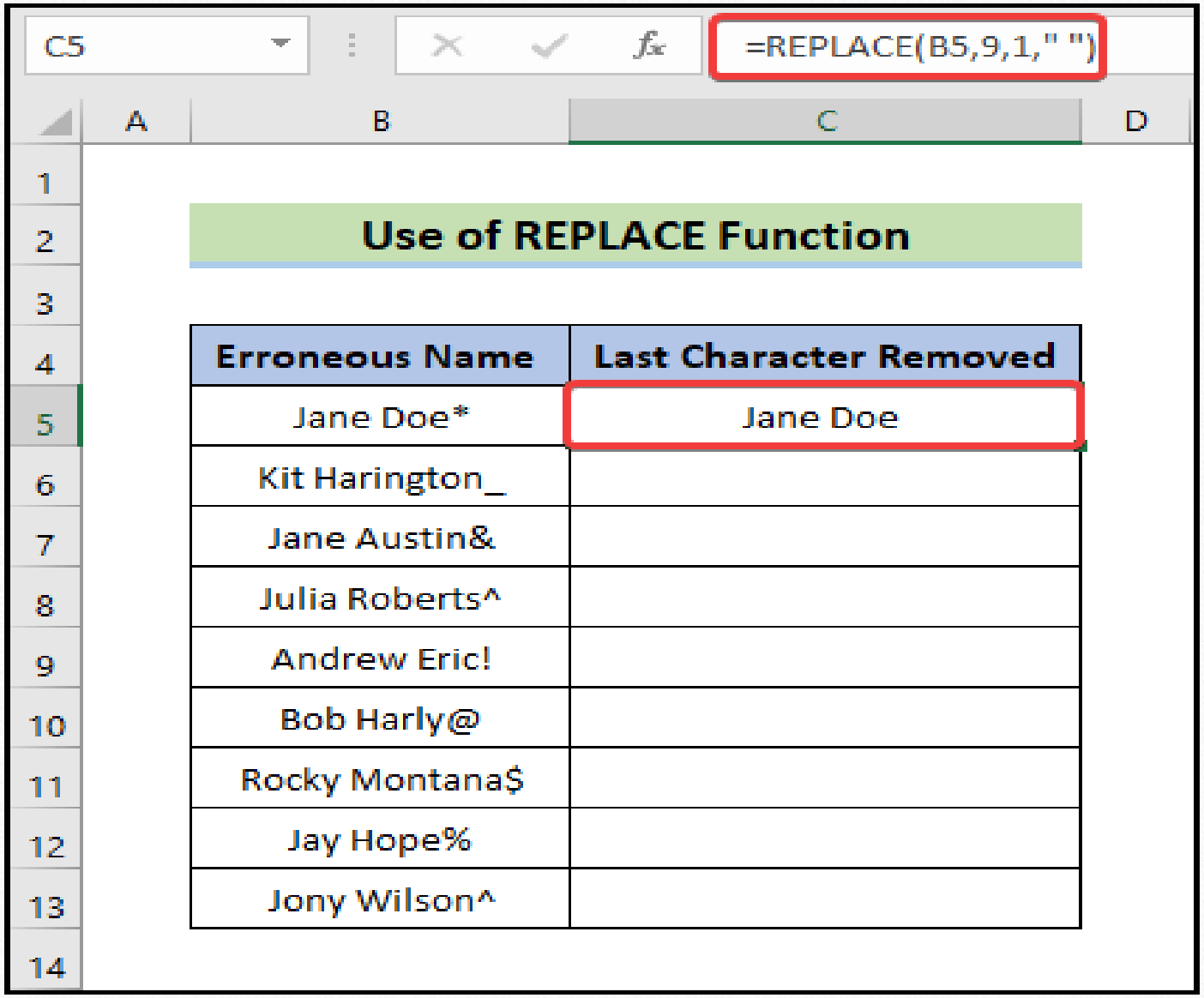
Additional functions

- **REPT function**
- REPT function repeats specified text a certain number of times.
- **Syntax**
- *REPT(text, number of times)*



Task 1

Erroneous Name	Last Character Removed
Jane Doe*	Jane Doe
Kit Harington_	
Jane Austin&	
Julia Roberts^	
Andrew Eric!	
Bob Harly@	
Rocky Montana$	
Jay Hope%	
Jony Wilson^	


C5
=REPLACE(B5,9,1," ")
A
B
C
D
Use of REPLACE Function
Erroneous Name
Last Character Removed
Jane Doe*
Jane Doe
Kit Harington_
Jane Austin&
Julia Roberts^
Andrew Eric!
Bob Harly@
Rocky Montana$
Jay Hope%
Jony Wilson^

Task 2

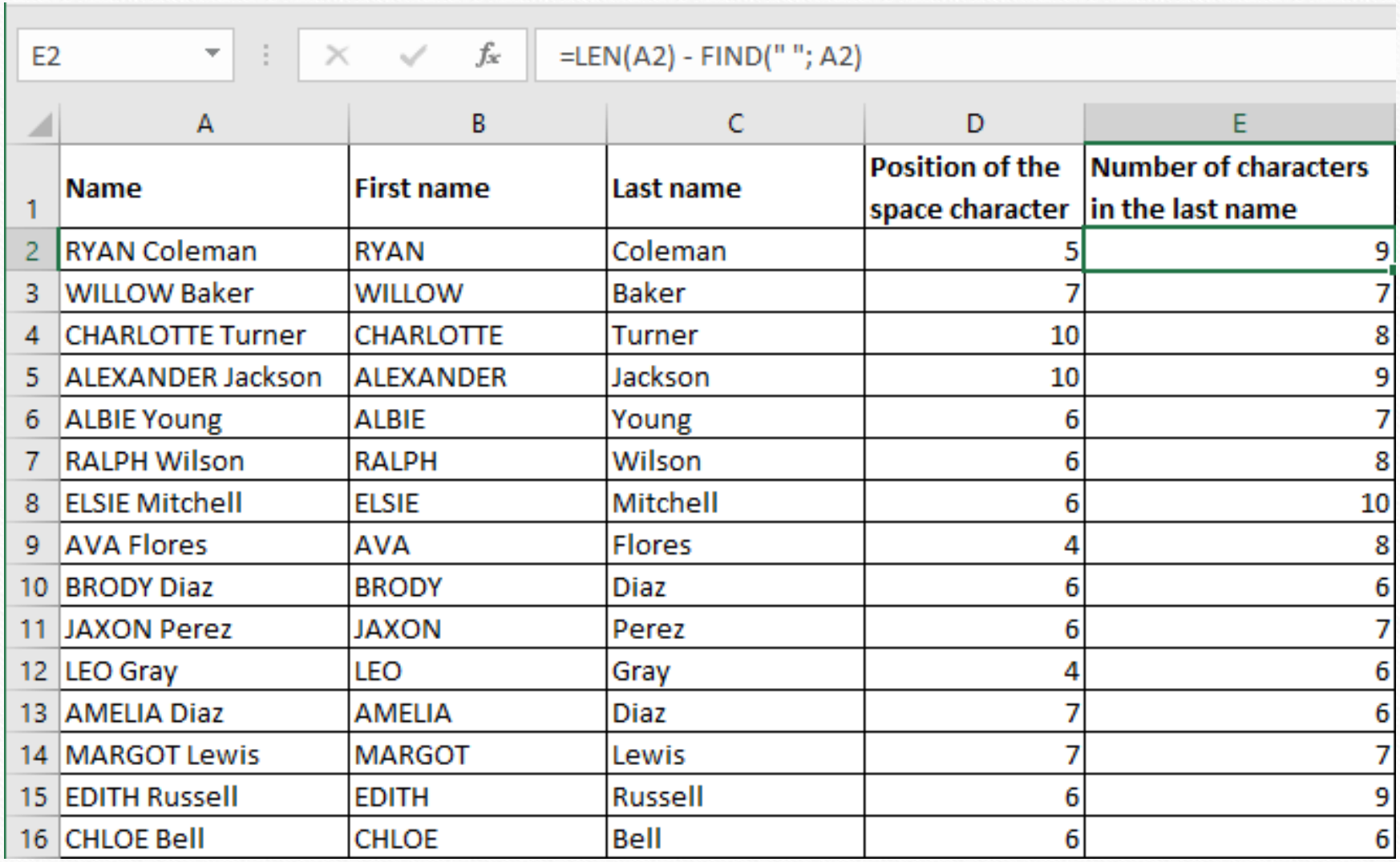
A	B	C	D	E	F	G
Student No	Student Name	Maths	Physics	Chemistry	Sum	Average
1	John	85	75	60	220	73.33333
2	Xavier	100	78	85	263	87.66667
3	Milton	88	72	75	235	78.33333
4	Clara	90	95	80	265	88.33333
5	Linda	95	82	99	276	92
	Maximum	100	95	99		
	Minimum	85	72	60		

Task 3

	A	B	C
1	**Name**	**First name**	**Last name**
2	RYAN Coleman		
3	WILLOW Baker		
4	CHARLOTTE Turner		
5	ALEXANDER Jackson		
6	ALBIE Young		
7	RALPH Wilson		
8	ELSIE Mitchell		
9	AVA Flores		
10	BRODY Diaz		
11	JAXON Perez		
12	LEO Gray		
13	AMELIA Diaz		
14	MARGOT Lewis		
15	EDITH Russell		
16	CHLOE Bell		

D2 | =FIND(" ";A2)

	A	B	C	D
1	**Name**	**First name**	**Last name**	**Position of the space character**
2	RYAN Coleman	RYAN		5
3	WILLOW Baker	WILLOW		7
4	CHARLOTTE Turner	CHARLOTTE		10
5	ALEXANDER Jackson	ALEXANDER		10
6	ALBIE Young	ALBIE		6
7	RALPH Wilson	RALPH		6
8	ELSIE Mitchell	ELSIE		6
9	AVA Flores	AVA		4
10	BRODY Diaz	BRODY		6
11	JAXON Perez	JAXON		6
12	LEO Gray	LEO		4
13	AMELIA Diaz	AMELIA		7
14	MARGOT Lewis	MARGOT		7
15	EDITH Russell	EDITH		6
16	CHLOE Bell	CHLOE		6



	A	B	C	D	E
1	**Name**	**First name**	**Last name**	**Position of the space character**	**Number of characters in the last name**
2	RYAN Coleman	RYAN	Coleman	5	9
3	WILLOW Baker	WILLOW	Baker	7	7
4	CHARLOTTE Turner	CHARLOTTE	Turner	10	8
5	ALEXANDER Jackson	ALEXANDER	Jackson	10	9
6	ALBIE Young	ALBIE	Young	6	7
7	RALPH Wilson	RALPH	Wilson	6	8
8	ELSIE Mitchell	ELSIE	Mitchell	6	10
9	AVA Flores	AVA	Flores	4	8
10	BRODY Diaz	BRODY	Diaz	6	6
11	JAXON Perez	JAXON	Perez	6	7
12	LEO Gray	LEO	Gray	4	6
13	AMELIA Diaz	AMELIA	Diaz	7	6
14	MARGOT Lewis	MARGOT	Lewis	7	7
15	EDITH Russell	EDITH	Russell	6	9
16	CHLOE Bell	CHLOE	Bell	6	6

=MID(A2, 1, FIND(" ", A2)-1)

=MID(A2, FIND(" ", A2) + 1, LEN(A2) - FIND(" ", A2))

	A	B	C
1	Name	First name	Last name
2	[illegible]		
3	WILLOW Baker		
4	CHARLOTTE Turner		
5	ALEXANDER Jackson		
6	[illegible]		
7	RALPH Wilson		
8	ELSIE Mitchell		
9	AVA Flores		
10	BRODY Diaz		
11	JAXON Perez		
12	LEO Gray		
13	AMELIA Diaz		
14	MARGOT Lewis		
15	EDITH Russell		
16	CHLOE Bell		