


01_ExcelNavigation

Keyboard Navigation

Keyboard navigation is emphasized principally for quickly navigating and manipulating large blocks of data. A few heavily used function keys and keyboard shortcuts are cited to accelerate work flow.

Navigate and select blocks of data

Arrow key generically refers to 1 of 4 directions, ←, ↑, →, or ↓																																																																																																					
End, arrow – Moves selected cell to edge of data extent in direction of arrow. For example, end, → moves selection from column 1 to column 143.	<div>Before</div> <table><tr><th></th><th>A</th><th>B</th></tr><tr><td>1</td><td>0.9</td><td>0.5</td></tr><tr><td>2</td><td>0.9</td><td>0.8</td></tr></table> <div>After</div> <table><tr><th></th><th>EL</th><th>EM</th></tr><tr><td>1</td><td>0.9</td><td>0.9</td></tr><tr><td>2</td><td>0.9</td><td>0.9</td></tr></table>		A	B	1	0.9	0.5	2	0.9	0.8		EL	EM	1	0.9	0.9	2	0.9	0.9																																																																																		
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Hold Shift, End, arrow – Selects cells from start to edge of data extent in direction of arrow. Apply End, arrow twice while holding shift to select a block of data. For example, 1) Hold shift 2) end, → 3) end, ↓ Selects 168 rows of 143 columns, which can be copied.	<div>Start</div> <table><tr><th></th><th>A</th><th>B</th></tr><tr><td>1</td><td>0.9</td><td>0.5</td></tr><tr><td>2</td><td>0.9</td><td>0.8</td></tr></table> <div>Finish</div> <table><tr><th></th><th>EE</th><th>EF</th><th>EG</th><th>EH</th><th>EI</th><th>EJ</th><th>EK</th><th>EL</th><th>EM</th><th>EN</th><th>EO</th><th>EP</th></tr><tr><td>164</td><td>0.7</td><td>0.7</td><td>0.7</td><td>0.7</td><td>0.7</td><td>0.8</td><td>0.9</td><td>1</td><td>0.8</td><td></td><td></td><td></td></tr><tr><td>165</td><td>0.7</td><td>0.7</td><td>0.7</td><td>0.7</td><td>0.7</td><td>0.7</td><td>0.8</td><td>0.9</td><td>0.8</td><td></td><td></td><td></td></tr><tr><td>166</td><td>0.7</td><td>0.7</td><td>0.7</td><td>0.7</td><td>0.7</td><td>0.7</td><td>0.8</td><td>0.8</td><td>0.8</td><td></td><td></td><td></td></tr><tr><td>167</td><td>0.7</td><td>0.7</td><td>0.7</td><td>0.7</td><td>0.7</td><td>0.7</td><td>0.7</td><td>0.8</td><td>0.9</td><td></td><td></td><td></td></tr><tr><td>168</td><td>0.7</td><td>0.8</td><td>0.7</td><td>0.7</td><td>0.6</td><td>0.7</td><td>0.7</td><td>0.8</td><td>0.8</td><td></td><td></td><td></td></tr><tr><td>169</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> <div>168R x 143C</div>		A	B	1	0.9	0.5	2	0.9	0.8		EE	EF	EG	EH	EI	EJ	EK	EL	EM	EN	EO	EP	164	0.7	0.7	0.7	0.7	0.7	0.8	0.9	1	0.8				165	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.9	0.8				166	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8				167	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.9				168	0.7	0.8	0.7	0.7	0.6	0.7	0.7	0.8	0.8				169												
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Extent selected Shown in Name box if selection in visible screen.	<div>5R x 4C</div> <div>Name Box</div> <table><tr><th></th><th>A</th><th>B</th><th>C</th><th>D</th><th>E</th><th>F</th><th>G</th><th>H</th></tr><tr><td>1</td><td>0.9</td><td>0.9</td><td>0.8</td><td>0.8</td><td>0.8</td><td>0.9</td><td>1</td><td>0.9</td></tr><tr><td>2</td><td>0.9</td><td>0.8</td><td>0.9</td><td>0.8</td><td>0.8</td><td>0.9</td><td>1</td><td>0.9</td></tr><tr><td>3</td><td>0.9</td><td>0.8</td><td>0.9</td><td>0.9</td><td>0.8</td><td>0.8</td><td>0.9</td><td>0.9</td></tr><tr><td>4</td><td>0.9</td><td>0.9</td><td>1</td><td>0.9</td><td>0.9</td><td>0.9</td><td>0.9</td><td>0.9</td></tr><tr><td>5</td><td>0.9</td><td>0.9</td><td>1</td><td>0.9</td><td>0.9</td><td>0.9</td><td>0.9</td><td>0.9</td></tr><tr><td>6</td><td>1</td><td>0.9</td><td>1</td><td>0.9</td><td>0.9</td><td>1</td><td>0.9</td><td>0.9</td></tr></table>		A	B	C	D	E	F	G	H	1	0.9	0.9	0.8	0.8	0.8	0.9	1	0.9	2	0.9	0.8	0.9	0.8	0.8	0.9	1	0.9	3	0.9	0.8	0.9	0.9	0.8	0.8	0.9	0.9	4	0.9	0.9	1	0.9	0.9	0.9	0.9	0.9	5	0.9	0.9	1	0.9	0.9	0.9	0.9	0.9	6	1	0.9	1	0.9	0.9	1	0.9	0.9																																					
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5	0.9	0.9	1	0.9	0.9	0.9	0.9	0.9																																																																																													
6	1	0.9	1	0.9	0.9	1	0.9	0.9																																																																																													

Extent selected

Shown in floating frame at lower, right corner for large arrays.

	EK	EL	EM	EN	EO	EP
167	0.7	0.8	0.9			
168	0.7	0.8	0.8			
169						

168R x 143C

Function keys

F2—Open a cell for editing.

- 1) Useful for mapping dependent cells
- 2) Building complex equations by allowing parts to be tested independently.

Prior to entering F2

	A	B	C	D	E	F
1		Constant =	0.2			
2	x	y		Fancy Equation		
3	0.713336	0.142219		1.125003313		
4	0.460865	0.883612				
5	0.827455	0.064218				
6	0.809669	0.82643				
7	0.176358	0.720854				

After entering F2

	A	B	C	D	E	F
1		Constant =	0.2			
2	x	y		Fancy Equation		
3	0.713336	0.142219		=SUM(A3:A7)*\$C\$1+AVERAGE(B3:B7)		
4	0.460865	0.883612				
5	0.827455	0.064218				
6	0.809669	0.82643				
7	0.176358	0.720854				

F2—Toggles between visual and text editing in forms.

Visual editing—Left, right arrows move cell reference.

Text editing—Left, right arrows move text edit focus within dialog box.

Format only unique or duplicate values

Use a formula to determine which cells to format

Edit the Rule Description:

Format values where this formula is true:

=A3>\$C\$1

Preview: AaBbCcYyZz

OK Cancel

F4—Toggles through 4 states of cell references being relative or absolute. Starts with cell reference being absolute for rows and cells.

1)

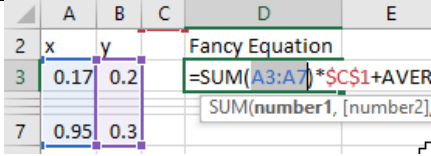
	A	B	C	D	E
2	x	y		Fancy Equation	
3	0.17	0.2		=SUM(\$A\$3:\$A\$7)*\$C\$1+SUM(number1, [number2])	
7	0.95	0.3			

2)

	A	B	C	D	E
2	x	y		Fancy Equation	
3	0.17	0.2		=SUM(A\$3:A\$7)*\$C\$1+SUM(number1, [number2])	
7	0.95	0.3			

3)

	A	B	C	D	E
2	x	y		Fancy Equation	
3	0.17	0.2		=SUM(\$A3:\$A7)*\$C\$1+SUM(number1, [number2])	
7	0.95	0.3			

	
F9	Manually force a calculation cycle.
Alt+F8	Open a list of macros that can be executed.
Alt+F11	Open the VBA editor.

Common shortcuts

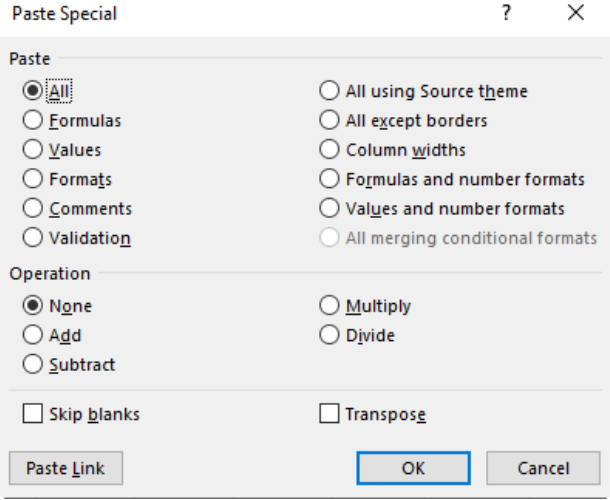
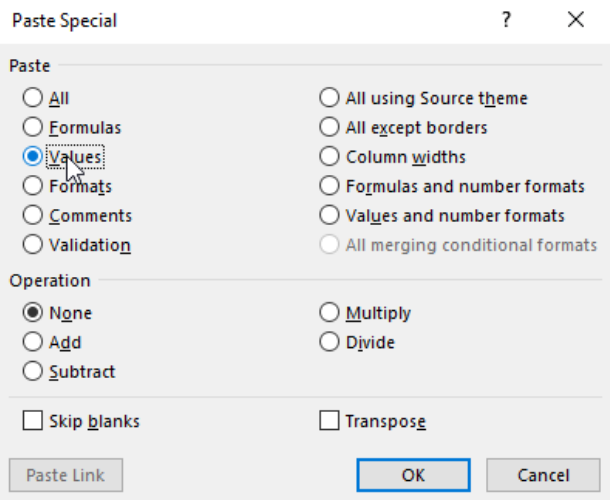
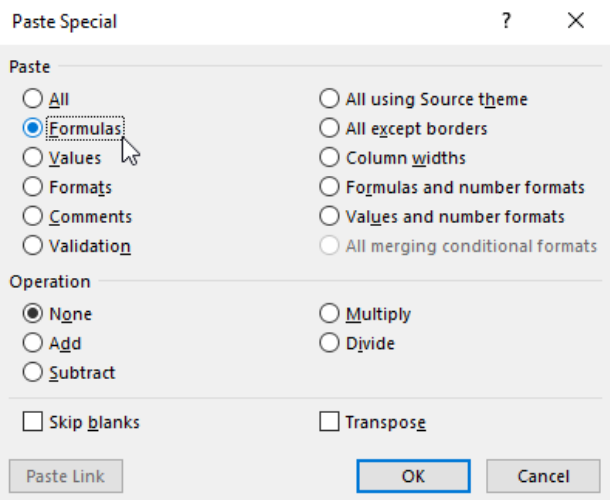
Ctrl+1	Open form or dialog for formatting cells or chart features depending on current selection.
Ctrl+K	Open dialog for creating/editing/deleting hyperlinks.
Ctrl+wheel	Alter magnification of workbook with mouse wheel.
Ctrl+Home	Goes to upper, left cell A1 on an active worksheet.
Ctrl+End	Goes to lower, rightmost cell used on an active worksheet. Not a reliable command if much cutting and deleting of data.
Ctrl+PageUp	Activate next worksheet to left.
Ctrl+PageDown	Activate next worksheet to right.
ALT, f, n, l	Open a new workbook.
ALT+TAB	Toggle between open applications in Windows.

Many sites exist with exhaustive lists of shortcuts. Search for “keyboard shortcuts Excel” to find what you consider helpful. Two examples are,

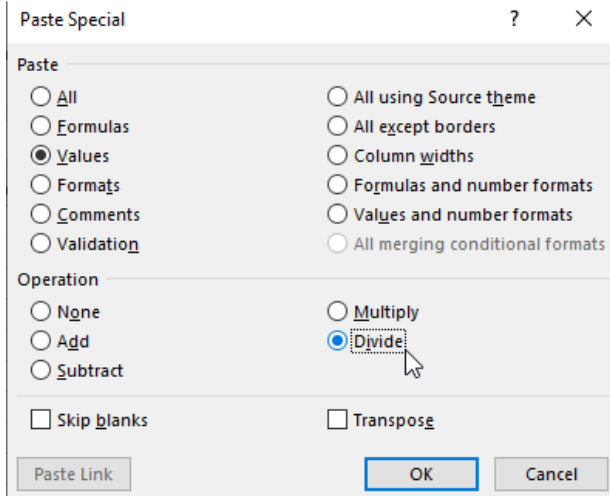
<https://support.office.com/en-us/article/keyboard-shortcuts-in-excel-for-windows-1798d9d5-842a-42b8-9c99-9b7213f0040f>

https://shortcutworld.com/Excel/win/Microsoft-Excel_2016_Shortcuts

Paste Special

<p>Short cuts for opening form</p> <p>Old sequence -- ALT, e, s Current sequence-- ALT, h, v, s</p>	 <p>The screenshot shows the 'Paste Special' dialog box. In the 'Paste' section, the 'All' radio button is selected. Other options include Formulas, Values, Formats, Comments, and Validation. In the right column, options include 'All using Source theme', 'All except borders', 'Column widths', 'Formulas and number formats', 'Values and number formats', and 'All merging conditional formats'. In the 'Operation' section, 'None' is selected, with other options being Add, Subtract, Multiply, and Divide. There are checkboxes for 'Skip blanks' and 'Transpose'. At the bottom are buttons for 'Paste Link', 'OK', and 'Cancel'.</p>
<p>Values – Cleanest way to paste data without changing format of receiving worksheet.</p> <p>Converts formula results to numeric or text entries.</p>	 <p>The screenshot shows the 'Paste Special' dialog box. In the 'Paste' section, the 'Values' radio button is selected. Other options include All, Formulas, Formats, Comments, and Validation. In the right column, options include 'All using Source theme', 'All except borders', 'Column widths', 'Formulas and number formats', 'Values and number formats', and 'All merging conditional formats'. In the 'Operation' section, 'None' is selected, with other options being Add, Subtract, Multiply, and Divide. There are checkboxes for 'Skip blanks' and 'Transpose'. At the bottom are buttons for 'Paste Link', 'OK', and 'Cancel'.</p>
<p>Formulas— Apply equations and numbers without altering formatting.</p>	 <p>The screenshot shows the 'Paste Special' dialog box. In the 'Paste' section, the 'Formulas' radio button is selected. Other options include All, Values, Formats, Comments, and Validation. In the right column, options include 'All using Source theme', 'All except borders', 'Column widths', 'Formulas and number formats', 'Values and number formats', and 'All merging conditional formats'. In the 'Operation' section, 'None' is selected, with other options being Add, Subtract, Multiply, and Divide. There are checkboxes for 'Skip blanks' and 'Transpose'. At the bottom are buttons for 'Paste Link', 'OK', and 'Cancel'.</p>

Operation – Apply basic math operation uniformly to a selected range.



For example,
Convert meters to feet with Paste Special.

- 1) Copy A1, Select A3:A5.
- 2) Paste special as values & Divide.
- 3) Change METERS to FEET in A2.

1)	A	
1	0.3048	
2	METERS	
3	1	
4	2	
5	3	
6		

>

2)	A	
1	0.3048	
2	METERS	
3	3.2808	
4	6.5617	
5	9.8425	
6		

>

3)	A	
1	0.3048	
2	FEET	
3	3.2808	
4	6.5617	
5	9.8425	
6		

Transpose – Flips rows and columns.

- 1) Copy A2:A7, Select A1
- 2) Paste special with Transpose checked.

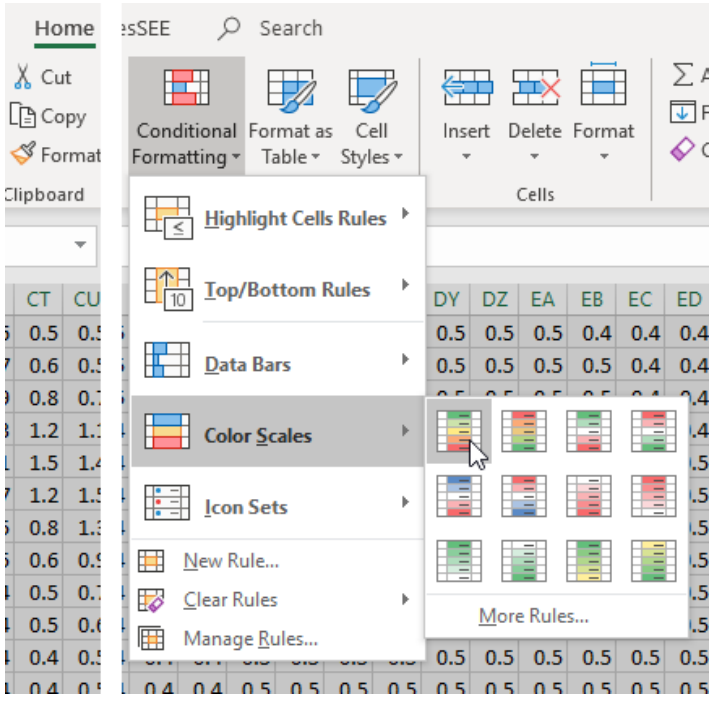
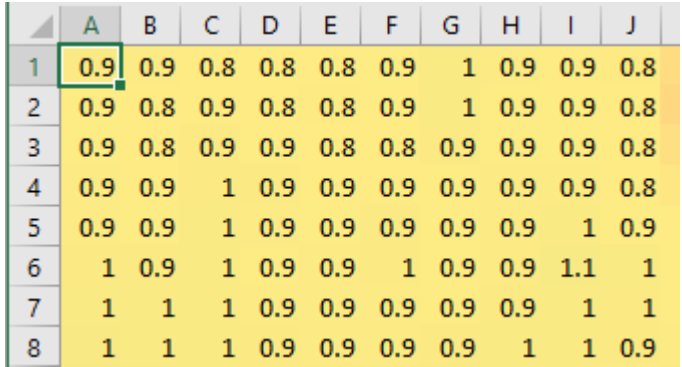
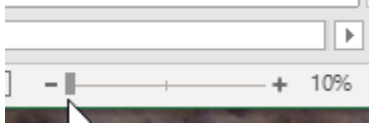
1)	A	B	C	D	E	F
1						
2	R\C					
3	1					
4	2					
5	3					
6	4					
7	5					

>

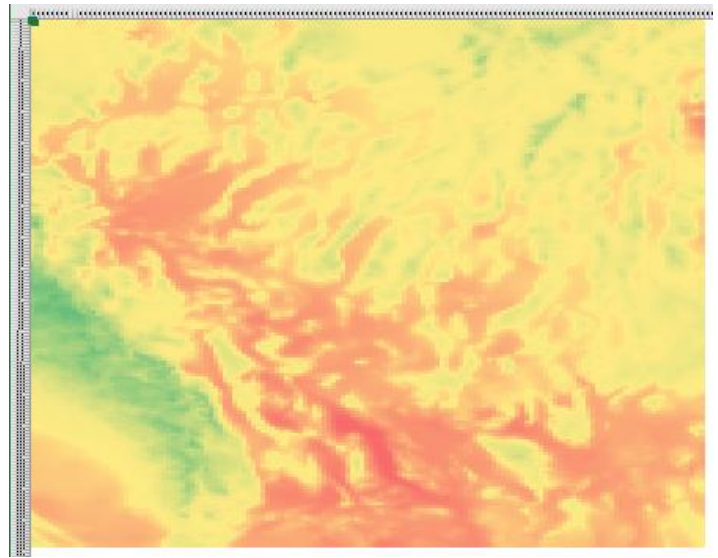
2)	A	B	C	D	E	F
1	R\C	1	2	3	4	5
2	R\C					
3	1					
4	2					
5	3					
6	4					
7	5					

Conditional formatting serves as a quick check for 2D arrays.

Quick shading of arrays – 01_PRISM_4.0km.NV.xlsx

<p>Select range A1:EM168.</p> <p>Select Home tab on ribbon,</p> <p>Select “Conditional Formatting”,</p> <p>Select first option under “Color Scales.”</p>	 <p>The screenshot shows the Excel ribbon with the 'Home' tab selected. The 'Conditional Formatting' dropdown menu is open, and the 'Color Scales' option is highlighted. The background shows a portion of a spreadsheet with numerical data.</p>
<p>Selected range will be shaded.</p>	 <p>The screenshot shows a portion of an Excel spreadsheet. The range A1:EM168 is highlighted in yellow. The spreadsheet contains numerical data, and the yellow shading is applied to the selected range.</p>
<p>Reduce zoom enough that entire array is visible in window, ctrl+wheel</p>	 <p>The screenshot shows the Excel window with the zoom level set to 10%. The zoom slider is visible, and the text '10%' is displayed next to it.</p>

Inspect array for lows, highs, and patterns to ensure array is correct.



Customize Status Bar

The status bar is the lower edge Excel application frame (Figure 1). Several options exist for quick assessments of data arrays.

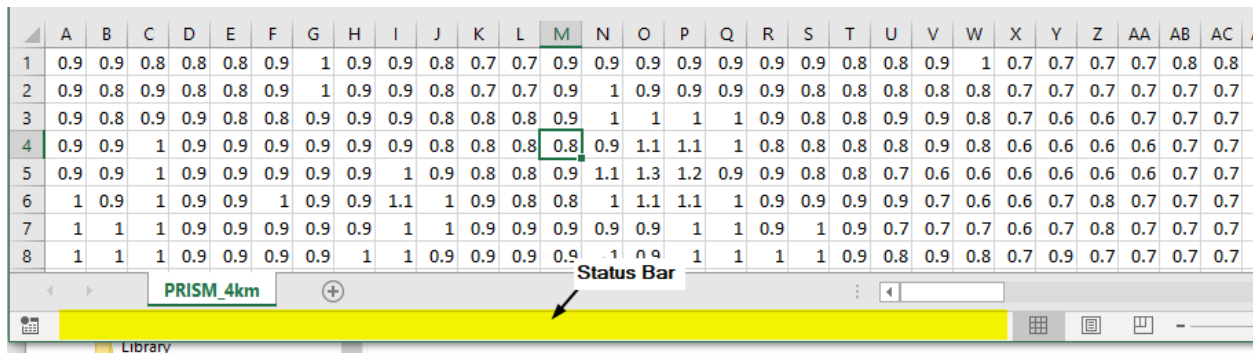


Figure 1.--Status bar in Excel.

Right-click the status bar to display the Customize Status Bar form (Figure 2). Check the highlighted average, count, numerical count, minimum, maximum, and sum options that summarize numeric data in multi-cell selections.

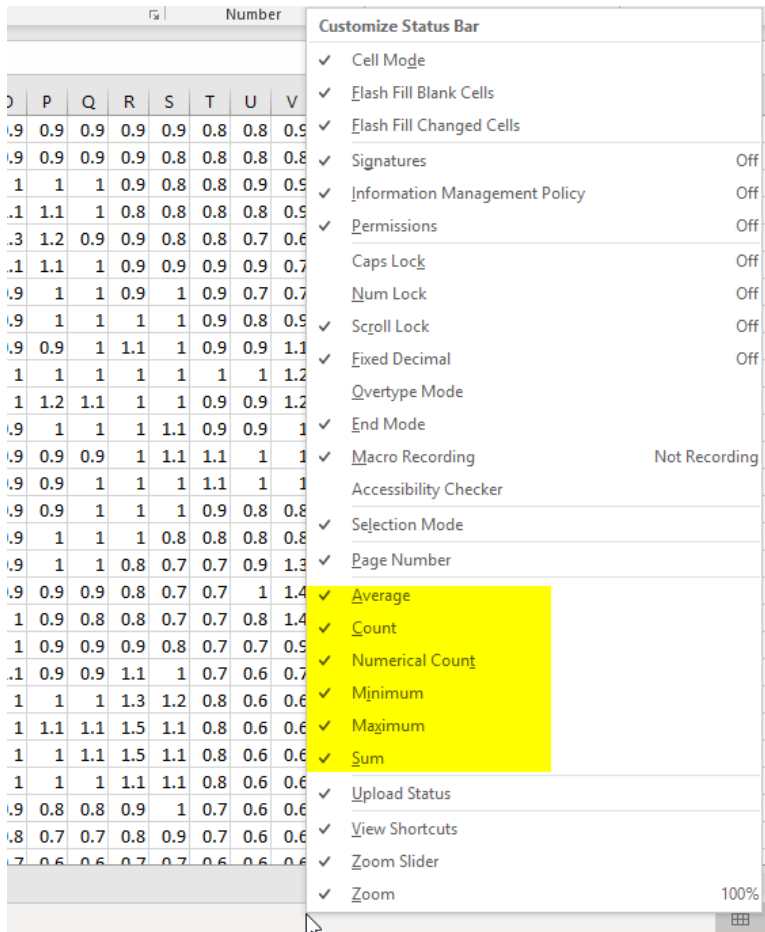


Figure 2.—Right-click to display Customize Status Bar form.

Select a range and statistics are reported in the Status Bar (Figure 3). This approach quickly defines range of values and outliers, such as null values, in large arrays.

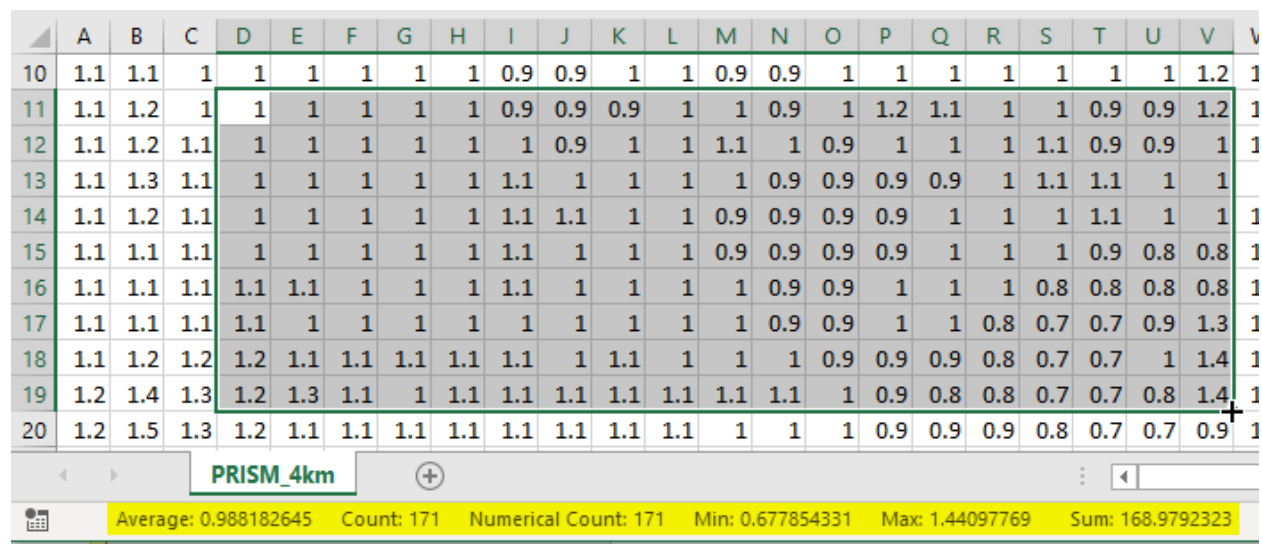


Figure 3.— Average, count, numerical count, minimum, maximum, and sum of selected range are reported in Status Bar.

Count and numerical count will agree if all entries are values (Figure 4).

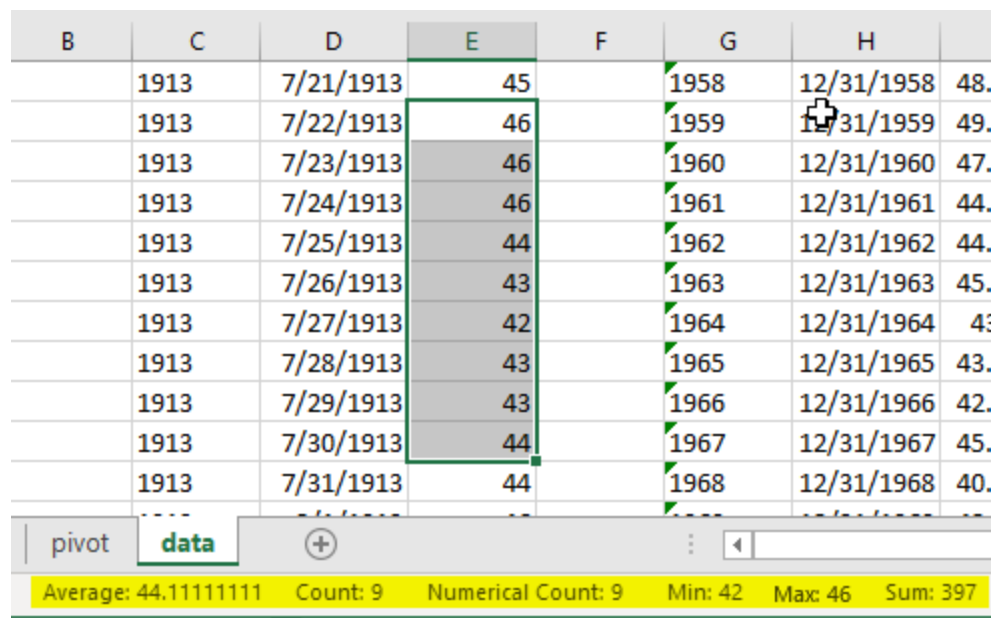


Figure 4.— Average, count, numerical count, minimum, maximum, and sum of selected range are reported in Status Bar.

Count and numerical count will differ non-numeric entries occur in the selected range (Figure 5). Empty cells are counted as numeric values.

B	C	D	E	F	G	H	
	1913	7/21/1913	45		1958	12/31/1958	48.
	1913	7/22/1913	46		1959	12/31/1959	49.
	1913	7/23/1913	46		1960	12/31/1960	47.
	1913	7/24/1913	46		1961	12/31/1961	44.
	1913	7/25/1913	xxx		1962	12/31/1962	44.
	1913	7/26/1913	43		1963	12/31/1963	45.
	1913	7/27/1913	42		1964	12/31/1964	43.
	1913	7/28/1913	43		1965	12/31/1965	43.
	1913	7/29/1913	43		1966	12/31/1966	42.
	1913	7/30/1913	44		1967	12/31/1967	45.
	1913	7/31/1913	44		1968	12/31/1968	40.

pivot	data	+	:	<	
Average: 44.125		Count: 9	Numerical Count: 8	Min: 42	Max: 46
		Sum: 353			

Figure 5.—Count and numerical count differ because non-numeric data occurs in the selected range.

Lack of reported average, minimum, maximum, and sum indicate an error condition occurs in the selected range (Figure 6). Errors from dividing by zero and failure results from functions such as MATCH, FIND, or VLOOKUP all stop reporting of sums. Fast check for hidden errors.

B	C	D	E	F	G	H	
	1913	7/21/1913	45		1958	12/31/1958	48.
	1913	7/22/1913	46		1959	12/31/1959	49.
	1913	7/23/1913	46		1960	12/31/1960	47.
	1913	7/24/1913	46		1961	12/31/1961	44.
	1913	7/25/1913	#DIV/0!		1962	12/31/1962	44.
	1913	7/26/1913	43		1963	12/31/1963	45.
	1913	7/27/1913	42		1964	12/31/1964	43.
	1913	7/28/1913	43		1965	12/31/1965	43.
	1913	7/29/1913	43		1966	12/31/1966	42.
	1913	7/30/1913	44		1967	12/31/1967	45.
	1913	7/31/1913	44		1968	12/31/1968	40.

pivot	data	+	:	<	
		Count: 9	Numerical Count: 8		

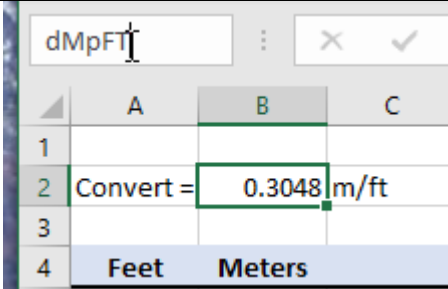
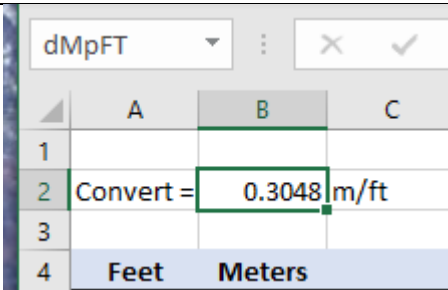
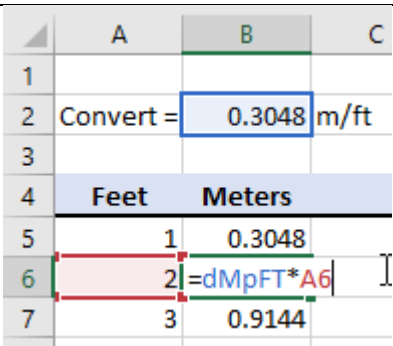
Figure 6.— Average, minimum, maximum, and sum results are not reported if an error condition occurs in the selected range.

Named Ranges and Data Validation

Named ranges are useful for defining constants and validating data from lists. Named ranges can be created through the name box or Name manager form (**Alt, m, n**).

Named constants are typically a single value such as a conversion factor, gravitational acceleration, etc. Named ranges of lists ensure exact matches when used with [data validation](#) (**Alt, d, l**).

Named Ranges

Define a constant by 1) Selecting a cell, B2 in example. 2) Enter name in Name Box, dMpFT. 3) Hit return.	 <p>The screenshot shows the Excel Name Box at the top left containing the text 'dMpFT'. Below it is a small grid representing the worksheet. Column A is labeled 'Feet' and column B is labeled 'Meters'. Row 2 is highlighted, and cell B2 contains the value '0.3048 m/ft'.</p>
Name appears in Name Box when named range is selected.	 <p>The screenshot shows the Excel Name Box at the top left containing the text 'dMpFT'. Below it is a small grid representing the worksheet. Column A is labeled 'Feet' and column B is labeled 'Meters'. Row 2 is highlighted, and cell B2 contains the value '0.3048 m/ft'.</p>
Name appears, instead of \$B\$2, when equation is opened for editing.	 <p>The screenshot shows the Excel worksheet grid. Cell B6 is selected, and the formula bar at the top displays '=dMpFT*A6'. The grid shows columns A (Feet) and B (Meters). Row 5 has values 1 and 0.3048. Row 6 has values 2 and the formula result. Row 7 has values 3 and 0.9144.</p>

Define a list by

- 1) Selecting multiple cells in a single row or single column, cells G5:G22 in example.
- 2) Enter name in Name Box, pickAREA.
- 3) Hit return.

	G	H
4	Description	RechZONES
5	Pervious	1
6	IMP BareMtn	
		116
21	AR_Farms	202
22	AR_DumontDunes	204
23		

Names can be created, edited, and deleted with the Name Manager form.

Short cut – **ALT, m, n**

Name	Value	Refers To	Scope	Comment
dMpFT	0.3048	=Named!\$B\$2	Workbo...	
pickAREA	("Pervious"; "IMP_Ba...	=Named!\$G\$5:\$G\$22	Workbo...	
pickSHOW	("Description"; "Rec...	=Named!\$G\$4:\$L\$4	Workbo...	

Refers to:

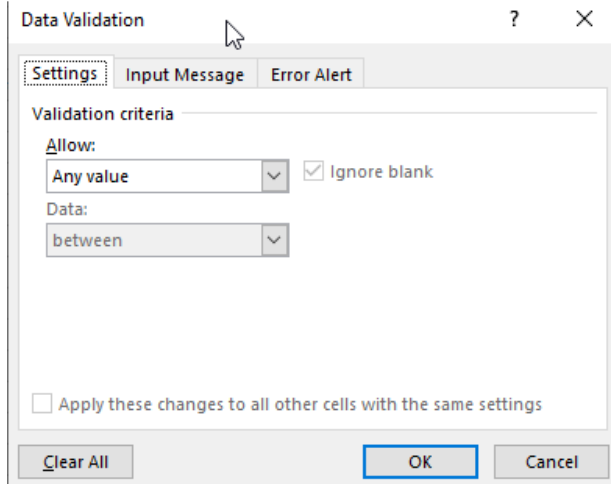
Data Validation

Apply data validation to cell D5.

	D
4	Description
5	
6	

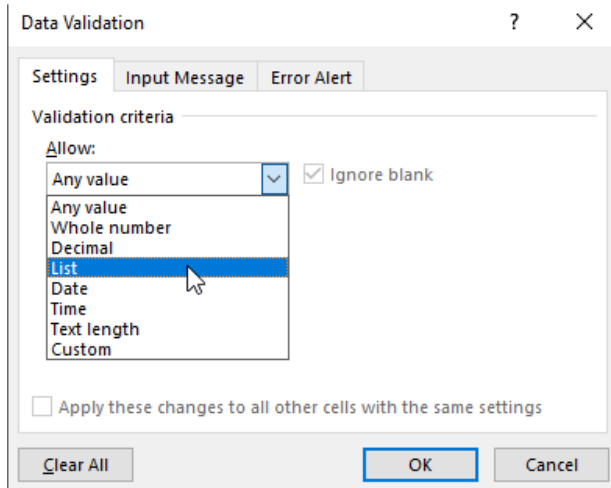
Open Data Validation form

Short cut – **ALT, d, l**



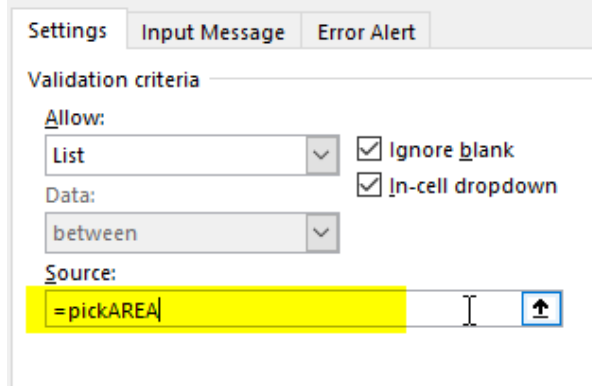
The Data Validation dialog box is shown with the 'Settings' tab selected. Under 'Validation criteria', 'Allow:' is set to 'Any value' and 'Data:' is set to 'between'. The 'Ignore blank' checkbox is checked. At the bottom, there are 'Clear All', 'OK', and 'Cancel' buttons.

Select list from entries to be allowed.



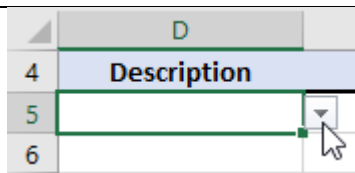
The 'Allow:' dropdown menu is open, showing a list of options: 'Any value', 'Whole number', 'Decimal', 'List' (which is highlighted), 'Date', 'Time', 'Text length', and 'Custom'. The 'Ignore blank' checkbox remains checked.

Type “=pickAREA” in the Source dialog.
pickAREA is the named range that was defined previously.



The 'Source:' field is now visible and contains the formula “=pickAREA”. The 'List' option is selected in the 'Allow:' dropdown. The 'Ignore blank' and 'In-cell dropdown' checkboxes are both checked.

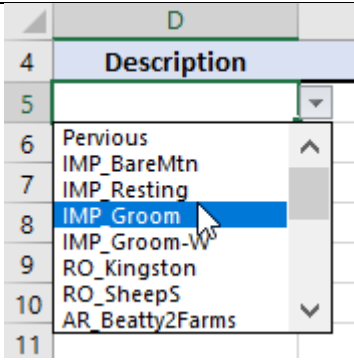
A pull-down tab appears when cell D5 is selected because of the list validation.



A screenshot of an Excel spreadsheet. Cell D5 is selected, and a small pull-down arrow (tab) is visible on its right side. The spreadsheet shows columns A through D and rows 4 through 6. Cell D4 contains the text 'Description'.

List of entries from named range pickAREA appears when pull-down tab is selected.

Alternatively, type **ALT+↓** to show the list.



Data validation assures exact match in functions such as VLOOKUP and MATCH when they depend on values in cell D5.

	D	E	F	G	H
3					
4	Description	Rate, ft/yr		Description	RechZONES
5	IMP_Groom	=VLOOKUP(D5,\$G\$5:\$L\$37,E\$3,0)			1
6				IMP_BareMtn	6
7				IMP_Resting	10
8				IMP_Groom	14
9				IMP_Groom-W	18
10				RO_Kingston	111
11				RO_SheepS	115
12				AR_Beatty2Farms	201