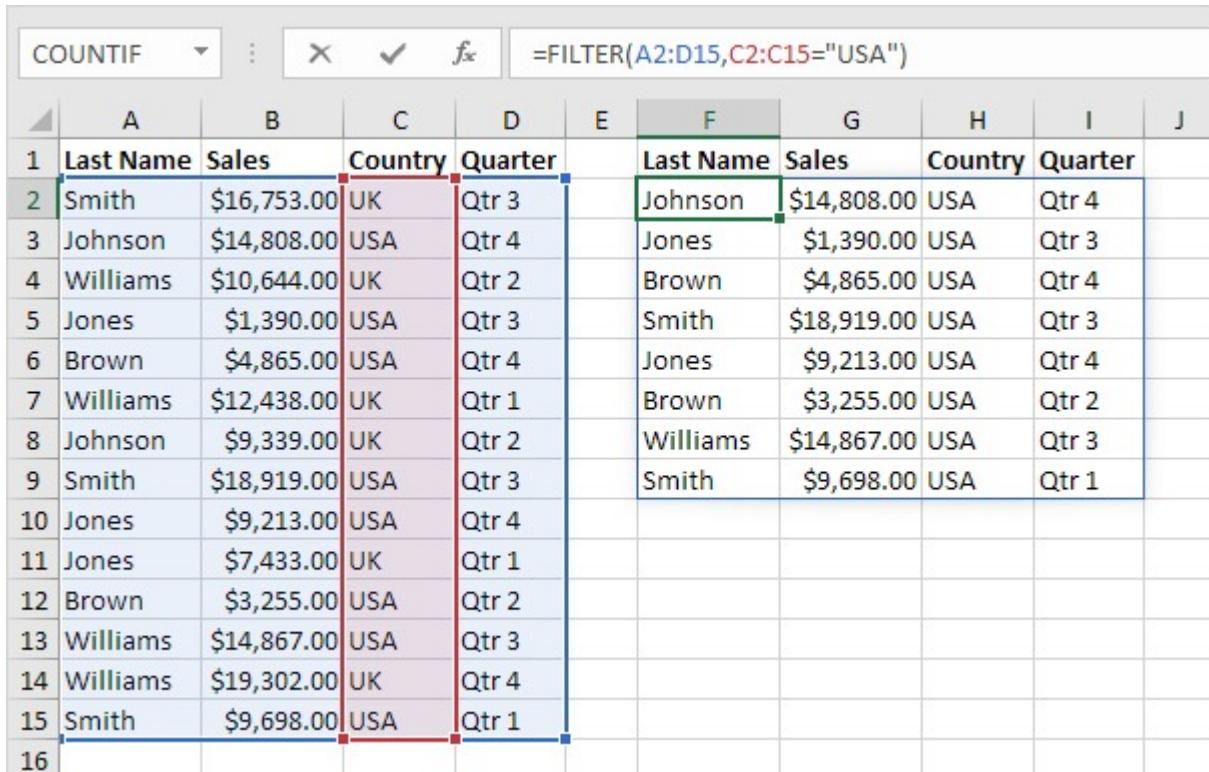# FILTER function in Excel

Use the magic FILTER function in Excel 365/2021 to extract records that meet certain criteria. The FILTER function is quite versatile.

1. The simple FILTER function below has two arguments and extracts all USA records.

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Note: this dynamic array function, entered into cell F2, fills multiple cells. Wow! This behavior in Excel 365/2021 is called spilling.

2. The dynamic FILTER function below extracts all UK records.

COUNTIF ▼ : ✕ ✓ ƒx =FILTER(A2:D15,C2:C15=B17)

	A	B	C	D	E	F	G	H	I	J
1	Last Name	Sales	Country	Quarter		Last Name	Sales	Country	Quarter	
2	Smith	$16,753.00	UK	Qtr 3		Smith	$16,753.00	UK	Qtr 3	
3	Johnson	$14,808.00	USA	Qtr 4		Williams	$10,644.00	UK	Qtr 2	
4	Williams	$10,644.00	UK	Qtr 2		Williams	$12,438.00	UK	Qtr 1	
5	Jones	$1,390.00	USA	Qtr 3		Johnson	$9,339.00	UK	Qtr 2	
6	Brown	$4,865.00	USA	Qtr 4		Jones	$7,433.00	UK	Qtr 1	
7	Williams	$12,438.00	UK	Qtr 1		Williams	$19,302.00	UK	Qtr 4	
8	Johnson	$9,339.00	UK	Qtr 2						
9	Smith	$18,919.00	USA	Qtr 3						
10	Jones	$9,213.00	USA	Qtr 4						
11	Jones	$7,433.00	UK	Qtr 1						
12	Brown	$3,255.00	USA	Qtr 2						
13	Williams	$14,867.00	USA	Qtr 3						
14	Williams	$19,302.00	UK	Qtr 4						
15	Smith	$9,698.00	USA	Qtr 1						
16										
17	Country	UK								
18										

3. The FILTER function has an optional third argument. Use this argument to display a friendly message (instead of the #CALC! error) if no records are found.

COUNTIF ▼ : ✕ ✓ ƒx =FILTER(A2:D15,C2:C15=B17,"No Items")

	A	B	C	D	E	F	G	H	I	J
1	Last Name	Sales	Country	Quarter		Last Name	Sales	Country	Quarter	
2	Smith	$16,753.00	UK	Qtr 3		No Items				
3	Johnson	$14,808.00	USA	Qtr 4						
4	Williams	$10,644.00	UK	Qtr 2						
5	Jones	$1,390.00	USA	Qtr 3						
6	Brown	$4,865.00	USA	Qtr 4						
7	Williams	$12,438.00	UK	Qtr 1						
8	Johnson	$9,339.00	UK	Qtr 2						
9	Smith	$18,919.00	USA	Qtr 3						
10	Jones	$9,213.00	USA	Qtr 4						
11	Jones	$7,433.00	UK	Qtr 1						
12	Brown	$3,255.00	USA	Qtr 2						
13	Williams	$14,867.00	USA	Qtr 3						
14	Williams	$19,302.00	UK	Qtr 4						
15	Smith	$9,698.00	USA	Qtr 1						
16										
17	Country	Canada								
18										

4. Let's kick it up a notch! The FILTER function below uses the multiplication operator (*) to extract all records where Sales is greater than $10,000 and Country equals "USA".

COUNTIF ▼ ⋮ ✕ ✓ ƒx =FILTER(A2:D15,(B2:B15>10000)*(C2:C15="USA"))

	A	B	C	D	E	F	G	H	I	J
1	Last Name	Sales	Country	Quarter		Last Name	Sales	Country	Quarter	
2	Smith	$16,753.00	UK	Qtr 3		Johnson	$14,808.00	USA	Qtr 4	
3	Johnson	$14,808.00	USA	Qtr 4		Smith	$18,919.00	USA	Qtr 3	
4	Williams	$10,644.00	UK	Qtr 2		Williams	$14,867.00	USA	Qtr 3	
5	Jones	$1,390.00	USA	Qtr 3						
6	Brown	$4,865.00	USA	Qtr 4						
7	Williams	$12,438.00	UK	Qtr 1						
8	Johnson	$9,339.00	UK	Qtr 2						
9	Smith	$18,919.00	USA	Qtr 3						
10	Jones	$9,213.00	USA	Qtr 4						
11	Jones	$7,433.00	UK	Qtr 1						
12	Brown	$3,255.00	USA	Qtr 2						
13	Williams	$14,867.00	USA	Qtr 3						
14	Williams	$19,302.00	UK	Qtr 4						
15	Smith	$9,698.00	USA	Qtr 1						
16										

5. The FILTER function below uses the addition operator (+) to extract all records where Last Name equals "Smith" or Last Name equals "Brown".

COUNTIF ▼ ⋮ ✕ ✓ ƒx =FILTER(A2:D15,(A2:A15="Smith")+(A2:A15="Brown"))

	A	B	C	D	E	F	G	H	I	J
1	Last Name	Sales	Country	Quarter		Last Name	Sales	Country	Quarter	
2	Smith	$16,753.00	UK	Qtr 3		Smith	$16,753.00	UK	Qtr 3	
3	Johnson	$14,808.00	USA	Qtr 4		Brown	$4,865.00	USA	Qtr 4	
4	Williams	$10,644.00	UK	Qtr 2		Smith	$18,919.00	USA	Qtr 3	
5	Jones	$1,390.00	USA	Qtr 3		Brown	$3,255.00	USA	Qtr 2	
6	Brown	$4,865.00	USA	Qtr 4		Smith	$9,698.00	USA	Qtr 1	
7	Williams	$12,438.00	UK	Qtr 1						
8	Johnson	$9,339.00	UK	Qtr 2						
9	Smith	$18,919.00	USA	Qtr 3						
10	Jones	$9,213.00	USA	Qtr 4						
11	Jones	$7,433.00	UK	Qtr 1						
12	Brown	$3,255.00	USA	Qtr 2						
13	Williams	$14,867.00	USA	Qtr 3						
14	Williams	$19,302.00	UK	Qtr 4						
15	Smith	$9,698.00	USA	Qtr 1						
16										

6. Add the SORT function to sort the records by the first column.

COUNTIF ▼ ⋮ =SORT(FILTER(A2:D15,(A2:A15="Smith")+(A2:A15="Brown")))

	A	B	C	D	E	F	G	H	I	J
1	Last Name	Sales	Country	Quarter		Last Name	Sales	Country	Quarter	
2	Smith	$16,753.00	UK	Qtr 3		Brown	$4,865.00	USA	Qtr 4	
3	Johnson	$14,808.00	USA	Qtr 4		Brown	$3,255.00	USA	Qtr 2	
4	Williams	$10,644.00	UK	Qtr 2		Smith	$16,753.00	UK	Qtr 3	

5	Jones	$1,390.00	USA	Qtr 3		Smith	$18,919.00	USA	Qtr 3
6	Brown	$4,865.00	USA	Qtr 4		Smith	$9,698.00	USA	Qtr 1
7	Williams	$12,438.00	UK	Qtr 1					
8	Johnson	$9,339.00	UK	Qtr 2					
9	Smith	$18,919.00	USA	Qtr 3					
10	Jones	$9,213.00	USA	Qtr 4					
11	Jones	$7,433.00	UK	Qtr 1					
12	Brown	$3,255.00	USA	Qtr 2					
13	Williams	$14,867.00	USA	Qtr 3					
14	Williams	$19,302.00	UK	Qtr 4					
15	Smith	$9,698.00	USA	Qtr 1					
16									

Note: by default, the SORT function in Excel 365/2021 sorts by the first column, in ascending order.

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