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STEVEN M. FREUND | JOY L. STARKS



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Steven M. Freund and Joy L. Starks

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COMPREHENSIVE



Getting to Know Microsoft Office Versions

Cengage is proud to bring you the next edition of Microsoft Office. This edition was designed to provide a robust learning experience that is not dependent upon a specific version of Office.

Microsoft supports several versions of Office:

- **Office 365:** A cloud-based subscription service that delivers Microsoft's most up-to-date, feature-rich, modern productivity tools direct to your device. There are variations of Office 365 for business, educational, and personal use. Office 365 offers extra online storage and cloud-connected features, as well as updates with the latest features, fixes, and security updates.
- **Office 2019:** Microsoft's "on-premises" version of the Office apps, available for both PCs and Macs, offered as a static, one-time purchase and outside of the subscription model.
- **Office Online:** A free, simplified version of Office web applications (Word, Excel, PowerPoint, and OneNote) that facilitates creating and editing files collaboratively.

Office 365 (the subscription model) and Office 2019 (the one-time purchase model) had only slight differences between them at the time this content was developed. Over time, Office 365's cloud interface will continuously update, offering new application features and functions, while Office 2019 will remain static. Therefore, your onscreen experience may differ from what you see in this product. For example, the more advanced features and functionalities covered in this product may not be available in Office Online or may have updated from what you see in Office 2019.

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SAM and *MindTap* are interactive online platforms designed to transform students into Microsoft Office and Computer Concepts masters. Practice with simulated SAM Trainings and MindTap activities and actively apply the skills you learned live in Microsoft Word, Excel, PowerPoint, or Access. Become a more productive student and use these skills throughout your career.

If your instructor assigns SAM Projects:

1. Launch your SAM Project assignment from SAM or MindTap.
2. Click the links to download your **Instructions file**, **Start file**, and **Support files** (when available).
3. Open the Instructions file and follow the step-by-step instructions.
4. When you complete the project, upload your file to SAM or MindTap for immediate feedback.

To use SAM Textbook Projects:

1. Launch your SAM Project assignment from SAM or MindTap.
2. Click the links to download your **Start file** and **Support files** (when available).
3. Locate the module indicated in your book or eBook.
4. Read the module and complete the project.



Open the Start file you downloaded.



Save, close, and upload your completed project to receive immediate feedback.

IMPORTANT: To receive full credit for your Textbook Project, you must complete the activity using the Start file you downloaded from SAM or MindTap.

1 Creating a Worksheet and a Chart

Objectives

After completing this module, you will be able to:

- Start an app
- Identify the components of the Microsoft Office ribbon
- Describe the Excel worksheet
- Enter text and numbers
- Use the Sum button to sum a range of cells
- Enter a simple function
- Copy the contents of a cell to a range of cells using the fill handle
- Apply cell styles
- Format cells in a worksheet
- Create a pie chart
- Change a worksheet name and sheet tab color
- Change document properties
- Preview and print a worksheet
- Use the AutoCalculate area to display statistics
- Correct errors on a worksheet
- Use Microsoft Office Help

Introduction

Almost every organization collects vast amounts of data. Often, data is consolidated into a summary so that people in the organization better understand the meaning of the data. An Excel worksheet allows data to be summarized and charted easily. A **chart** is a graphic element that illustrates data. In this module, you will create a worksheet that includes a chart. The data in the worksheet and chart comprise a budget that contains monthly estimates for each income and expense category.

Project: Real Estate Budget Worksheet and Chart

The project in this module follows proper design guidelines and uses Excel to create the worksheet and chart shown in Figure 1–1a and Figure 1–1b. The worksheet contains budget data for Frangold Realty. Mrs. Frangold has compiled a list of her projected expenses and sources of income and wants to use this information to create an easy-to-read worksheet. In addition, she would like a pie chart to show her estimated monthly expenses by category.

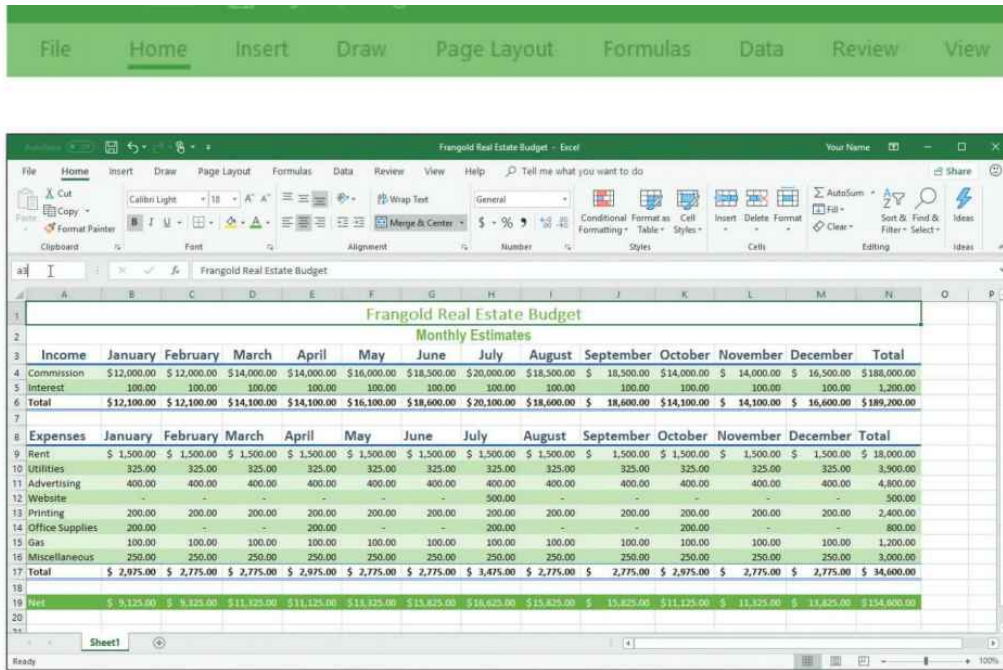


Figure 1-1(a) Real Estate Budget Worksheet

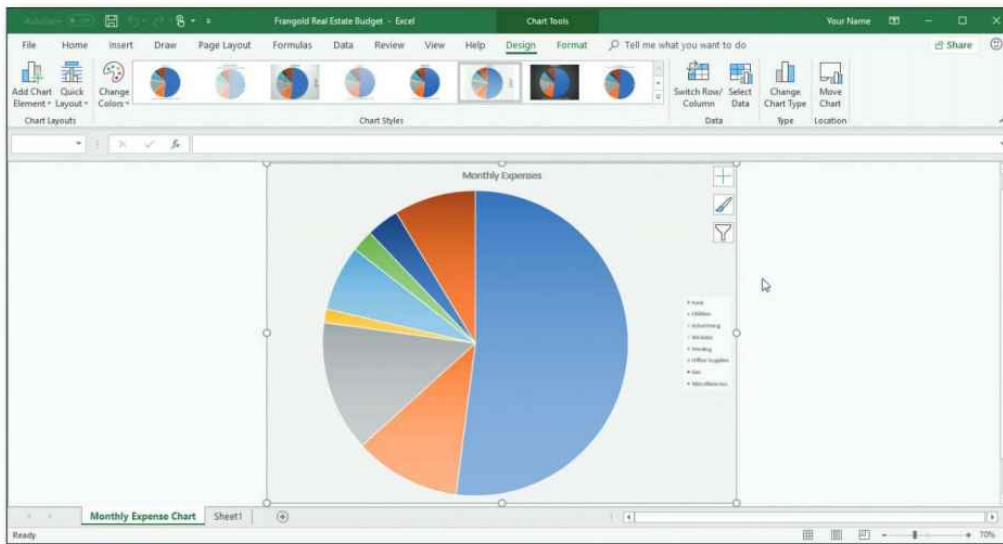
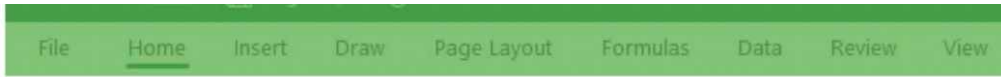


Figure 1-1(b) Pie Chart Showing Monthly Expenses by Category



The first step in creating an effective worksheet is to make sure you understand what is required. The person or persons requesting the worksheet may supply their requirements in a requirements document, or you can create one. A requirements document includes a needs statement, a source of data, a summary of calculations, and any other special requirements for the worksheet, such as charting and web support. Figure 1–2 shows the requirements document for the new workbook to be created in this module.

Worksheet Title	Frangold Real Estate Budget
Need	A yearly projection of Frangold Realty's budget
Source of data	Data supplied by Madelyn Frangold includes monthly estimates for income and expenses
Calculations	The following calculations must be made: 1. For each month, a total for income and expenses 2. For each budget item, a total for the item 3. For the year, total all income and expenses 4. Net income = Total income - Expenses

Figure 1-2

Why is it important to plan a worksheet?

The key to developing a useful worksheet is careful planning. Careful planning can reduce your effort significantly and result in a worksheet that is accurate, easy to read, flexible, and useful. When analyzing a problem and designing a worksheet solution, what steps should you follow?

1. Define the problem, including need, source of data, calculations, charting, and web or special requirements.
2. Design the worksheet.
3. Enter the data and formulas.
4. Test the worksheet.



CONSIDER THIS

After carefully reviewing the requirements document (Figure 1–2) and making the necessary decisions, the next step is to design a solution or draw a sketch of the worksheet based on the requirements, including titles, column and row headings, the location of data values, and the pie chart, as shown in Figure 1–3. The dollar signs and commas that you see in the sketch of the worksheet indicate formatted numeric values.

EX 1-3

EX 1-4 Excel Module 1 Creating a Worksheet and a Chart

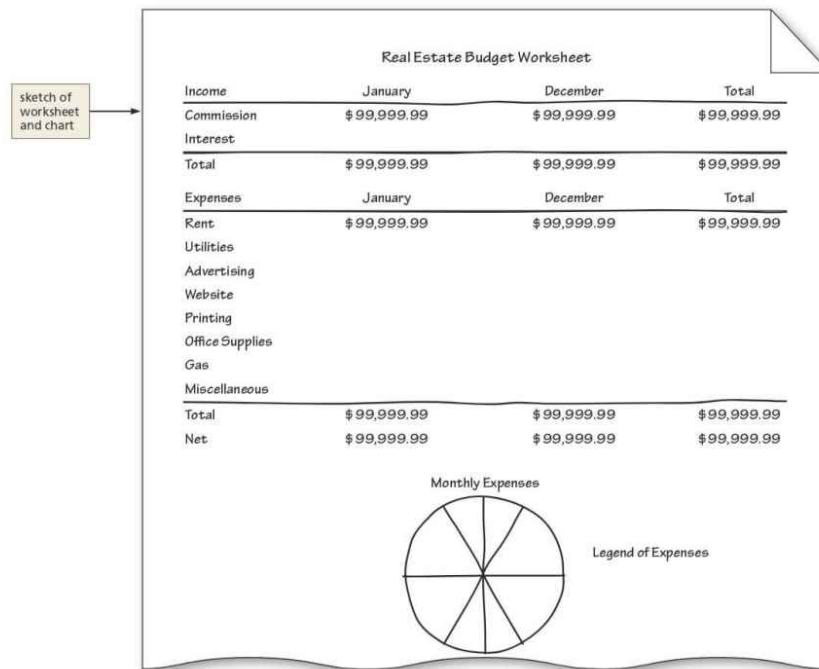


Figure 1-3

With a good understanding of the requirements document, an understanding of the necessary decisions, and a sketch of the worksheet, the next step is to use Excel to create the worksheet and chart.

Starting and Using Excel

What Is Excel?

Excel is a powerful spreadsheet app that allows users to organize data, complete calculations, make decisions, graph data, develop professional-looking reports, publish organized data to the web, and access real-time data from websites. The four major parts of Excel are as follows:

- **Workbooks and Worksheets:** A workbook is like a notebook. Inside the workbook are sheets, each of which is called a worksheet. A **worksheet** is a single sheet in a workbook file that lets you enter and manipulate data, perform calculations with data, and analyze data. Thus, a workbook is a collection of worksheets. Worksheets allow users to enter, calculate, manipulate, and analyze data, such as numbers and text. The terms “worksheet” and “spreadsheet” are interchangeable.
- **Charts:** Excel can draw a variety of charts, such as column charts and pie charts.
- **Tables:** Tables organize and store data within worksheets. For example, once a user enters data into a worksheet, an Excel table can sort the data, search for specific data, and select data that satisfies defined criteria.

- **Web Support:** Web support allows users to save Excel worksheets or parts of a worksheet in a format that a user can view in a browser, so that a user can view and manipulate the worksheet using a browser. Excel web support also provides access to real-time data, such as stock quotes, using web queries.

To Start Excel and Create a Blank Workbook

Across the bottom of the Windows desktop is the taskbar. The taskbar contains the **Start button**, a clickable button at in the lower left corner of the Windows 10 screen that you click to open the Start menu. The **Start menu** provides access to all programs, documents, and settings on the computer. The Start menu may contain one or more folders, and these folders can be used to group related apps together. A **folder** is an electronic container that helps you organize your computer files, like a cardboard folder on your desk; it can contain subfolders for organizing files into smaller groups.

The Start menu allows you to start programs, store and search for documents, customize the computer or mobile device, and sign out of a user account or shut down the computer or mobile device. A **menu** is a list of related items, including folders, programs, and commands. Each **command** on a menu performs a specific action, such as saving a file or obtaining help. *Why?* *Commands are one of the principal ways you communicate with an app so you can tell it what you want it to do.*

The following steps, which assume Windows is running, use the Start menu to start Excel and create a blank workbook based on a typical installation. You may need to ask your instructor how to start Excel on your computer.

1

- **san1** ↓ Click the Start button on the Windows taskbar to display the Start menu containing a list of apps installed on the computer or mobile device.
- If necessary, scroll to display Excel (Figure 1-4).

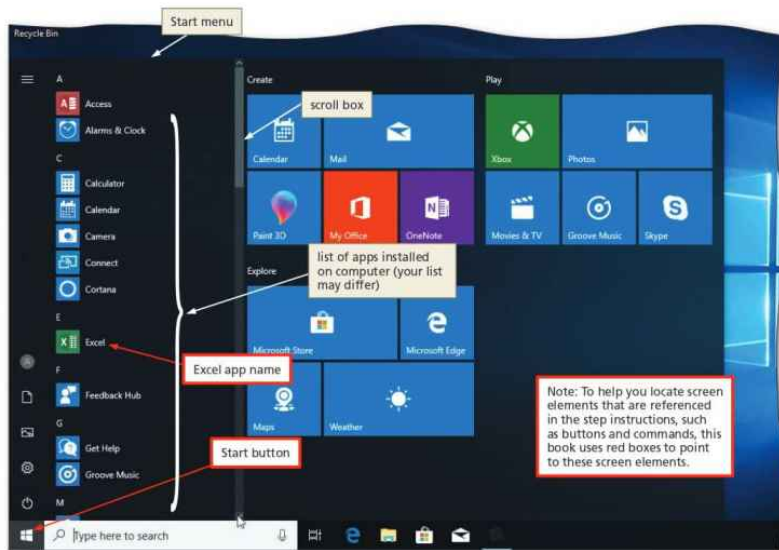


Figure 1-4

EX 1-6 Excel Module 1 Creating a Worksheet and a Chart

2

- Click Excel to start the app (Figure 1-5).

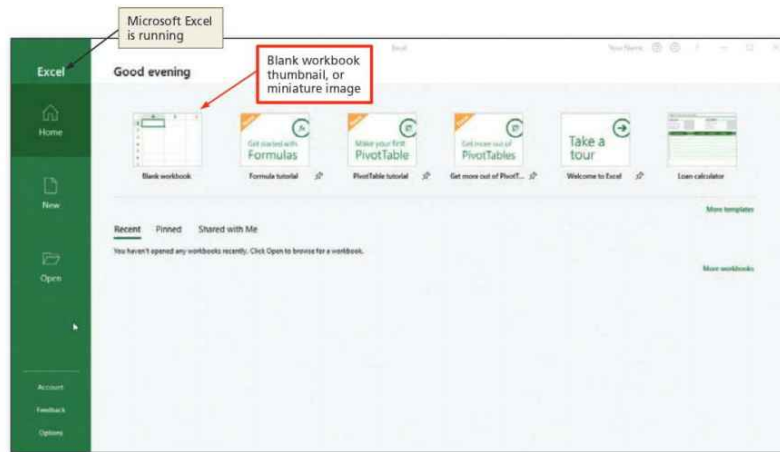


Figure 1-5

3

- Click the Blank workbook thumbnail on the Excel start screen to create a blank Excel workbook in the Excel window (Figure 1-6).

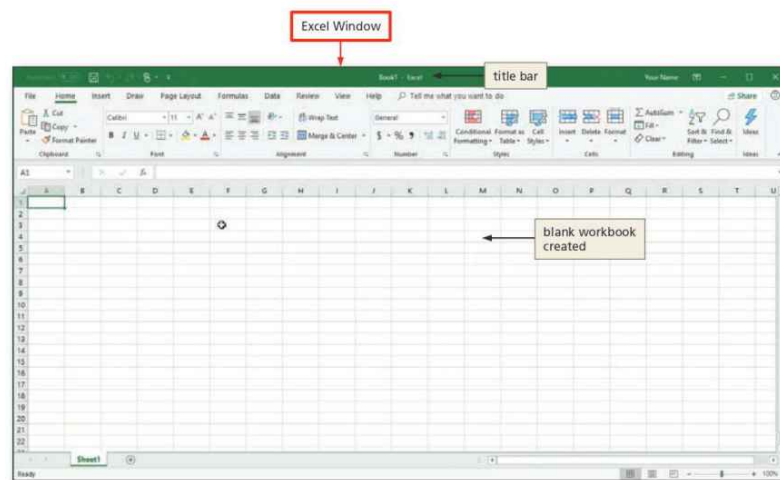


Figure 1-6

Q&A What happens when I start Excel? Excel provides a means for you to create a blank document, as shown in Figure 1-5. After you click the Blank workbook thumbnail, the Excel window shown in Figure 1-6 opens. A window is a rectangular-shaped work area that displays an app or a collection of files, folders, and Windows tools. A window has a title bar, an area at the top of a document window or app window that displays the file name and program name.

Other Ways

1. Type app name in search box, click app name in results list

2. Double-click file created in app you want to start

The Excel Window

The Excel window consists of a variety of components to make your work more efficient and worksheets more professional. These include the worksheet window, ribbon, Tell Me box, Quick Access Toolbar, and Microsoft Account area.

Excel opens a new workbook with one worksheet. If necessary, you can add additional worksheets. Each worksheet has a sheet name that appears on a **sheet tab**, an indicator at the bottom of the window that identifies a worksheet. For example, Sheet1 is the name of the active worksheet displayed in the blank workbook shown in Figure 1-7. You can add more sheets to the workbook by clicking the New sheet button.

Worksheet The worksheet is organized into a rectangular grid containing vertical columns and horizontal rows. A column letter in a box above the grid, also called the **column heading**, appears above each worksheet column to identify it. A row number in a box on the left side of a worksheet row, also called the **row heading**, identifies each row.

The intersection of each column and row is a cell. A **cell** is the box, formed by the intersection of a column and a row, where you enter data. Each worksheet in a workbook has 16,384 columns and 1,048,576 rows for a total of 17,179,869,184 cells. Only a small fraction of the active worksheet appears on the screen at one time.

A cell is referred to by its unique address, or **cell reference**, which is the column letter and row number location that identifies a cell within a worksheet, such as A1. To identify a cell, specify the column letter first, followed by the row number. For example, cell reference D5 refers to the cell located at the intersection of column D and row 5 (Figure 1-7).

One cell on the worksheet, designated the **active cell**, is the worksheet cell into which you are entering data. The active cell in Figure 1-7 is A1. The active cell is identified in three ways. First, a heavy border surrounds the cell; second, the active cell reference shows immediately above column A in the Name box; and third, the column heading A and row heading 1 are highlighted so that it is easy to see which cell is active (Figure 1-7).

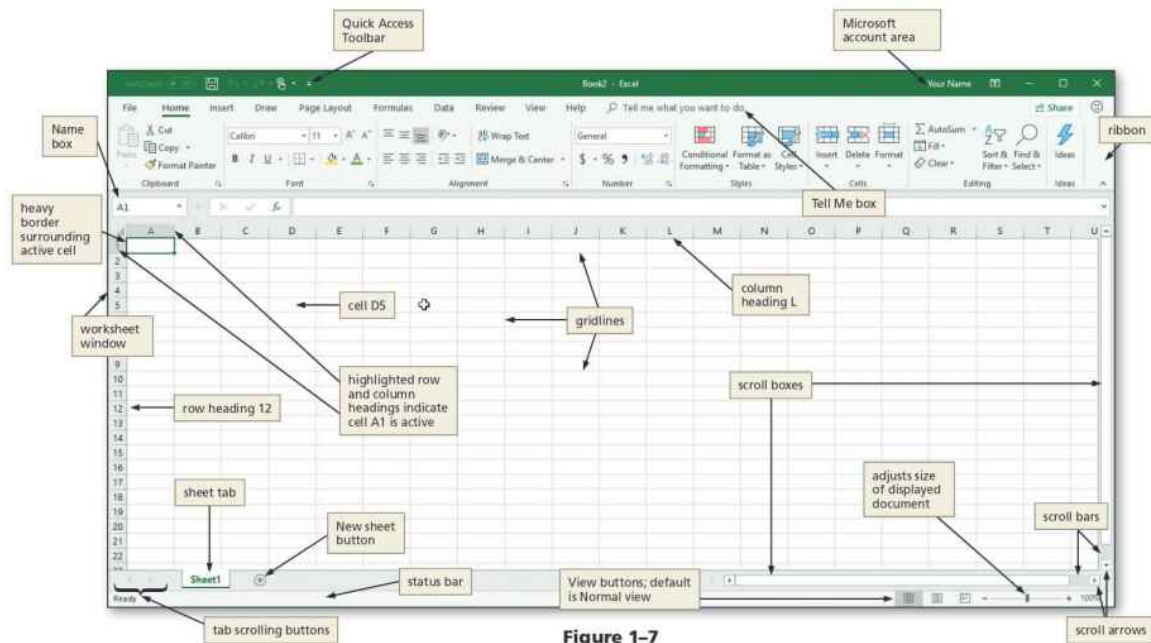


Figure 1-7

EX 1-8 Excel Module 1 Creating a Worksheet and a Chart

The evenly spaced horizontal and/or vertical lines used in a worksheet or chart are called **gridlines**. Gridlines make a worksheet easier to read. If desired, you can turn the gridlines off so that they do not show on the worksheet. While learning Excel, gridlines help you to understand the structure of the worksheet.

The pointer appears as a block plus sign whenever it is located in a cell on the worksheet. Another common shape of the pointer is the block arrow. The pointer turns into the block arrow when you move it outside the worksheet or when you drag cell contents between rows or columns.

Scroll Bars Scroll bars on the right edge (vertical scroll bar) and bottom edge (horizontal scroll bar) of a document window let you view a document that is too large to fit on the screen at once. You use a scroll bar to display different portions of a document in the document window. On a scroll bar, the position of the scroll box reflects the location of the portion of the document that is displayed in the document window.

Status Bar The status bar is the gray bar at the bottom of the Excel window that shows status information about the currently open worksheet, as well as view buttons and zoom controls. As you type text or perform certain tasks, various indicators and buttons may appear on the status bar. The right side of the status bar includes buttons and controls you can use to change the view of a document and adjust the size of the displayed document.

Ribbon The ribbon (shown in Figure 1-8) is a horizontal strip near the top of the window that contains tabs (pages) of grouped command buttons that you click to interact with the app. Each **tab** in the ribbon contains a group of related commands and settings. Each **group** is a tab element on the ribbon that contains related commands. When you start an Office app, such as Excel, it initially displays several main tabs, also called default or top-level tabs. All Office apps have a Home tab, which contains the more frequently used commands. When you start Excel, the ribbon displays ten main tabs: File, Home, Insert, Draw, Page Layout, Formulas, Data, Review, View, and Help. (If you are using a desktop computer, you might not see the Draw tab.)

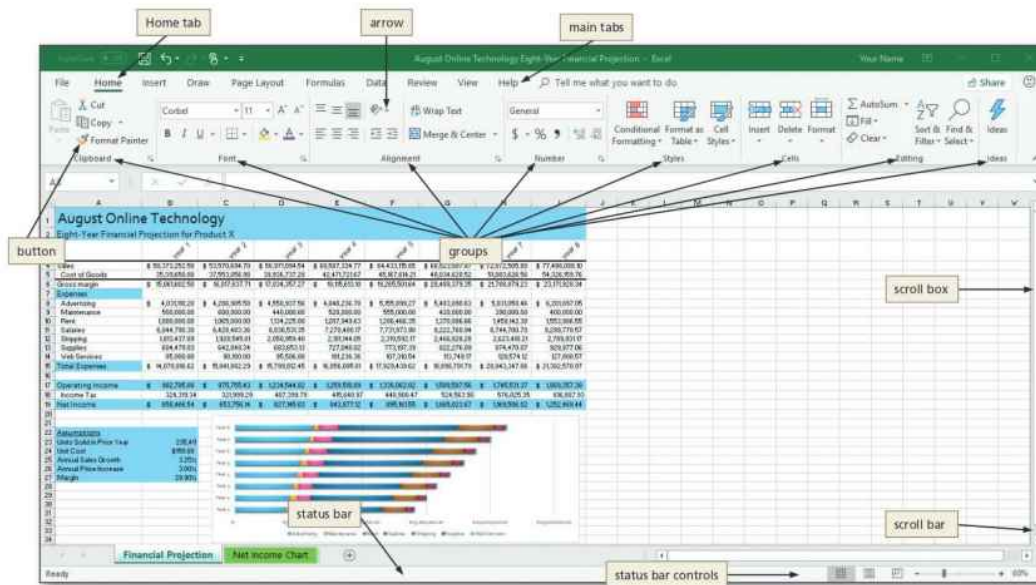


Figure 1-8

In addition to the main tabs, Excel displays **tool tabs**, also called **contextual tabs** (Figure 1-9), tabs that appear in addition to the main tabs on the ribbon when you perform certain tasks or work with objects, such as pictures or tables. If you insert a chart in an Excel workbook, for example, the Chart Tools tab and its related subordinate Design and Format tabs appear, collectively referred to as the Chart Tools Design tab or the Chart Tools Format tab. When you are finished working with the chart, the Chart Tools tabs disappear from the ribbon. Excel determines when tool tabs should appear and disappear based on tasks you perform.



Figure 1-9

Items on the ribbon include buttons and galleries (shown in Figures 1-8 and 1-9). A **gallery** is a collection of choices, arranged in a grid or list, that you can browse through before making a selection of items such as fonts. You can scroll through choices in a gallery by clicking its scroll arrows. Or, you can click a gallery's More button to view more gallery options on the screen at a time.

Some buttons and boxes have arrows that, when clicked, also display a gallery; others always cause a gallery to be displayed when clicked. Most galleries support **live preview**, an Office feature that shows the results that would occur in your file, such as the effects of formatting options on a document's appearance, if you clicked the option you are pointing to (Figure 1-10). Live preview works only if you are using a mouse; if you are using a touch screen, you will not be able to view live previews.

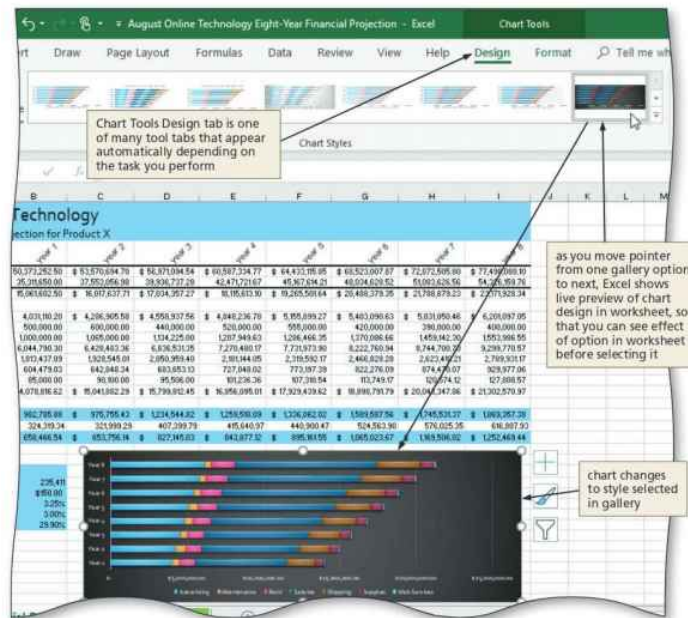


Figure 1-10

EX 1-10 Excel Module 1 Creating a Worksheet and a Chart

Some commands on the ribbon display an image to help you remember their function. When you point to a command on the ribbon, all or part of the command glows in a darker shade of gray, and a ScreenTip appears on the screen. A **ScreenTip** (Figure 1–11) is a label that appears when you point to a button or object, which may include the name, purpose, or keyboard shortcut for the object. It may also include a link to associated Help topics, if any.

Some groups on the ribbon have a small arrow in the lower-right corner, called a **Dialog Box Launcher**, that when clicked displays a dialog box or a pane with more options for the group (Figure 1–12). When presented with a dialog box, you make selections and must close the dialog box before returning to the document. A **pane**, in contrast to a dialog box, is a section of a window, such as the navigation pane in the File Explorer window, that can remain open and visible while you work in the document.

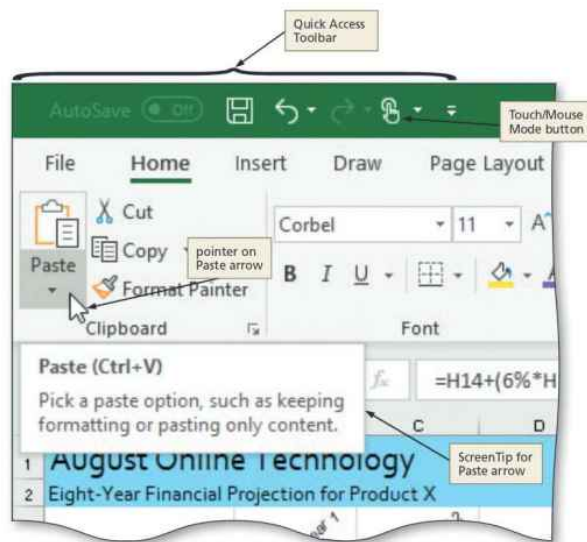


Figure 1-11

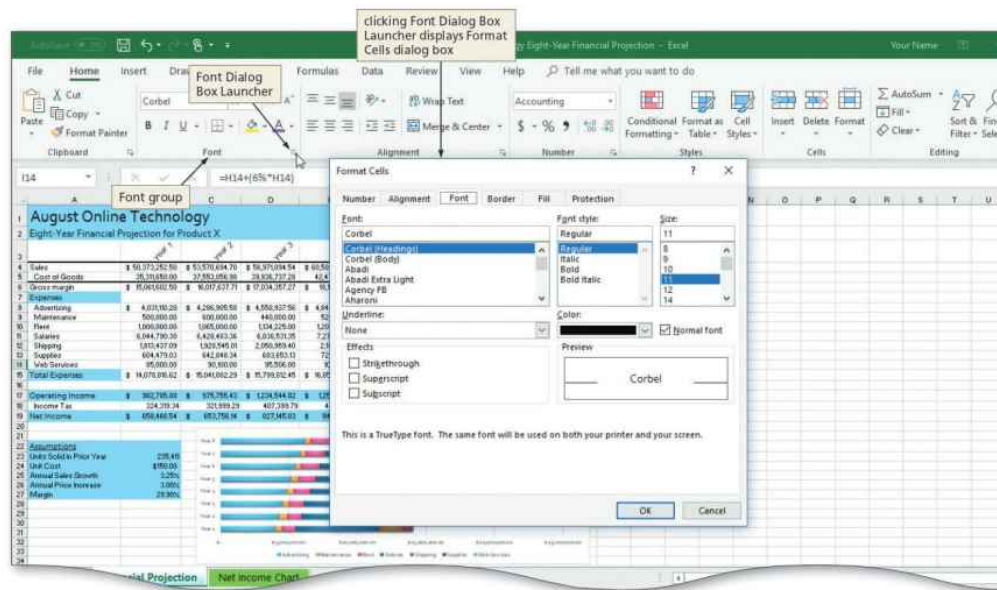


Figure 1-12

Mini Toolbar The **Mini toolbar** is a small toolbar that appears automatically next to selected text and that contains the most frequently used text formatting commands, such as bold, italic, font color, and font size

(Figure 1–13). If you do not use the Mini toolbar, it disappears from the screen. The buttons, arrows, and boxes on the Mini toolbar may vary, depending on whether you are using Touch mode versus Mouse mode. If you right-click an item in the document window, Excel displays both the Mini toolbar and a shortcut menu, which is discussed in a later section in this module.

All commands on the Mini toolbar also exist on the ribbon. The purpose of the Mini toolbar is to minimize hand or mouse movement.

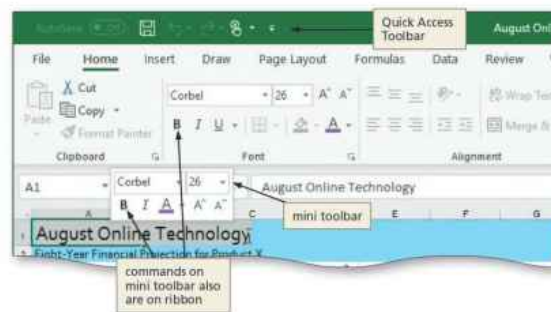


Figure 1–13

Quick Access Toolbar The **Quick**

Access Toolbar (shown in Figure 1–13) is a customizable toolbar at the left edge of the title bar that contains buttons you can click to perform frequently used commands. The commands on the Quick Access Toolbar always are available, regardless of the task you are performing. If your computer or mobile device has a touch screen, the Touch/Mouse Mode button will appear on the Quick Access Toolbar and will allow you to switch between Touch mode and Mouse mode. If you are primarily using touch gestures, Touch mode will add more space between commands on menus and on the ribbon so that they are easier to tap. While touch gestures are convenient ways to interact with Office apps, not all features are supported when you are using Touch mode. If you are using a mouse, Mouse mode will not add the extra space between buttons and commands. The Quick Access Toolbar is discussed in more depth later in the module.

KeyTips If you prefer using the keyboard instead of the mouse, you can display KeyTips for certain commands (Figure 1–14). **KeyTips** are labels that appear over each tab and command on the ribbon when the ALT key is pressed. To select a command using the keyboard, press the letter or number displayed in the KeyTip, which may cause additional KeyTips related to the selected command to appear. To remove KeyTips from the screen, press the ALT key or the ESC key until all KeyTips disappear, or click anywhere in the app window.

Formula Bar As you type, Excel displays your entry in the **formula bar**, the area above the worksheet grid where you enter or edit data in the active cell (Figure 1–14). You can make the formula bar larger by dragging the bottom of the formula bar or clicking the expand button to the right of the formula bar. Excel also displays cell information in the **Name box**, a box to the left of the formula bar that shows the cell reference or name of the active cell.

Tell Me Box The **Tell Me box** is a text box to the right of the ribbon tabs that is used to find a command or to access the Office Help system (Figure 1–14). As you type in the Tell Me box, Excel displays search results that are refined as you type. For example, if you want to center text in a document, you can type “center” in the Tell Me box and then select the appropriate command. The Tell Me box also lists related commands and/or the last five commands accessed from the box.

Microsoft Account Area In the **Microsoft Account area**, an area on the right side of the title bar, you can use the Sign in link to sign in to your Microsoft account (Figure 1–14). Once signed in, you will see your account information.



Figure 1–14

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To Display a Different Tab on the Ribbon

The ribbon tab currently displayed is called the **active tab**. The following step displays the Insert tab; that is, it makes it the active tab. *Why? When working with an Office app, you may need to switch tabs to access other options for working with a document.*

1

- Click Insert on the ribbon to display the Insert tab (Figure 1–15).

Experiment

- Click the other tabs on the ribbon to view their contents.
- Click the View tab, click the Page Layout tab, and then click the Insert tab again.

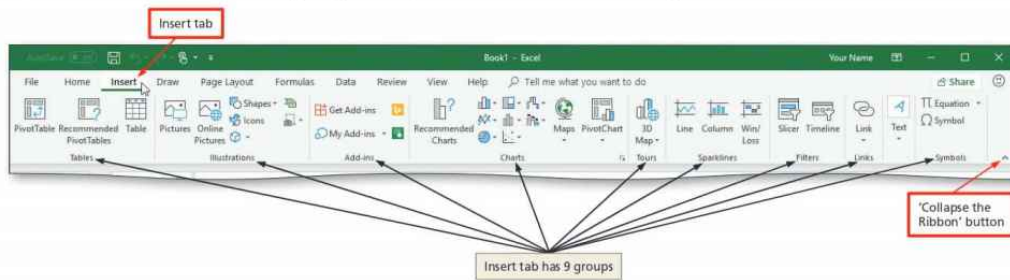


Figure 1–15

Other Ways

1. Press ALT, press letter corresponding to tab to display

BTW

Touch Mode Differences

The Office and Windows interfaces may vary if you are using touch mode. For this reason, you might notice that the function or appearance of your touch screen differs slightly from this module's presentation.

Selecting a Cell

To enter data into a cell, you first must select it. The easiest way to **select** a cell (to make it active) is to use the mouse to move the block plus sign pointer to the cell and then click.

An alternative method is to use the arrow keys that are located on a standard keyboard. An arrow key selects the cell adjacent to the active cell in the direction of the arrow on the key.

You know a cell is selected, or active, when a heavy border surrounds the cell and the active cell reference appears in the Name box on the left side of the formula bar. Excel also changes the color of the active cell's column and row headings to a darker shade.

Entering Text

In Excel, any set of characters containing a letter, hyphen (as in a telephone number), or space is considered **text**. Text is used for titles, such as column and row titles, on the worksheet.

Worksheet titles and subtitles should be as brief and meaningful as possible. A worksheet title could include the name of the organization, department, or a description of the content of the worksheet. A worksheet subtitle, if included, could