



Introduction to Excel Macros 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.

The Future of Excel

Microsoft 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. Formerly known as Office 365.

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 2021

Excel 2019

Excel 2016

Excel 2013

Excel 2010 and earlier

References to Excel 2013+, Excel 2016+, and so on mean a feature is available in all subsequent versions, including Microsoft 365.

1 File Home Insert Page Layout

2 Cut Copy

3

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

Handouts include PDF of today's presentation along with an example workbook that contains most examples I'll teach from.

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

Excel tip: Data Entry Shortcut

Related Articles Car Payme



Macro Recorder Introduction

1 Select any cell within a worksheet.

2 Choose Macros from the View menu.

3 Record Macro...

4 Hello

5 Personal Macro Workbook

6 My first Excel macro

7 OK

8 Type "Hello, world!" and then press Enter.

9

10 View

11 Macros

12 PERSONAL.XLSB:Hello

13 Run

14 Hello, world! should appear in another cell.



Center Across Selection

1 Select the area you wish to center across columns.

2 Home

3 Click the Alignment Settings button, or press Ctrl-1.

4 Center Across Selection

5 OK

6 The text is centered across the columns without merging the cells.

7 Home

8 To undo Center Across Selection, select the cells in question then choose Align Left.



Automating Center Across Selection

1 Preselect the cells you wish to format, so that the selection is not included in the macro.

2 Click the Record button or choose View, Macro, Macro Recorder.

3 Avoid using Excel features as macro names, also spaces are not permitted.

4 Personal Macro Workbook

5 Automates center across selection.

6 OK

7 Click the Alignment Settings button on the Home menu or press Ctrl-1.

8 Center Across Selection

9 OK

10 The Macro Recorder shortcut on the Status Bar becomes a Stop Recording shortcut, and also serves as a visual indication that recording is in progress.

Center Across Selection



Manually Running Our New Macro

The image consists of three sequential screenshots of an Excel spreadsheet, illustrating the steps to manually run a macro. The spreadsheet has columns E, F, G, and H, and rows 1 through 22. The text 'Another Report Title' is in row 5 and 'Another Report Subtitle' is in row 6, both centered across columns E-H.

- 1** Select any combination of rows and columns. (The selection area E5:H6 is highlighted with a red box.)
- 2** Click the **View** tab in the ribbon. (The 'View' tab is circled in red.)
- 3** Click the **Macros** icon in the View ribbon. (The 'Macros' icon is circled in red.)
- 4** Select the macro **PERSONAL.XLSB!CenterTitle** in the Macro dialog box. (The macro name is highlighted with a blue selection bar and circled in red.)
- 5** Click the **Run** button in the Macro dialog box. (The 'Run' button is circled in red.)
- 6** The text is centered across columns. (A callout box points to the centered text in the spreadsheet.)

At the bottom of each screenshot, a green button labeled 'Center Across Selection' is visible.



Creating an Icon for Our Macro

1 Click the dropdown arrow in the top right of the Quick Access Toolbar.

2 Click **More Commands...** in the dropdown menu.

3 The **Quick Access Toolbar** section of the **Excel Options** dialog box appears.

4 Choose commands from: **Macros**.

5 Select the macro **PERSONAL.XLSB!CenterTitle**.

6 Click **Add >>**.

7 Click **Modify...**.

8 Select a symbol from the **Symbol** list.

9 Spaces are permitted in the **Display Name** field.

10 Click **OK**.

11 Click **OK** in the **Customize Quick Access Toolbar** dialog.



Shortcuts for Running a Macro

1 Select cells.

2 To run the macro either click the icon or tap Alt and then type the number shown.

3 Yet Another Report Title
Yet Another Report Subtitle

4 View

5 Macros

6 PERSONAL.XLSB!CenterTitle

7 Options...

8 Ctrl+Shift+ C

9 Automates center across selection (Shortcut Ctrl-Shift-C).

10 OK

Macro descriptions appear here.

• Be careful when assigning shortcut keys in this fashion.

• Always include Shift to avoid superseding Windows shortcuts.

• If you assign Ctrl-C here then you can no longer use Ctrl-C to copy while working in Excel.



What are the Risks?

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	When you run a macro, you can't undo any previous steps that you carried out. Save your work frequently!													
2														
3	Recorded macros are unable to make any decisions, so the macro recorder is only useful for simple but repetitive tasks.													
4														
5	Recorded macros can easily break if the user changes the name of a worksheet or modifies the structure of a worksheet.													
6														
7	Keyboard shortcuts for macros can potentially override an Excel or Windows shortcut, such as Ctrl-C.													
8														
9	In Excel 2007 and later, users can inadvertently remove macros from a file by saving in the XLSX format.													
10														
11														
12														
13														
14														
15														
16														
17														
18	It's also easy to forget to turn off the macro recorder and inadvertently capture more steps than you intend.													
19														
20														
21														

Macro Risks (+)



What is the Personal Macro Workbook?

1 View

2 Unhide

If Unhide is disabled then you have not yet used the Macro Recorder and do not have a Personal Macro Workbook.

3 OK

4 PERSONAL - Excel

Home Insert Page Layout Formulas Data Review View Help

The Personal Macro Workbook is a normal Excel workbook with some special characteristics:

- It is created the first time you use Excel's Macro Recorder
- Macros can be used in any other open Excel workbook
- The personal.xlsb file opens automatically when you open Excel.
- The workbook should remain hidden unless you're editing macros.

Sheet1

4 View

5 Hide

Choose the Hide command after you finish working with the Personal macro workbook.

6 Save

Do you want to save the changes you made to the Personal Macro Workbook? If you click Save, the macros will be available the next time you start Microsoft Excel.

Save All Don't Save Cancel

Watch for this prompt when you exit Excel, click Save to save your work, or Don't Save to discard.



Deleting a Macro

1 Make sure that the personal macro workbook is visible. If it isn't, choose View, Unhide, and then click OK.

2 View

3 Share

4 Hello

5 Delete

6 Yes

7 View

8 Be sure to hide the Personal Macro workbook back again.

9 Choose Switch Windows on the View menu.

10 Personal.xlsb should not appear on this list unless you're editing/deleting a macro.



Path to Personal Macro Workbook

1 Type %appdata% and press Enter in a This PC or Windows Explorer address bar.

2 Double-click Microsoft.

3 Double-click Excel.

4 Double-click XLSTART. This folder may not exist if you haven't used the Macro Recorder yet.

Excel launches any spreadsheets stored within the XLSTART folder automatically. If you sharing or moving your personal.xlsb file then save it in this location on other computers. Make sure that you close Excel before you attempt to maintain personal.xlsb.



Recording a Simple Contact Info Macro

1 Select cell A1. If you move the cursor after starting the recorder then your macro will always be tied to the cell that you click on.

2 If the Macro Recorder shortcut doesn't appear here then choose View, Macros, and then Record Macro.

3 The first character of a macro name must be a letter. No punctuation or spaces are permitted, but you can use underscores and numbers.

4 macro in: Personal Macro Workbook

5 Types out contact info tagline

6 OK

7 Type two lines of text and then select cells A1:A2

8 Optional: Press Ctrl-B, Ctrl-I, and Ctrl-U to make the text bold, italicized, and underlined. You can use keyboard shortcuts or menu commands interchangeably while recording a macro. Undo mistakes as you're recording to remove those steps from the macro.

9 Click Stop Recording here or on the Macros menu.



Running the Contact Info Macro

2 Select any cell other than A1.

1 Add a blank worksheet.

3

4

5

6

7 The macro starts out in the cell you selected, but continues in cell A2.

Questions? Additional Functionality?

7 The macro starts out in the cell you selected, but continues in cell A2.

We recorded the macro starting in cell A1, but when we pressed Enter the macro recorder captured A2 instead of "move down one row".

```

Sub ContactInfo ()
    ContactInfo
    Types out
    ActiveCell.FormulaR1C1 = "Questions? Additional Functionality?"
    Range ("A2") .Select
    ActiveCell.FormulaR1C1 = "Contact david@acctadv.com"
    Range ("A1:A2") .Select
    Selection.Font.Bold = True
    Selection.Font.Underline = xlUnderlineStyleSingle
    Selection.Font.Italic = True
End Sub

```



Re-recording with Relative References

The image is a composite of four panels illustrating the steps to record a macro with relative references in Excel:

- Panel 1 (Top Left):** Shows the Excel ribbon with the **View** tab selected. A red circle with the number 1 highlights the **View** tab. A red circle with the number 2 highlights the **Macros** button in the View group. A red circle with the number 3 highlights the **Use Relative References** button in the Macros group.
- Panel 2 (Top Right):** Shows the **Macros** dropdown menu. A green callout box says "A tiny border indicates that Use Relative References is on." A red circle with the number 4 highlights the **Macros** button. A red circle with the number 5 highlights the **Use Relative References** button.
- Panel 3 (Bottom Left):** Shows the **Record Macro** dialog box. A red circle with the number 6 highlights the **Macro name:** field containing "ContactInfo". A red circle with the number 7 highlights the **Store macro in:** dropdown menu set to "Personal Macro Workbook". A red circle with the number 8 highlights the **Description:** field containing "Types out contact info tagline.". A red circle with the number 9 highlights the **OK** button.
- Panel 4 (Bottom Right):** Shows a warning dialog box: "Macro with name 'ContactInfo' already exists. Replace existing macro?". A red circle with the number 10 highlights the **Yes** button.
- Panel 5 (Right):** Shows a spreadsheet with columns A, B, C, and D. Row 1 contains "Questions? Additional Functionality?" and row 2 contains "Contact david@acctadv.com". A red circle with the number 11 highlights these two rows. A yellow callout box says "Type two lines of text and then select cells A1:A2." A red circle with the number 12 highlights the text in row 1. A red circle with the number 13 highlights the status bar at the bottom right.



Playing Back the Re-Recorded Macro

1 Add a blank worksheet.

2 Select any cell other than A1.

3 Review

4 Macros

5 PERSONAL.XLSB!ContactInfo

6 Run

7 The macro functions properly now.

Questions? Problems? Additional Functionality?
Contact david@acctadv.com

```

Sub ContactInfo ()
    ActiveCell.FormulaR1C1 = "Questions? Additional Functionality?"
    ActiveCell.Offset (1, 0) .Range ("A1") .Select
    ActiveCell.FormulaR1C1 = "Contact david@acctadv.com"
    ActiveCell.Offset (-1, 0) .Range ("A1:A2") .Select
    Selection.Font.Bold = True
    Selection.Font.Italic = True
    Selection.Font.Underline = xlUnderlineStyleSingle
End Sub

```

Use Relative References instructs Excel to record the macro in a way that although cells A1 and A2 are referenced, the macro operates based on the active cell.



Planning to Automate a Repetitive Task

	A	B	C	D	E	F	G	H
1				Dec 1 - 15, 19				
2		Abercrombie, Kristy						
3		Remodel Bathroom		3,862.00				
4		Abercrombie, Kristy - Other		10.00				
5		Total Abercrombie, Kristy		3,872.00				
6		Campbell, Heather						
7		Remodel		13,900.00				
8		Total Campbell, Heather		13,900.00				
9		Cook, Brian						
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20		Total Pretell Real Estate		1,715.00				
21								
22								
23								
24								
25								
26								
27		Robson, Darci						
28		Robson Clinic		12,362.00				
29		Total Robson, Darci		12,362.00				
30		Roche, Diarmuid						
31		Garage repairs		440.00				
32		Total Roche, Diarmuid		440.00				
33		Violette, Mike						
34		Workshop		5,632.00				
35		Total Violette, Mike		5,632.00				
36		TOTAL		53,009.69				
37								

	A	B	C
1			Dec 1 - 15, 19
2		Abercrombie, Kristy	3,872.00
3		Campbell, Heather	13,900.00
4		Cook, Brian	1,528.45
5		Keenan, Bridget	95.00
6		Lew Plumbing - C	220.00
7		Natiello, Ernesto	13,207.66
8		Nguyen, Tuan	37.58
9		Pretell Real Estate	1,715.00
10		Robson, Darci	12,362.00
11		Roche, Diarmuid	440.00
12		Violette, Mike	5,632.00
13		TOTAL	53,009.69
14			
15			

1

The report as it exports from an accounting software.

2

We'll create a macro that deletes the detail rows and removes the word Total from each line. The macro will also automatically open the report spreadsheet. We'll then create a button on the screen for launching the macro.

Accounting Report Macro: Clean-Up

1 View

2 Macros

3 Record Macro...

4 ReformatSalesReport

5 New Workbook

6 Condenses and reformats sales report.

7 OK

8 File

9 Open

10 Browse (or Computer in Excel 2013) if needed.

11 Sales By Customer Summary

12 Open

13 Press Ctrl-A, then press Ctrl-C to copy and then right-click and choose Values (or Paste Special and then Values) to eliminate formulas from the report.

14 Press Ctrl while you select columns A and C, and then press Ctrl-Minus to delete both columns.

	A	B	C	D
1				Dec 1 - 15, 19
2				
3				
4				
5				
6				
7				
8			Total Campbell, Heather	13,900.00
9			Cook, Brian	
10			Kitchen	1,528.45
11			Total Cook, Brian	1,528.45



Accounting Report Macro: Filtering

15 Double-click between columns A and B to widen the column.

16 Data

17 Filter

18 Dec 1 - 15, 19

19 Text Filters

20 Custom Filter...

21 does not begin with

22 Enter the word Total.

23 OK

24 Select the remaining rows, and press Ctrl-Minus to delete them.

25 Filter

26 The rows with word Total remain. Hidden rows are protected within filtering data in Excel.

	A	B	C	D	E	F	G
1		Dec 1 - 15, 19					
2	Abercrombie, Kristy						
3							
4							
5							
6							
7	Total	Lew Plumbing - C					220.00
8	Total	Natiello, Ernesto					13,207.66
9	Total	Nguyen, Tuan					37.58
10	Total	Pretell Real Estate					1,715.00
11	Total	Robson, Darci					12,362.00
12	Total	Roche, Diarmuid					440.00



Accounting Report Macro: Text to Columns

27 Select column A.

30 Fixed width

31 Next >

32 Next >

33 Do not import column (skip)

34 Only the customer names remain.

	A	B	C
1		Dec 1 - 15, 19	
2	Total Abercrombie, Kristy		
3	Total Campbell, Heather		
4	Total Cook, Brian	1,528.45	
5	Total Keenan, Bridget	95.00	
6	Total Lew Plumbing - C	220.00	
7	Total Natiello, Ernesto	13,207.66	
8	Total Nguyen, Tuan	37.58	
9	Total Pretell Real Estate	1,715.00	
10	Total Robson, Darci	12,362.00	
11	Total Roche, Diarmuid	440.00	



Accounting Report Macro: Stop Recording

35 Select column B.

36

37 No Border

38 Select cell B1 and press Ctrl-U to add an underline.

39 Press Ctrl-Down to move to the bottom of the column.

40 The keyboard shortcut is critical here, because if you click on cell B13 with your mouse the macro will always format that cell instead of the total row which could shift in the future.

41 Choose Top and Double Bottom border from the Borders menu.

42 View

43 Macros

44 Stop Recording

A	B	C
1	Dec 1 - 15, 19	
2	Abercrombie, Kristy	3,872.00
3	Campbell, Heather	13,900.00
4	Cook, Brian	1,500.00
5		
6	Low Plumbing - C	220.00
7	Natiello, Ernesto	13,207.66
8	Nguyen, Tuan	37.58
9	Pretell Real Estate	1,715.00
10	Robson, Darci	12,362.00
11		
12	Violette, Mike	5,632.00
13	TOTAL	53,009.69



Creating a Clickable Shape

1 Close the accounting report spreadsheet without saving. We can now format it on demand with our macro. The workbook with the macro should now be active.

2 Insert

3 Shapes

4

5 Draw a rectangle, and then type a caption within the shape.

6 Right-click.

7 Assign Macro...

8 ReformatSalesReport

9 OK

10 You can now launch the macro by clicking this button instead of going through the Macros command.

A	B	C
	Dec 1 - 15, 19	
2	Abercrombie, Kristy	3,872.00
3	Ppbell, Heather	13,900.00



Saving Workbooks That Contain Macros

The image shows two screenshots from Microsoft Excel illustrating the process of saving a workbook containing macros.

Top Screenshot: Save As Dialog
The "Save As" dialog is open, showing the file name "Accounting Report Macro" and the "Save as type" set to "Excel Macro-Enabled Workbook (*.xism)". A yellow callout box states: "Spreadsheets that contain macros must be saved as an Excel Macro-Enabled Workbook (or the .XLS or .XLSB formats) otherwise your macros will get discarded." The "Save as type" dropdown is circled in red.

Bottom Screenshot: Microsoft Excel Warning Dialog
A warning dialog box titled "Microsoft Excel" is displayed. It contains the following text: "The following features cannot be saved in macro-free workbooks", followed by a list: "• VB project". Below the list, it says: "To save a file with these features, click No, and then choose a macro-enabled format." and "To continue saving as a macro-free workbook, click Yes." The "No" button is highlighted with a red callout box that says: "Always choose No when this prompt appears and change the Save As Type to Excel Macro-Enabled Workbook unless you want to purposefully remove all macros from a file." The "Save as type" in the background dialog is now "Excel Workbook (*.xlsx)".



Macro Security Notification Prompt

The image shows two side-by-side screenshots from Microsoft Excel. The left screenshot displays a yellow security warning bar at the top of the worksheet that reads "SECURITY WARNING Macros have been disabled." with a red "X" icon. A red circle highlights the "Enable Content" button on the right side of the warning bar. A green callout box with a white border and a blue border contains the text: "Click Enable Content to enable macros for the current work session. Alternatively skip this button and choose steps 1 through 4 to permanently enable macros within this workbook (this is a per-workbook setting)." The right screenshot shows the "File" menu open, with a red circle around the "File" menu item (labeled "1"). Another red circle highlights the "Info" option in the left-hand menu (labeled "2"). In the "Info" pane on the right, a red circle highlights the "Enable Content" button (labeled "3") and another red circle highlights the "Enable All Content" option (labeled "4"). The "Enable All Content" option includes the text "Always enable this document (make this a Trusted Document)".

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.