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Exercise: Analyzing data using logical functions

Note: You can pass this course and all graded assessments without access to the downloadable version of Excel.

How to complete this exercise

To complete this exercise, you will need access to Microsoft 365 Excel.

Note: Keep in mind that if you are using free Office for the web or another version of the Microsoft 365 Excel application some features covered in this exercise may not be available.

Free Office for the web

If you do not have access to Microsoft 365 Excel, you can use Free Office for the web. This version of Office allows you to view and edit files in apps like Word, Excel, and PowerPoint. This free service is available to anyone with a Microsoft account.

Access Microsoft Account

[Log in to your Microsoft account.](#) Type the email, phone number, or Skype sign-in that you use for other services (Outlook, Office, etc.), then select Next. If you don't have a Microsoft account, you can select No account? Create one!

Let's get started!

1. Click on the link below to open the Microsoft Excel exercise document you can use to complete this exercise.

[Exercise: Analyzing Data Using Logical Functions](#)

2. First you need to fill in the ID column. This data is the first name and last name separated by an underscore (_). While you can do this manually, the TEXTJOIN function is built for exactly this type of work. Select cell **C5**, then, in the Formula Bar, type `=TEXTJOIN("_",TRUE,A5,B5)`

	A	B	C	D	E	F	G	H	I	J	K	L
1	Weekly Sales & Bonus Payout											Weekly Bonus Amount
2												\$ 500.00
3												
4	First Name	Last Name	ID	Call List Comp	Weekly Sales	Weekly Goal	Bonus	Bonus Amount				
5	Jackie	Williamson	<code>=TEXTJOIN("_",TRUE,A5,B5)</code>	Yes	\$ 16,785.14	\$ 15,000.00						
6	Lucas	Bressan		Yes	\$ 14,687.50	\$ 15,000.00						
7	Stanley	Prestwick		No	\$ 13,478.96	\$ 15,000.00						
8	Jerry	Harrison		No	\$ 21,689.47	\$ 15,000.00						
9	Leah	Thompson		Yes	\$ 25,478.45	\$ 15,000.00						
10	Robyn	Fletcher		No	\$ 7,600.00	\$ 10,000.00						
11	Lisa	McCain		Yes	\$ 5,689.00	\$ 10,000.00						
12	Steven	Stone		Yes	\$ 12,346.87	\$ 10,000.00						
13	Devon	Lawrence		No	\$ 11,687.00	\$ 10,000.00						
14	George	Jackson		Yes	\$ 9,874.45	\$ 10,000.00						
15												

3. Press **Enter**, to enter the formula, then select cell **C5** again, hover your cursor over the cell handle until your cursor icon turns into a small black cross:

	A	B	C	D	E	F	G	H
1	Weekly Sales & Bonus Payout							
2								
3								
4	First Name	Last Name	ID	Call List Comp	Weekly Sales	Weekly Goal	Bonus	Bonus Amount
5	Jackie	Williamson	Jackie_Williamson	Yes	\$ 16,785.14	\$ 15,000.00		
6	Lucas	Bressan		Yes	\$ 14,687.50	\$ 15,000.00		
7	Stanley	Prestwick		No	\$ 13,478.96	\$ 15,000.00		
8	Jerry	Harrison		No	\$ 21,689.47	\$ 15,000.00		
9	Leah	Thompson		Yes	\$ 25,478.45	\$ 15,000.00		
10	Robyn	Fletcher		No	\$ 7,600.00	\$ 10,000.00		
11	Lisa	McCain		Yes	\$ 5,689.00	\$ 10,000.00		
12	Steven	Stone		Yes	\$ 12,346.87	\$ 10,000.00		
13	Devon	Lawrence		No	\$ 11,687.00	\$ 10,000.00		
14	George	Jackson		Yes	\$ 9,874.45	\$ 10,000.00		
15								

4. **Double click on the cell handle** to automatically copy your formula down the column, to cell C14:

	A	B	C	D	E	F	G	H
1	Weekly Sales & Bonus Payout							
2								
3								
4	First Name	Last Name	ID	Call List Comp	Weekly Sales	Weekly Goal	Bonus	Bonus Amount
5	Jackie	Williamson	Jackie_Williamson	Yes	\$ 16,785.14	\$ 15,000.00		
6	Lucas	Bressan	Lucas_Bressan	Yes	\$ 14,687.50	\$ 15,000.00		
7	Stanley	Prestwick	Stanley_Prestwick	No	\$ 13,478.96	\$ 15,000.00		
8	Jerry	Harrison	Jerry_Harrison	No	\$ 21,689.47	\$ 15,000.00		
9	Leah	Thompson	Leah_Thompson	Yes	\$ 25,478.45	\$ 15,000.00		
10	Robyn	Fletcher	Robyn_Fletcher	No	\$ 7,600.00	\$ 10,000.00		
11	Lisa	McCain	Lisa_McCain	Yes	\$ 5,689.00	\$ 10,000.00		
12	Steven	Stone	Steven_Stone	Yes	\$ 12,346.87	\$ 10,000.00		
13	Devon	Lawrence	Devon_Lawrence	No	\$ 11,687.00	\$ 10,000.00		
14	George	Jackson	George_Jackson	Yes	\$ 9,874.45	\$ 10,000.00		
15								
16								

5. Next, you need to determine which salespeople are going to receive a bonus. Bonuses are dispensed when the representative exceeds their weekly sales goal, and if their call reports are complete. For this purpose, you can use the AND function. Use your cursor to select cells **G5** on the worksheet:

	A	B	C	D	E	F	G	H	I	J	K	L
1	Weekly Sales & Bonus Payout										Weekly Bonus Amount	
2											\$	500.00
3												
4	First Name	Last Name	ID	Call Rep Comp	Weekly Sales	Weekly Goal	Bonus	Bonus Amount				
5	Jackie	Williamson	Jackie_Williamson	Yes	\$ 16,785.14	\$ 15,000.00						
6	Lucas	Bressan	Lucas_Bressan	Yes	\$ 14,687.50	\$ 15,000.00						
7	Stanley	Prestwick	Stanley_Prestwick	No	\$ 13,478.96	\$ 15,000.00						
8	Jerry	Harrison	Jerry_Harrison	No	\$ 21,689.47	\$ 15,000.00						
9	Leah	Thompson	Leah_Thompson	Yes	\$ 25,478.45	\$ 15,000.00						
10	Robyn	Fletcher	Robyn_Fletcher	No	\$ 7,600.00	\$ 10,000.00						
11	Lisa	McCain	Lisa_McCain	Yes	\$ 5,689.00	\$ 10,000.00						
12	Steven	Stone	Steven_Stone	Yes	\$ 12,346.87	\$ 10,000.00						
13	Devon	Lawrence	Devon_Lawrence	No	\$ 11,687.00	\$ 10,000.00						
14	George	Jackson	George_Jackson	Yes	\$ 9,874.45	\$ 10,000.00						
15												

6. Inside the Formula Bar, type “=AND(D5="Yes",E5>F5)” and then press **Enter**:

	A	B	C	D	E	F	G	H	I	J	K	L
1	Weekly Sales & Bonus Payout										Weekly Bonus Amount	
2											\$	500.00
3												
4	First Name	Last Name	ID	Call Rep Comp	Weekly Sales	Weekly Goal	Bonus	Bonus Amount				
5	Jackie	Williamson	Jackie_Williamson	Yes	\$ 16,785.14	\$ 15,000.00	=AND(D5="Yes",E5>F5)					
6	Lucas	Bressan	Lucas_Bressan	Yes	\$ 14,687.50	\$ 15,000.00						
7	Stanley	Prestwick	Stanley_Prestwick	No	\$ 13,478.96	\$ 15,000.00						
8	Jerry	Harrison	Jerry_Harrison	No	\$ 21,689.47	\$ 15,000.00						
9	Leah	Thompson	Leah_Thompson	Yes	\$ 25,478.45	\$ 15,000.00						
10	Robyn	Fletcher	Robyn_Fletcher	No	\$ 7,600.00	\$ 10,000.00						
11	Lisa	McCain	Lisa_McCain	Yes	\$ 5,689.00	\$ 10,000.00						
12	Steven	Stone	Steven_Stone	Yes	\$ 12,346.87	\$ 10,000.00						
13	Devon	Lawrence	Devon_Lawrence	No	\$ 11,687.00	\$ 10,000.00						
14	George	Jackson	George_Jackson	Yes	\$ 9,874.45	\$ 10,000.00						
15												
16												

7. Because both logical tests are true, the formula returns the value of TRUE in cell G5. Now **drag the AutoFill handle** at the bottom right of the cell down to cell G14:

	A	B	C	D	E	F	G	H	I	J	K	L
1	Weekly Sales & Bonus Payout										Weekly Bonus Amount	
2											\$	500.00
3												
4	First Name	Last Name	ID	Call Rep Comp	Weekly Sales	Weekly Goal	Bonus	Bonus Amount				
5	Jackie	Williamson	Jackie_Williamson	Yes	\$ 16,785.14	\$ 15,000.00	TRUE					
6	Lucas	Bressan	Lucas_Bressan	Yes	\$ 14,687.50	\$ 15,000.00						
7	Stanley	Prestwick	Stanley_Prestwick	No	\$ 13,478.96	\$ 15,000.00						
8	Jerry	Harrison	Jerry_Harrison	No	\$ 21,689.47	\$ 15,000.00						
9	Leah	Thompson	Leah_Thompson	Yes	\$ 25,478.45	\$ 15,000.00						
10	Robyn	Fletcher	Robyn_Fletcher	No	\$ 7,600.00	\$ 10,000.00						
11	Lisa	McCain	Lisa_McCain	Yes	\$ 5,689.00	\$ 10,000.00						
12	Steven	Stone	Steven_Stone	Yes	\$ 12,346.87	\$ 10,000.00						
13	Devon	Lawrence	Devon_Lawrence	No	\$ 11,687.00	\$ 10,000.00						
14	George	Jackson	George_Jackson	Yes	\$ 9,874.45	\$ 10,000.00						
15												

8. All sales representatives who have met both conditions now show a value of TRUE in this column. To add the bonus amount to column H, first select cells **H5 through H14**:

	A	B	C	D	E	F	G	H	I	J	K	L
1	Weekly Sales & Bonus Payout										Weekly Bonus Amount	
2											\$	500.00
3												
4	First Name	Last Name	ID	Call Rep Comp	Weekly Sales	Weekly Goal	Bonus	Bonus Amount				
5	Jackie	Williamson	Jackie_Williamson	Yes	\$ 16,785.14	\$ 15,000.00	TRUE					
6	Lucas	Bressan	Lucas_Bressan	Yes	\$ 14,687.50	\$ 15,000.00	FALSE					
7	Stanley	Prestwick	Stanley_Prestwick	No	\$ 13,478.96	\$ 15,000.00	FALSE					
8	Jerry	Harrison	Jerry_Harrison	No	\$ 21,689.47	\$ 15,000.00	FALSE					
9	Leah	Thompson	Leah_Thompson	Yes	\$ 25,478.45	\$ 15,000.00	TRUE					
10	Robyn	Fletcher	Robyn_Fletcher	No	\$ 7,600.00	\$ 10,000.00	FALSE					
11	Lisa	McCain	Lisa_McCain	Yes	\$ 5,689.00	\$ 10,000.00	FALSE					
12	Steven	Stone	Steven_Stone	Yes	\$ 12,346.87	\$ 10,000.00	TRUE					
13	Devon	Lawrence	Devon_Lawrence	No	\$ 11,687.00	\$ 10,000.00	FALSE					
14	George	Jackson	George_Jackson	Yes	\$ 9,874.45	\$ 10,000.00	FALSE					
15												

9. Inside the Formula Bar, type “=IF(G5:G14=TRUE,K2, 0)”. Because this is an array function, press **Ctrl + Shift + Enter**:

	A	B	C	D	E	F	G	H	I	J	K	L
1	Weekly Sales & Bonus Payout										Weekly Bonus Amount	
2											\$	500.00
3												
4	First Name	Last Name	ID	Call Rep Comp	Weekly Sales	Weekly Goal	Bonus	Bonus Amount				
5	Jackie	Williamson	Jackie_Williamson	Yes	\$ 16,785.14	\$ 15,000.00	TRUE	=TRUE,K2, 0)				
6	Lucas	Bressan	Lucas_Bressan	Yes	\$ 14,687.50	\$ 15,000.00	FALSE					
7	Stanley	Prestwick	Stanley_Prestwick	No	\$ 13,478.96	\$ 15,000.00	FALSE					
8	Jerry	Harrison	Jerry_Harrison	No	\$ 21,689.47	\$ 15,000.00	FALSE					
9	Leah	Thompson	Leah_Thompson	Yes	\$ 25,478.45	\$ 15,000.00	TRUE					
10	Robyn	Fletcher	Robyn_Fletcher	No	\$ 7,600.00	\$ 10,000.00	FALSE					
11	Lisa	McCain	Lisa_McCain	Yes	\$ 5,689.00	\$ 10,000.00	FALSE					
12	Steven	Stone	Steven_Stone	Yes	\$ 12,346.87	\$ 10,000.00	TRUE					
13	Devon	Lawrence	Devon_Lawrence	No	\$ 11,687.00	\$ 10,000.00	FALSE					
14	George	Jackson	George_Jackson	Yes	\$ 9,874.45	\$ 10,000.00	FALSE					
15												
16												

10. The bonus information has now been calculated for all employees in this worksheet:

	A	B	C	D	E	F	G	H	I	J	K	L
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