



Introduction to Excel Part 1

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About the speaker:

David H. Ringstrom, CPA, is an author and nationally recognized instructor who teaches scores of webinars each year. His Excel courses are based on over 25 years of consulting and teaching experience. His mantra is “Either you work Excel, or it works you.” David offers spreadsheet and database consulting services nationwide.



Excel Versions

I'll be teaching from the Microsoft 365 version of Excel, and noting any differences or limitations in the legacy versions of Excel. References to Excel 2013+, Excel 2016+, and so on mean a feature is available in all subsequent versions, including Microsoft 365.

The Future of Excel

Microsoft 365 (Formerly Office 365)

Subscription-based version of Microsoft Office, which includes Excel. Use the software on multiple devices, new calculation engine, services and more features are rolling out that will dramatically set this version apart from past Excel versions.
www.microsoft365.com

Legacy Versions

Perpetual Licenses

Pay once for the software to use on a single computer. No new features added until you buy a new license. Includes

Excel 2019
Excel 2016
Excel 2013
Excel 2010
Excel 2007 and earlier

1 File Home Insert Page Layout

2 Cut Copy

Paste Format Painter

Calibri

B I U

I demonstrate each technique at least twice, first by way of numbered steps in PowerPoint, and then in Excel.

The following articles written by David Ringstrom include PDF of today's presentation along with an example workbook that contains most examples I'll teach from as well as related articles.

Email ask@davidringstrom.com if you haven't received the handouts.

Excel Tips, Data Entry Shortcuts

Related Articles Car Payme



Getting Oriented in Excel

The screenshot shows the Microsoft Excel interface with several annotations explaining key concepts:

- Annotation 1:** A red arrow points to the "Sheet1" tab at the bottom of the window. The text box says: "Depending upon your Excel version, workbooks start with 1 or 3 worksheets. You can add dozens, perhaps hundreds of worksheets, but if you reach that point, you're probably using the wrong tool."
- Annotation 2:** A red circle highlights a cell in the grid. The text box says: "Each 'box' is referred to as a cell and has a unique 'address' comprised of the cell's column letter and row number. An address can be identified two ways: (1) the frame color of column letters and row numbers (in this example, green), and (2) the Name box (in this example, A1)."
- Annotation 3:** A red circle highlights the first row of the grid. The text box says: "1,000,000+ rows."
- Annotation 4:** A red circle highlights the first column of the grid. The text box says: "16,000+ columns."
- Annotation 5:** A red circle highlights the "Name box" in the top-left corner of the ribbon, which displays "A1". The text box says: "Name box."

The Excel interface shows the "Home" tab selected, with the ribbon displaying options for Clipboard, Font, Number, Styles, Cells, and Ideas. The status bar at the bottom indicates "Ready" and "Accessibility: Good to go".



Saving Excel Files

1 File

2 Save As

3 Car Payment
Excel Workbook (*.xlsx)

4 Excel spreadsheets can be saved in 27 different formats, but initially, you'll primarily use the following 3:

- **.xlsx** - Excel 2007 and later
- **.xlsm** - Macro-Enabled Excel 2007 and later (only use this format if you're saving a file that already contains macros).
- **.pdf** - You can create .pdf versions of files from Excel's Save As dialog box.

Use the Browse button (or Computer button in Excel 2013) to display a traditional Save As dialog box, which appears after step 2 in Excel 2010 and earlier.

Recent

OneDrive

This PC

Add a P...

Browse

Documents

Save

More options...

Date modified

	Date modified
1/6/2019 9:23 P	
1/8/2019 7:49 P	
1/6/2019 9:28 P	
3/15/2019 2:06	

Custom Office Templates

Snagit

Employee List.xlsx



Working within a Cell

The screenshot displays the Microsoft Excel interface with the Home tab selected. The ribbon includes groups for Clipboard, Font, Alignment, Number, Conditional Formatting, and Insert. A red box highlights the Font, Alignment, and Number groups. A callout box (2) explains that most commands are disabled while editing a cell. Below the ribbon, the worksheet shows cell A1 containing the text 'Interest'. A callout box (1) instructs the user to type the word but not press Enter. Three smaller panels at the bottom illustrate the effects of pressing Enter or Tab: (3) shows the vertical bar indicating the active cell, (4) shows the cursor moving down to the next row, and (5) shows the cursor moving right to the next column.

AutoSave Off Book1 - Excel David Ringstrom DR

File Home Insert Page Layout Formulas Data Review View Help Share Comments

Clipboard Font Alignment Number Conditional Formatting Insert Delete Format

1 Type the word Interest but don't press Enter, just pause.

2 Most of Excel's commands are disabled when you're editing a worksheet cell. These features are enabled again once you press Enter or Tab.

3 The vertical bar indicates that you're "in" a worksheet cell as opposed to "on" a worksheet. Press Enter to leave the cell.

4 The cursor moves down to the next row when you press Enter.

5 Alternative: Press the Tab key to move the cursor to the right.



Entering Text into Worksheet Cells

Four ways to edit a cell:

1. Click into the formula bar above the worksheet.
2. Double-click on the cell you wish to edit.
3. Press F2 within the cell you wish to edit.
4. Navigate to a cell and type over the contents.

1 Type cell contents as shown.

2 Enter a number in cell B1 and then press Enter.

By default text entered into a cell will overlap adjacent cells in a given row as needed...

...until something is entered in the adjacent cell. The contents of cell A1 are still present, but no longer entirely visible. Any cell can contain up to 32,000 characters.

A	B	C	D
Interest Rate	0.0525		
Term			
Principal			
Payment			



Managing Column Widths

1 Home

2 Select one or more columns.

3 Format

4 Column Width...

5 Alternatives: Position cursor to the right of a column and double-click, or hold down the left mouse button and drag to the left or the right.

6 Alternative: Right-click on a column (make sure to right-click on the worksheet frame as a different menu appears for worksheet cells).

7 Column Width...

8 Column Width

Column width: 8.43

9 OK

You can also select two or more columns at once and use any of these techniques to resize multiple columns.



Formatting Percentages

1 Click the **Home** tab in the ribbon.

2 Select cell B1.

3 Click the **Percent Style** button in the **Number** section of the **Home** menu.

4 Click **Increase Decimal** twice to add two decimal places.

5 Alternative: Type the number including decimal places and percent sign to enter and format in one step. This only works in blank cells that don't have a number format assigned yet.

6 Alternative: Click the **Number Format** button to display the **Format Cells** dialog box.

7 Alternative: Click this arrow in the **Number** section of the **Home** menu.

8 Nuance: in Excel **Percent** means no decimals, while **Percentage** includes decimals.

	A	B	C	D
1	Interest Rate	0.0525		
2	Term			
3	Principal			

	A	B	C	D
1	Interest Rate	5.25%		
2	Term			

Format Cells

Number Alignment Font Border

Category: General Sample

Percentage
5.25%

Fraction
0



Formatting Numbers

1 The Accounting Format adds a dollar sign, commas, and two decimal places.

2 Optional: Click Decrease Decimal twice to remove unwanted decimal places.

3 The Accounting Format aligns dollar signs at the left, versus Currency format that places dollar signs adjacent to the number.

4 Alternative: Type dollar signs and/or commas when entering numbers to enter and format as Currency in one step (assuming cell has no existing number format).

5 The Comma Styles button also automatically adds two decimal places.

6 Choose General from the Number Format list to remove number formatting from one or more cells.

7

8

	A	B	C	D
6	Accounting	\$ 30,000.00		
7	Currency	\$30,000.00		
8				
9				
10				
11				
12				
13				
14				
15				
16				

	A	B	C	D
1	Interest Rate	5.25%		
2	Term	48		
3	Principal	30000		
4	Payment			

	A	B	C	D
1	Interest Rate	5.25%		
2	Term	48		
3	Principal	\$30,000		
4	Payment			



Formatting Worksheet Cells

1 Update spreadsheet to include all of this text, and then select cells A6:E6.

2 Click the Bold icon (or press Ctrl-B).

3 Click the Underline icon (or press Ctrl-U).

4 Click the Center command to center text within the cell. Many commands do not have keyboard shortcuts.

5 Click the Undo command (or press Ctrl-Z) if you make a mistake.

6 Alternative, click a formatting icon again to turn that format off.

7 Text is bolded, underlined, and centered within the column.

Payment #	Date	Interest	Principal	Balance



Copying Formulas

1 Type a 1 in cell A7.

2 Enter this formula in cell A8. Formulas always begin with an equal sign.

3 Excel shows the formula result when you press Enter. Optional: Double-click the cell to edit the formula again.

4 Drag the Fill Handle in cell A8 down through cell A54.

5 Excel copies the formula down and creates a series of numbers.

Payment #	Date	Interest
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
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14		
15		
16		
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47		
48		



Entering Dates

1 Enter dates in m/d/yy format. You can enter a date as 01/01/2020, 1/1/2020, or 1/1/20. If you enter 1/1 and press Enter Excel adds the current year.

Payment #	Date	Interest	Principal
1	1/1/2020		
2		1/1/2020	

3 Enter a second date, select cells B7:B8, and then double-click the Fill Handle.

Payment #	Date	Interest	Principal
1	1/1/2020		
2	2/1/2020		

5 Dates in Excel are serial number representing the number of days since January 1, 1900. You may sometimes inadvertently lose the date format.

Payment #	Date	Interest	Principal
1	43831		
2	43862		
3	43891		

2 Do not include an equal sign otherwise Excel will perform division instead of returning a date.

Payment #	Date	Interest	Principal
1	1/1/2020	1/1/2020	
2	0.00099	=2/1/2020	

4 Excel creates a series of dates down the column and stops when it finds a blank cell in the preceding column.

Payment #	Date	Interest	Principal
1	1/1/2020		
2	2/1/2020		
3	3/1/2020		
4	4/1/2020		
5	5/1/2020		

6 **7** **8**

The screenshot shows the Excel Home ribbon with the 'Date' format selected in the 'Number' group. The 'Short Date' format is highlighted in the dropdown menu. The background shows a spreadsheet with dates in column B and interest in column C.



Calculating Our Loan Payment

Spreadsheet Data:

	A	B	C
1	Interest Rate	5.25%	
2	Term	48	
3	Principal	30,000.00	
4	Payment		
5			
6	Payment #	Date	Interest
7	1	1/1/2022	
8	2	2/1/2022	

Function Arguments Dialog:

1 Search for: **Describe calculation**

2 Loan Payment

3 Or select a category:

4 Select a function: **PMT**

5 PMT(rate,nper,pv,fv,type)

6 Calculates the payment on constant payments and a constant interest rate.

7 [Help on this function](#)

8 OK

Formula Bar: `=PMT(B1/12,B2,B3)`

Function Arguments Dialog:

9 Rate: B1/12 = 0.004375

10 Nper: B2 = 48

11 Pv: B3 = 30000

12 Fv: = number

13 Type: = number

14 = -694.2813825

15 Calculate the payment for a loan based on constant payments and a constant interest rate.

16 Present value: the total amount that a series of future payments will...

17 Formula result appears here.

18 Formula result = (\$694.28)

19 [Help on this function](#)

20 OK



Excel's Order of Operations

	A	B	C	D		A	B	C	D	E	F	G	H
1	Interest Rate	5.25%			1	Interest Rate	5.25%						
2	Term	48			2	Term	48						
3	Principal	30,000			3	Principal	30,000						
4	Payment	(\$694.28)			4	Payment	(\$694.28)						
5					5								
6	Payment #	Date	Interest	Princip	6	Payment #	Date	Interest	Principal	Balance			
7	1	1/1/2020	131.25		7	1	1/1/2020	131.25					
8	2	2/1/2020			8	2	2/1/2020						
9	3	3/1/2020			9	3	3/1/2020						
10	4	4/1/2020			10	4	4/1/2020						
11	5	5/1/2020			11	5	5/1/2020						
12	6	6/1/2020			12	6	6/1/2020						
13	7	7/1/2020			13	7	7/1/2020						
14	8	8/1/2020			14	8	8/1/2020						
15	9	9/1/2020			15	9	9/1/2020						
16	10	10/1/2020			16	10	10/1/2020						
17	11	11/1/2020			17	11	11/1/2020						
18	12	12/1/2020			18	12	12/1/2020						
19	13	1/1/2021			19	13	1/1/2021						
20	14	2/1/2021			20	14	2/1/2021						
21	15	3/1/2021			21	15	3/1/2021						
22	16	4/1/2021			22	16	4/1/2021						

You can include parentheses in this calculation but they're not necessary since no addition or subtraction is occurring.

Excel's Order of Operations:

1. Parentheses
2. Exponents
3. Division
4. Multiplication
5. Addition
6. Subtraction



Use F4 to Toggle Absolute References

Excel sometimes, but not always, adopts the number format of other cells that you reference.

4 Select cell B4 in the formula bar and press F4 (or Cmd-T in Excel for Mac) to create an absolute reference.

2 Drag the formula down.

3 Excel changes the cell references to the payment amount as the formula is copied down.

5

Payment #	Date	Interest	Principal	Balance
1	1/1/2020	131.25	\$563.03	=B4-C7
2	2/1/2020		\$0.00	=B5-C8
3	3/1/2020		#VALUE!	=B6-C9
4	4/1/2020		#####	=B7-C10

#	Date	Interest	Principal	Balance
1	1/1/2020	131.25	=B\$4-C7	=B4-C7
2	2/1/2020			
3	3/1/2020			
4	4/1/2020			
5	5/1/2020			



Copying Formulas

Panel 1: Selecting the source cell

Cell C7 is selected. The formula bar shows the formula: $=E7*\$B\$1/12$.

Panel 2: Copying the formula

The formula bar shows the formula: $=E7*\$B\$1/12$.

Panel 3: Dragging the formula

The formula is being dragged from cell C7 to cell D8. The formula bar shows the formula: $=E7-D8$.

Panel 4: Final result

The formula is now in cell D8, and the result is displayed: \$ 28,871.47.

Payment #	Date	Interest	Principal	Balance
1	1/1/2020	\$ 131.25	\$ 563.03	\$ 29,436.97
2	2/1/2020	\$ 128.79	\$ 565.03	\$ 28,871.47
3	3/1/2020			
4	4/1/2020			



Verifying Our Work

1 Select cells C8:E8, and then double-click the Fill Handle.

Payment #	Date	Interest	Principal	Balance
1	1/1/2020	\$131.25	\$563.03	\$29,436.97
2	2/1/2020	\$128.79	\$565.49	\$28,871.47
3	3/1/2020			
4	4/1/2020			
5	5/1/2020			
6	6/1/2020			
7	7/1/2020			
8	8/1/2020			
9	9/1/2020			

3 The ending balance should be zero. Press Ctrl+Home.

Payment #	Date	Interest	Principal	Balance
46	10/1/2023	\$26.75	\$667.53	\$5,446.48
47	11/1/2023	\$23.83	\$670.45	\$4,776.02
48	12/1/2023	\$20.90	\$673.39	\$4,102.64
49	1/1/2024	\$17.95	\$676.33	\$3,426.31
50	2/1/2024	\$14.99	\$679.28	\$2,747.01
51	3/1/2024	\$12.03	\$682.23	\$2,064.78
52	4/1/2024	\$9.07	\$685.18	\$1,379.60
53	5/1/2024	\$6.04	\$688.25	\$691.26
54	6/1/2024	\$3.02	\$691.26	\$0.00
55				

2 Excel copies the formulas down. Press Ctrl+Down.

Payment #	Date	Interest	Principal	Balance
1	1/1/2020	\$131.25	\$563.03	\$29,436.97
2	2/1/2020	\$128.79	\$565.49	\$28,871.47
3	3/1/2020	\$126.31	\$567.97	\$28,303.51
4	4/1/2020	\$123.83	\$570.45	\$27,733.06
5	5/1/2020	\$121.33	\$572.95	\$27,159.11
6	6/1/2020	\$118.83	\$575.46	\$26,581.65
7	7/1/2020	\$116.31	\$577.97	\$26,000.67
8	8/1/2020	\$113.78	\$580.50	\$25,426.17
9	9/1/2020	\$111.24	\$583.04	\$24,843.13

4 The cursor returns to cell A1 when you press Ctrl+Home.

	Value
Interest Rate	5.25%
Term	48
Principal	30,000
Payment	(\$694.28)



Freeze Panes Feature

1

It's easy for data to blur when you don't freeze column headings on-screen.

	A	B	C	D
26	20	8/1/2021	\$82.56	\$611
27	21	9/1/2021	\$79.88	\$614
28	22	10/1/2021	\$77.19	\$617
29	23	11/1/2021	\$74.49	\$619
30	24	12/1/2021	\$71.78	\$622
31	25	1/1/2022	\$69.06	\$625
32				
33				
34				
35				
36	30	6/1/2022	\$55.26	\$639

3 View

4 Freeze Panes

5 Freeze Panes

Keep rows and columns visible while the rest of the worksheet scrolls (based on current selection)

Freeze Top Row

Keep the top row visible while scrolling through the rest of the worksheet.

Freeze First Column

Keep the first column visible while scrolling through the rest of the worksheet.

2

Select the cell just below the rows (and optionally to the right of any columns) that you wish to always remain on-screen.

	A	B	C
6	Payment #	Date	Interest
7	1	1/1/2020	\$ 131.25
8	2	2/1/2020	\$ 128.79
9	3	3/1/2020	\$ 126.31
10	4	4/1/2020	\$ 123.83
11	5	5/1/2020	\$ 121.33

6

Rows 1 through 6 are now always present on screen.

	A	B	C
1	Interest Rate	5.25%	
2	Term	48	
3	Principal	30,000	
4	Payment	(\$694.28)	
5			
6	Payment #	Date	Interest
26	20	8/1/2021	\$82.56
27	21	9/1/2021	\$79.88
28	22	10/1/2021	\$77.19
29	23	11/1/2021	\$74.49
30	24	12/1/2021	\$71.78

Freeze panes toggles to Unfreeze Panes if you wish to undo the action.

Unfreeze Panes

Unlock all rows and columns to scroll through the entire worksheet.

Freeze Top Row

Keep the top row visible while scrolling through the rest of the worksheet.



Instant Amortization Schedule

Step 1: Right-click any worksheet tab.

Step 2: Insert...

Step 3: Spreadsheet Solutions

Step 4: Loan Amortization

Step 5: OK

Step 6: Excel adds an amortization schedule to the workbook.

Excel for Mac: Choose File, New from Template, and enter amortization into the Search field in lieu of steps 1-5.

Loan Amortization Schedule Worksheet:

Pmt. No.	Payment Date	Beginning Balance
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		

Loan Amortization Schedule



Using Excel Templates

1 Click the **File** tab on the ribbon.

2 Click the **New** button in the left sidebar.

3 Type a search term and press Enter.

4 Double-click any template from the list, or search a more comprehensive set of templates at <http://templates.office.com>. Use the search term **NCAA** there to locate a college basketball tournament bracket template.

Budget

Personal Monthly Budget

BUDGET OVERVIEW

Income & Expenses

ESTIMATED ACTUAL

Monthly company budget

Blue balance

Wedding Budget

	ESTIMATED	ACTUAL
Total Expenses	\$1,150	\$1,320
Apparel	\$350	\$320
Wedding rings	\$1,100	\$1,000
Wedding price		\$1,000
Decorations		\$1,000

KAYLA + JACOB TIE THE KNOT

Take a tour

Thank you for attending!

I'm happy to hear from you. In particular let me know if you did not receive the handouts for this presentation.

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Is there something you were hoping to learn today but didn't?
Please let me know. You can ask me anything about Excel.