Master data management, analysis, and
presentation with Excel 2016

Learn
Excel 2016
for OS X

Guy Hart-Davis

Apress®

Learn Excel 2016 for OS X

Second Edition

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Learn Excel 2016 for OS X

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About the Author

Guy Hart-Davis is the author of more than 100 computer books including *Learn Microsoft Office 2011 for Mac OS X* and *Pro Office for iPad*, both from Apress.

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Michael Thomas has worked in software development for more than 20 years as an individual contributor, team lead, program manager, and vice president of engineering. Michael has more than 10 years of experience working with mobile devices. His current focus is in the medical sector, using mobile devices to accelerate information transfer between patients and health care providers.

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Introduction

Do you need to get your work done with Excel—smoothly, confidently, and as quickly as possible?

If so, you've picked up the right book.

Who Is This Book For?

This book is designed to help beginning and intermediate users get up to speed quickly with Excel 2016 for Mac and immediately become productive with it.

If you need to learn to use Excel to accomplish everyday tasks, at work or at home, you'll benefit from this book's focused approach and detailed advice. You can either start from the beginning of the book and work through the chapters in sequence, or use the Table of Contents or the Index to find the topic you need immediately, and then jump right in there.

What Does This Book Cover?

This book contains three parts that cover everything you need to know to use Excel 2016 effectively.

Part 1, "Becoming Proficient with Excel for Mac," makes sure you know essential moves for using Excel:

- Chapter 1, "Learning the Secrets of the Excel for Mac Interface," teaches you the ins and outs of the three main means of controlling Excel: the Ribbon, the menus on the menu bar, and keyboard shortcuts. You grasp how to navigate through worksheets and workbooks; learn about quick ways of entering text in workbooks; and use splitting, freezing, and custom views to display exactly the items you need.

- Chapter 2, “Configuring Excel to Suit the Way You Work,” shows you how to make Excel work your way by setting the most important preferences and by creating custom keyboard shortcuts for menu items. You also learn how to open workbooks automatically when you launch Excel.
- Chapter 3, “Creating Effective Workbooks and Templates,” explains how to create workbooks in which you can enter, edit, and manipulate data quickly and effectively. You learn which file formats to save the workbooks in, how to add property information to help you identify workbooks when searching, and how to make the most of templates—including creating templates of your own. You also learn how to organize worksheets, lay data out effectively, define named ranges to make navigation easier, and create a collapsible worksheet.
- Chapter 4, “Formatting Your Worksheets Quickly and Efficiently,” shows you how to format worksheets quickly and efficiently using the various tools that Excel provides. We start with formatting rows and columns—everything from changing column width and row height to inserting and deleting rows and columns and hiding sensitive data. Then we go through how to apply straightforward formatting, how to apply conditional formatting to quickly flag values that need attention, and how to use data validation to check for invalid entries. Finally, we cover how to save time by using table formatting or Excel’s styles, and how to add headers and footers to worksheets.

Part 2, “Performing Calculations and Presenting Data,” gets you up to speed with formulas, functions, charts, and graphical elements such as pictures and sparklines:

- Chapter 5, “Performing Custom Calculations with Formulas,” makes sure you know what formulas and functions are, and what the difference between the two is. This chapter then teaches you how to create your own formulas using Excel’s calculation operators, starting with straightforward formulas that use a single calculation operator each, and then moving on to more complex formulas that use multiple calculation operators. You also learn how to override Excel’s default order for evaluating operators and how to troubleshoot common problems that occur with formulas.
- Chapter 6, “Using Excel’s Built-In Functions,” explains how to insert functions in your worksheets using the various tools that Excel provides, find the functions you want, and point the functions to the data they need for the calculations. The second part of the chapter reviews Excel’s different categories of functions, such as database functions, logical functions, and math and trigonometric functions, and gives examples of how to use widely used functions.

- Chapter 7, “Creating Clear and Persuasive Charts,” teaches you how to present data clearly and persuasively using Excel’s wide range of charts. You learn the different ways you can place charts in worksheets, the components of charts, and the types of charts you can use. We then dig into how you create a chart from your data, lay it out the way you want, and then give it the look it needs. We also look at ways of reusing the custom charts you create and ways of using Excel charts in Word documents or PowerPoint presentations.
- Chapter 8, “Using Data Bars, Color Scales, Icon Sets, and Sparklines,” shows you how to add visual appeal to your worksheets by using those four types of single-cell graphical elements. You quickly get the hang of using data bars to compare the values in a range of cells, adding color scales to adjust the background colors of cells to provide a visual reference to their values, and using icon sets to provide quick visual reference to performance. And you learn to create single-cell charts using sparklines.
- Chapter 9, “Illustrating Your Worksheets with Pictures, SmartArt, and More,” explains ways of giving your workbooks visual interest by adding graphics, shapes, SmartArt diagrams, and WordArt items. You learn how to make a picture look the way you want it, how to position graphical objects wherever you need them, and how to position graphical items relative to cells and how to arrange graphical objects to control which ones are visible.

Part 3, “Analyzing Data and Sharing and Automating Your Workbooks,” shows you how to analyze, manipulate, and share the workbooks you’ve built:

- Chapter 10, “Creating Databases Using Tables,” covers using Excel’s tables to create databases for storing information, sorting it, and filtering it to find the records you need. You also learn how to put Excel’s database functions to work with tables.
- Chapter 11, “Solving Business Questions with What-If Analysis, Goal Seek, and Solver,” teaches you how to analyze your data using four powerful tools. You learn to use data tables to assess the impact of one or two variables on a calculation and how to use scenarios to experiment with different sets of values without changing your core data. You also learn to use Goal Seek to solve single-variable problems and Solver to crack multi-variable problems.
- Chapter 12, “Analyzing Data with PivotTables,” explains what PivotTables are and how you can use them to examine the data in your worksheets and find the secrets it contains. You learn how to create PivotTables either using Excel’s automated tool or by placing fields manually where you need them, how to change the PivotTable once you’ve created it, and how to sort and filter the data it contains.

- Chapter 13, “Collaborating and Sharing with Macs and Windows PCs,” takes you through ways of sharing your workbooks with others. We start by covering how to print worksheets, create PDF files from them, and export data to comma-separated values files. We then move on to sharing workbooks so that multiple people can work on them at the same time, tracking the changes if necessary so that you can review them. We finish by looking at how to merge changes from separate copies of the same workbook into one workbook and how to consolidate multiple worksheets into a single worksheet.

Conventions Used in This Book

This book uses several conventions to make its meaning clear without wasting words:

- *Ribbon commands*. The ➤ arrow shows the sequence for choosing an item from the Ribbon. For example, “choose **Page Layout ➤ Page Setup ➤ Print Area ➤ Set Print Area**” means that you click the Page Layout tab of the Ribbon (displaying the tab’s contents), go to the Page Setup group, and click the Print Area button (displaying a pop-up menu), and then click Set Print Area.
- *Menu commands*. The ➤ arrow shows the sequence of commands for choosing an item from the menu bar. For example, “choose **Data ➤ Data Table**” means that you open the Data menu and then click the Data Table item on it.
- *Special paragraphs*. Special paragraphs present information that you may want to pay extra attention to. Note paragraphs contain information you may want to know; Tip paragraphs present techniques you may benefit from using; and Caution paragraphs warn you of potential problems.
- *Check boxes*. Excel uses many check boxes—the square boxes that can either have a check mark in them (indicating that the option is turned on) or not (indicating that the option is turned off). This book tells you to “select” a check box when you need to put a check mark in the check box, and to “clear” a check box when you need to remove the check mark from it. If the check box is already selected or cleared, you don’t need to change it—just make sure it’s set the right way.
- *Keyboard shortcuts*. In Excel, you can often save time and effort by using a keyboard shortcut rather than a Ribbon command or a menu command. This book uses + signs to represent keyboard shortcuts. For example, “press Cmd+S” means that you hold down the Cmd key, press the S key, and then release the Cmd key. “Press Cmd+Option+T” means that you hold down the Cmd key and the Option key, press the T key, and then release the Cmd key and the Option key.

Part I

Becoming Proficient with Excel for Mac

In this part of the book, you become proficient at the essentials of Excel for Mac.

In Chapter 1, you learn the ins and outs of the three main means of controlling Excel: the Ribbon, the menus, and keyboard shortcuts. You grasp how to navigate through worksheets and workbooks; learn about quick ways to enter text in workbooks; and use splitting, freezing, and custom views to display exactly the items you need.

In Chapter 2, we cover how to make Excel work your way by setting the most important preferences and by creating custom keyboard shortcuts as needed. You also learn how to open workbooks automatically when you launch Excel.

In Chapter 3, you study how to create workbooks in which you can enter, edit, and manipulate data quickly and effectively. You learn which file formats to save the workbooks in, how to add property information to help you identify workbooks when searching, and how to make the most of templates—including creating templates of your own. You also learn how to organize worksheets, lay out data effectively, define named ranges to make navigation easier, and create a collapsible worksheet.

In Chapter 4, we go through how to format worksheets quickly and efficiently using the various tools that Excel provides. We start with formatting rows and columns—everything from changing column width and row height to inserting and deleting rows and columns and hiding sensitive data. Then we see how to apply straightforward formatting, how to apply conditional formatting to quickly flag values that need attention, and how to use data validation to check for invalid entries. Finally, we cover how to save time by using table formatting and Excel's styles, and how to add headers and footers to worksheets.

Chapter 1

Learning the Secrets of the Excel for Mac Interface

In this chapter, you'll learn the ins and outs of the Excel for Mac interface and the many secrets it holds.

We'll start by looking at the three main ways to control Excel: the Ribbon, the menus on the menu bar, and keyboard shortcuts. These give you great flexibility in the way you control Excel, especially when you set them up as you prefer.

From there, we'll discuss how to navigate through worksheets and workbooks. We'll then go through the various ways in which you can get data into your Excel workbooks—from importing existing data to entering it more quickly using AutoCorrect, AutoFill, and even the Replace feature.

Toward the end of the chapter, I'll show you the smart ways to view your workbooks so you can work quickly and efficiently. These include splitting the window to show different parts of the worksheet at the same time, opening extra windows, and freezing key rows and columns so that they stay onscreen when you scroll to other parts of the worksheet. You can even create custom views to keep your data laid out exactly as you need it.

Getting Ready to Learn Excel's Secrets

You'll probably want to have Excel running as you go through this chapter so you can try out the modifications and techniques that interest you. So launch Excel if it's not already running: either click the Excel icon on the Dock or (if there isn't one) click the Launchpad icon on the Dock to display the Launchpad screen, and then click the Excel icon on it.

When you launch Excel, the app may display the Microsoft Excel dialog box (see Figure 1-1), which enables you to connect to services such as OneDrive, create new documents, and open existing documents. If the Microsoft Excel dialog box does open, click the New tab in the left column, click the Blank Workbook item, and then click the Create button. This makes Excel create a blank workbook rather than one based on a content template. We'll look at how to use the Microsoft Excel dialog box, which is also called the Workbook Gallery, to create workbooks in Chapter 3.

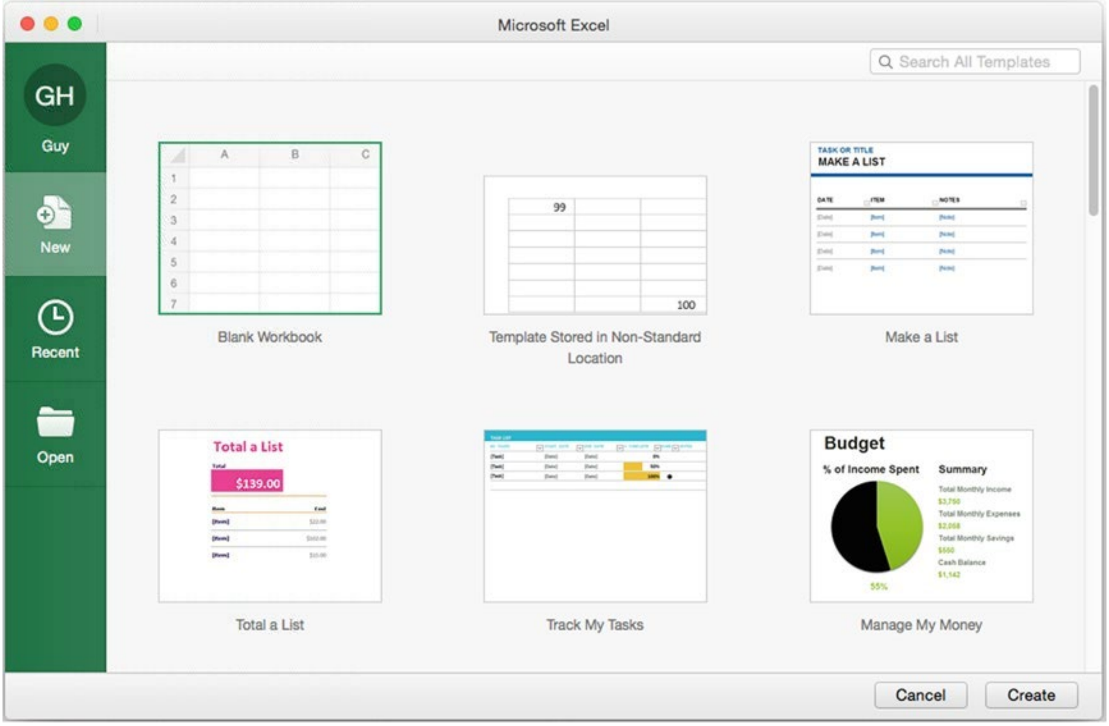

Microsoft Excel
Search All Templates
GH
Guy
New
Recent
Open
Blank Workbook
Template Stored in Non-Standard Location
Make a List
Total a List
Track My Tasks
Manage My Money
Cancel
Create

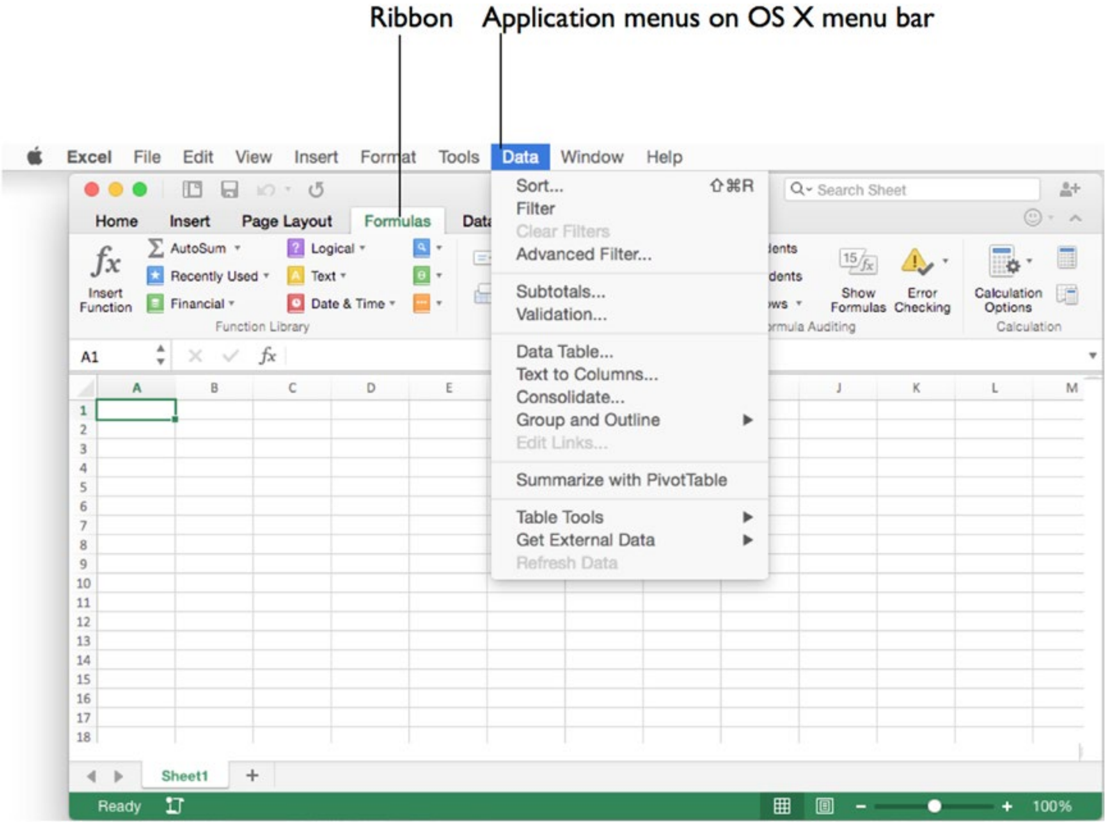
Figure 1-1. If the Microsoft Excel dialog box opens when you launch Excel, click New in the left column, click Blank Workbook in the main section, and then click the Create button in the lower-right corner

Three Ways to Control Excel

To control Excel, you give commands. For example, when you need a new workbook, you give the command to create a new workbook.

In Excel 2016 (see Figure 1-2), you can give commands in three main ways:

- *Menus.* Like most Mac applications, Excel provides a set of menus that appear on the OS X menu bar when Excel is the active application. To give a command, you click the menu, and then click the command.
- *Ribbon.* The Ribbon is the main control strip in many Microsoft apps. To give a command, you click its button or control.
- *Keyboard shortcuts.* To give a command, you press the associated key combination.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Filter
Clear Filters
Advanced Filter...
Subtotals...
Validation...
Data Table...
Text to Columns...
Consolidate...
Group and Outline
Edit Links...
Summarize with PivotTable
Table Tools
Get External Data
Refresh Data
Home Insert Page Layout Formulas Data
Insert Function
AutoSum
Recently Used
Financial
Logical
Text
Date & Time
Function Library
Show Formulas
Error Checking
Calculation Options
Calculation
Search Sheet
A1
Sheet1
Ready
100%

Figure 1-2. You can control Excel using the Ribbon, the menus on the menu bar, or keyboard shortcuts

Let’s dig into each of these in turn, starting with the Ribbon.

Secrets of the Ribbon

The Ribbon is the control strip that runs across the top of the Excel window below the window’s title bar. The Ribbon is a control bar that contains multiple tabs, each containing several groups of controls. At any time, the Ribbon displays one tab’s contents; to switch to the contents of another tab, you click that tab. As you can see in Figure 1-3, the active tab’s name and background appear in different colors than those of the other tabs, so you can easily pick it out.

Note To make clear where you find the controls, I give Ribbon instructions in the sequence tab–group–control. For example, “choose **Formulas ➤ Formula Auditing ➤ Trace Precedents**” means that you click the Formulas tab to display its contents, go to the Audit Formulas group (without clicking it), and then click the Trace Precedents button. To follow these instructions easily, make sure Excel is displaying Ribbon groups. With Excel active, click Excel on the menu bar, and then click Preferences on the menu to open the Excel Preferences window. In the Authoring category, click the View icon to display the View preferences pane. In the section called “In Ribbon, Show,” select the Group Titles check box (placing a check in it). Then close the Excel Preferences window by clicking the Close button (the red button) at the left end of the window’s title bar.

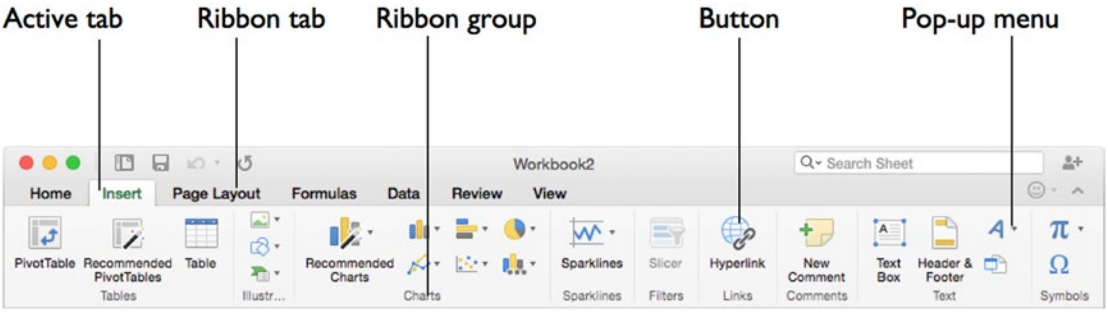
Active tab
Ribbon tab
Ribbon group
Button
Pop-up menu
Workbook2
Search Sheet
Home
Insert
Page Layout
Formulas
Data
Review
View
PivotTable
Recommended PivotTables
Table
Tables
Illustr...
Recommended Charts
Charts
Sparklines
Sparklines
Slicer
Filters
Hyperlink
Links
New Comment
Comments
Text Box
Header & Footer
Text
Symbols

Figure 1-3. The active tab of the Ribbon appears in a different color than the other tabs. Each tab contains groups of controls, such as buttons and pop-up menus

Understanding How the Ribbon’s Tabs Work

Most of the time, the Ribbon displays seven tabs that contain controls for most normal operations in Excel:

- *Home.* This tab contains controls for cut, copy, and paste; font, alignment, and number formatting; conditional formatting and styles; inserting and deleting rows, columns, and cells; and applying themes.
- *Insert.* This tab contains controls for inserting tables, illustrations, charts, sparklines (miniature charts that fit in a single cell), and slicers (a type of filters); comments (text attached to cells); text objects including text boxes, headers and footers, and WordArt decorative text; and symbol characters and equations.
- *Page Layout.* This tab contains controls for applying themes (overall looks), manipulating page setup, scaling the workbook to fit printed pages, and choosing whether to view and print gridlines and headings.

- *Formulas.* This tab contains controls for inserting functions, working with named ranges, auditing formulas, and controlling how Excel performs calculations.
- *Data.* This tab contains controls for sorting and filtering data, creating PivotTables and performing what-if analysis, connecting to external data sources, validating data, and grouping and outlining worksheets. (Chapter 3 discusses grouping and outlining.)
- *Review.* This tab contains controls for checking spelling, working with comments, applying protection and change-tracking to a worksheet or workbook, and sharing a workbook.
- *View.* This tab contains controls for switching among workbook views; controlling whether the ruler, gridlines, the Formula bar, and headings appear on screen; zooming the window; freezing and splitting the window; and recording and running macros.

As well as these standard tabs, the Ribbon contains other tabs that it displays only when you need them. These are sometimes called *context-sensitive tabs*. For example, when you select a chart, Excel automatically displays the Chart Design tab and the Format tab (see Figure 1-4).

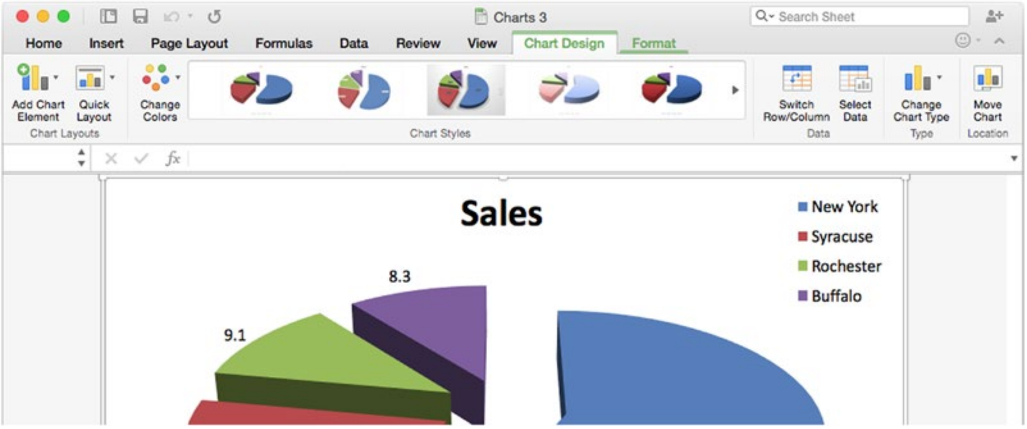
Charts 3
Search Sheet
Home
Insert
Page Layout
Formulas
Data
Review
View
Chart Design
Format
Add Chart Element
Quick Layout
Change Colors
Chart Layouts
Chart Styles
Switch Row/Column
Select Data
Data
Change Chart Type
Type
Move Chart
Location
Sales
New York
Syracuse
Rochester
Buffalo
8.3
9.1

***Figure 1-4.** The Ribbon displays context-sensitive tabs when you select an object for which tabs are available. Here, the Chart Design tab and Format tab appear on the Ribbon because a chart is active*

Note In Office for Windows, the Ribbon replaces the menu bar and the toolbars completely, so you have to use the Ribbon unless you set up myriad keyboard shortcuts. By contrast, Office on the Mac still has the menus, and you can give a fair number of commands from them; in fact, some commands are available only from the menus, not via the Ribbon.

Understanding How the Ribbon's Groups and Controls Work

Chances are you got the hang of using the Ribbon's tabs the first time you used Excel. The groups and controls are a little trickier because they change depending on whether the Excel window is wide enough to display the entire Ribbon.

When the Excel window *is* wide enough, all the groups appear, and they display their controls—the buttons, pop-up menus, check boxes, and so on—in their most spacious arrangement. For example, the top part of Figure 1-5 shows the rightmost sections of the Home tab of the Ribbon. All the controls in (going from right to left) the Editing group, the Cells group, and the Styles group appear with labels, so you can easily identify each control; and the Styles group displays a wide panel of cell styles.

But when there's less space, Excel gradually collapses parts of the Ribbon so as to display as much as possible in the available space. For example, the middle part of Figure 1-5 shows the rightmost sections of the Home tab again, but this time the panel in the Styles group has gone, replaced by the Cell Styles pop-up menu.

When the window is even narrower, Excel collapses the groups and controls further. In the lower part of Figure 1-5, you can see that Excel has collapsed the Cells group to a single pop-up button that you can click to display a pop-up menu containing the buttons that previously appeared in it. Similarly, the Editing pop-up button replaces the Editing group, and the Number pop-up button replaces the Number group. The Styles group retains its three pop-up menus, but they now appear in a vertical stack instead of side by side.

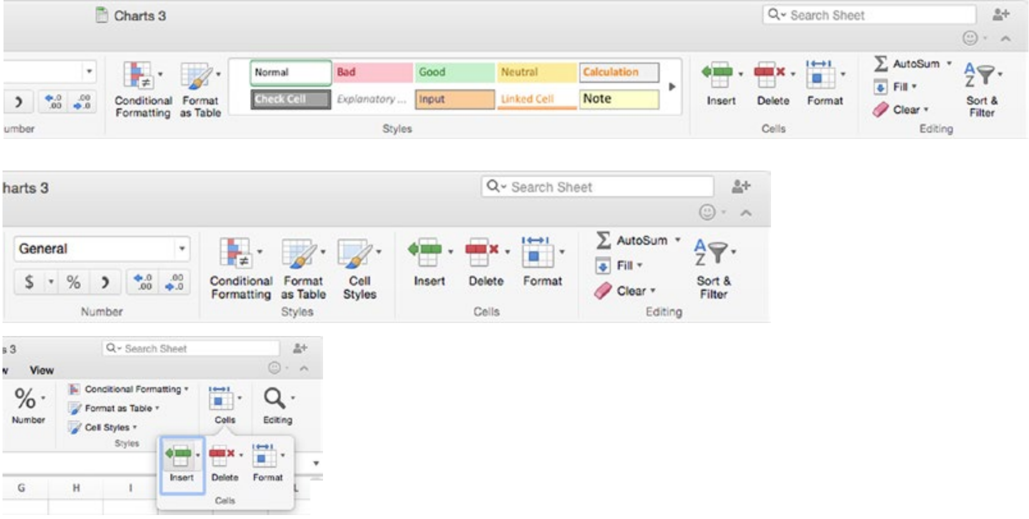
Charts 3
Search Sheet
Conditional Formatting
Format as Table
Normal
Bad
Good
Neutral
Calculation
Check Cell
Explanatory ...
Input
Linked Cell
Note
Styles
Insert
Delete
Format
Cells
AutoSum
Fill
Clear
Sort & Filter
Editing
umber
harts 3
Search Sheet
General
Number
Conditional Formatting
Format as Table
Cell Styles
Styles
Insert
Delete
Format
Cells
AutoSum
Fill
Clear
Sort & Filter
Editing
s 3
Search Sheet
View
Number
Conditional Formatting
Format as Table
Cell Styles
Styles
Cells
Editing
Insert
Delete
Format
Cells
G
H
I

***Figure 1-5.** As the Excel window becomes narrower, Excel hides first the labels for the less important controls and then the controls themselves, as you can see here with the controls on the right side of the Home tab of the Ribbon*

By automatically changing the Ribbon to suit the window width, Excel keeps as many controls as possible at the tip of your mouse. But because labels may not appear, you will sometimes need to display the ScreenTip to identify a control; to display the ScreenTip, hold the mouse pointer over the control for a moment (see Figure 1-6).

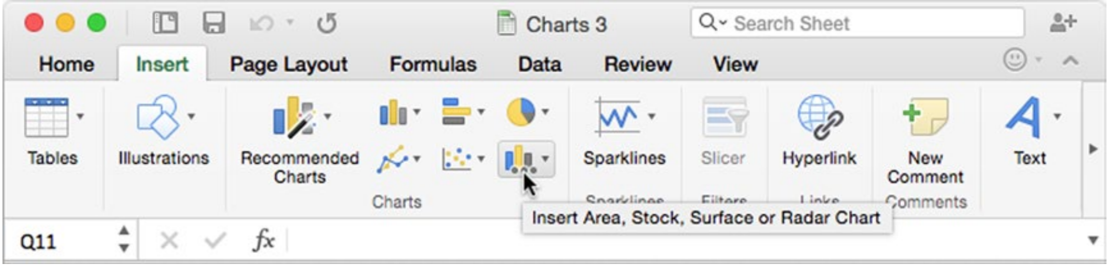
Charts 3
Search Sheet
Home
Insert
Page Layout
Formulas
Data
Review
View
Tables
Illustrations
Recommended Charts
Charts
Sparklines
Sparklines
Slicer
Filters
Hyperlink
Links
New Comment
Comments
Text
Insert Area, Stock, Surface or Radar Chart
Q11
fx

Figure 1-6. When a control's label doesn't appear on the Ribbon, hold the mouse pointer over the control to display a ScreenTip containing its name. When the Excel window is narrow, some Ribbon tabs display the arrow button shown on the right here, which you can click to display controls that are currently hidden

Further, because some controls may appear in different places when the Ribbon's whole width isn't displayed, you may sometimes need to hunt for the controls you need. This book assumes that the window is displayed wide enough for you to see all the controls on the Ribbon, but it notes some of the disappearing controls that can cause confusion.

If you can't see a command that's supposed to be there, have a poke around the remaining controls in the group to find where Excel has hidden the control, or to see if one of the controls opens a dialog box that contains the controls. (Or use the menu alternative if there is one.)

Collapsing the Ribbon

When you need more space to work on a worksheet, collapse the Ribbon to just its tab bar (see Figure 1-7) in one of these ways:

- Click the tab that's currently active.
- Click the Collapse ribbon button (the ^ button) at the right end of the Ribbon.
- Choose **View ➤ Ribbon** from the menu bar (removing the check mark next to the Ribbon item).
- Press Cmd+Option+9.

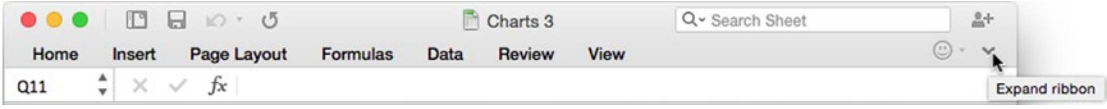
Charts 3
Search Sheet
Home
Insert
Page Layout
Formulas
Data
Review
View
Q11
fx
Expand ribbon

Figure 1-7. Click the Collapse Ribbon button to collapse the Ribbon to just its tabs. Click the Expand Ribbon button (which replaces the Collapse Ribbon button) to expand the Ribbon again