

# Macros in Word & Excel

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**Description:** If you perform a task repeatedly in Word or Excel , you can automate the task by using a macro. A macro is a series of steps that is grouped together as a single step and then executed when necessary.

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- Class Objectives:**
- Class participants will:
- use the Record Macro feature to create several macros in Word and Excel
  - assign macros to keyboard commands and a toolbar
  - execute macros using keyboard commands or toolbar buttons
  - view the Visual Basic editor in order to become familiar with the underlying programming language of a macro
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## ABOUT MACROS AND VBA

VBA (Visual Basic for Applications) is the programming language that macros use to create custom procedures or automate tasks in all the Office® applications. You can create macros without learning VBA. But, if you create a macro and cannot quite get it to do everything you want it to do, you would then edit the macro using VBA (*figure 1*) to create additional commands for the macro to carry out.

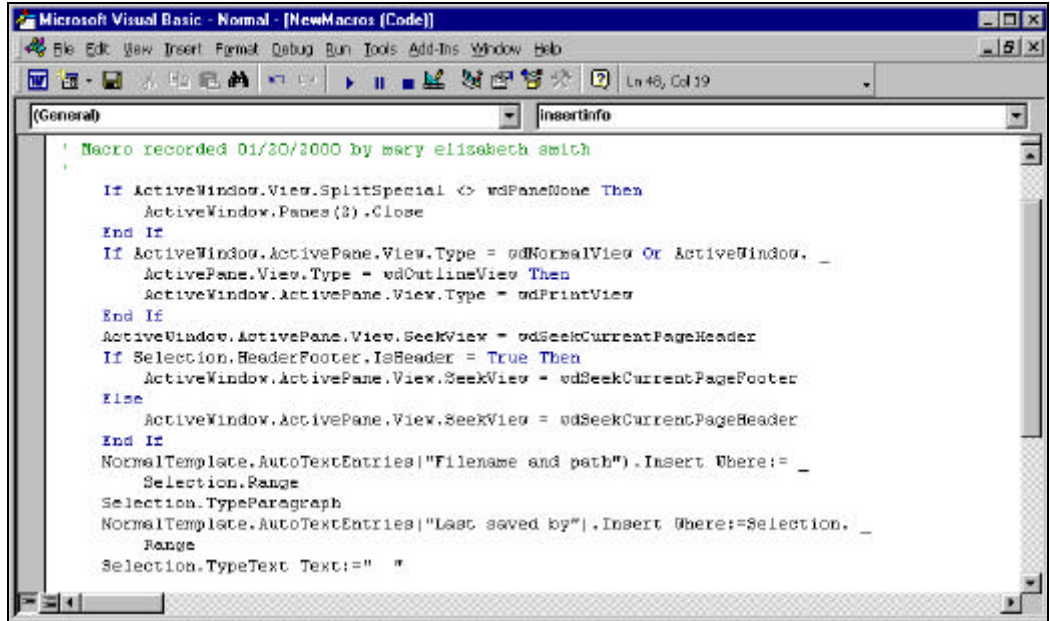


Figure 1 – VBA editor. Displays the code of a macro that was created using the macro recorder.

## WHERE ARE MACROS STORED?

When a macro is created, you choose to either save it within that particular document, or save it to all files of that type.

For example, a Word macro that would quickly format a header and footer with the date, time and page number would be saved so that **all** Word files could execute the macro, not just one file.

Prior to recording a macro, Word and Excel will “ask” if you want the macro made available to all files or just that file (*figure 2 and 3*).

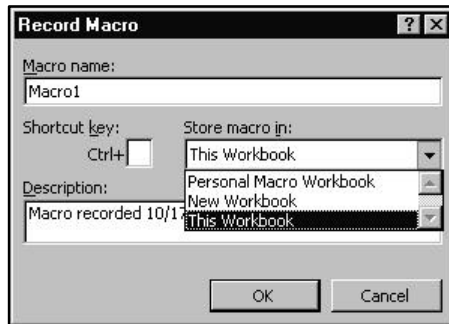


Figure 2 Excel - To save a macro so that it is available to **all** Excel spreadsheets, choose Personal Macro Workbook under the “Store macro in” option.

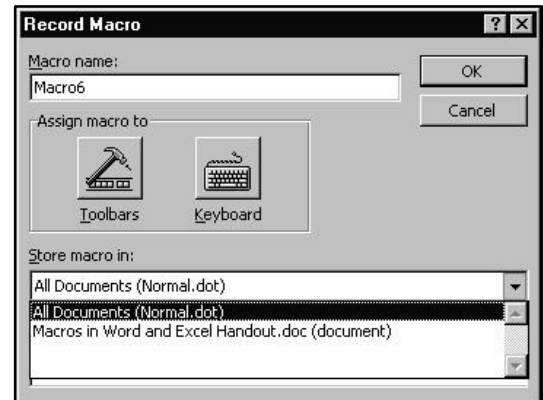


Figure 3 Word - To save a macro that can be executed from **any** Word document, select All Documents (Normal.dot) under the “Store macro in” option.

## BEFORE YOUR CREATE A MACRO...

- Before you record or write a macro, plan the steps and commands you want the macro to perform.
- If you want to use the macro you're recording in other documents, make sure that the macro doesn't depend on the current document's contents.
- If you use a particular macro often, assign it to a toolbar button, a menu, or shortcut keys. That way, you can run the macro directly without having to open the Macros dialog box.

## CREATING A MACRO

The easiest way to quickly create a simple macro in Word or Excel is to use the macro recorder. The Macro Recorder creates a copy of the commands you select with your mouse. When the Macro Recorder is active, the tip of the mouse pointer will contain a cassette.

### Using the Recorder in Word



Figure 4 Record Macro Toolbar (Word). The two buttons will stop or pause the recording.

When you begin recording your actions in Word you can use the mouse to click commands and options, but the macro recorder doesn't record mouse movements in a document window. For example, you can't use the mouse to move the insertion point or to select, copy, or move items by clicking or dragging. You must use the keyboard to record these actions.

When you're recording a macro, you can temporarily pause recording (*figure 4*) and then resume recording where you stopped.

### Steps

1. Click Tools, Macro, Record New Macro the Record Macro dialog box opens (*figure 5*)
2. Under Macro name type a short descriptive name with NO spaces.
3. Under Store macro in, select either all documents or the current document. *select All Document if you want to use this macro globally*
4. Under Description, type a short description of what the macro will do. Include the date the macro was created and the creator.
5. Assign the macro to a Toolbar or Keyboard short cut see [page 4](#).
6. Perform the actions you want to include in your macro.  
*You can use the mouse to click commands and options, but the macro recorder cannot record mouse actions in a document window. To move the insertion point or select, copy, or move text you must use keyboard commands.*
7. To stop recording your macro, click Stop Recording

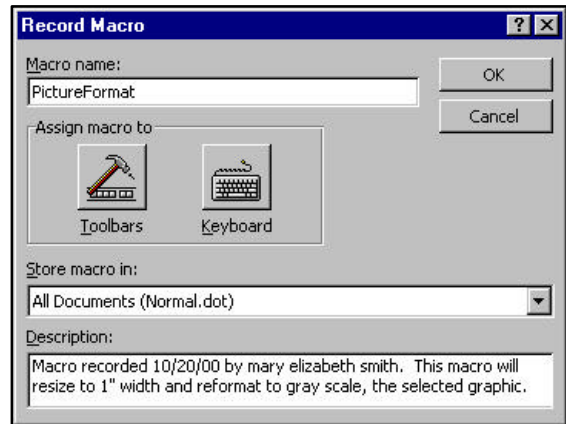


Figure 5 - Record Macro dialog box. Name, describe and assign the macro.

## Running the Macro

If the macro has not been assigned to a keyboard command or a toolbar then do the following to run the macro;

1. Tools, Macro, Macros
2. Under Macro Name, click the macro you want to run
3. Click the Run button

## Assign Macro to Keyboard Command

For quick access to your macro, you can assign it to a keyboard command and then when you want to execute the macro, strike the keys.

Short cut commands for a macro must begin with either Ctrl, Alt or Ctrl + Alt followed by a letter or number. Some keyboard commands are already assigned to other Word commands, for example you want to use the letter F for a macro called FormatPic. Ctrl + F is already assigned to the Find command, Ctrl + Alt + F is assigned to the Insert Footnote command, but Alt + F is unassigned. You could then use the keyboard command, Alt + F to run the macro.

### Steps



After accessing the Record Macro dialog box and naming the macro;

1. Click the Keyboard button  
*the Customize Keyboard box opens (figure 6)*
2. Strike Alt, Ctrl or Alt + Ctrl and a letter or number  
*if the keyboard combination is taken the command will be displayed under Currently Assigned To:*
3. Click the Assign button, then Close
4. Strike the keyboard command at any time to run the macro

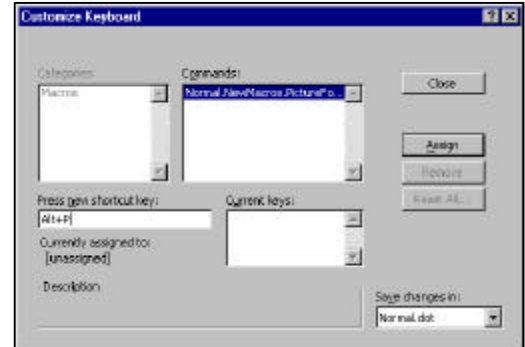


Figure 6 – Type different keyboard combinations under “Press New Shortcut Key” until you find one that is unassigned.

## Assign Macro to Toolbar

For quick access to your macro, you can assign it to a Toolbar as a button, and then when you want to execute the macro just click the button.

### Steps



After accessing the Record Macro dialog box and naming the macro;

1. Click the Toolbars button  
*the Customize dialog box opens*
2. Under Command, find the macro you just named. Click on it and drag it to a place on the toolbar.  
*the Modify Selection button becomes active*
3. Click the Modify Selection button  
*the menu in figure 7 appears*
4. Use the menu to:
  - Create a shorter name for the macro
  - Assign an image to the button
  - Set the default display
5. Click the Close button
6. Begin recording the macro

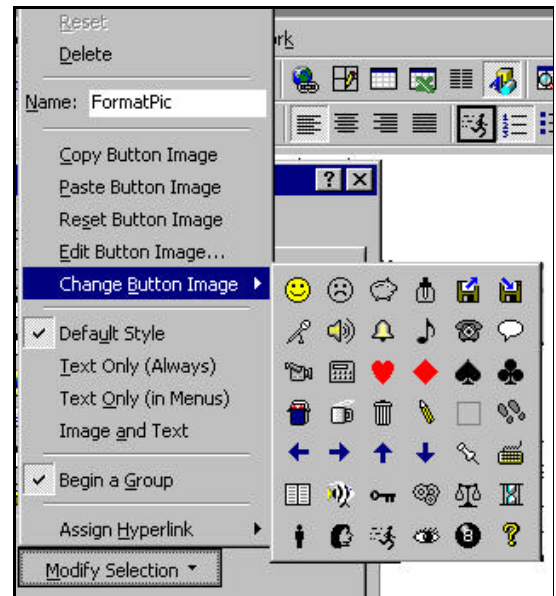


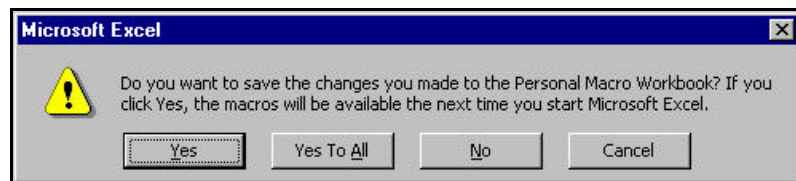
Figure 7 – Use the Modify Selection menu to change the button image, assign a short name, and set other defaults for the macro

## CREATING EXCEL MACROS

Creating macros in Excel requires a few more steps, even when using the Macro Recorder, than if you were creating the automated procedure in Word.

If you want to add the macro to a toolbar, then you must perform this procedure **after** the macro has been created. Also, there is a Relative Reference button on the Macro Recorder toolbar. By default, Relative References is turned OFF, so Absolute References are recorded. In most instances, you will want to record Relative References (perform the procedure relative to the active cell) so make sure to click the Relative References button prior to clicking a command!


If you want the macro available to all Excel workbooks, then save it to the Personal Macro workbook. This file, also called personal.xls, is what all new Excel workbooks are based on. If you have never saved a macro to this file you may get the message below (figure 8). Click Yes to All.



**Figure 8** – This message will appear if you have NEVER saved a macro to the Personal Macro workbook (personal.xls). Click "Yes" or "Yes to All" to confirm that the macros will be stored globally.

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## Using the Recorder in Excel

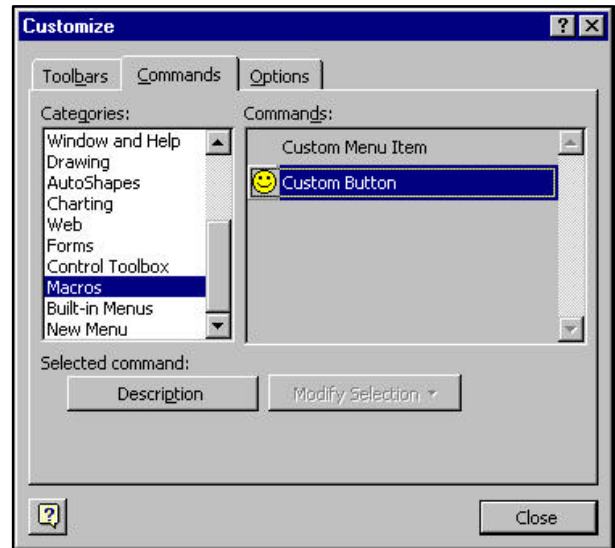
1. Click Tools, Macro, Record New Macro
  2. Type a short, yet descriptive name for the macro  
*The first character of the macro name must be a letter. Other characters can be letters, numbers, or underscore characters. Spaces are not allowed in a macro name; an underscore character works well as a word separator.*
  3. Assign a keyboard shortcut to the macro by clicking in the box to the right of CTRL + and typing a letter.  
*The shortcut is case sensitive. If you want to use an uppercase letter strike SHIFT + the letter. Numbers or special characters (#, @, !) are not allowed!*
  4. Click the down-arrow under "Store macro in" and select the location where you want to store the macro.  
*If you want a macro to be available whenever you use Excel choose Personal Macro Workbook.*
  5. Type a description of what the macro will do when it is executed in the Description box.
  6. Click OK to begin recording the macro.
  7. From within the Record Macro Toolbar, turn OFF or ON the Relative Reference button.  
 *If you select cells while running a macro, the macro will select the same cells regardless of which cell is first selected because it records absolute cell references. If you want a macro to select cells regardless of the position of the active cell when you run the macro, click the Relative References button on the macro recorder. For example, if you want to be able to insert a formatted row with the days of the week at the active cell, you would need to turn ON the Relative References button. Now, no matter where the active cell is, the list will insert, otherwise it will Absolutely insert at the same cell every time!*
  8. Click Stop Recording on the Record Macro toolbar when finished.
-

## ASSIGNING A MACRO TO THE TOOLBAR

It is easiest to assign the macro to a keyboard shortcut during step 3 of the “Recording a Macro” process (Page 5). A macro can be assigned to the toolbar, it is just a bit more complicated than the process in Word.

**Steps** Once the macro has been recorded,

1. Click View, Toolbars, Customize
2. Click the Command tab
3. Under Categories scroll down and select Macros.
4. Click and drag the Custom Button command (**Figure 9**) to the toolbar.
5. Click the Modify Selection button within the Customize box
6. Click Assign Macro
7. From within the Assign Macro box, select the macro name that you want to assign to the button on the toolbar, then click OK
8. Click the Modify Selection button again to do the following to the button:
  - Create a shorter name for the macro
  - Assign an image to the button
  - Set the default display
9. Click the Close button when finished.



**Figure 9** – Click and drag the Custom Button command onto the toolbar, then assign a macro to the button.

## PRINTING KEYBOARD COMMANDS

If you assign keyboard commands to global macros (macros available to all files of that type) try to keep a running list close to your keyboard. If you cannot remember the keyboard shortcut then in Word you can print the listing and in Excel you can lookup the shortcut.

### Word

From within Word,

1. Click File, Print
2. Under Print What, click the down arrow and select Key Assignments

### Lookup Shortcut in Excel

From with Excel,

1. Click Tools, Macro, Macros
2. Under Macro Name select the Macro, then click the Options button  
*the Macros Options box for that macro opens (Figure 10) and the shortcut key appears in the middle*
3. Click Cancel, then Cancel



**Figure 10** – Clicking the macro options button displays details about that macro, including the shortcut key.

**EXAMPLES**

All the examples listed below can be re-created outside of class. The Format Picture macro calls for you to open a file that already contains several graphics. To simulate this file, create Word document and insert many pieces of clipart.

**WORD**

**Format Pictures**

This macro will re-size and re-format the selected graphic.

- |  |  |
|--|--|
| 1. Open Word.  | 11. Click Format, Picture, Size tab          |
| 2. Open the file called PR.doc   | 12. Width = .75                              |
| 3. Select a graphic  | 13. Click the Color & Line tab               |
| 4. Click Tools, Macro, Record new macro  | 14. Line Color = Black, Weight = 1 pt        |
| 5. Under Name type FormatPic   | 15. Click the Layout Tab                     |
| 6. Under Store Macro In select All Documents   | 16. Select Tight                             |
| 7. Under Description type what the macro will do, the author's name, and the creation date | 17. Click the Picture tab                    |
| 8. Click the Keyboard icon   | 18. Color = Grayscale                        |
| 9. Press Alt+F, then click the Assign button   | 19. Click Stop on the Macro Recorder toolbar |
| 10. Click the Close button<br>the macro is now recording                                   | 20. Select another graphic then press Alt+F  |

**Custom Header & Footer**

This macro will insert the current date / time and filename in the header and the page number in the footer.

- |   |   |
|---|---|
| 1. Open a blank document in Word  | 20. Click Format, Borders and Shading   |
| 2. Click Tools, Macro, Record New Macro   | 21. In the Preview box, use the button to place a line <b>under</b> the selection, then close the Borders and Shading box |
| 3. Name = headfoot  | 22. Click the Switch to Footer button on the Header/Footer toolbar  |
| 4. Store In = All Documents   | 23. Click the Center button   |
| 5. Description = author's name, creation date and short description of what the macro will do | 24. Type Page then a space  |
| 6. Click the Toolbar button   | 25. Click the Page Number button on the Header and Footer toolbar   |
| 7. Click and drag the macro under command to the toolbar                                      | 26. Press Ctrl + A to select all the footer text  |
| 8. Click the Modify Selection button  | 27. Click Format Font   |
| 9. Name = Custom HF   | 28. Select a size of 9 and italic, then close the Format Font box   |
| 10. Select Default Style  | 29. Click Format, Borders and Shading   |
| 11. Change the button image   | 30. In the Preview box, use the button to place a line <b>above</b> the selection, then close the Borders and Shading box |
| 12. Close<br><i>the macro is now recording</i>  | 31. Click the Close button the Header and Footer toolbar.   |
| 13. Click View, Header/Footer   | 32. Start a new blank document.   |
| 14. Click Insert, Date and Time   | 33. Click the Custom HF button on the toolbar   |
| 15. Select a format then OK   |   |
| 16. Click Insert, Field, Document Info, Filename, then OK                                     |   |
| 17. Press Ctrl + A to select all the header text  |   |
| 18. Click Format Font   |   |
| 19. Select a size of 9 and italic, then close the Format Font box                             |   |

**Open an Often Used File**

This macro will open an often used file.

- |  |   |
|--|---|
| 1. Click Tools, Macro, Record New Macro  | 7. Click File, Open   |
| 2. Macro Name = OpenPR   | 8. Navigate to where the document is stored and then open it. |
| 3. Store In = All Documents  | 9. Stop recording the macro                                   |
| 4. Description = author's name, creation date and what the macro will do when executed | 10. Close the file, then press Alt+O                          |
| 5. Click the Keyboard icon   |   |
| 6. Press Alt+O, Assign, then Close<br>the macro begins recording                       |   |

## EXCEL

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**90° Days** This macro will create and format the days of the week.

1. Click in any cell.
  2. Click Tools, Macro, Record New Macro
  3. Macro Name = days
  4. Short cut = Ctrl + d
  5. Store Macro In = Personal Macro Book
  6. OK
  7. Click the Relative Reference button on the Record Macro toolbar
  8. Type Monday
  9. Use the fill handle to drag across 6 more cells thereby completing the series to Sunday
  10. Click Format, Cells
  11. Click the Alignment tab
  12. Horizontal & Vertical alignment = Center
  13. Orientation = 90 degrees
  14. Click the Font tab
  15. Font = Bold, 12
  16. Click the Border tabs
  17. Click between each Text block to place vertical lines between cells
  18. Click OK
  19. Click on an empty cell, then press Ctrl+d
- 

**Automatic Custom Header & Footer** This macro will create a custom header and custom footer which includes the file name, page number and author.

1. Click Tools, Macro, Record New Macro
  2. Macro Name = CustomHF
  3. Shortcut = Ctrl+Shift+C
  4. Click OK
  - the macro begins recording*
  5. Click the Relative Reference button on the Record Macro Toolbar
  6. Click File, Page Setup
  7. Click the header/footer tab
  8. Click Custom header
  9. Left = date  
Center = tab  
Right = filename
  10. Click OK
  11. Click the down arrow under footer
  12. Select Page 1
  13. Click OK, then stop recording the macro
-