

# FUNCTIONS IN EXCEL

TEXT FUNCTIONS



# TEXT FUNCTIONS

- Many functions are used to manipulate text values.
- The following are only some of them

right( )  
left( )  
mid( )  
concatenate( )  
lower( )  
upper( )  
len( )



# TEXT FUNCTIONS

## JOIN STRINGS

- To join strings, use the & operator.

B3    ✕    ✓    fx    =A3&" " &A4				
	A	B	C	D
1	JOIN STRINGS			
2				
3	Hello	Hello World		
4	World			
5				
6				
7				

## LEFT FUNCTION

- To extract the leftmost characters from a string, use the LEFT function.

=LEFT(C3,4)			
C	D	E	F
LEFT FUNCTION			
Excel Functions	Exce		



# TEXT FUNCTIONS

## RIGHT FUNCTION

- To extract the rightmost characters from a string, use the RIGHT function.

B3				
=RIGHT(A3,3)				
	A	B	C	D
1	RIGHT FUNCTION			
2				
3	Learn EXCEL	CEL		
4				
5				
6				

## MID FUNCTION

- To extract a substring, starting in the middle of a string, use the MID function.

=MID(C3,3,5)				
	C	D	E	F
	MID FUNCTION			
	University		ivers	



# TEXT FUNCTIONS

## LEN FUNCTION

- To get the length of a string, use the LEN function.

B3    ✕   ✓ <i>fx</i> =LEN(A3)				
	A	B	C	D
1	LEN FUNCTION			
2				
3	Lovely Professional University	31		
4				
5				
6				
7				

## FIND

- To find the position of a substring in a string, use the FIND function.

=FIND("ing", D3)				
C	D	E	F	G
	FIND FUNCTION			
	Learning EXCEL	6		



# TEXT FUNCTIONS

## SUBSTITUTE FUNCTION

- To replace existing text with new text in a string, use the SUBSTITUTE function.
- If you know the text to be replaced, use the SUBSTITUTE function.

B3    ✕   ✓ <i>fx</i> =SUBSTITUTE(A3,"Jacob","Jobs")				
	A	B	C	D
1	SUBSTITUTE FUNCTION			
2				
3	Marc Jacob	Marc Jobs		
4				
5				

## REPLACE FUNCTION

- If you know the position of the text to be replaced, use the REPLACE function.

=REPLACE(D3,1,4,"John")				
C	D	E	F	
	REPLACE FUNCTION			
	Marc Jacob	John Jacob		



# TEXT FUNCTIONS

## CONCATENATE FUNCTION

- To concatenate or join various strings, simply use concatenate function.

C2		=CONCATENATE(A2," is learning", " ", B2)	
	A	B	C
1			CONCATENATE
2	John	Database	John is learning Database
3	Jill	Excel	Jill is learning Excel
4	Mark	Python	Mark is learning Python
5	Jacob	Software	Jacob is learning Software
6			
7			
8			
9			



# COMPARE TEXT

## EXACT FUNCTION (Case sensitive )

C3    X   ✓   fx   =EXACT(B3,A3)					
	A	B	C	D	E
1	EXACT FUNCTION				
2					
3	Mark	MARK	FALSE		
4	LIA	LIA	TRUE		
5	Jacob	Jacob	TRUE		
6	JOHN	JOHN	TRUE		
7	Jill	JILL	FALSE		
8					
9					

## =A=B formula (Case Insensitive)

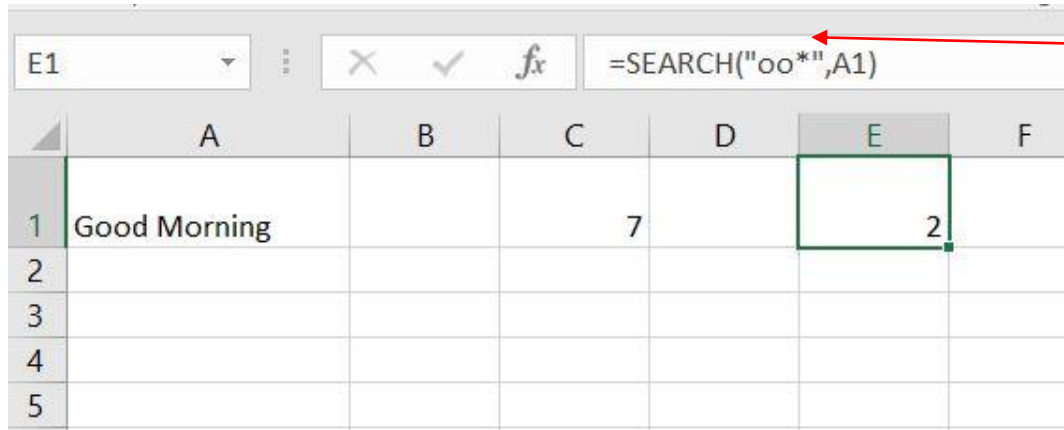
E3    X   ✓   fx   =B3=A3						
	A	B	C	D	E	F
1	EXACT FUNCTION				ASSIGNMENT	
2						
3	Mark	MARK	FALSE		TRUE	
4	LIA	LIA	TRUE		TRUE	
5	Jacob	Jacob	TRUE		TRUE	
6	JOHN	JOHN	TRUE		TRUE	
7	Jill	JILL	FALSE		TRUE	
8						
9						



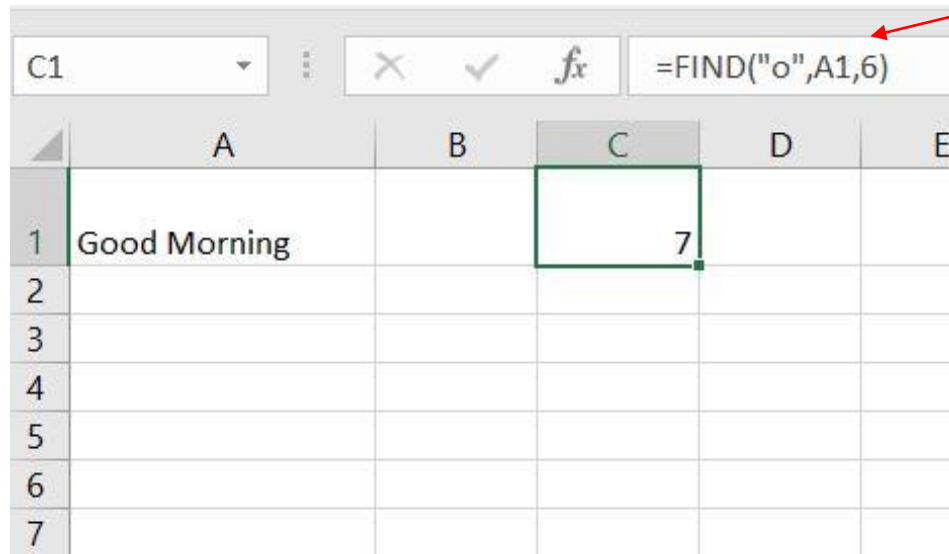


## FIND VS. SEARCH FUNCTION

- To find the position of a substring in a string, use the FIND function. FIND is case-sensitive.



	A	B	C	D	E	F
1	Good Morning		7		2	
2						
3						
4						
5						



	A	B	C	D	E
1	Good Morning		7		
2					
3					
4					
5					
6					
7					

- To find the position of a substring in a string, use the SEARCH function. SEARCH is case-insensitive.
- The SEARCH function is more versatile. You can use wildcard characters when you use this function.
- One other interesting point to mention about the FIND and the SEARCH function is that they have a 3rd optional argument. You can use this argument to indicate the position, counting from the left, at which you want to start searching.

The search will start from 6<sup>th</sup> position that is M and will give result of “o” in Morning. If you don’t specify 6, then you will get 2 that is position of “o” in Good



## REMOVE EXTRA SPACES

- The **TRIM** function in Excel removes leading spaces, extra spaces and trailing spaces.
- Use the **SUBSTITUTE** function to remove all spaces or non-breaking spaces.
- The **CLEAN** function below removes a non-printable character, CHAR(7).
- Simply combine the **CLEAN** and the **TRIM** function to remove non-printable characters and spaces.

B3       =TRIM(A3)

	A	B	C	D
1	REMOVE SPACES			
2				
3	Morning	Morning		
4	Morn ing	Morning		
5				
6				
7				

B4       =SUBSTITUTE(A4," ","")

	A	B	C	D
1	REMOVE SPACES			
2				
3	Morning	Morning		
4	Morn ing	Morning		
5				
6				
7				
8				

B5       =CLEAN(A5)

	A	B	C
1	REMOVE SPACES		
2			
3	Morning	Morning	
4	Morn ing	Morning	
5	Good Morning	Good Morning	
6			
7			
8			



# SEPARATE STRINGS

You have a list of Full Names separated with commas and you want to find first and last name.

- To Get the FIRST NAME
- To find the position of the comma, use the FIND function (position 5). To get the length of a string, use the LEN function (11 characters).  $\text{=RIGHT}(A2, \text{LEN}(A2) - \text{FIND}(",", A2) - 1)$  reduces to  $\text{=RIGHT}(A2, 11 - 5 - 1)$ .  $\text{=RIGHT}(A2, 5)$  extracts the 5 rightmost characters and gives the desired result (Jacob).
- To GET the LAST NAME
- to find the position of the comma, use the FIND function (position 5).  $\text{=LEFT}(A2, \text{FIND}(",", A2) - 1)$  reduces to  $\text{=LEFT}(A2, 5 - 1)$ .  $\text{=LEFT}(A2, 4)$  extracts the 5 leftmost characters and gives the desired result (John).

B2 fx  $\text{=RIGHT}(A2, \text{LEN}(A2) - \text{FIND}(",", A2) - 1)$

	A	B	C	D	E	F	G
1	Full Name	First Name	Last Name				
2	John, Jacob	Jacob	John				
3	Jill, Mark	Mark	Jill				
4	Lee, Gates	Gates	Lee				
5	Brown, John	John	Brown				
6	Jones, Lisa	Lisa	Jones				
7	Millar, Peter	Peter	Millar				
8							
9							
10							

C2 fx  $\text{=LEFT}(A2, \text{FIND}(",", A2) - 1)$

	A	B	C	D	E	F
1	Full Name	First Name	Last Name			
2	John, Jacob	Jacob	John			
3	Jill, Mark	Mark	Jill			
4	Lee, Gates	Gates	Lee			
5	Brown, John	John	Brown			
6	Jones, Lisa	Lisa	Jones			
7	Millar, Peter	Peter	Millar			
8						
9						
10						



# NUMBER OF INSTANCES

Use the LEN function to get the length of the string (25 characters, including spaces).

The SUBSTITUTE function replaces existing text with new text in a string.  $\text{LEN}(\text{SUBSTITUTE}(A1, B1, ""))$  equals 13 (the length of the string without the words dog). If we subtract this number from 25, we get the length of the dog instances ( $25 - 13 = 12$ ).

Dividing this number by the length of the word dog (3), gives us the dog instances ( $12 / 3 = 4$ ).

C1							
	A	B	C	D	E	F	G
1	dog, cat, dog dog cat dog	dog	4				
2							
3							
4							
5							
6							
7							
8							





# NUMBER OF WORDS

- Task : To calculate number of words.
- To get the length of the string with normal spaces, we combine the LEN and TRIM function.
- $\text{LEN}(\text{TRIM}(A1)) = 12$

- The SUBSTITUTE function replaces existing text with new text in a text string. We use the SUBSTITUTE function to get the string without spaces.
- To get the length of the string without spaces, we combine the LEN and SUBSTITUTE function.
- $\text{LEN}(\text{SUBSTITUTE}(A1, " ", "")) = 10$

To get the number of words, we subtract the length of the string without spaces (10) from the length of the string with normal spaces (12) and add 1.

The image shows an Excel spreadsheet with the following data:

	A	B	C	D	E	F	G	H
1	how are you?	3						
2								
3								
4								

The formula bar shows the formula:  $\text{=LEN}(\text{TRIM}(A1)) - \text{LEN}(\text{SUBSTITUTE}(A1, " ", "")) + 1$ . The formula is highlighted with a yellow circle around the first part and a red circle around the second part. Arrows point from the text boxes above to the corresponding parts of the formula.

