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# Excel® 2019

ALL-IN-ONE

for  
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A Wiley Brand



**Greg Harvey, PhD**

Author of all previous editions of  
*Excel All-In-One For Dummies*





# Excel<sup>®</sup> 2019

ALL-IN-ONE

by Greg Harvey, PhD

for  
**dummies**<sup>®</sup>  
A Wiley Brand

## Excel® 2019 All-in-One For Dummies®

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# Introduction

**E**xcel 2019 *All-in-One For Dummies* brings together plain and simple information on using all aspects of the latest-and-greatest version of Microsoft Excel. It's designed to be of help no matter how much or how little experience you have with the program. As the preeminent spreadsheet and data analysis software for all sorts of computing devices running Windows 10 (desktops, laptops, tablet PCs and even smartphones), Excel 2019 offers its users seemingly unlimited capabilities too often masked in technical jargon and obscured by explanations only a software engineer could love. On top of that, many of the publications that purport to give you the lowdown on using Excel are quite clear on how to use particular features without giving you a clue as to why you would want to go to all the trouble.

**Warning:** Excel 2019 marks the first version of Microsoft Excel that runs *exclusively* under a home or business version of Windows 10. If your computer runs an earlier version of Windows, such as Windows 7 or 8, you must content yourself with using Excel 2016, which is part of an Office 365 subscription has all the power of Excel 2019 but in a slightly different format. If such is the case, you need to put this book down now and instead pick up the *Excel 2016 All-In-One For Dummies* by Greg Harvey.

The truth is that understanding how to use the abundance of features offered by Excel 2019 is only half the battle, at best. The other half of the battle is to understand how these features can benefit you in your work; in other words, “what’s in it for you.” I have endeavored to cover both the “how to” and “so what” aspects in all my discussions of Excel features, being as clear as possible and using as little tech-speak as possible.

Fortunately, Excel 2019 is well worth the effort to get to know because it’s definitely one of the best data-processing and analysis tools that has ever come along. Its Quick Analysis tool, Office Add-ins, Flash Fill, and Recommended Charts and PivotTables, along with the tried-and-true Live Preview feature and tons of ready-made galleries, make this version of the program the easiest to use ever. In short, Excel 2019 is a blast to use when you know what you’re doing, and my great hope is that this “fun” aspect of using the program comes through on every page (or, at least, every other page).

# About This Book

As the name states, *Excel 2019 All-in-One For Dummies* is a reference (whether you keep it on your desk or use it to prop up your desk is your business). This means that although the chapters in each book are laid out in a logical order, each stands on its own, ready for you to dig into the information at any point.

As much as possible, I have endeavored to make the topics within each book and chapter stand on their own. When there's just no way around relying on some information that's discussed elsewhere, I include a cross-reference that gives you the chapter and verse (actually the book and chapter) for where you can find that related information if you're of a mind to.

Use the full Table of Contents and Index to look up the topic of the hour and find out exactly where it is in this compilation of Excel information. You'll find that although most topics are introduced in a conversational manner, I don't waste much time cutting to the chase by laying down the main principles at work (usually in bulleted form) followed by the hard reality of how you do the deed (as numbered steps).

## Foolish Assumptions

I'm only going to make one foolish assumption about you, and that is that you have some need to use Microsoft Excel 2019 under Windows 10 in your work or studies. If pushed, I further guess that you aren't particularly interested in knowing Excel at an expert level but are terribly motivated to find out how to do the stuff you need to get done. If that's the case, this is definitely the book for you. Fortunately, even if you happen to be one of those newcomers who's highly motivated to become the company's resident spreadsheet guru, you've still come to the right place.

As far as your hardware and software go, I'm assuming that you already have Excel 2019 (usually as part of Microsoft Office 2019) installed on your computing device, using a standard home or business installation running under Windows 10. I'm not assuming, however, that when you're using Excel 2019 that you're sitting in front of a large screen monitor and making cell entries and command selections with a physical keyboard or connected mouse. With the introduction of Microsoft's Surface 4 tablet for Windows 10 and the support for a whole slew of different Windows tablets, you may well be entering data and selecting commands with your finger or stylus using the Windows Touch keyboard and Touch pointer.

To deal with the differences between using Excel 2019 on a standard desktop or laptop computer with access only to a physical keyboard and mouse and a touch-screen tablet or smartphone environment with access only to the virtual Touch keyboard, I've outlined the touchscreen equivalents to common commands you find throughout the text, such as "click," "double-click," "drag," and so forth, in the section that explains selecting by touch in Book 1, Chapter 1.

**Warning:** This book is intended *only* for users of Microsoft Office Excel 2019! Because of the diversity of the devices that Excel 2019 runs on and the places where its files can be saved and used, if you're using Excel 2007 or Excel 2010 for Windows, much of the file-related information in this book may only confuse and confound you. If you're still using a version prior to Excel 2007, which introduced the Ribbon interface, this edition will be of no use to you because your version of the program works nothing like the 2016 version this book describes.

## How This Book Is Organized

*Excel 2019 All-in-One For Dummies* is actually eight smaller books rolled into one. That way, you can go after the stuff in the particular book that really interests you at the time, putting all the rest of the material aside until you need to have a look at it. Each book in the volume consists of two or more chapters consisting of all the basic information you should need in dealing with that particular component or aspect of Excel.

In case you're the least bit curious, here's the lowdown on each of the eight books and what you can expect to find there.

### Book 1: Excel Basics

This book is for those of you who've never had a formal introduction to the program's basic workings. Chapter 1 covers all the orientation material including how to deal with the program's Ribbon user interface. Of special interest may be the section selecting commands by touch if you're using Excel 2019 on a Windows touchscreen device that isn't equipped with either a physical keyboard or mouse.

Chapter 2 is not to be missed, even if you do not consider yourself a beginner by any stretch of the imagination. This chapter covers the many ways to customize Excel and make the program truly your own. It includes information on customizing the Quick Access toolbar as well as great information on how to use and procure add-in programs that can greatly extend Excel's considerable features.

## Book 2: Worksheet Design

Book 2 focuses on the crucial issue of designing worksheets in Excel. Chapter 1 takes up the call on how to do basic design and covers all the many ways of doing data entry (a subject that's been made all the more exciting with the addition of voice and handwriting input).

Chapter 2 covers how to make your spreadsheet look professional and read the way you want it through formatting. Excel offers you a wide choice of formatting techniques, from the very simple formatting as a table all the way to the now very sophisticated and super-easy conditional formatting.

Chapter 3 takes up the vital subject of how to edit an existing spreadsheet without disturbing its design or contents. Editing can be intimidating to the new spreadsheet user because most spreadsheets contain not only data entries that you don't want to mess up but also formulas that can go haywire if you make the wrong move.

Chapter 4 looks at the topic of managing the worksheets that contain the spreadsheet applications that you build in Excel. It opens the possibility of going beyond the two-dimensional worksheet with its innumerable columns and rows by organizing data three-dimensionally through the use of multiple worksheets. (Each Excel file already contains three blank worksheets to which you can add more.) This chapter also shows you how to work with and organize multiple worksheets given the limited screen real estate afforded by your monitor and how to combine data from different files and sheets when needed.

Chapter 5 is all about printing your spreadsheets, a topic that ranks only second in importance to knowing how to get the data into a worksheet in the first place. As you expect, you find out not only how to get the raw data to spit out of your printer but also how to gussy it up and make it into a professional report of which anyone would be proud.

## Book 3: Formulas and Functions

This book is all about calculations and building the formulas that do them. Chapter 1 covers formula basics from doing the simplest addition to building array formulas and using Excel's built-in functions courtesy of the Function Wizard. It also covers how to use different types of cell references when making formula copies and how to link formulas that span different worksheets.

Chapter 2 takes up the subject of preventing formula errors from occurring and, barring that, how to track them down and eliminate them from the spreadsheet. This chapter also includes information on circular references in formulas and how you can sometimes use them to your advantage.

Chapters 3 through 6 concentrate on how to use different types of built-in functions. Chapter 3 covers the use of date and time functions, not only so you know what day and time it is, but actually put this knowledge to good use in formulas that calculate elapsed time. Chapter 4 takes up the financial functions in Excel and shows you how you can use them to both reveal and determine the monetary health of your business. Chapter 5 is concerned with math and statistical functions (of which there are plenty). Chapter 6 introduces you to the powerful group of lookup, information, and text functions. Here, you find out how to build formulas that automate data entry by returning values from a lookup table, get the lowdown on any cell in the worksheet, and combine your favorite pieces of text.

## **Book 4: Worksheet Collaboration and Review**

Book 4 looks at the ways you can share your spreadsheet data with others. Chapter 1 covers the important issue of security in your spreadsheets. Here, you find out how you can protect your data so that only those to whom you give permission can open or make changes to their contents.

Chapter 2 takes up the subject of building and using hyperlinks in your Excel spreadsheets (the same kind of links that you know and love on web pages on the World Wide Web). This chapter covers how to create hyperlinks for moving from worksheet to worksheet within the same Excel file as well as for opening other documents on your hard drive, or connecting to the Internet and browsing to a favorite web page.

Chapter 3 introduces Excel's sophisticated features for sending out spreadsheets and having a team of people review and make comments on them. It also covers techniques for reviewing and reconciling the suggested changes.

Chapter 4 is concerned with sharing spreadsheet data with other programs that you use. It looks specifically at how you can share data with other Office 2019 programs, such as Microsoft Word, PowerPoint, and Outlook. This chapter also discusses the variety of ways to share your workbooks files online, all the way from inviting people to review or co-author them from your OneDrive or SharePoint site, attaching them to e-mail messages, and adding and sharing comments as an Adobe PDF (Portable Document Format) file, using the AdobePDF Maker add-in.

## **Book 5: Charts and Graphics**

Book 5 focuses on the graphical aspects of Excel. Chapter 1 covers charting your spreadsheet data in some depth. Here, you find out not only how to create

great-looking charts but also how to select the right type of chart for the data that you're representing graphically.

Chapter 2 introduces you to all the other kinds of graphics that you can have in your spreadsheets. These include graphic objects that you draw as well as graphic images that you import, including clip art included in Microsoft Office, as well as digital pictures and images imported and created with other hardware and software connected to your computer.

## **Book 6: Data Management**

Book 6 is concerned with the ins and outs of using Excel to maintain large amounts of data in what are known as databases or, more commonly, data lists. Chapter 1 gives you basic information on how to set up a data list and add your data to it. This chapter also gives you information on how to reorganize the data list through sorting and how to total its numerical data with the Subtotal feature.

Chapter 2 is all about how to filter the data and extract just the information you want out of it (a process officially known as *querying* the data). Here, you find out how to perform all sorts of filtering operations from the simplest, which involves relying upon the AutoFilter feature, to the more complex operations that use custom filters and specialized database functions. Finally, you find out how to perform queries on external data sources, such as those maintained with dedicated database management software for Windows, such as Microsoft Access or dBASE, as well as those that run on other operating systems, such as DB2 and Oracle.

## **Book 7: Data Analysis**

Book 7 looks at the subject of data analysis with Excel; essentially how to use the program's computational capabilities to project and predict possible future outcomes. Chapter 1 looks at the various ways to perform what-if scenarios in Excel. These include analyses with one- and two-input variable data tables, doing goal seeking, setting a series of different possible scenarios, and using the Solver add-in.

Chapter 2 is concerned with the topic of creating special data summaries called pivot tables that enable you to analyze large amounts of data in an extremely compact and modifiable format. Here, you find out how to create and manipulate pivot tables as well as build pivot charts that depict the summary information graphically. In addition, you'll get an introduction to using the 3D Maps and Forecast Sheet features as well as the Power Pivot for Excel Add-in to perform more sophisticated types of data analysis on the Data Model that's represented in your Excel pivot table.



## Book 8: Macros and VBA

Book 8 introduces the subject of customizing Excel through the use of its programming language called Visual Basic for Applications (VBA for short). Chapter 1 introduces you to the use of the macro recorder to record tasks that you routinely perform in Excel for later automated playback. When you use the macro recorder to record the sequence of routine actions (using the program's familiar menus, toolbars, and dialog boxes), Excel automatically records the sequence in the VBA programming language.

Chapter 2 introduces you to editing VBA code in Excel's programming editor known as the Visual Basic Editor. Here, you find out how to use the Visual Basic Editor to edit macros that you've recorded that need slight modifications as well as how to write new macros from scratch. You also find out how to use the Visual Basic Editor to write custom functions that perform just the calculations you need in your Excel spreadsheets.

## Conventions Used in This Book

This book follows a number of different conventions modeled primarily after those used by Microsoft in its various online articles and help materials. These conventions deal primarily with Ribbon command sequences and shortcut or hot key sequences that you encounter.

Excel 2019 is a sophisticated program that uses the Ribbon interface first introduced in Excel 2007. In Chapter 1, I explain all about this Ribbon interface and how to get comfortable with its command structure. Throughout the book, you may find Ribbon command sequences using the shorthand developed by Microsoft whereby the name on the tab on the Ribbon and the command button you select are separated by arrows, as in

Home↔Copy

This is shorthand for the Ribbon command that copies whatever cells or graphics are currently selected to the Windows Clipboard. It means that you click the Home tab on the Ribbon (if it's not already displayed) and then click the Copy button, which sports the traditional side-by-side page icon.

Some of the Ribbon command sequences involve not only selecting a command button on a tab but then also selecting an item on a drop-down menu. In this case,

the drop-down menu command follows the name of the tab and command button, all separated by vertical bars, as in

Formulas↔Calculation Options↔Manual

This is shorthand for the Ribbon command sequence that turns on manual recalculation in Excel. It says that you click the Formulas tab (if it's not already displayed) and then click the Calculation Options command button followed by the Manual drop-down menu option.

The book occasionally encourages you to type something specific into a specific cell in the worksheet. When I tell you to enter a specific function, the part you should type generally appears in **bold** type. For example, **=SUM(A2:B2)** means that you should type exactly what you see: an equal sign, the word **SUM**, a left parenthesis, the text **A2:B2** (complete with a colon between the letter-number combos), and a right parenthesis. You then, of course, still have to press the Enter key or click the Enter button on the Formula bar to make the entry stick.

When Excel isn't talking to you by popping up message boxes, it displays highly informative messages in the status bar at the bottom of the screen. This book renders messages that you see onscreen like this:

CALCULATE

This is the message that tells you that Excel is in manual recalculation mode (after using the earlier Ribbon command sequence) and that one or more of the formulas in your worksheet are not up to date and are in sore need of recalculation.

Occasionally I give you a *hot key combination* that you can press in order to choose a command from the keyboard rather than clicking buttons on the Ribbon with the mouse. Hot key combinations are written like this: Alt+FS or Ctrl+S. (Both of these hot key combos save workbook changes.)

With the Alt key combos, you press the Alt key until the hot key letters appear in little squares all along the Ribbon. At that point, you can release the Alt key and start typing the hot key letters. (By the way, you type all lowercase hot key letters — I only put them in caps to make them stand out in the text.)

Hot key combos that use the Ctrl key are of an older vintage, and they work a little bit differently because, on a physical keyboard, you have to hold down the Ctrl key as you type the hot key letter. (Again, type only lowercase letters unless you see the Shift key in the sequence as in Ctrl+Shift+C.)

Finally, if you're really observant, you may notice a discrepancy between the capitalization of the names of dialog box options (such as headings, option buttons, and check boxes) as they appear in the book and how they actually appear in Excel on your computer screen. I intentionally use the convention of capitalizing the initial letters of all the main words of a dialog box option to help you differentiate the name of the option from the rest of the text describing its use.

## Icons Used in This Book

The following icons are strategically placed in the margins throughout all eight books in this volume. Their purpose is to get your attention, and each has its own way of doing that.



TIP

This icon denotes some really cool information (in my humble opinion) that will pay off by making your work a lot more enjoyable or productive (or both).



REMEMBER

This icon denotes a tidbit that you ought to pay extra attention to; otherwise, you may end up taking a detour that wastes valuable time.



WARNING

This icon denotes a tidbit that you ought to pay extra attention to; otherwise, you'll be sorry. I reserve this icon for those times when you can lose data and otherwise screw up your spreadsheet.



TECHNICAL  
STUFF

This icon denotes a tidbit that makes free use of (oh no!) technical jargon. You may want to skip these sections (or, at least, read them when no one else is around).

## Beyond the Book

In addition to what you're reading right now, this book comes with a free access-anywhere Cheat Sheet. To get this Cheat Sheet, go to [www.dummies.com](http://www.dummies.com) and search for "Excel 2019 All in One For Dummies Cheat Sheet" by using the Search box.

# Where to Go from Here

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The question of where to go from here couldn't be simpler: Go to Chapter 1 and find out what you're dealing with. Which book you go to after that is a matter of personal interest and need. Just go for the gold and don't forget to have some fun while you're digging!



REMEMBER

Occasionally, Wiley's technology books are updated. If this book has technical updates, they'll be posted at [www.dummies.com/go/excel2019aioupdates](http://www.dummies.com/go/excel2019aioupdates).

# 1 Excel Basics

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