



UNIT: 01

Getting Started with Microsoft Excel

Learning Outcomes

By the end of this unit the learner will be able to:

- ✓ Identify the elements of the Excel interface
- ✓ Create a basic worksheet
- ✓ Use the help system in Microsoft Excel

UNIT 01 GETTING STARTED WITH MICROSOFT EXCEL 2016

MICROSOFT EXCEL 2016

Microsoft Office Excel 2016 is the 16th version of Microsoft's spreadsheet program. A **spreadsheet** is essentially a large flexible grid that is used to hold information, usually numerical data. In Excel, spreadsheet data is stored in a **worksheet**, which is made up of **rows (1)** and **columns (2)**. The intersection of a row and column is called a **cell (3)**:

	A	B	C	D
1		Q1	Q2	Q3
2	Product1	5000	2000	3000
3	Product2	600	550	600
4	Product3	4000	2000	1000

Using Excel, you can analyze large amounts of data, move sets of data around to get a different picture of your figures, and generate a number of different charts and diagrams to help summarize the data.

WHAT ARE SPREADSHEETS, WORKSHEETS, AND WORKBOOKS?

Spreadsheets are paper or digital documents that are typically used to store, sort, and work with data. They consist of intersecting rows and columns that form cells. These cells are used to enter, store, and display data. This data, while most often numerical, can include text, shapes, and pictures. **Worksheets** are a digital form of the spreadsheet that is used by Microsoft Excel. Notably this type of spreadsheet displays columns with alphabetical headers and rows with numerical ones.

A **workbook** is a collection of one or more worksheets. By default, new blank workbooks only include one worksheet, but you can add others if needed:



If the workbook that you are using includes more than one worksheet, you can switch between them by clicking the worksheet tab you want to view. The name of the worksheet that you are presently working with will be in bold type on a white background. In the previous image, Sheet1 is the worksheet that is currently being used.

WHAT ARE COLUMNS, ROWS, CELLS, AND RANGES?

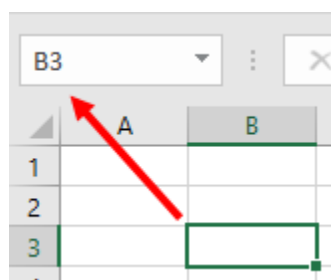
Columns, rows, and cells make up the fundamental components of a worksheet. A **column** is a vertical series of adjacent cells from top to bottom. A **row** is a horizontal series of cells from left to right. A **cell** describes the intersection of a row and column:

	A	B	C	D
1			Column	
2				
3	Row		Cell	
4				

Each column has an index letter. Since there are only 26 letters, and far more than 26 columns on a spreadsheet, the columns after column Z are indexed by the letters AA, AB, AC, and so on until the last column (up to XFD, over 16,000).

Each row has an index number. The rows are numbered from 1 through 1048576. The top left cell in the worksheet is indexed by the letter-number combination A1.

The **active cell** is the name given to the cell that is currently selected. The active cell is referenced in the Name Box:

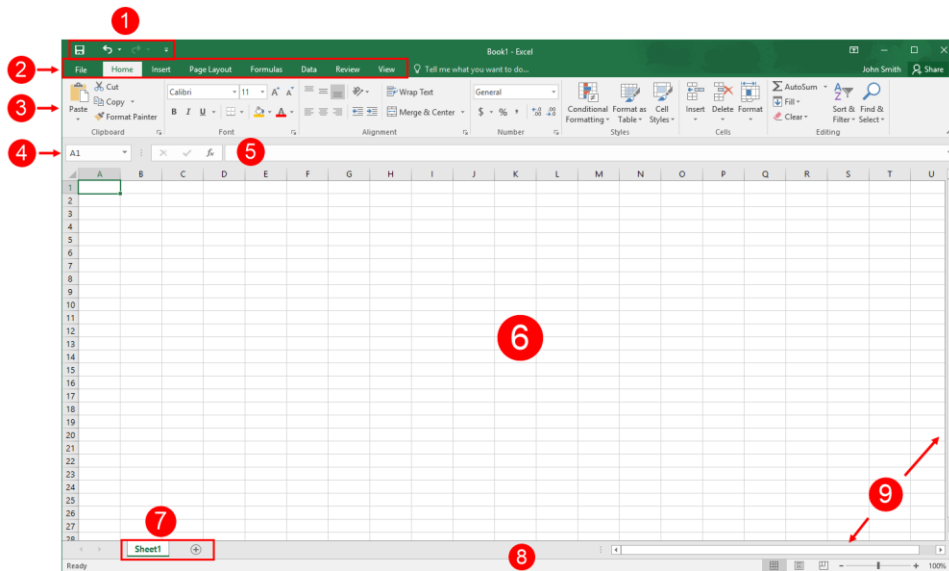


Excel is designed to have data organized down the sheet under column headings more so than across the sheet in rows. This is why there are over a million rows down and only about 16000 columns across.

A **cell range** (or simply “range”) is defined as a series or block of adjacent cells. A range can be a very useful tool because it allows you to make changes (such as applying formatting) to multiple cells at once.

THE EXCEL INTERFACE

When you open Excel, you will see something like the following image. This is the user interface. Let’s go over the basics of what you will see and how to interact with the interface. As we progress through the course, we will cover these items in more detail:



1: Quick Access Toolbar

As the name implies, the Quick Access toolbar gives you quick access to frequently used commands. This toolbar is completely customizable and can be positioned above or below the ribbon commands.

2: Tabs

Groups of like commands are organized under tab names. Click a tab to view the commands in the ribbon.

3: Ribbon Interface

Displays tab commands organized into groups. If you click the different tabs, you will see the commands change. Notice that some of the commands might be grayed out. This is because those commands are only usable in certain situations. The File tab, which opens Backstage view, is also included here.

4: Name Box

Every cell has a name in the format <ColumnRow>. The name of the currently selected cell, called the active cell, is shown in the Name Box. In the sample image, the active cell is A1.

5: Formula Bar

The Formula Bar allows you to enter data in a cell. Data can be alphanumeric, pictures, symbols, or (as the name suggests) formulae.

6: Working Area

The data contained in the file will be shown here.

7: Worksheet Tabs

Every Excel file is properly referred to as a workbook. A workbook can contain one or more worksheets, just like an accounting ledger can contain one or more pages. Click these tabs to switch between the different worksheets.

8: Status Bar

This bar is used to display information about the workbook. Any running calculations will be shown here. There are also some zoom and view commands here.

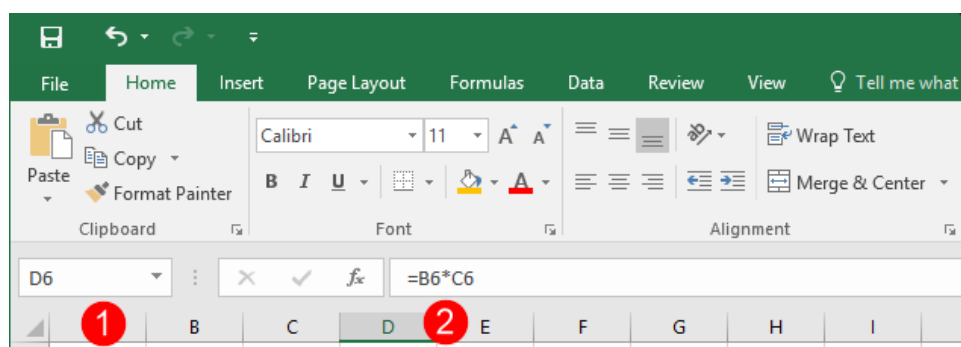
9: Scroll Bars

As you grow more accustomed to working with Excel, you will no doubt begin to work on larger files. Not all of the information in a worksheet will fit on the screen, so use these scroll bars to scroll horizontally or vertically through the data.

Worksheet Referencing Elements

In Excel, all column references start with a letter while all rows start with a number. Columns are listed from A to Z and thereafter are labeled as AA to AZ and so on. Row numbers can continue until over a million before reaching a limit set by the application.

Cell references are identified by the intersection of the column and row. For example, if a cell is in the D column on row 6, its cell reference would be D6. To quickly see the cell reference for a currently selected cell, examine the **Name Box(1)**. The contents of this cell will also be shown in the **Formula Bar(2)**:



NAVIGATION OPTIONS

Navigating with the Mouse

Using just your mouse you can navigate to the different components of your worksheets, other worksheets, and even other workbooks. For example, you can scroll through a worksheet using one of the vertical scrolling arrows on the right side of the window. To scroll even faster, you can drag the vertical scroll bar.

Keyboard Navigation Options

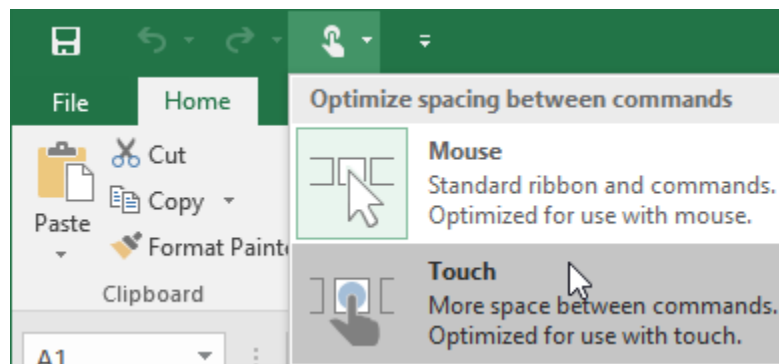
Sometimes the keyboard can be an even quicker way to navigate through worksheets. Below are some common keyboard shortcuts that you may find useful:

Move one cell in any direction	Press any of the arrow keys (Up, Down, Left, Right)
Go to column A	Home key
Scroll to the left or right by one screen	Alt + Page Up or Alt + Page Down
Scroll up or down by one screen	Page Up or Page Down
Move one cell to the right	Tab
Return to cell A1	Ctrl + Home

Touch Navigation Options

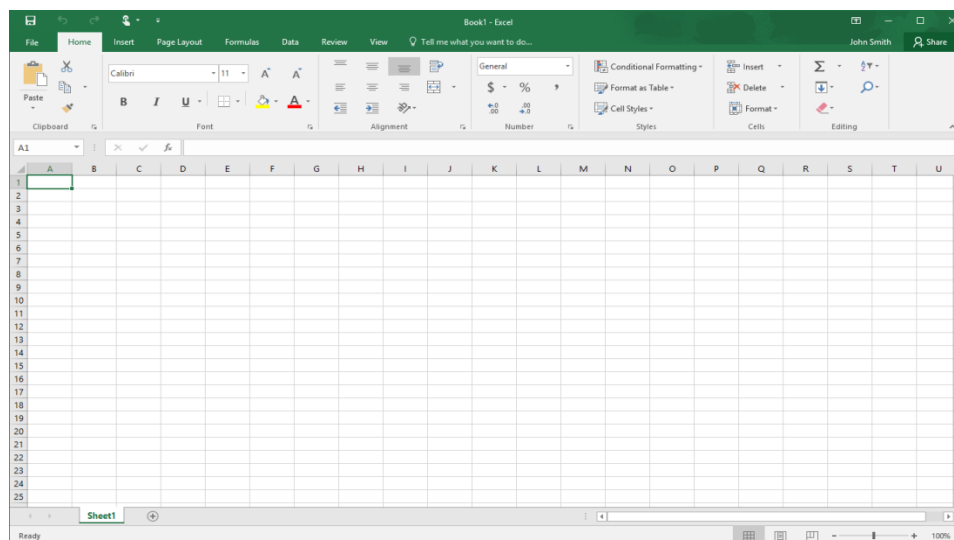
Excel has supported touch navigation in previous versions, but Excel 2016 now supports multi-selection of Slicer items using touch. This new change allows you to select multiple items in an Excel Slicer, where previous versions of Excel only allowed one item to be selected at a time. (Slicers will be covered in the next part of this course.)

Excel also still fully supports basic touch-first controls that allow you to work with your spreadsheets using just your fingers. You may enable Touch Mode by clicking the Touch/Mouse Mode hand icon on the Quick Access toolbar and clicking the Touch option:



(If you do not see this command on the Quick Access toolbar, you can add it. For further instructions, refer to Lesson 7-D.)

Once Touch Mode is enabled, you will see that the commands on the ribbon are spaced further apart to facilitate easier touch interaction:



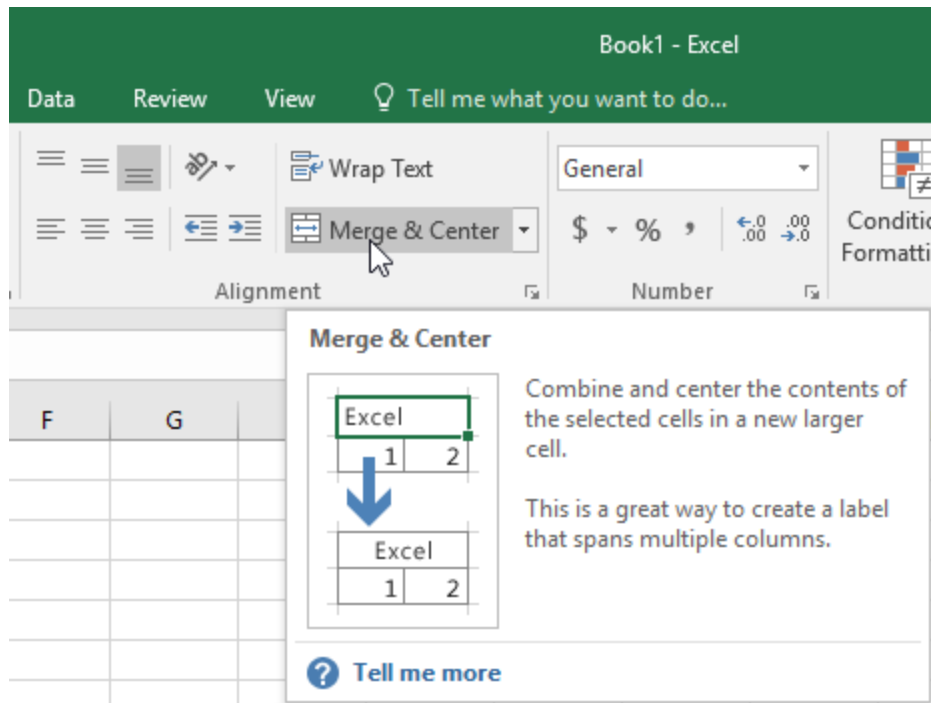
Cell Selection Options

There are many ways in which you can select cells or cell ranges within a worksheet. Below are some of the more common techniques that you can use to select various parts of a worksheet:

Select a cell	Click on the cell.
Select a contiguous range of cells	Click the first cell included in the range. Hold down the Shift key and then click on the last cell in the range.
Select a noncontiguous range of cells	Click the first cell in the range. Hold down the Ctrl key and click the next cell in the range.
Select an entire row	Click on the numerical header.
Select an entire column	Click on the alphabetic header.
Select an entire worksheet	Click the worksheet selector under the Name Box or press Ctrl + A on your keyboard.

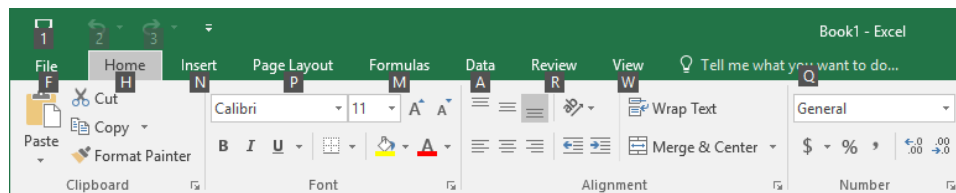
ScreenTips and Key Tips

ScreenTips can help you get acquainted with the many features, commands, controls, and tools that Excel has to offer. ScreenTips are small description boxes that appear temporarily when you hover your cursor over an object, like a command:



Typically a ScreenTip will include the name of the object that your cursor is hovering over, its keyboard shortcut, and a brief description of what it does.

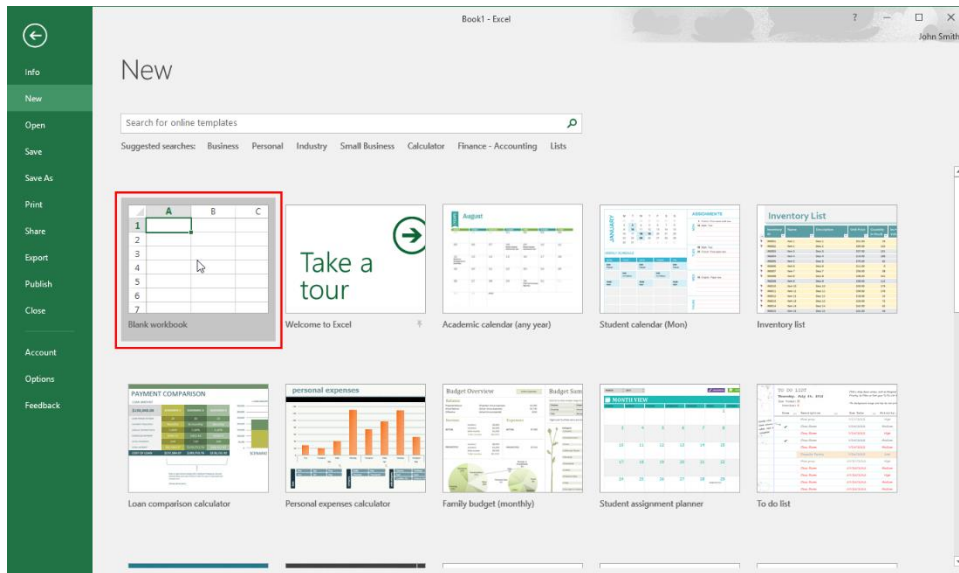
Key Tips are only displayed if you press the Alt key. They are used to help you navigate the Excel interface using keyboard shortcuts:



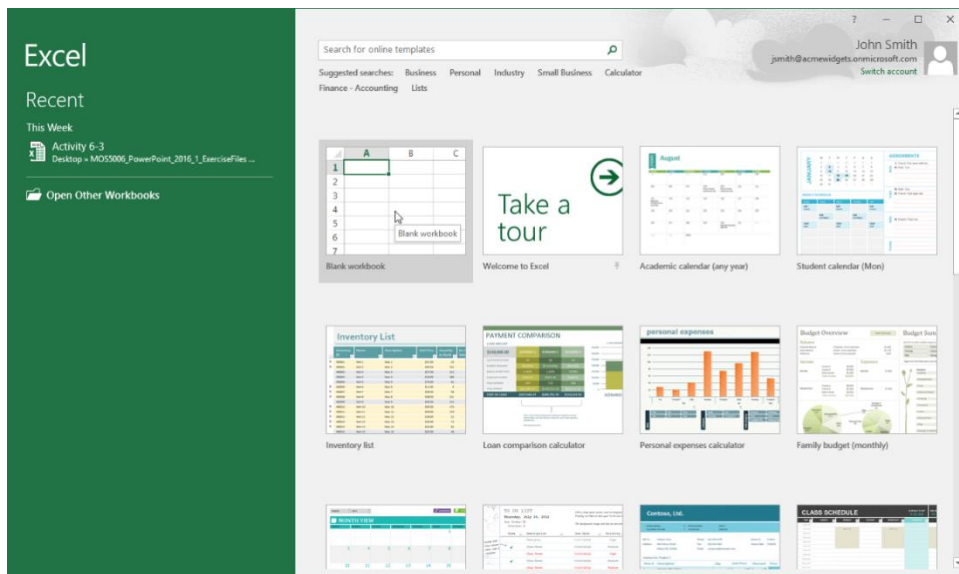
While holding down the Alt key, you can press the corresponding key that is shown to access the desired ribbon tab or Quick Access toolbar command.

CREATING A NEW BLANK WORKBOOK

To create a new blank workbook while working with Excel, click File → New → Blank workbook:



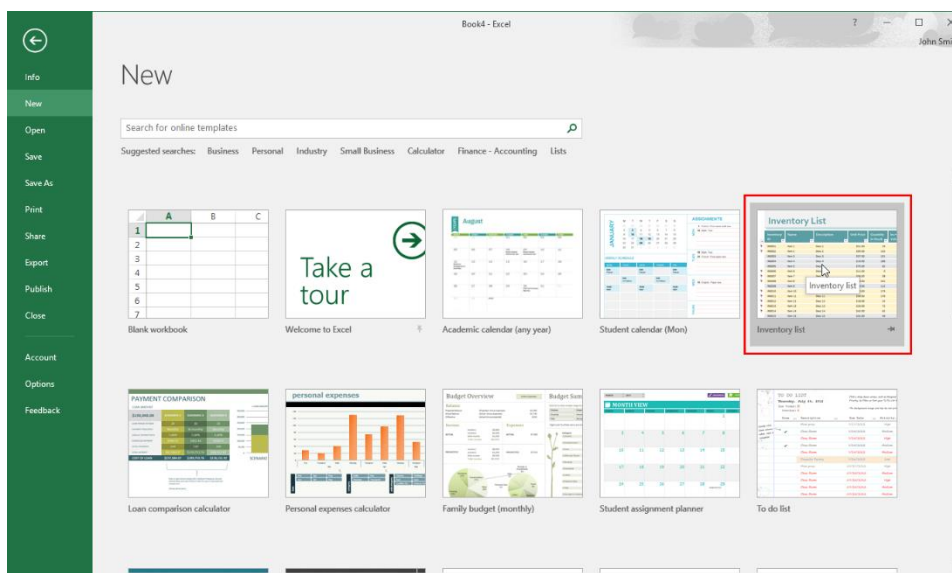
Alternatively, if you have just opened Excel, you can click the “Blank workbook” option in the Start screen:



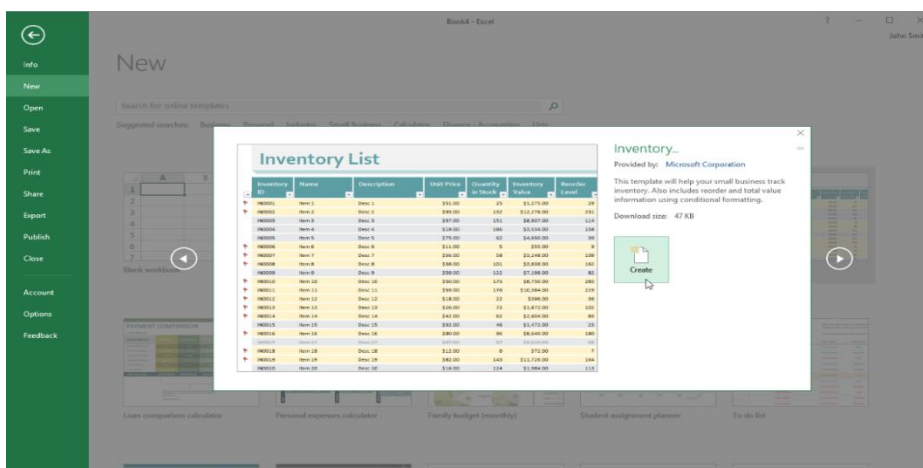
CREATING A NEW WORKBOOK FROM A TEMPLATE

Excel 2016 includes more templates to choose from than ever. These templates can be used to give you a head start on your Excel project by providing you with preconfigured workbooks. For example, if you wanted to create an inventory list, you could use the “Inventory list” template. Much of the structure and formulas will already be created for you and ready to accept data.

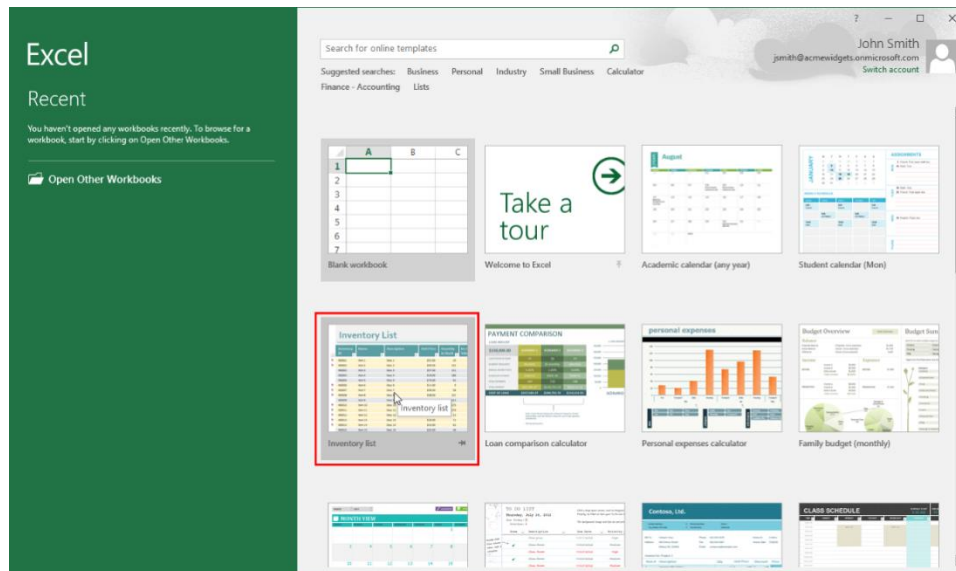
To create a new workbook from a template while you are working with another workbook, click File → New. From the gallery of templates that are available, click the one that you would like to use:



A pop-up will provide you with a preview of the selected template, as well as a brief description of its possible purposes. When you are ready, click the Create button to create a new workbook from this template:



Alternatively, if you just opened Excel, you can click any of the template options shown in the Start screen:

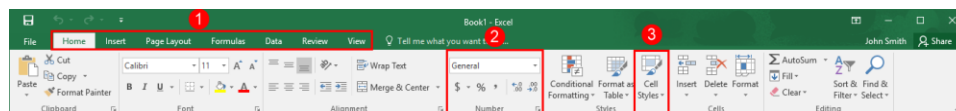


Following your selection, you will be given the same preview and information as seen previously

Create a Basic Worksheet

THE RIBBON

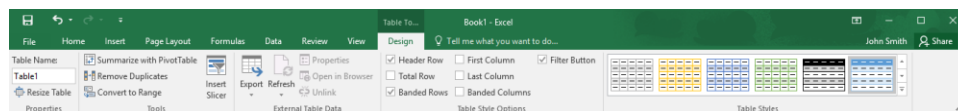
Excel's **commands (3)** are found on the **ribbon (1)**, and split into **groups (2)**. Each group is identified with a name, and the active tab is outlined with a border to differentiate it from the others:



By default, Microsoft Office Excel 2016 has seven tabs (excluding the File menu). Those tabs are:

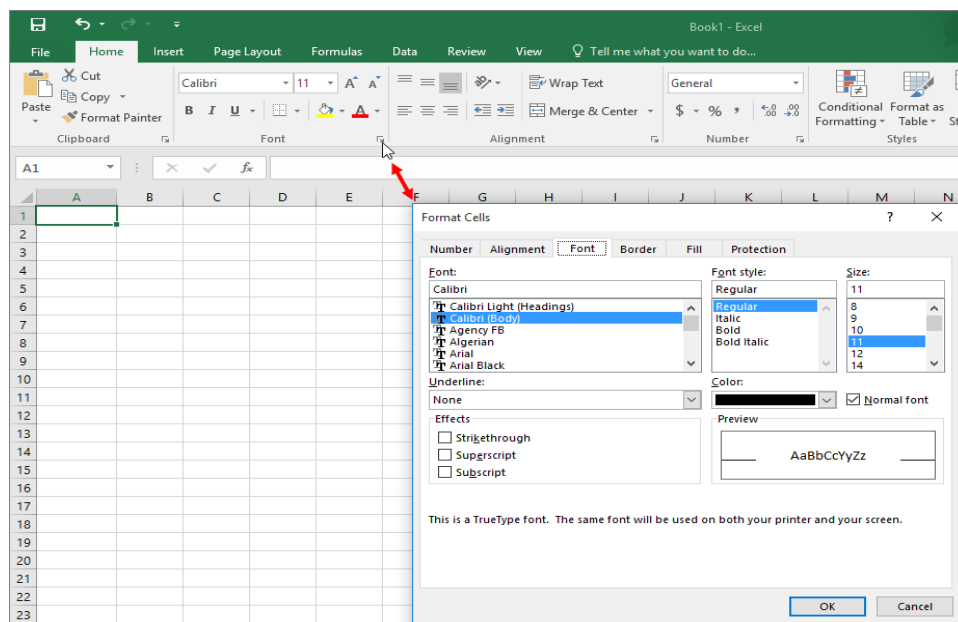
- **Home:** Perform basic formatting and editing tasks.
- **Insert:** Add objects and filters to the workbook.
- **Page Layout:** Change the overall appearance of the workbook.
- **Formulas:** Find, insert, and manage formulas and functions in your workbook.
- **Data:** Manage and organize the data within your workbook.
- **Review:** Check your workbook for spelling errors, add comments, and manage how changes are handled.
- **View:** Change how you are viewing your workbook and work with macros.

Excel 2016 also features **contextual tabs**. These are special tabs that only appear when you are working with a specific object or group of information. For example, if you select a table the Table Tools - Design contextual tab will be shown:



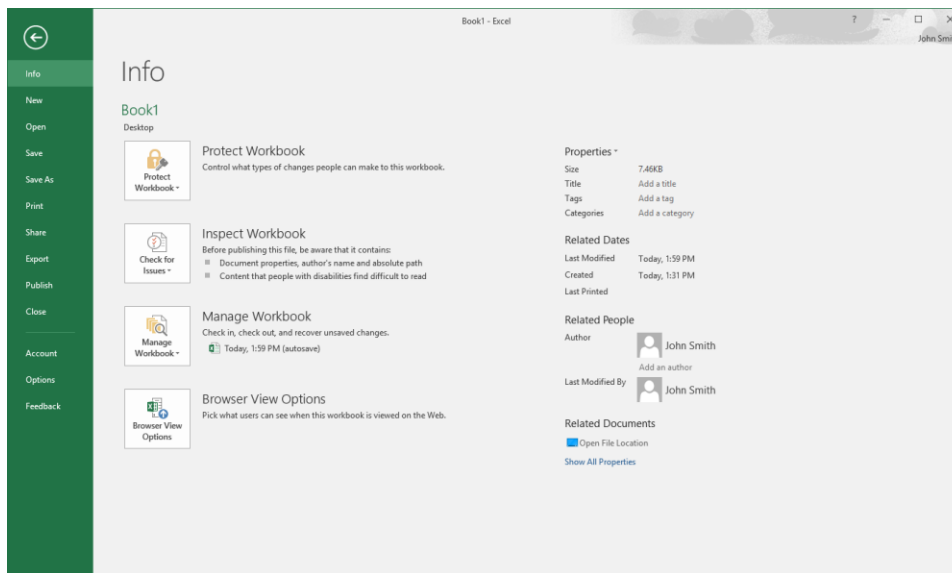
Dialog Box Launchers

Some groups feature an option button (☰) beside the group name. Click this button to open a dialog with more specific controls relating to this group and other commands in the tab:



THE BACKSTAGE VIEW

The File tab opens a special screen called **Backstage view**:

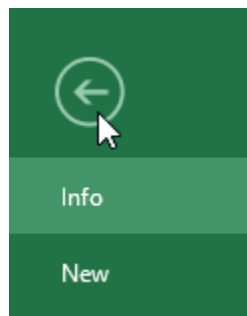


Here is a quick overview of each item on the left-hand side:

<p>Info</p>	<p>Displays vital statistics about the current file. You are also able to modify read/write permissions, check for compatibility issues with other programs, manage versions of this file, and choose what users see if the current workbook is viewed on the web. Document properties are listed on the far right side.</p>
<p>New</p>	<p>Create a new blank workbook or choose from a number of available templates.</p>
<p>Open</p>	<p>Open a workbook from your OneDrive account, your computer, or any other location that you have access to.</p>
<p>Save</p>	<p>Update the current workbook with any changes made since it was last saved. If the file has not been saved, clicking this command will switch you to the Save As</p>

	category.
Save As	Save the workbook to your OneDrive account, your computer, or any other location that you have access to.
Print	Preview and browse your workbook as it would look if it were printed (called print preview). Also provides commands to print the workbook and customize this printout.
Share	Share this workbook to the cloud or send this workbook to others via e-mail.
Export	Save the workbook as a PDF or XPS file. Also provides a command to change the file type, which gives you access to many different formats.
Publish	Publish your workbook to Power BI, an online data analysis service.
Close	Close the current workbook.
Account	Modify your Microsoft account.
Options	Open the Excel Options dialog box.

To close Backstage view, click the back arrow at the top of the menu:



DATA TYPES

Excel 2016 offers support for a variety of data types that can be entered into worksheets, including:

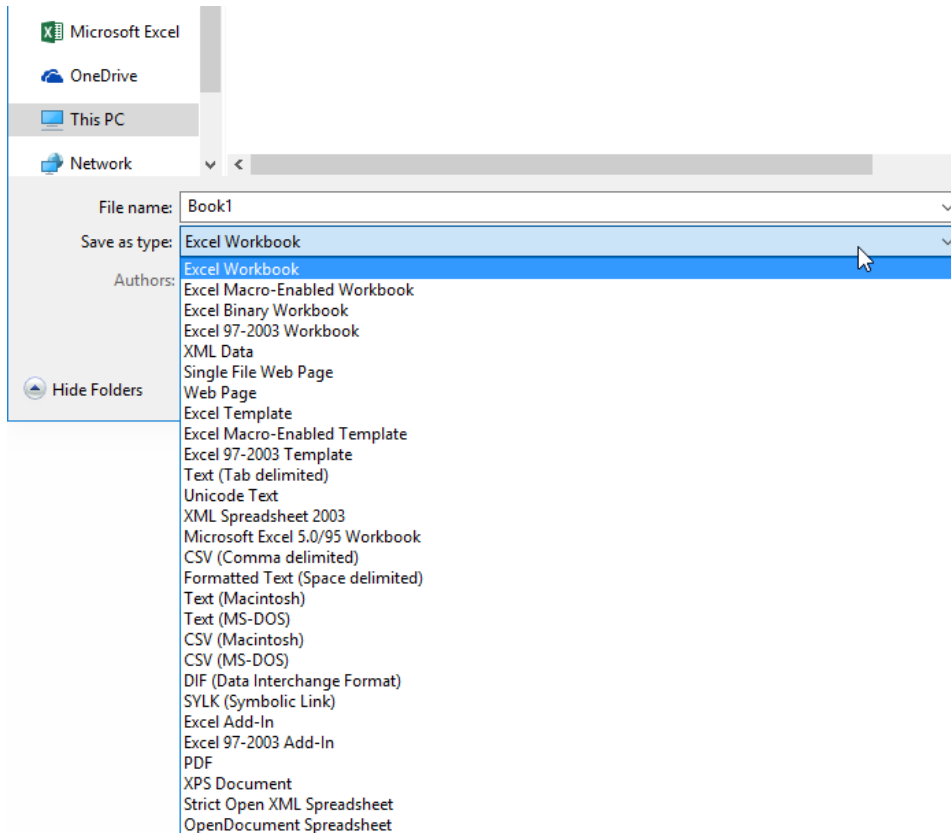
- **Labels**, which can be any alphanumeric text.
- **Values**, which are numbers that you can use to perform functions and data analysis.
- **Dates and times**, which express the date, the time, or both.

Using the correct data type will facilitate data analysis and ensure that you can use appropriate features, like PivotTables and what-if analysis.

EXCEL 2016 FILE FORMATS


Excel 2016 uses a file format known as the Microsoft Excel XML format. Despite this newer file format, Excel 2016 is capable of reading files created from Excel 97 right on up to 2016 (and beyond). It is also capable of using other file types as well, including plain text, OpenOffice.org documents, and data output files.






Whenever you save a new file in Excel, it is automatically saved in the Excel 2016 file format. However, you can use the Save As command to open the related dialog and choose a file type in the dialog. This can be helpful if you are worried about compatibility with earlier versions of Microsoft Office:







(Click File → Save As or press F12 to open this dialog box.)

The following table summarizes a few of the most popular file types that can be saved with Excel 2016:

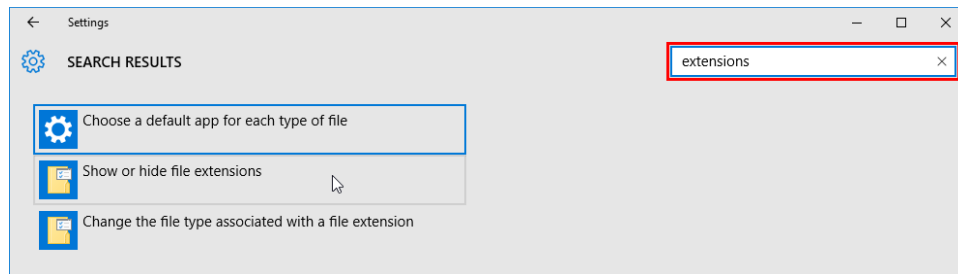
<p>Excel Workbook (.xlsx)</p>		<p>Default format for Excel 2016, Excel 2013, Excel 2010, and Excel 2007. Allows you to add new authors or tag the file. You can also save a thumbnail, which will let you look at the beginning of the document if you use the Extra Large or Large icon views in File Explorer.</p> <p>Although Excel 2007 and later share the same file extension as Excel 2016, there</p>
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		are some instances where items created in Excel 2016 may not be compatible with these earlier versions.
Excel Macro-Enabled Workbook (.xlsm)		Excel workbooks with macros. Macros are short, specific pieces of code that allow the document user to perform automated tasks, such as accessing data from a database file.
Excel Binary Workbook (.xlsb)		This option is the same as the default Excel Workbook option, only the file is saved in binary form instead of XML form. This makes the file more efficient to open and use, although the Binary Workbook is intended for very large files with columns and rows numbering in the tens of thousands.
Excel 97-2003 Workbook (.xls)		The format for Excel 97-2003.
Excel Template (.xltx)		Template for Excel 2007 and later. A template is a pre-formatted file designed to be used over and over, meaning you don't have to re-create the same formatting and file structure each time you make a certain file.
Excel Macro-Enabled Template (.xltm)		Template for Excel 2007 and later that contains macros.

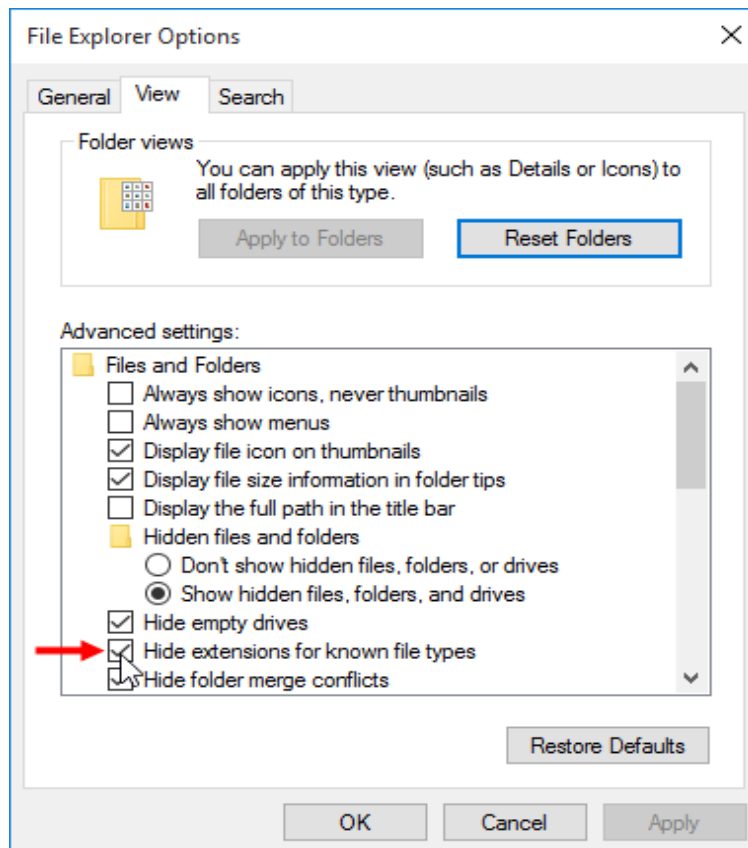
<p>Excel 97-2003 Template (.xlt)</p>		<p>Template for Excel 97-2003.</p>
<p>Text (Tab delimited) (.txt)</p>		<p>This option is only capable of saving one worksheet at a time. Text is entered with one row equaling one line of text. The text is also delimited (separated) by tab spaces.</p> <p>Delimited text is capable of being read by many different programs on nearly any computer platform. This characteristic makes the data very portable, meaning the raw data can be used just about anywhere.</p>
<p>PDF (.pdf)</p>		<p>Stands for Portable Document Format. PDF files work by creating a snapshot of a file, just as if you printed a file and then scanned it to send an electronic copy. Extra options include the ability to change the file detail and to open the file after saving.</p>
<p>XPS Document (.xps)</p>		<p>Stands for XML Paper Specification. XPS documents are Microsoft's answer to PDF documents.</p>

Displaying File Name Extensions

Windows 10 does not display file name extensions (such as .xls) by default. To display file extensions, open the Settings window and type “extensions” into the search text box. From the list of results that are shown, click “Show or hide file extensions:”



With the File Explorer Options dialog open to the View tab, clear the “Hide extensions for known file types” checkbox inside the “Advanced settings” list box:




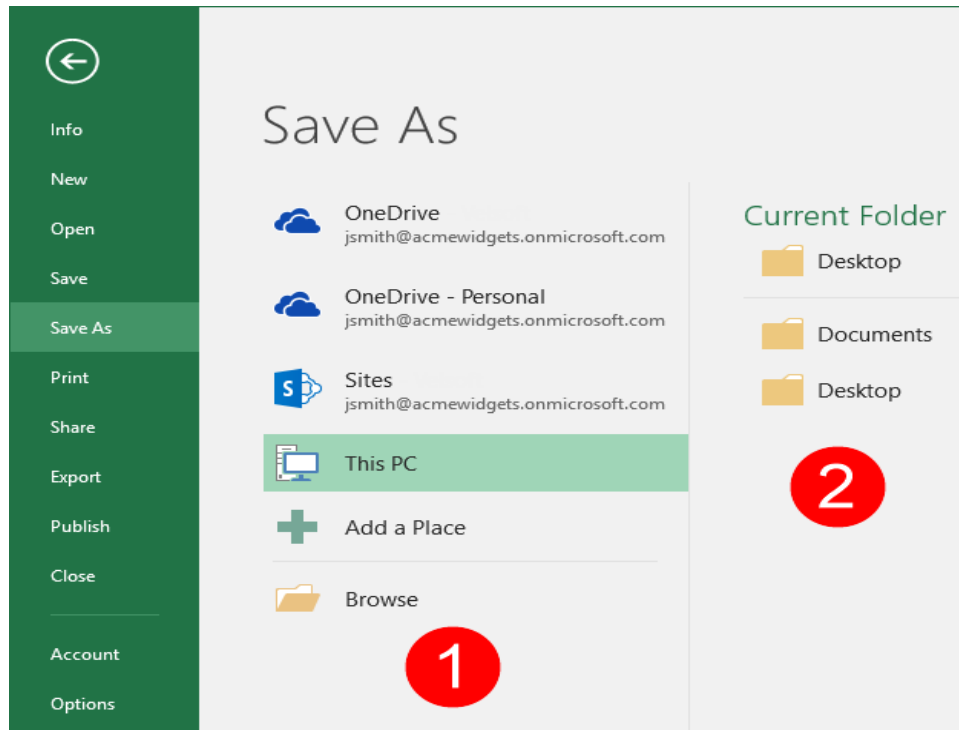
Click OK to apply these new settings.

THE SAVE AND SAVE AS COMMANDS

When working with files in Excel, there will be two save scenarios: you will either save a new file that was made from scratch or you will save changes to an existing file. Therefore, there are two different save commands in Excel: **Save** and **Save As**. Consider the following chart, which outlines the actions of each command on either a new file or an existing file:

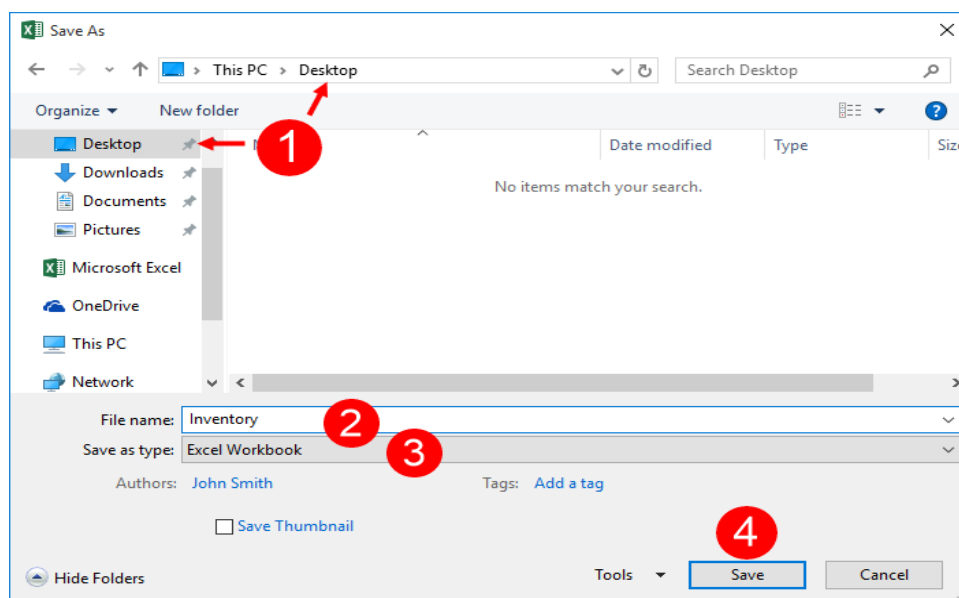
	Save	Save As
New File	You will be prompted to give the file a name and choose a save location. You can also specify a file type.	You will be prompted to give the file a name and choose a save location. You can also specify a file type.
Existing File	Any changes you made will be applied to the existing file in its current location.	You have the option to give the file a new name and/or a new save location. You can also specify a new file type. If you do change something, the original file will not be changed.

To save a new file for the first time, you can click the Save icon () on the Quick Access toolbar, press Ctrl + S, click File → Save, or click File → Save As. Any of these options will open the Save As category of Backstage view:



On the left-hand side, choose the **location** that you want to save to **(1)**. Or, click Browse to manually choose a location. Then, click the **specific folder (2)** to place the workbook in.

Once you choose a folder and click Browse, you will see the traditional Save As dialog box:



At the **top of the window (1)**, you can choose a location to save your file. (You can also use the shortcuts on the left-hand side of the window to navigate through your computer.) At the bottom of the window, enter a **file name (2)**. Finally, choose a **file type (3)** if desired. Click **Save (4)** to complete the process.

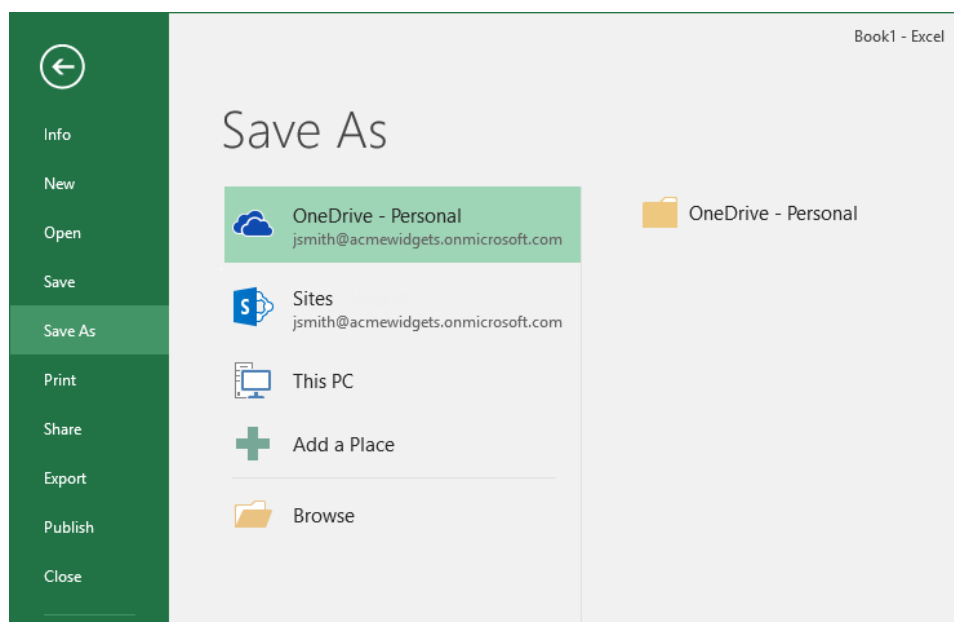
Once you have saved a file in this way, you can use the commands mentioned above (Save icon on the Quick Access toolbar, Ctrl + S keys, or File → Save) to update it. Because you are updating an existing file, you won't need to enter the file name, location, or type again.

If you want to save the file with a different name, location, or type, click File → Save As or use the F12 shortcut. This will re-open the Save As dialog and let you change file information.

SAVING TO MICROSOFT ONEDRIVE

Formerly known as SkyDrive, Microsoft OneDrive is Microsoft's online file storage service. Available to anyone with a Microsoft account, it allows users to store, sync, and share files with others online. You can access these files using your browser or through your operating system (if you use Windows 8 or later).

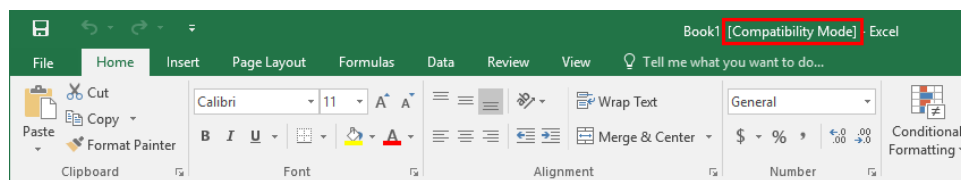
Microsoft Office 2016 incorporates this service directly into most of its apps so that you can seamlessly save and open files to your OneDrive account. For example, in the Save As category of Backstage view, you have quick access to your OneDrive account (if you are signed in with a Microsoft account):



To save the current workbook to your OneDrive account, click the OneDrive entry on the left-hand side of the Save As category. Then, choose the desired folder within the OneDrive account from the list on the right-hand side.

COMPATIBILITY MODE

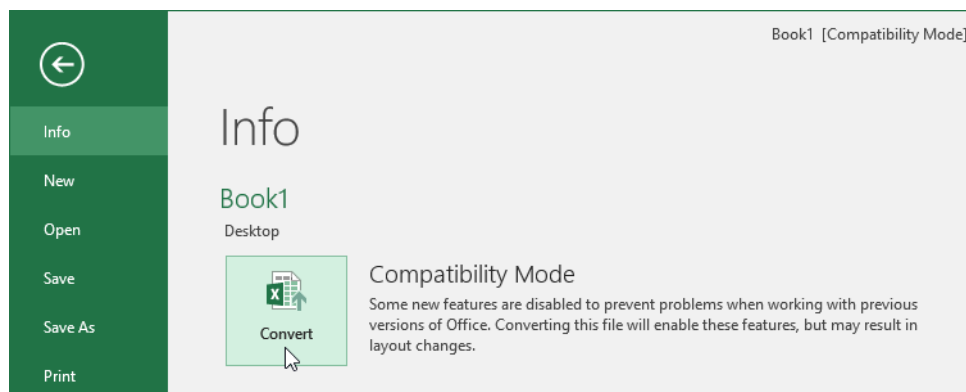
When working with a workbook in Excel 2016 that was created in an older version of Excel (such as Excel 2003), that workbook will automatically open in Compatibility Mode. Such workbooks can easily be identified by the [Compatibility Mode] text next to the file name on the title bar:



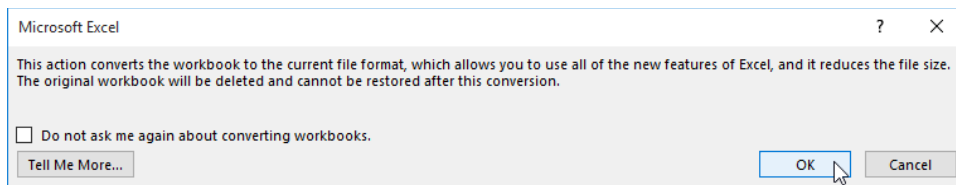
THE CONVERT OPTION

While you can open a workbook that was created using an older version of Excel in Excel 2016 using Compatibility Mode, some newer features may be limited. To access these features, you can convert older workbooks into the Excel 2016 file format. Additionally, you will often find that converting older workbooks into this newer format will help reduce its size.

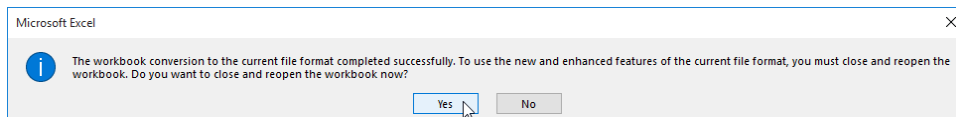
To convert an open workbook, click File → Info → Convert:



Then, click OK to confirm the operation:

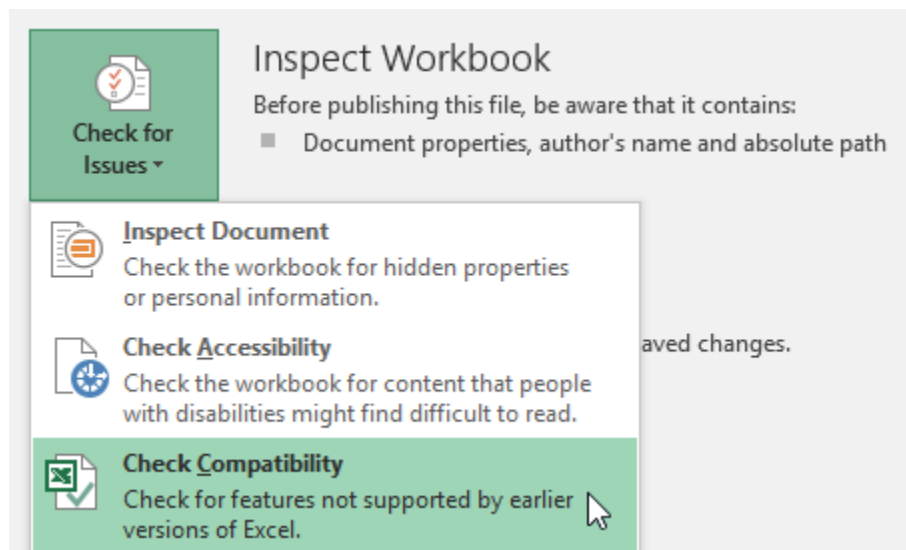


When the process is finished, click Yes to close and re-open the workbook and complete the conversion:

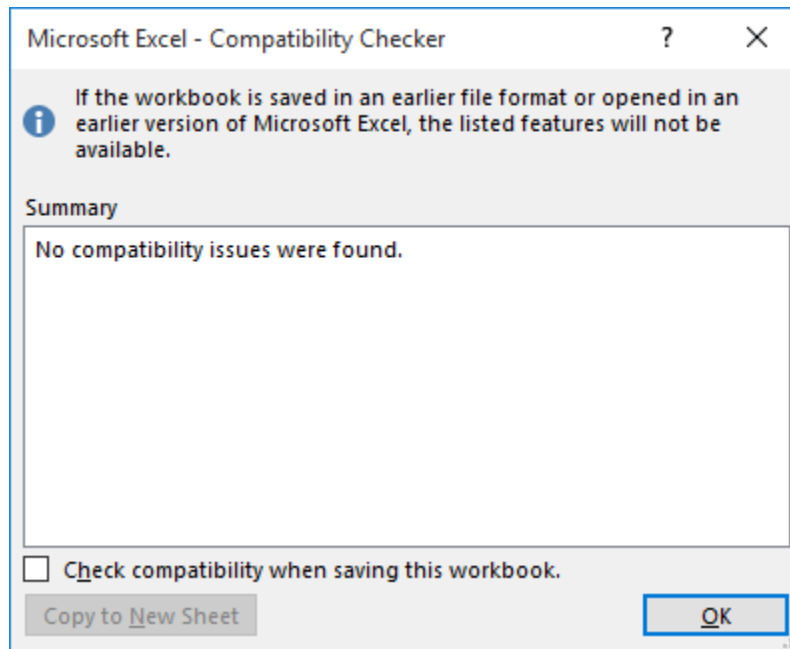


THE COMPATIBILITY CHECKER

The Compatibility Checker is designed to scan your workbook for potential issues if it is to be saved for an earlier version of Excel, particularly using .xls format. Open this tool by clicking File → Info → Check for Issues → Check Compatibility:



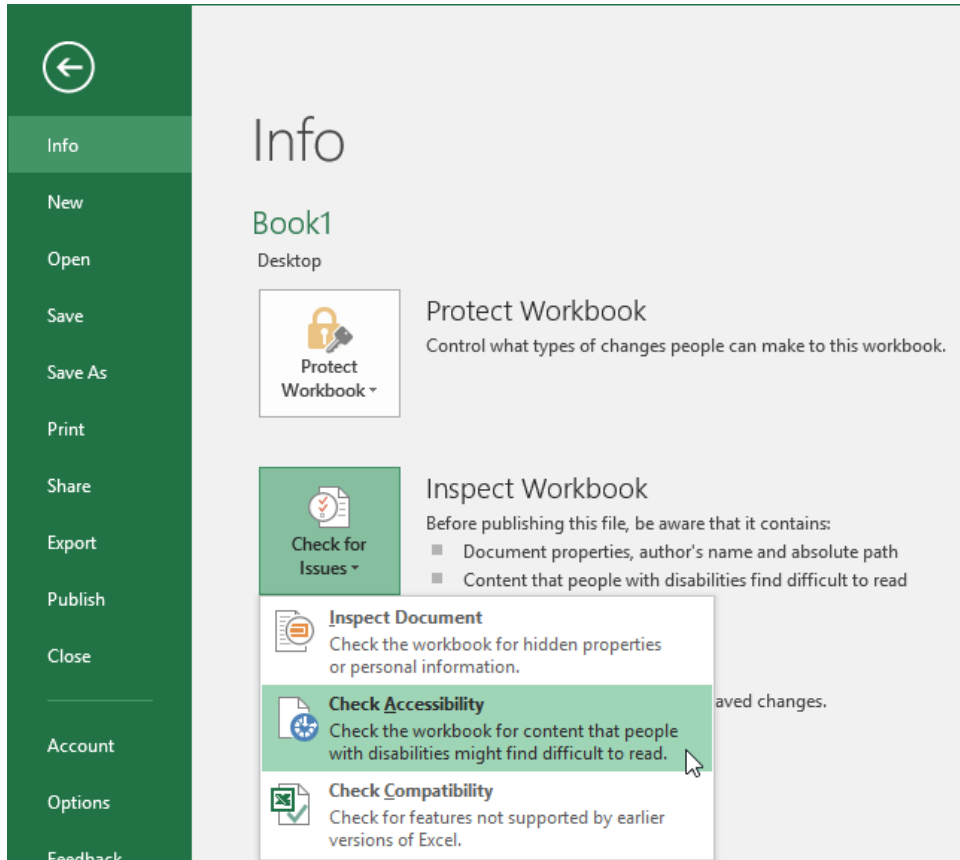
After a moment, the Compatibility Checker dialog box will appear and show all possible conflicts between Excel 2016 and previous versions:



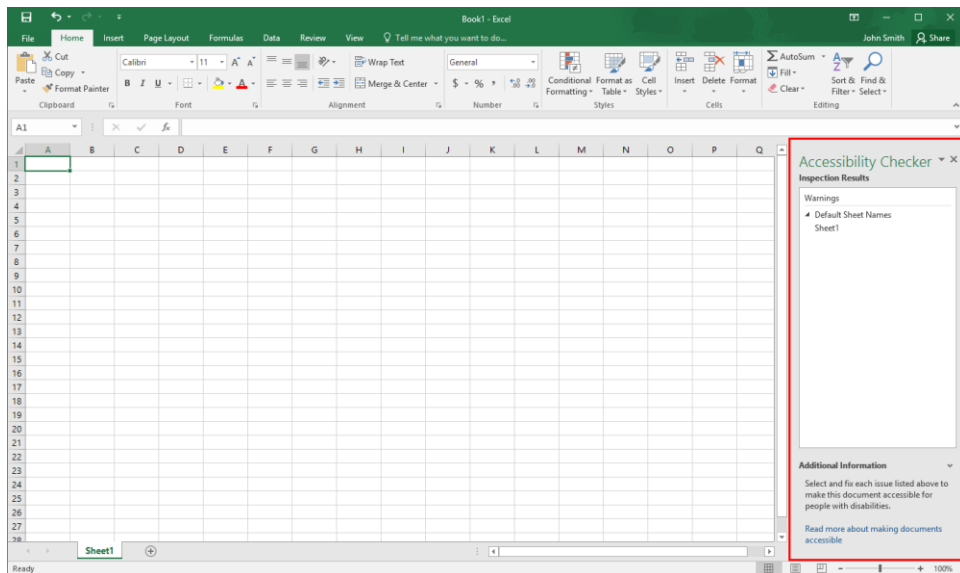
Click OK to close the dialog.

CHECKING FOR ACCESSIBILITY ISSUES

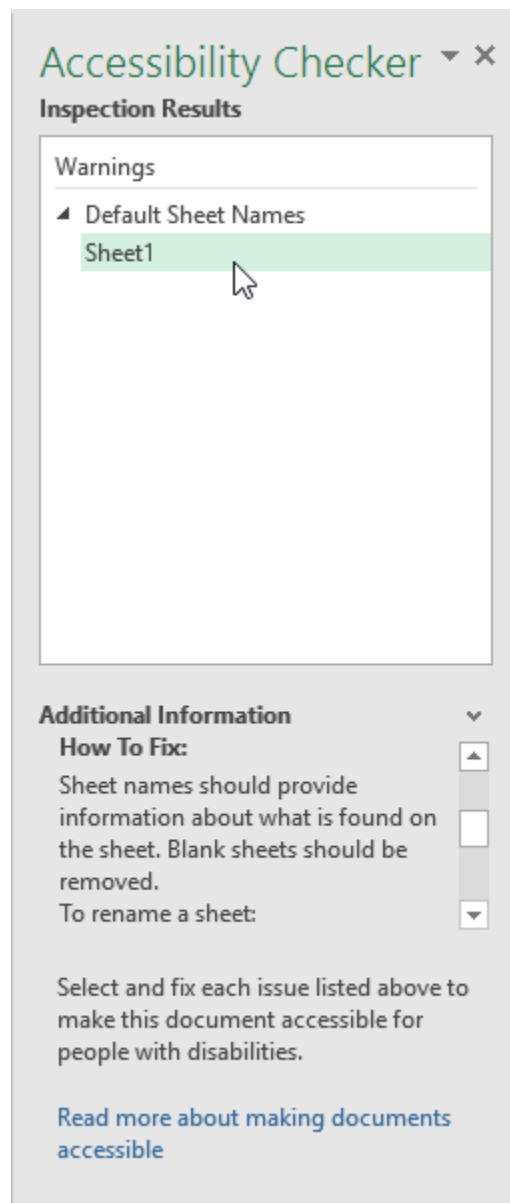
Microsoft Excel 2016 also comes with a tool to help you check your document for possible accessibility issues. To begin, click File → Info → Check for Issues → Check Accessibility:



The Accessibility Checker task pane will then be displayed on the right-hand side of your screen:



Its contents will be divided into three sections (Errors, Warnings, and Tips), each of which will list issues of the related type. You can click on any issue to go to that item and view more information about the problem in the Accessibility Checker task pane:



Inspection Results

Error

This section will list items in the workbook that people with disabilities will not be able to access. This includes objects without alternate text, tables that do not have header rows, and manual formatting.

Warnings

This section will list items in the workbook that people with disabilities will find difficult to access. This includes default sheet names, awkward table formatting, and hyperlinks that don't have ScreenTips.

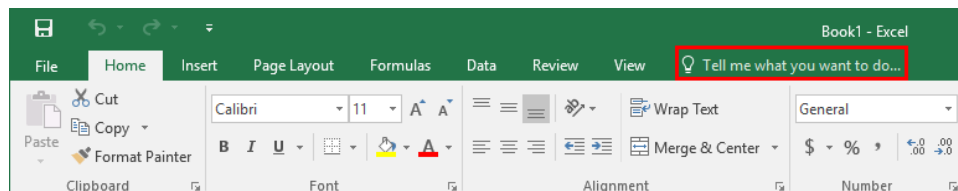
Tips

The final section of the Accessibility Checker will give you additional information on ways that you can improve the accessibility of your workbook even further.

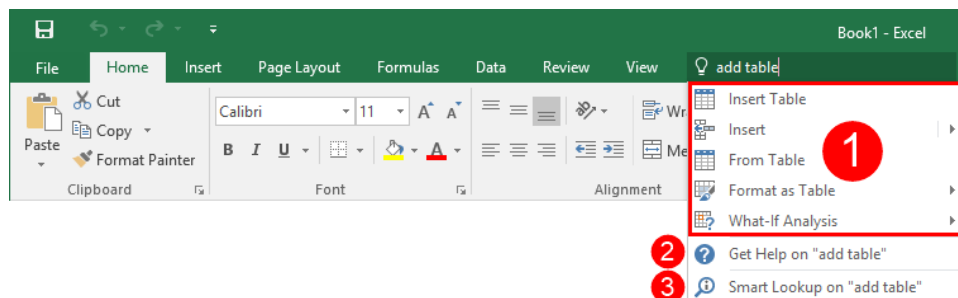
Use the Help System

USING TELL ME

Microsoft Excel 2016 features a new natural language help feature. To take advantage of it, type your question in the text box by the ribbon tabs:



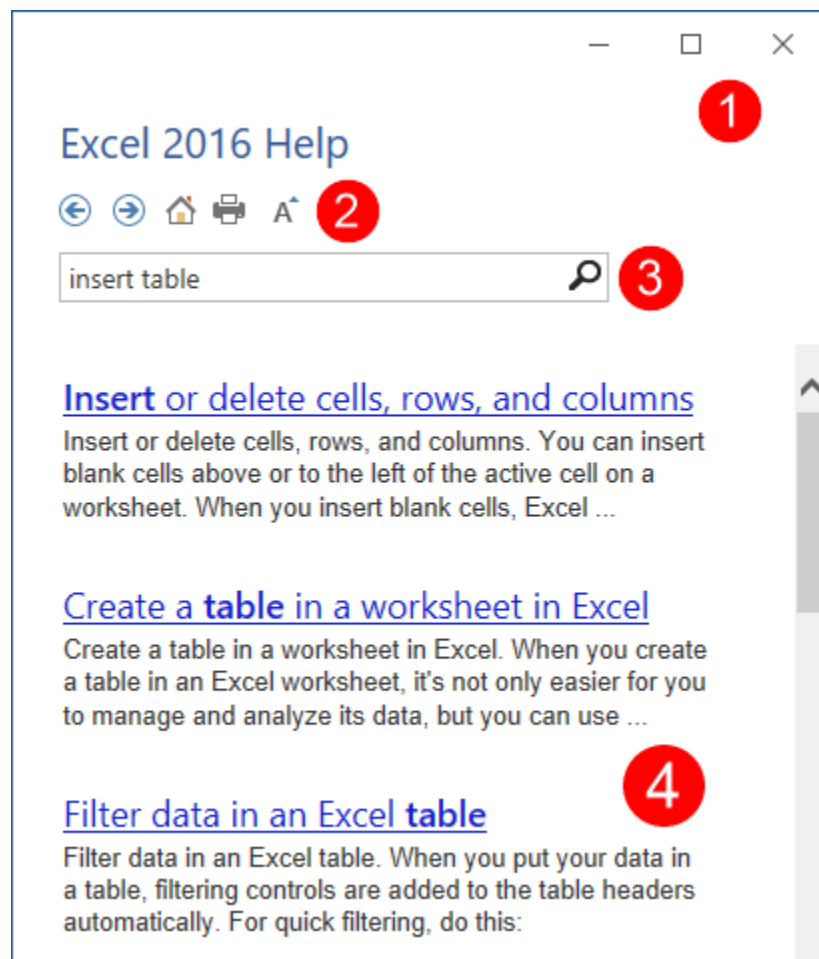
As you type, you will see various links to the related topic:



At the top, you will usually see shortcuts to **related commands (1)**. (If a command is greyed out, it means that it is not currently available.) Next, you will see an option to open the **traditional Help window (2)**. Finally, there is usually an option for **Smart Lookup (3)**, which will search for the term(s) using the Insights feature.

ACCESSING ADVANCED HELP OPTIONS

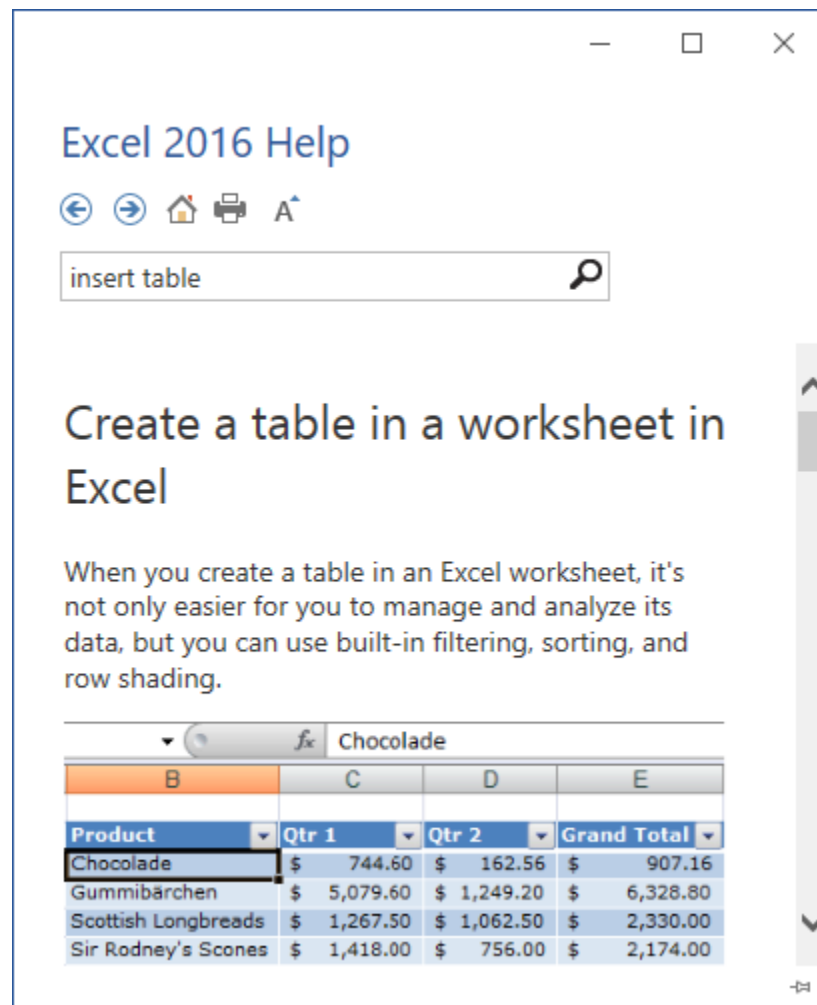
When you choose a “Get Help” entry from the Tell Me results menu, you will see the traditional Help window:



(You can also use the F1 shortcut to open the default page of the Help file.)

In the top right-hand corner, you will see the **Minimize, Maximize/Restore, and Close buttons (1)**. Also at the top is the **Helptoolbar (2)** and **search bar (3)**. The main part of the window shows the **main help content (4)**. You can browse through the help content by clicking the blue text, called a **hyperlink**.






This text is linked to relevant information. For example, the “Create a table in a worksheet in Excel” link will show content that explains how you create a table in a worksheet:



You can perform a new search for help information in the Help window by typing keywords into the search bar and pressing Enter. After a moment, any results Excel thinks are relevant will appear in a list. Click one of the topics in that list to view more information about it.

The Help Toolbar

The Help toolbar contains commands similar to those you would find in a web browser. In fact, the Help window behaves very much like a web browser that only searches for information relevant to Excel 2016.

Back		Move back one step at a time through the help topics you have previously read.
Forward		If you click the Back button, the Forward button will become active. This lets you step forward through the topics you have visited.
Home		Click this button to return to the default Help page.
Print		Prints the current topic.
Text Size		Use this to make the text in the help file larger or smaller.