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**AD 803  
EXCEL 2016  
PART 1**

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## PRE-COURSE EVALUATION

The following evaluation will assist in determining your current knowledge of the material presented in the following course. If you already know how to perform the specified operation using Microsoft Office Excel 2016, check in the **Yes** column next to that operation; otherwise check in the **No** column next to the operation.

OPERATION	YES	NO
Start Excel		
Use the Excel menu system		
Use Excel ribbon		
Use Excel task panes		
Display help information		
Exit from Excel		
Reset the working folder		
Move the cell pointer		
Change data in a worksheet		
Reverse an edit operation		
Save a workbook		
Add data to a worksheet		
Enter a formula into a worksheet		
Adjust column width in a worksheet		
Adjust row height in a worksheet		
Print a worksheet		
Open a new workbook		
Use the Spelling Checker		
Work in Edit mode		
Select ranges in a worksheet		

(Continued)

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<b>OPERATION</b>	<b>YES</b>	<b>NO</b>
Use AutoFill		
Use Flash Fill		
Copy cells		
Move cells		
Clear cells		
Use AutoSum		
Insert and delete rows and columns		
Insert and delete a range of cells		
Realign cell entries		
Reset font options for cell entries		
Reset the number format of cell entries		
Add a border and shading to a worksheet		
Use AutoFormat		
Change the page setup for a worksheet		
Preview a worksheet		
Insert a manual page break into a worksheet		
Include print titles in a printout		
Print selected worksheet entries		
Use the SUM function		
Use the AVERAGE function		
Use the MAX function		
Use the MIN function		
Use the COUNT function		
Use the Insert Function button		

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Appendix A - Summary of Keyboard and Toolbar Shortcuts

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# **SECTION 1**

## **INTRODUCTION**

# 1 INTRODUCTION

Welcome to **Microsoft Office Excel 2016 Part 1** course. The primary objective of the course is to introduce a user to the basic operations of Microsoft Office Excel 2016, hereafter referred to as simply "Excel," in most cases. More detailed objectives are listed later in this section.

## 1.1 Course Prerequisites

No previous experience in using Excel or any other spreadsheet program is required in this introductory course. It is assumed, however, that you have:

- Knowledge of **personal computer fundamentals**.
- Experience in working in the **Microsoft Windows environment**.
- A reasonable degree of **keyboard proficiency**.
- Experience in using a **mouse**.

You will also need the following to complete this course:

- A **personal computer** with a **1 GHz or higher microprocessor**.
- A minimum of **2 Gigabyte** of **random access memory**.
- At least **3 GB** of available **hard disk space**.
- **Microsoft Windows 7 SP1** or **Microsoft Windows Server 2008 R2**, or later operating system.
- **Microsoft Office Excel 2016** properly installed.
- A **Super VGA (800 X 600) or higher-resolution monitor** with **256 colours**.
- An installed **pointing device** (mouse) that is supported by your operating system.
- An installed **printer** that is supported by your operating system.
- This **training manual**.

## 1.2 Course Objectives

After participating in this course, you should be able to:

- **Start Excel.**
- **Use the Excel menu system, ribbons and task panes.**
- **Display help information.**
- **Reset the working folder.**
- **Open and close a file.**
- **Enter labels and values** into a worksheet.
- **Enter a formula** into a worksheet.
- **Adjust column width and row height** in a worksheet.
- **Print a worksheet.**
- **Open a new workbook.**
- **Use the Spelling Checker.**
- **Automatically fill a range.**
- **Copy and move cells.**
- **Automatically compute a row or column total.**
- **Insert and delete rows and columns.**
- **Realign cell entries.**
- **Reset font options** for cell entries.
- **Reset the number format** of cell entries.
- **Add a border and shading** to a worksheet.
- **Change the page setup** for a worksheet.
- **Preview a worksheet.**
- **Insert a manual page break** into a worksheet.
- **Print selected worksheet entries.**
- **Use Excel functions (SUM, AVERAGE, MAX, MIN and COUNT).**

### 1.3 Course Conventions

**A number of conventions are used in this manual. Please be sure that you understand them.**

The course is divided into **sections**. Most sections consist of an **introduction** and various **subsections**.

Most **subsections** include an **overview** of the topic to be presented and an **exercise** headed by the word **OBJECTIVE**. The exercise itself is usually preceded by a section headed **PREPARATION**, which includes one or more preliminary instructions. **Be sure to follow any directions under this heading.**

**Exercises** are presented in two columns, with each step clearly numbered. Your instructions are in the column headed **ACTION (You Do)**; the second column headed **COMPUTER RESPONSE / Comments** describes the program response and/or may include other comments. **Be sure to complete each step in the order shown.**

**Instructions** of an exercise may be a combination of selecting a command (or command sequence), typing information and/or pressing one or more keys. Typical examples are given below:

#### **Example 1**

2. Click on the **Home** tab and click on the **Cut** button in the **Clipboard** group.

This means that you should first click on the **Home** tab in the Ribbon, then click on the **Cut** button located in the **Clipboard** group.

#### **Example 2**

4. Click on the **File tab** and choose the **info, Show All Properties** command.

This means that you should first click on the **File tab**, then select the **Info** command in the Microsoft Office menu and then select the **Show All Properties** option that appears after you select the **Info** command.

**Example 3**

When a shortcut button is available for a command sequence, that button is usually indicated.

6. Click on the **Save** button.

This means that you should position the mouse pointer on the **Save** button and then click the mouse button. (When clicking on any command, button or other screen object, or when dragging a screen object, use the **left** mouse button unless otherwise instructed.)

**Example 4**

8. Type: **Department Budget**  
Press **[ENTER]**.

This means that you should type the words **Department Budget** and then press the **[ENTER]** key. (In such instructions, special keys, such as **[ENTER]**, **[ESC]** and **[F1]**, can be easily identified because they are always enclosed in square brackets.)

**Example 5**

When you are required to press two keys at the same time, the **+** sign is used.

10. Press **[CTRL] + [O]**.

This means that you should press the **[CTRL]** key and, while holding it down, press the letter **O**.

This course assumes that you are using a mouse. Basic mouse techniques are summarized below.

<b>ACTION</b>	<b>DESCRIPTION</b>
<b>Point</b>	Position the mouse pointer on the specified screen item.
<b>Click</b>	Press and release the <b>left</b> mouse button.
<b>Double-click</b>	Press and release the <b>left</b> mouse button two times in rapid succession.
<b>Right-click</b>	Press and release the <b>right</b> mouse button.
<b>Drag</b>	Move the mouse pointer from its initial position to another area of the screen while holding down the <b>left</b> mouse button.



1. This course assumes that all default Excel settings are in effect when you start the program.
2. It is recommended that you create a folder named **Course Docs** containing the course data files. (This course assumes that you have done this.)

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**SECTION 2**  
**GETTING STARTED**

## 2 GETTING STARTED

### 2.1 Introduction

This section begins with a discussion of **Excel and the tools it provides**. It then covers various **program fundamentals**. In this section, you will learn how to:

- **Start Excel.**
- **Identify the elements of the Excel Application window.**
- **Use the Excel menu system.**
- **Use the File tab.**
- **Use the Quick Access Toolbar.**
- **Customize a Ribbon**
- **Display help information.**
- **Exit from Excel.**

## 2.2 What is Excel?

**Excel** is a popular spreadsheet program designed for use on a personal computer. Although it has many applications, Excel is used primarily as a **financial modeling package** for such purposes as budgeting, cash flow forecasting, sales reporting, and the preparation of profit and loss statements.

The advantages of using a program such as Excel are immediately apparent if you have used a strictly manual procedure to perform spreadsheet operations. Not only does the program make it easier for you to enter information, it can save you countless hours in calculating and recalculating information. In addition, it allows you to quickly obtain answers to what are called "**what-if**" scenarios.

For example, suppose you wish to predict the income from the sale of a particular product over a period of time. Using Excel, you can set up the appropriate model and then test various assumptions -- for example, "What if our costs rise by 5%?" or "What if actual sales fall short of projections by 10%?"

Excel provides three main types of **modeling tools** -- worksheets, charts and lists.

**Worksheets** A worksheet, Excel's term for a spreadsheet, is used to store numeric data, calculations involving that data, as well as descriptive text. The information is arranged in columns and rows in a format similar to an accountant's ledger. Related worksheets are saved in a **workbook**, which can be thought of as an electronic binder. An example of a worksheet might be a departmental budget.

**Charts** A chart is used to graphically represent the data contained in a worksheet. For example, a pie chart could be generated to show how a budget is allocated between different areas of expenditure.

**Lists** A list, sometimes called a database, serves as an electronic filing system. The information can be manipulated (for example, sorted and filtered) to suit a user's specific needs. An example of a list might be a detailed listing of company employees, including their names, addresses, titles, salaries, and so on.

In this introductory course, you will learn how to use Excel worksheet features.

## 2.3 Starting Excel

You start Excel by clicking on the **Start** button on the Windows taskbar, by pointing to **All Programs** (if you are running Windows XP) or to **Programs**, by selecting the **Microsoft Office** option on the All Programs or Programs menu, and by selecting the **Microsoft Office Excel 2016** option on the subsequent submenu.



If the Start menu includes a Microsoft Office Excel 2016 shortcut icon, you can start Excel by simply clicking on this icon. If the Windows desktop includes a Microsoft Office Excel 2016 shortcut icon, you can start Excel by double-clicking on this icon.

## Objective

In this exercise, you will **start Excel and display the opening Excel Application window**.



1. If necessary, **switch on your computer system**, and **load Windows**.
2. If you are using a data CD (instead of storing the course data files on the hard disk), insert that CD into the appropriate drive.

ACTION (You Do)	COMPUTER RESPONSE / Comments
1. Click on the <b>Start</b> button on the Windows taskbar.	The Start menu is displayed.
2. Point to <b>All Programs</b> (or to <b>Programs</b> ).	The All Programs (or Programs) menu is displayed.
3. Point to <b>Microsoft Office</b> on the menu.	A submenu is displayed.

<b>ACTION (You Do)</b>	<b>COMPUTER RESPONSE / Comments</b>
4. Click on <b>Microsoft Office Excel 2016</b> on the submenu.	Excel is started, and the Excel Application window appears, displaying a blank workbook.
5. If the Excel Application window is not maximized, click on the <b>Maximize</b> button on the Title bar of the window.	

## 2.4 The Excel Application Window

The initial **Excel Application window** includes the following elements:

<b>Title bar</b>	This displays the name of the <b>program</b> , as well as the name of the current <b>workbook</b> if it has been saved. (If the workbook has not been saved, it is identified by a number -- for example, Book1.) The standard Windows Control-menu box and window sizing buttons appear at the right end of the bar.
<b>Quick Access Toolbar</b>	This displays buttons that correspond to commands. By default, the Quick Access Toolbar shows the Save, Undo, and Redo buttons. However, you can modify the toolbar to include commands that you use frequently.
<b>Tabs</b>	These are areas on the Ribbon that contain buttons organized into groups. Tabs change based on the task you are performing in Excel.
<b>Dialog Box Launcher</b>	This button opens a dialog box that contains options for refining a command.
<b>Groups</b>	These are categories of buttons on a tab. Each group contains command buttons that do specific things to your text. Groups and buttons change based on the task you are performing in Excel. Often, the buttons you are most likely to use are larger than the rest, depending on the size of the program window.
<b>Ribbon</b>	This area runs across the top of the screen and makes all the capabilities of Excel available in a single area, so you can work more efficiently with the application. Commands related to working with document content appear as buttons on tabs that make up the Ribbon. The Home tab is active by default. Clicking one of the other tabs, such as Insert, displays the buttons associated with that tab. The Microsoft Excel Help button appears at the far right side of the Ribbon.
<b>Name box</b>	This identifies the active cell (described on the following page).
<b>Formula bar</b>	This displays the contents of the active cell, if any. As you will soon learn, it is also used to enter the formulas that specify calculations in a worksheet.

**Workbook window**

This window, which occupies the majority of the screen, displays an Excel workbook. A workbook initially contains three worksheets, which are saved in a single file. Each worksheet consists of a series of columns (identified by the letters A, B, C, etc., which appear across the top of the window) and a series of rows (identified by the numbers 1, 2, 3, etc., which appear down the left side of the window). Since an entire Excel worksheet can contain 16,384 columns and 1,048,576 rows, only a small part appears in this window at one time.

Columns and rows of a worksheet intersect to form cells. Each cell is identified by its column/row coordinates, or cell reference (for example, B5). Notice that cell A1 is currently surrounded by a border. This border, or cell pointer, identifies the active cell -- that is, the cell in which any information entered from the keyboard will be stored.

**Vertical/Horizontal scroll bars**

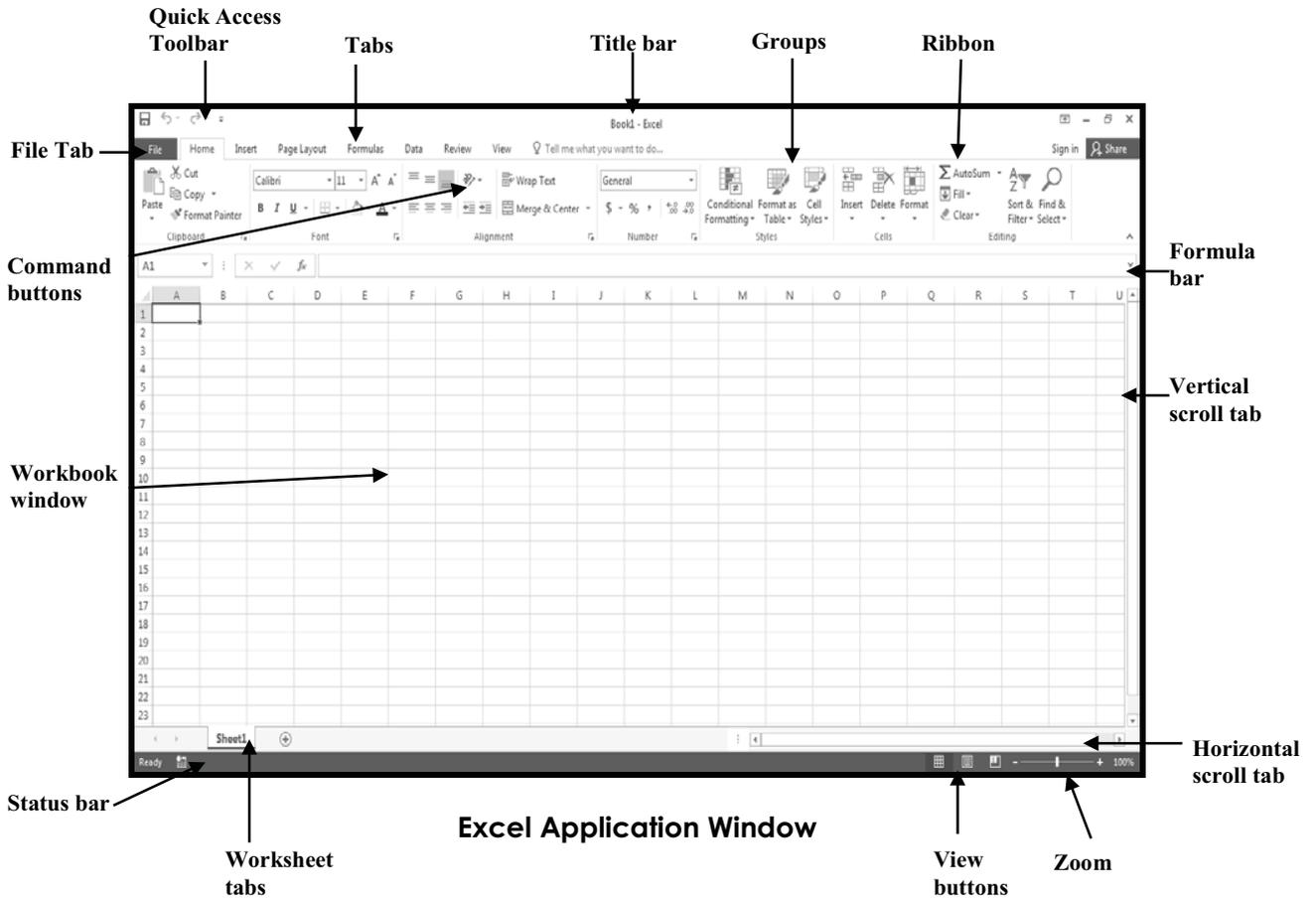
These are used to scroll the Workbook window vertically/horizontally through a worksheet.

**Worksheet tabs**

These identify the various worksheets in a workbook, and allow you to move from one worksheet to another.

**Status bar**

This area across the bottom of the window displays information about the current document. You can hide an item of information by right-clicking the status bar and clicking that item.



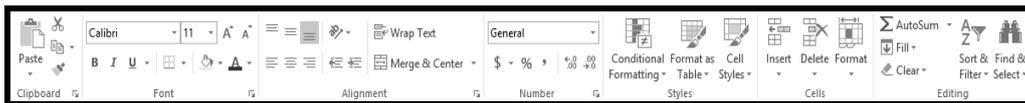
What appears on your screen may sometimes vary slightly from what is shown in this manual.

## 2.5 Using the Excel Menu System

In Excel 2016, when you click on a menu, you get a ribbon of options. Each ribbon is organized into different groups of command buttons. You can access the menu system by using a **mouse**. The procedure is as follows:

- Select a **tab** on the **Ribbon**. With a mouse, point to a tab, and click the **left** mouse button.
- Select a **button** on the **group** that is subsequently displayed. With a mouse, point to the button, and click the **left** mouse button.

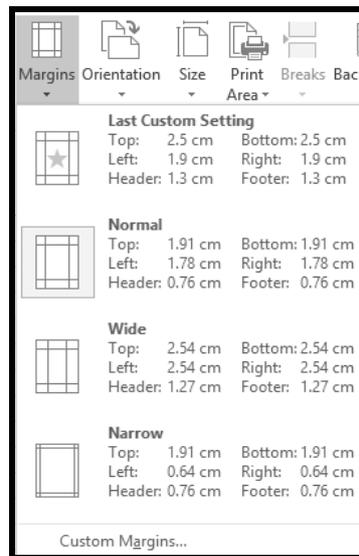
A group, as mentioned earlier, organizes a series of buttons for the tab you have chosen. If you choose the **Home** tab, for example, the **Clipboard**, **Font**, **Alignment**, **Number**, **Styles**, **Cells** and **Editing** groups similar to those illustrated below are displayed.



**Groups in the Home Tab**

Note the following:

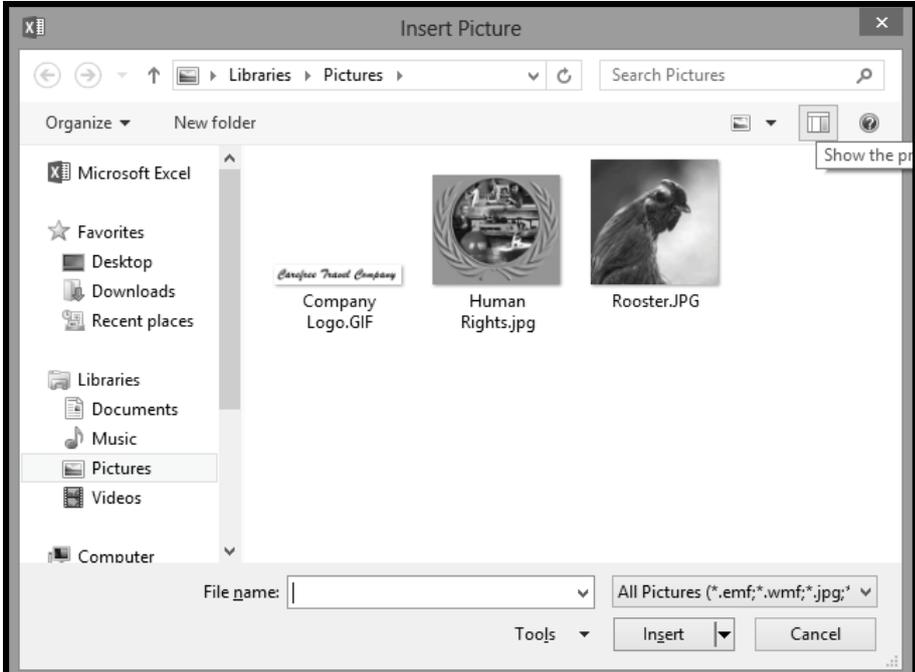
- If a button option is dimmed, that button is not relevant at the current time and, therefore, is not available.
- If a down arrow appears below a button, selecting that button displays a submenu of additional buttons. An example is illustrated below.

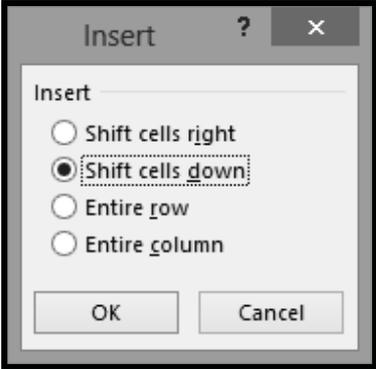
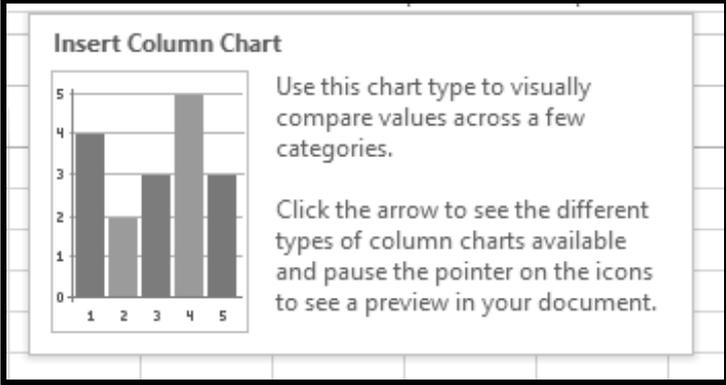


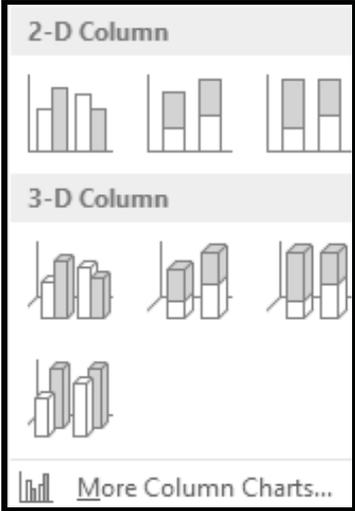
**Margins Button**

## Objective

In this exercise, you will **use the Excel menu system** by **selecting groups** and **buttons** from the **Ribbon**.

ACTION (You Do)	COMPUTER RESPONSE / Comments
1. Move the mouse pointer to the <b>Insert</b> tab.	You will now view the groups and buttons on the Insert tab.
2. Click the (left) mouse button.	The groups and buttons associated with the <b>Insert</b> tab are displayed (as illustrated below).
	
3. Point to the <b>Picture</b> button in the <b>Illustrations</b> tab, and click the mouse button.	The Insert Picture dialog box is displayed (as illustrated below).  <b>NOTE:</b> The dialog box on your screen may display different information.
	

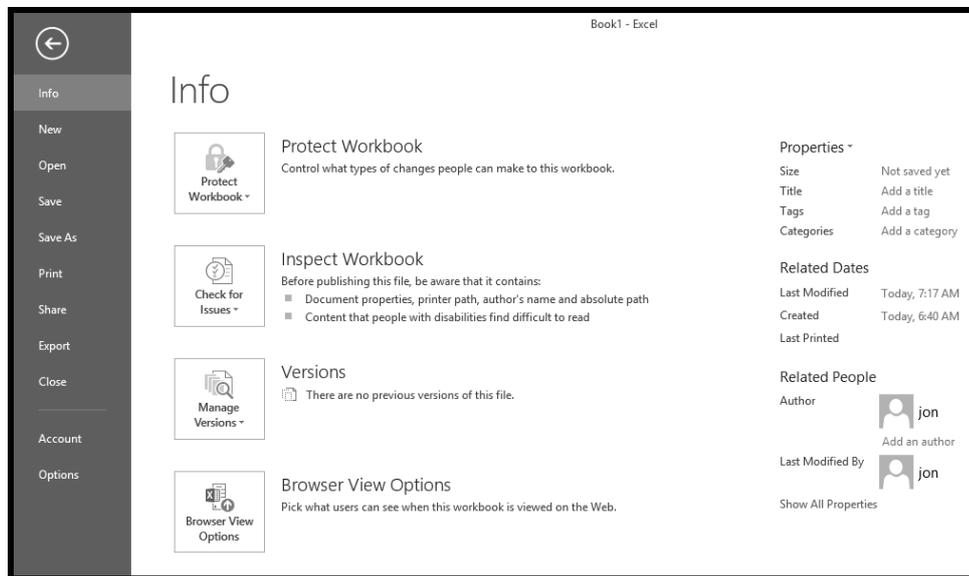
ACTION (You Do)	COMPUTER RESPONSE / Comments
4. Click on the <b>Cancel</b> button.	The dialog box is closed. You will now select an option on a shortcut menu.
5. Point to cell <b>A1</b> , and <b>right-click</b> the mouse button.	The relevant shortcut menu is displayed.
6. Click on <b>Insert</b> .	The Insert dialog box is displayed (as illustrated below).
	
7. Click on the <b>Cancel</b> button.	The dialog box is closed.
8. Position the mouse pointer <b>over</b> the <b>Column</b> button.	A screen tip appears that shows the name of the button and the function that it performs (as illustrated below).
	
9. Click on the <b>Column</b> button.	A list of available column types is displayed (as illustrated on the following page).

ACTION (You Do)	COMPUTER RESPONSE / Comments
	
10. Click in <b>any blank area</b> of the <b>Workbook window</b> .	The menu is closed.

## 2.6 Using the File tab

The **File tab** is located in the upper-left corner of the **Excel window**. When you click on this tab, a menu appears with commands relating to Excel and Excel documents as a whole, rather than document content. For example, the **File tab** has **commands** relating to **creating, saving, and printing**.

The following figure shows the commands in the **File tab**. The **commands** on the **left side** are **related** to the **document as a whole**. When a **command** is selected, further options may appear on the **right side** of the window pane.

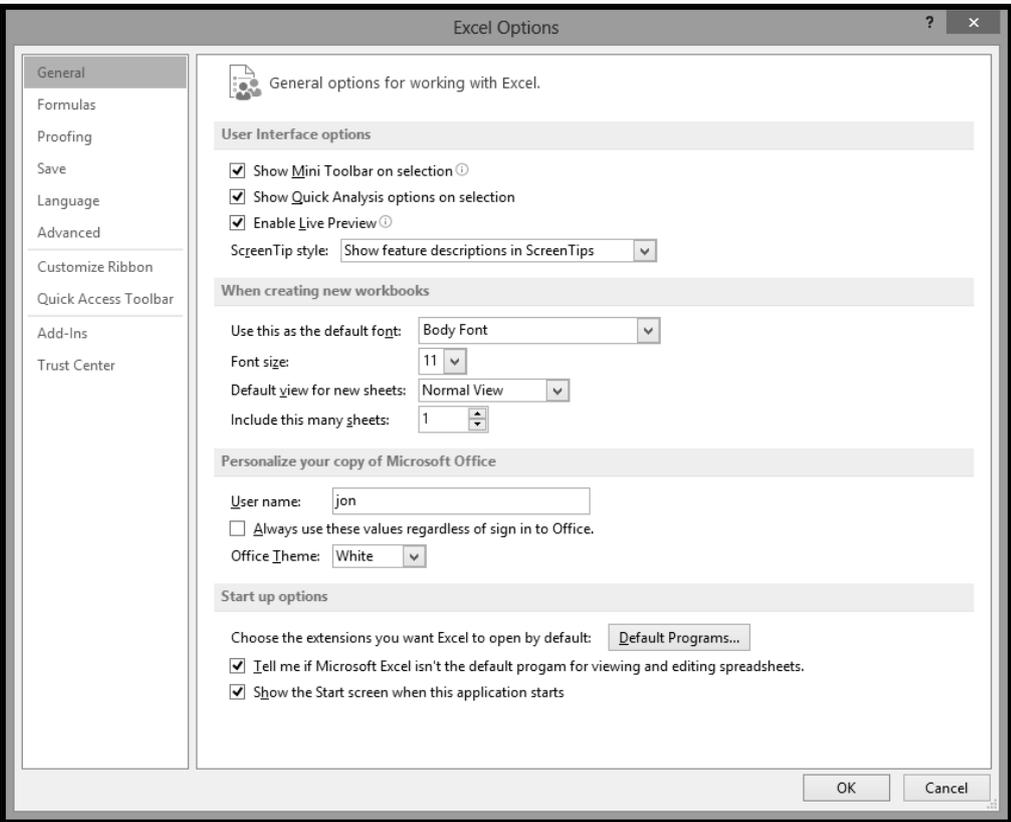


**File tab / Microsoft Office Menu**

## Objective

In this exercise, you will **use options on the File tab**. As part of this exercise, you will **personalize your copy of Microsoft Office**.

ACTION (You Do)	COMPUTER RESPONSE / Comments
1. Move the mouse pointer to the <b>File tab</b> .  	
2. Click the mouse button.	The File menu is displayed.
3. Click on the <b>Close</b> button.	The document that was open closes along with the menu.
4. Move the mouse pointer to the <b>File tab</b> , click the mouse button, and click on the <b>New</b> command.	The <b>New</b> command is highlighted.
5. Click on the <b>Blank workbook</b> template.	A New Workbook window appears, allowing you to open a blank document or any other document you worked on recently.
6. <b>Close</b> the <b>workbook</b> window	The New Workbook window is closed.
7. Using a procedure similar to that described above, display the <b>File</b> menu again.	Next, you will display Excel options.
8. Click on the <b>Options</b> button at the bottom-right side of the <b>menu</b> .  	The <b>Excel Options</b> dialog box appears, with a list of categories on the left side and settings associated with those categories on the right side. Initially, the settings for the <b>General</b> category are shown (as illustrated on the following page).

ACTION (You Do)	COMPUTER RESPONSE / Comments
 <p>The screenshot shows the 'Excel Options' dialog box with the 'General' category selected in the left-hand navigation pane. The right-hand pane displays settings for the General category, including 'User Interface options' (with checkboxes for Mini Toolbar, Quick Analysis, and Live Preview), 'When creating new workbooks' (with dropdowns for font, size, and view, and a spinner for sheets), 'Personalize your copy of Microsoft Office' (with a text field for the user name 'jon' and a theme dropdown set to 'White'), and 'Start up options' (with checkboxes for default extensions, a message about Excel as the default program, and the Start screen).</p>	
<p>9. Click <b>different categories</b> on the <b>left side</b> of the window.</p>	<p>The <b>settings</b> on the <b>right side</b> change with each <b>category</b> you select on the <b>left side</b>.</p>
<p>10. In the category list on the left side, click <b>General</b>.</p>	<p>The settings associated with the General category are displayed on the right side of the <b>Excel Options</b> dialog box.</p>
<p>11. Click in the <b>User Name</b> field and type your name.</p>	
<p>12. Click on <b>OK</b>.</p>	<p>The <b>Excel Options</b> dialog box is closed and your settings are saved.</p>