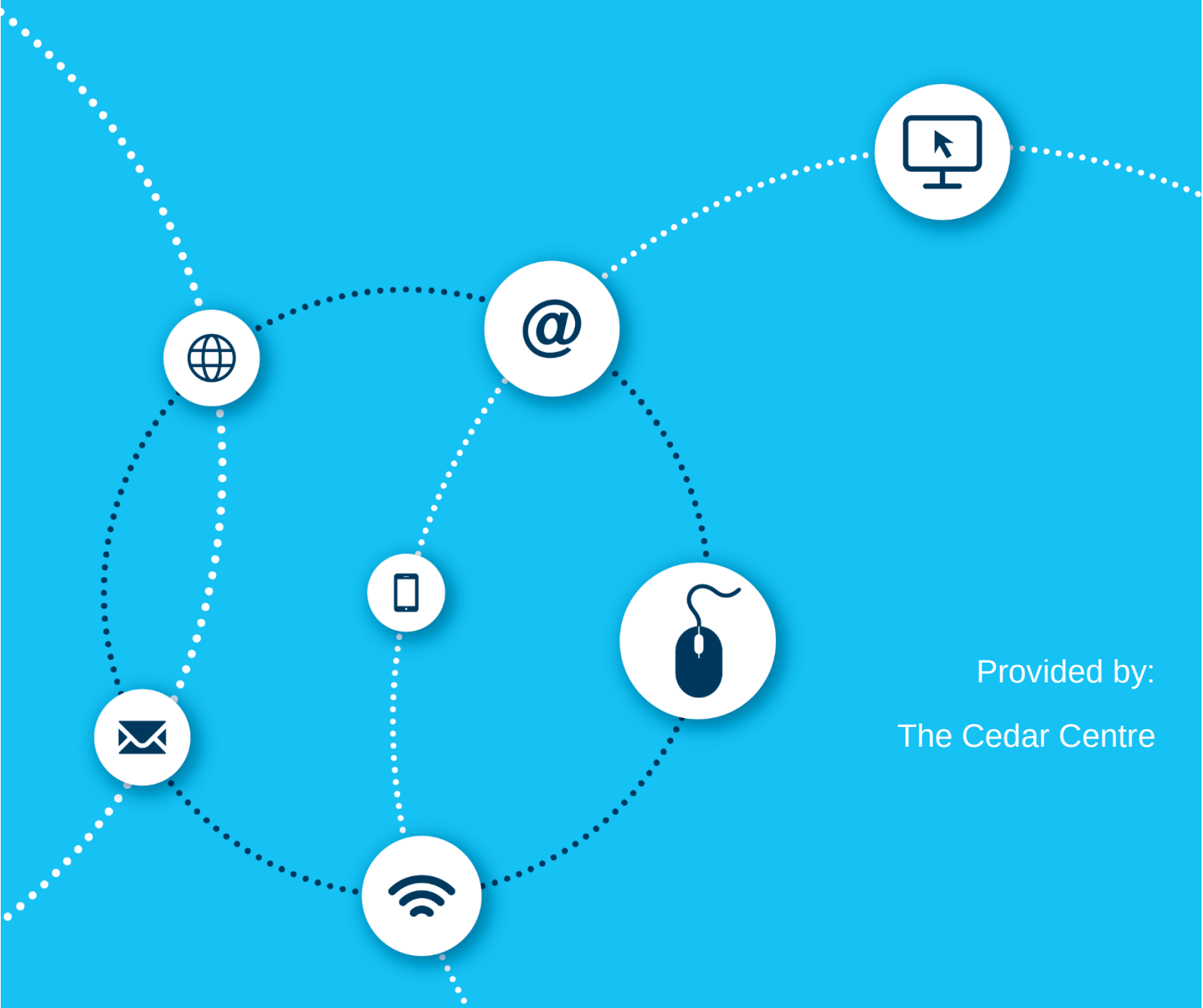
ICDL SPREADSHEETS

Syllabus 5.0
Learning Material (MS Excel 2013)



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ICDL Spreadsheets

Having the skills to operate and get the most from a spreadsheet application directly enhances your ability to manage numerical data and will positively impact on your job performance. This ICDL Spreadsheets module provides you with the tools to understand the concept of spreadsheets, and to demonstrate an ability to use a spreadsheet to produce accurate work outputs.

On completion of this module you will be able to:

- Work with spreadsheets and save them in different file formats.
- Choose built-in options, such as the Help function, within the application to enhance productivity.
- Enter data into cells; use good practice in creating lists.
- Select, sort and copy, move and delete data.
- Edit rows and columns in a worksheet.
- Copy, move, delete, and appropriately rename worksheets.
- Create mathematical and logical formulas using standard spreadsheet functions; use good practice in formula creation; recognise error values in formulas.
- Format numbers and text content in a spreadsheet.
- Choose, create, and format charts to communicate information meaningfully.
- Adjust spreadsheet page settings.
- Check and correct spreadsheet content before finally printing spreadsheets.

What are the benefits of this module?

This module gives you the skills to operate spreadsheet software, including the most common commercial and open-source offerings. Spreadsheets maintain an important role in business operations, and having the knowledge to utilise their functions, formulas and features is a necessary requirement for any worker. Once you have developed the skills and knowledge set out in this book, you will be in a position to become certified in an international standard in this area - ICDL Spreadsheets.

For details of the specific areas of the ICDL Spreadsheets syllabus covered in each section of this book, refer to the ICDL Spreadsheets syllabus map at the end of the book.

How to use this book

This book covers the entirety of the ICDL Spreadsheets course. It introduces important concepts and sets out the specific steps associated with using different features of the application. You will also have the opportunity to practice some of these activities yourself using sample files provided in the Student Folder. It is recommended that you do <u>not</u> save your changes to sample files, as you may want to practice an activity more than once.

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LESSON 1 -
EXPLORING MICROSOFT EXCEL 2013

In this section, you will learn about:

- Starting Excel
- The user interface
- Excel options
- Creating a workbook
- Opening a workbook
- Saving a new workbook
- Closing a workbook
- Working with worksheets
- Using the ribbon
- Hiding the ribbon
- Using magnification/zoom tools
- Exiting Excel

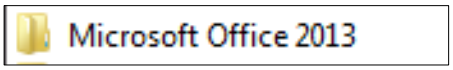
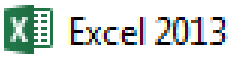
1.1 Starting Excel 2013

Concepts

Microsoft Excel is a spreadsheet application developed by Microsoft for Microsoft Windows and Mac OS X. It allows you to enter numerical values or data into the rows or columns of a spreadsheet, and use these numerical entries for calculations, graphs, and statistical analysis.

Steps

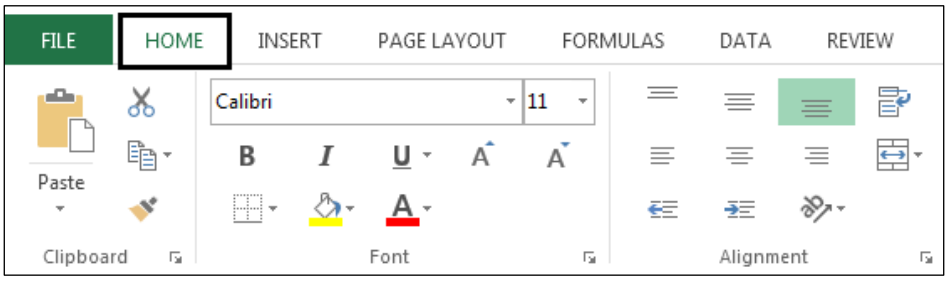
To start Microsoft Excel 2013:

1. Click **Start.** *The Start menu appears*.	
2. Point to **All Programs.** *The All Progams menu appears*.	
3. Click **Microsoft Office 2013.** *The Microsoft Office submenu appears*.	
4. Click **Microsoft Excel 2013.**	
5. Click **Blank workbook** and a new workbook opens.	

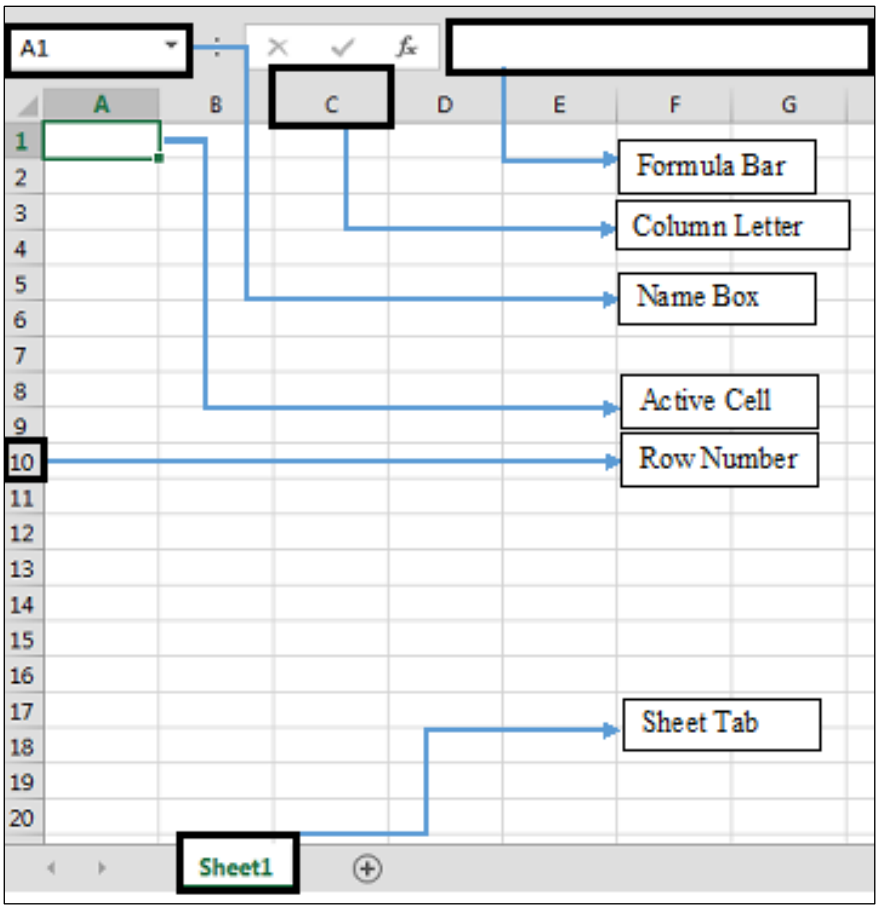
1.2 The User Interface

Concepts

The Microsoft Excel 2013 user interface uses ribbons and tabs just like its predecessor, Microsoft Office 2010. The user interface itself has been tweaked, with changes like blocky worksheet tabs and capitalised ribbon tab names – e.g., "HOME" instead of "Home." Now, you can share your files via e-mail or online. You can also export your file to create a PDF/XPS document.



HOME Tab



Excel Layout

Active Cell

In an Excel 2013 worksheet, an active cell is the cell with the black outline. Data is always entered into the active cell.

Column Letter

Columns run vertically on a worksheet and each column is identified by a letter in the column header.

Formula Bar

Located above the worksheet, this area displays the contents of the active cell. It can also be used for entering or editing data and formulas.

Name Box

Located left to the formula bar, the Name Box displays the cell reference or the name of the active cell.

Row Numbers

Rows run horizontally in a worksheet and are identified by a number in the row header. Together a column letter and a row number create a cell reference. Each cell in the worksheet can be identified by this combination of letters and numbers such as A1, F456, or AA34.

Sheet Tabs

By default there is one worksheet in an Excel file. The tab at the bottom of a worksheet tells you the name of the worksheet - such as Sheet1, Sheet2 etc.

Quick Access Toolbar

This customisable toolbar allows you to add frequently used commands. Click on the down arrow at the end of the toolbar to display the available options.

Application Button

Clicking on the Application Button displays a drop down menu containing a number of options, such as open, save, and print. The options in the Button menu are very similar to those found under the File menu in previous versions of Excel.

Ribbon

The Ribbon is the strip of buttons and icons located above the work area in Excel 2013. The Ribbon replaces the menus and toolbars found in earlier versions of Excel.

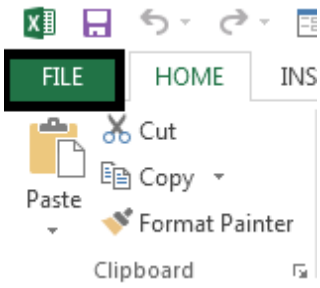
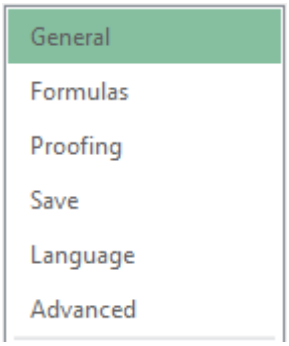
1.3 Excel Options

Concepts

Excel Options lets you change some of the basic option preferences in Excel 2013, such as the user name to be used for spreadsheets and the default folder from which to open and save spreadsheets.

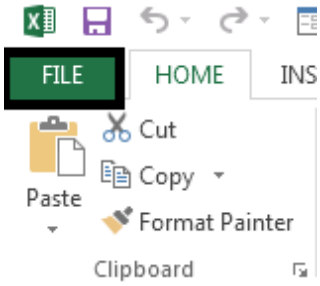
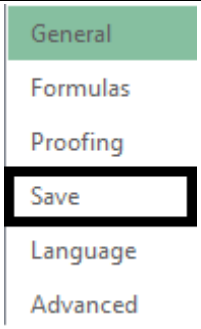
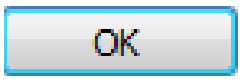
Steps

To enter a user name:

1. Click the **FILE** tab. *The Backstage view is displayed*.	
2. Select **Options**. *The Excel Options dialog box is displayed*.	
3. Select the **General** category from the left hand pane. *The options for the General category appear in the right-hand pane.*	
4. Enter a user name in the User name box and click **OK**. *The user name is entered.*	Click **OK**

Steps

To enter a default file location from which to open and save spreadsheets.

1. Click the **FILE** tab. *The Backstage view is displayed*.	
2. Select **Options**. *The Excel Options dialog box is displayed*.	
3. Select the **Save** category from the left hand pane. *The options for the save category appear in the right-hand pane.*	
4. Change the file path in the **Default file location** box**.** *The file location will be changed.*	Change the default location at the end of the file path from **\My Documents** to **\My Music**.
5. Click **OK.** *The Excel options dialog box closes and the options are applied.*	Click 

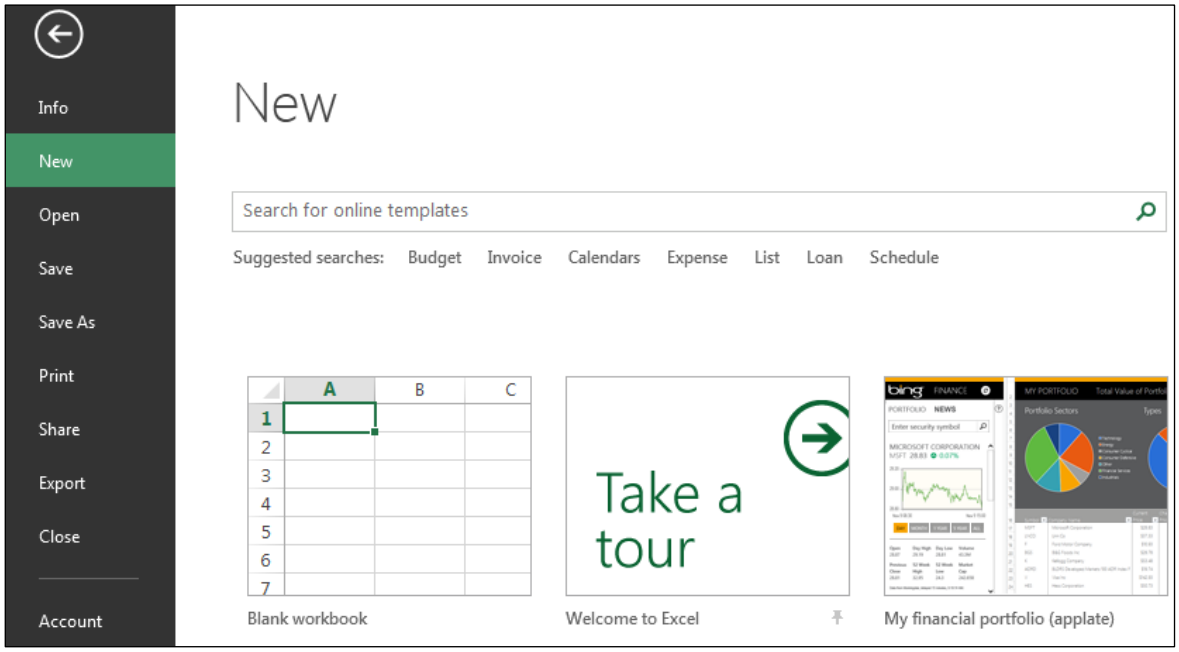
Save the file as **Practice Options.xlsx** and notice it in the **My Music** folder**.**

Practice the Concept: Change the Excel options back to having **My Documents** as the default location. Having done this delete the **Practice Options.xlsx** file from **My Music.**

1.4 Creating a Workbook

Concepts

A Microsoft Office Excel workbook is a file that contains one or more worksheets that you can use to organise various kinds of related information. You can create a new workbook by simply opening a blank one. You can also use templates on which to base the new workbook, such as the default template provided with Microsoft Excel or templates you have created.

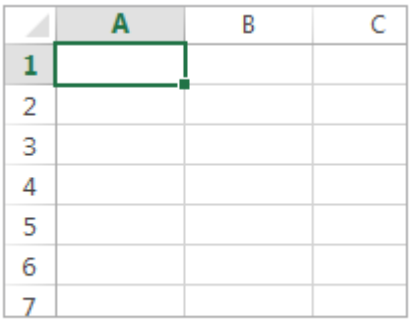


Creating a New Workbook

Steps

To create a new blank workbook:

1. Click the **FILE** tab. *The **Backstage View** is displayed.*	
2. Click **New.** *The pane on the right displays the available templates.*	Click

3. Click **Blank workbook.** *The Blank workbook template is opened.*	 Blank workbook

Close the new workbook without saving.

1.5 Opening a Workbook

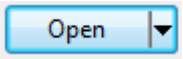
Concepts

You can open an existing workbook to work on in Excel instead of always starting with a blank workbook. The workbook may be on a storage device, cloud service or an online application.

Steps

Open an existing workbook from a specific drive and folder location. Open a blank workbook.

1. Click the **FILE** tab. *The **Backstage View** is displayed.*	
2. Click **Open.** *The Open dialog box is displayed.*	Click
3. Select the approriate drive that contains the **Student Folder**. Open the **Student Folder.** *The **Student Folder** will appear.*	Click **Student Folder**
4. Select **Annual Sales.xlsx.** *The Annual Sales workbook is selected.*	Click **Annual Sales.xlsx**

5. Click the **Open** button. *The Open dialog box closes and the Annual Sales workbook opens.*	Click 

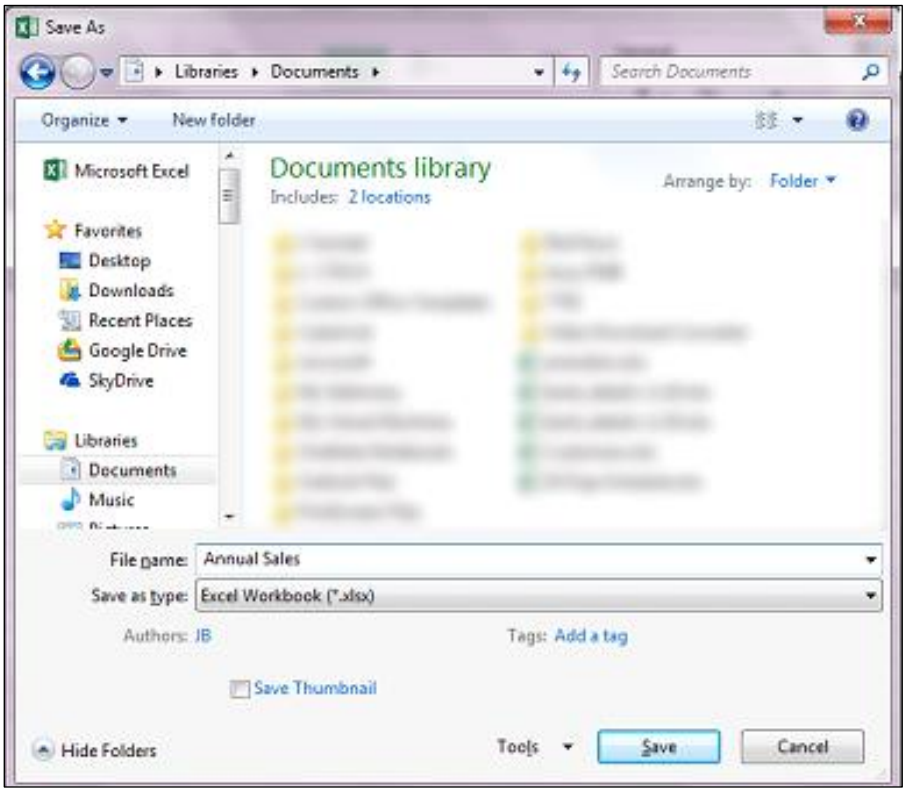
Close the **Annual Sales.xlsx** workbook without saving.

Quick Tip: When multiple workbooks are opened, use the **Switch Windows** option in the **VIEW** tab to navigate between the opened workbooks.

1.6 Saving a New Workbook

Concepts

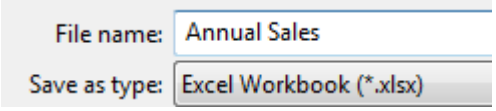
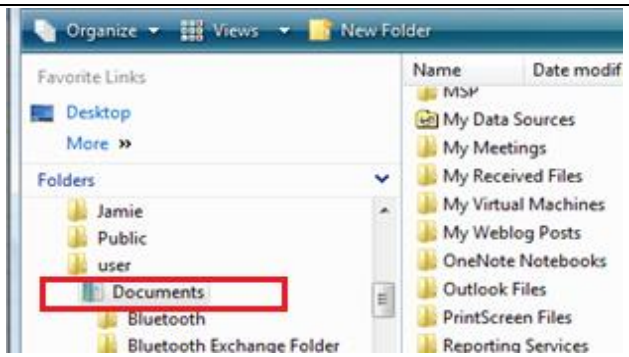
Whether using the desktop or web version of Excel, you save documents through the **FILE** tab, no matter where you wish to save the document to.



Select a Location to Save

Steps

To save a new workbook:

1. Open a new blank worksheet. *A blank worksheet is displayed.*	Open **Excel**
2. Click the **FILE** tab. *The backstage view will open.*	
3. Select the **Save** button. *The Save section will open.*	Click **Save**
4. Select a location for you to save the workbook to. *Enter a new file name and navigate to the location required.*	Click **Computer,** then **Browse.**
5. Type **Annual Sales** in the File name box. *The existing text is overwritten with the file name you specified.*	
6. Select **Documents** from the list of folders. *The Documents folder is selected.*	
7. Click the **Save** button. *The Save As dialog box closes and the file is saved to the Documents folder.*	Click

1.7 Closing a Workbook

Steps

To close a workbook:

1. Click the **FILE** tab. *The **Backstage View** is displayed.*	
2. Click **Close.** *The workbook closes.*	Click

If a message box opens, asking you if you want to save the workbook, click **Don't save**.

1.8 Working with Worksheets

Concepts

The tab at the bottom of a worksheet displays the name of the worksheet - such as Sheet1, Sheet2 etc. You can switch between worksheets by selecting the desired tab. You can add, rename, and move tab positions as shown in the steps below.

Excel Sheet Tab

Steps

To work with worksheets:

Open **Explore.xlsx**. Notice the worksheet tabs at bottom of the Excel window.

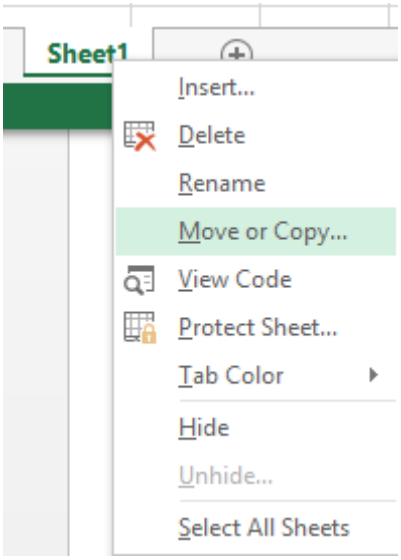
1. Click the **Expenses** sheet tab. *The Expenses sheet is displayed.*	

You can quickly insert a new worksheet by clicking on the button. Excel named these worksheets using a default name, so consider renaming your worksheets to reflect what they contain. To rename it, double-click on the existing sheet name (e.g. Sheet1) and type a new name.

Concepts

You can copy and move a worksheet within a spreadsheet by right-clicking the worksheet at the bottom of the workbook window, click **Move or Copy**, select the location to move the worksheet to, and clicking **OK**.

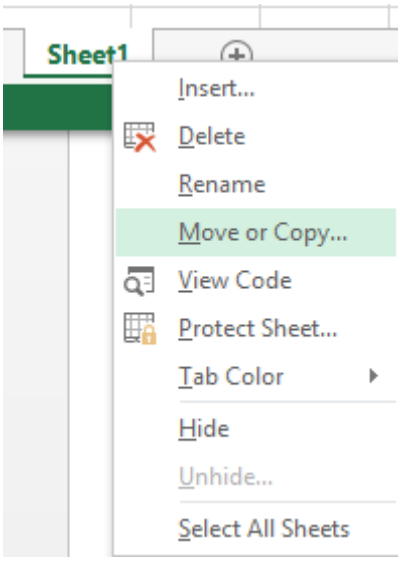
Steps

1. Select the worksheet tab at the bottom of the worksheet window. *The menu displays.*	Right-click the **Sales Data** tab at the bottom of the worksheet window.
2. Select **Move or Copy.** *The **Move or Copy** dialog box opens.*	Click **Move or Copy**. 
3. Select the location to copy the worksheet to.	Click **(move to end).**

4. Select the **Create a Copy** checkbox**.** *A new worksheet entitled **Sales Data (2)** appears.*	Click in the **Create a Copy** checkbox, and click **OK.**

To Move a worksheet within a spreadsheet

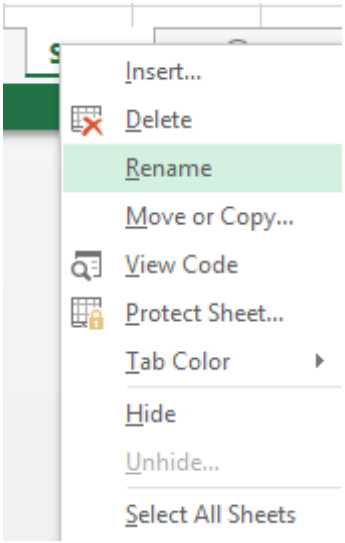
Steps

1. Select the worksheet tab at the bottom of the worksheet window. *The menu displays*	Right-click the **Sales Data (2)** tab at the bottom of the worksheet window.
2. Select **Move or Copy.** *The **Move or Copy** dialog box opens.*	Click **Move or Copy**. 
3. Select the location to move the worksheet to and click OK. **Sales Data (2)** appears before **Sales Data**.	Click **Sales Data** in the **Before sheet:** list**.**

Quick Tip: You can also move a worksheet within a workbook by clicking a sheet tab, holding the left mouse button, dragging the sheet to the desired location.

To rename a worksheet within a spreadsheet

Steps

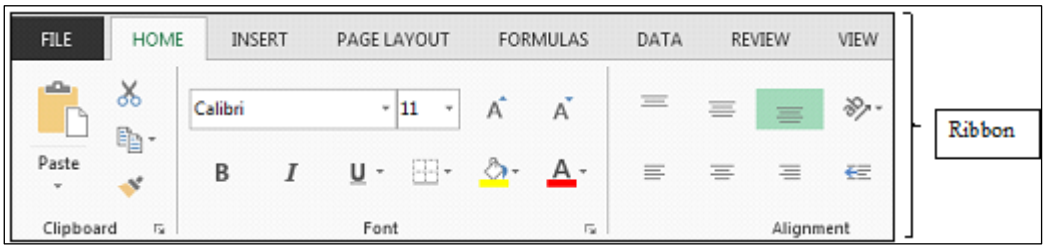
1. Select the worksheet tab at the bottom of the worksheet window. *The menu displays*	Right-click the **Sales Data (2)** tab at the bottom of the worksheet window.
2. Select **Rename.** *The worksheet name is highlighted.*	Click **Rename**. 
3. Enter the worksheet name into the highlighted worksheet tab. *The worksheet is renamed.*	Type **Copy of Sales Data**.

Quick Tip: You can quickly move to the next sheet or previous sheet in the workbook by pressing Ctrl+PgDn or Ctrl+PgUp respectively.

1.9 Using the Ribbon

Concepts

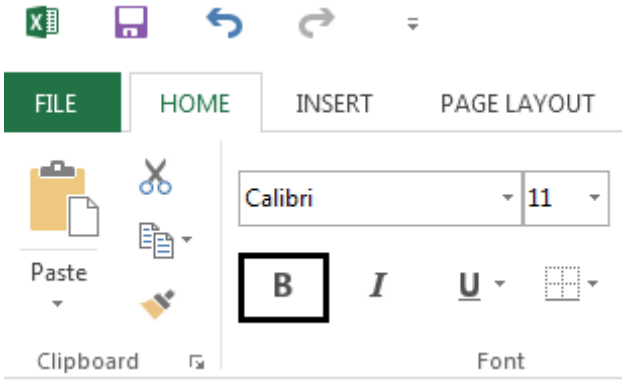
The Ribbon is designed to help you quickly find the commands that you need to complete a task. Commands are organised in logical groups, which are collected together under tabs. Each tab relates to a type of activity, such as writing or laying out a page. To reduce clutter, some tabs are shown only when needed. For example, the **Picture Tools** tab is shown only when a picture is selected.



Excel Ribbon

Steps

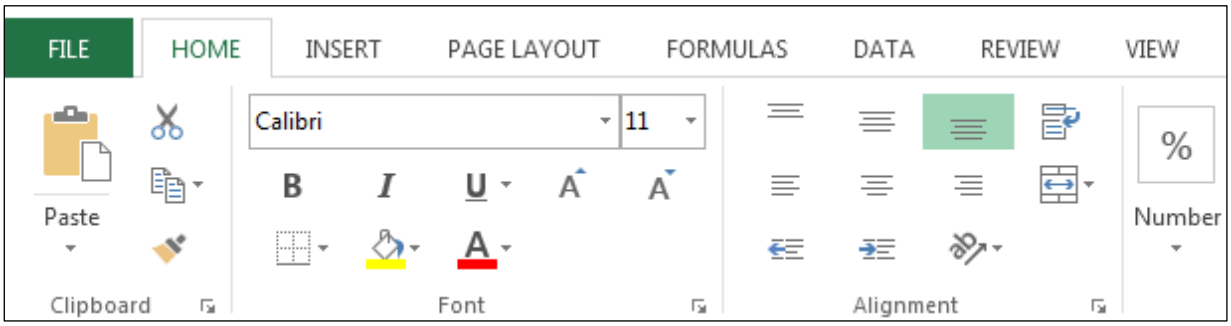
Using the ribbon to make the text bold:

1. Click the **HOME** tab. The Home ribbon is displayed.	Click HOME
2. Click **B** to make the text bold. The selected text is displayed in bold.	

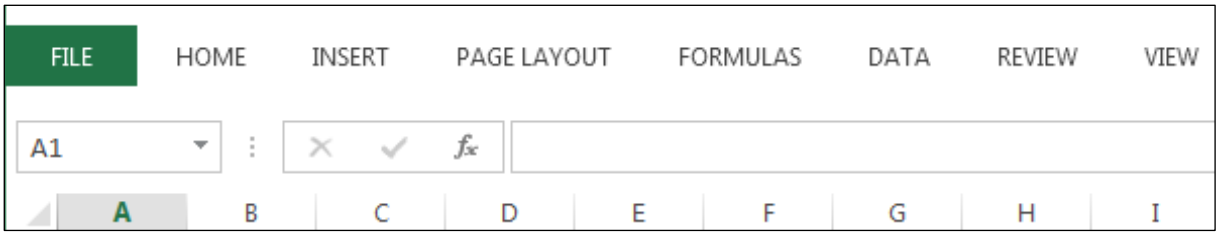
1.10 Hiding the Ribbon

Concepts

You can't delete or replace the Ribbon with the toolbars and menus from the earlier versions of Microsoft Office, although you can minimise it to allow for more on-screen space. When this option is in use, the ribbon reappears when you click on a tab, then disappears after you select a command or when you click anywhere in the worksheet.



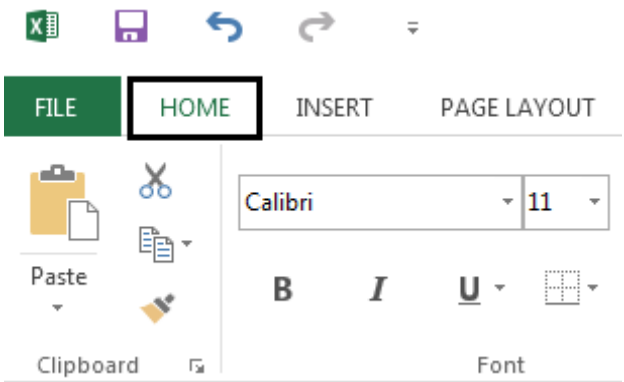
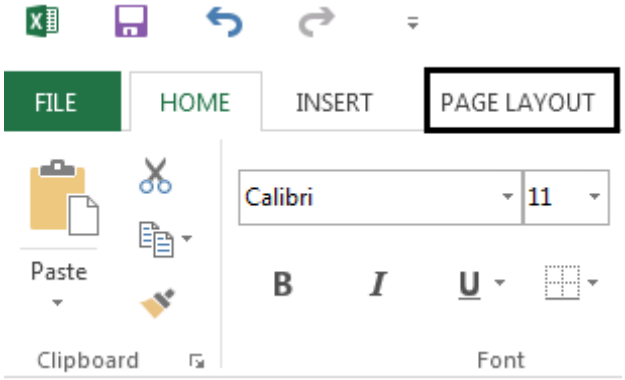
Full Ribbon

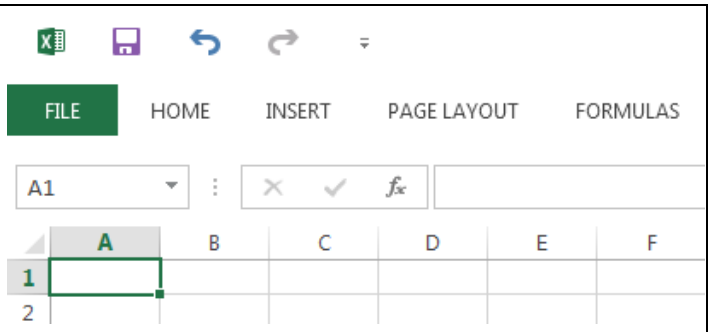
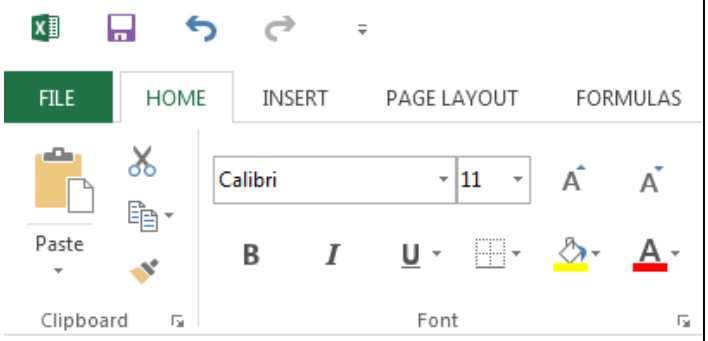


Minimised Ribbon

Steps

To hide the ribbon:

1. **Double-click** on the **currently selected tab**. *The ribbon is hidden temporarily.*	
2. Click on any tab. *The ribbon is displayed at the top of a few rows as an overlay.*	

3. Click any cell in the worksheet. *The ribbon is minimised.*	
4. Double-click on any tab. *The ribbon is permanently displayed once again.*	

1.11 Using Magnification/Zoom Tools

Concepts

You can use the magnification / zoom tools to display book depending on your needs.

Steps

1. On the **VIEW** tab in the **Zoom** group, select the **Zoom** button. *The Zoom dialog box appears.*	Click **Zoom**
2. Check the required magnification check-box or click the **Percent** box and enter the magnification required. *The options will allow you to set your preferred zoom measurement.*	Click the **75%** option
3. Apply the changes. *The zoom options will be applied.*	Click **OK**

1.12 Closing and Exiting Excel

Concepts

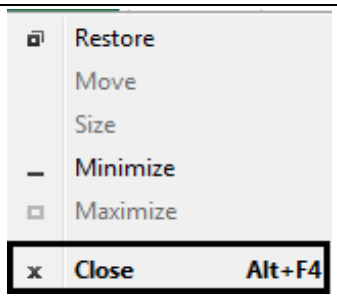
When you're ready to quit Excel, you have several choices for shutting down the program:

- Press Alt+F4.
- If you have only one workbook open, click the Close button (the X) in the upper-right corner of the Excel 2013 program window. If you have more than one workbook open, you need to close each workbook individually using this method.
- Double click the Excel Application icon in the top left corner of the Excel 2013 program window.

Be sure to save your changes before exiting the workbook you've been working on. If you attempt to leave the workbook without saving, an alert box appears in Excel warning you that your changes will not be saved. To save these changes before exiting click the Save button. If you don't want to save your changes click Don't Save.

Steps

To exit Excel:

1. Navigate your cursor to the upper-left hand corner of the Excel program and click on the Excel Application button. *The Backstage view is displayed.*	Click
2. Click **Close**. *If you have only one workbook open, the Excel program closes.*	

Select **Don't Save** if you are prompted to save any changes.

1.13 REVIEW EXERCISE

Explore Microsoft Excel 2013

1. Start Excel.
2. Click the **FILE** tab.
3. Open the Excel Options window.
4. Display the **VIEW** tab.
5. Minimise the **Ribbon.**
6. Maximise the **Ribbon**.
7. Exit **Excel** without saving changes to the workbook.

LESSON 2 -
GETTING HELP

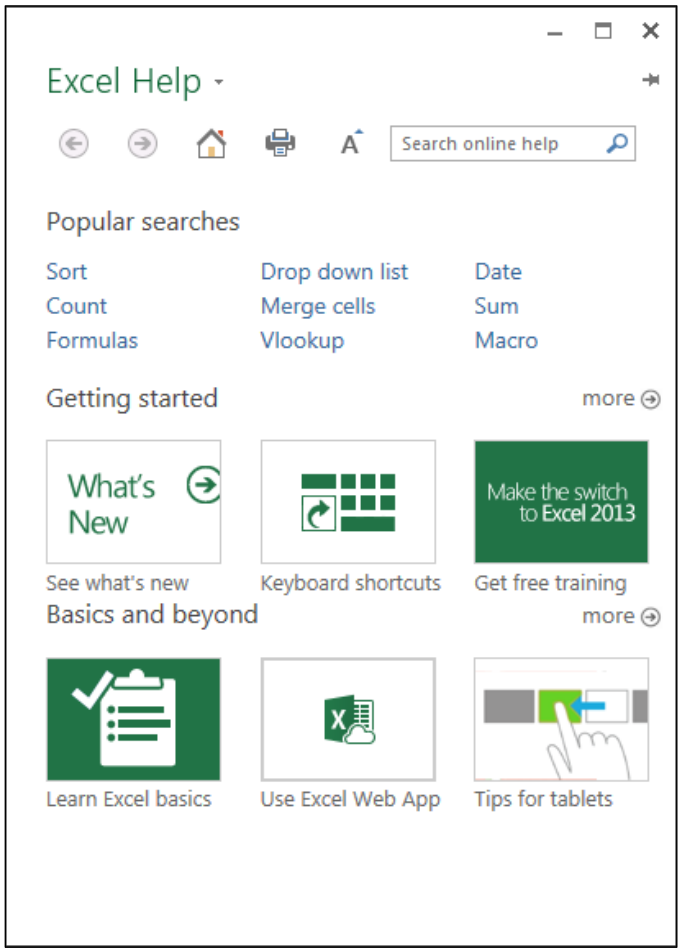
In this section, you will learn about:

- Using Microsoft Excel help and resources
- Working with Excel help
- Looking further for answers

2.1 Using Microsoft Excel Help and Resources

Steps

You can use Excel's extensive Help facility when you need assistance on any Excel topic or task. You can search online and offline versions of Excel Help to provide assistance and training, as well as answer your questions about other Office products if needed.



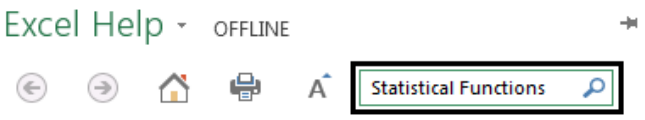
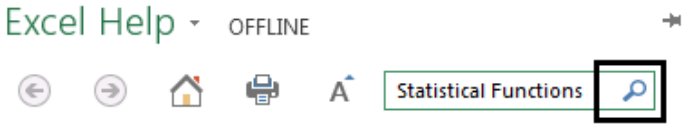
Excel Help Window

2.2 Working with Excel Help

Steps

To use the **Excel Help** window:

If necessary, open a new blank workbook.

1. Select the **Help** icon on the **Title Bar**. *The **Excel Help** window opens, displaying a number of topics. Online help will be displayed if the Help settings are set to **display Help from Office.com.***	Click the **?** icon
2. Type **Statistical Functions** into the **Search** box. *The text appears in the **Search** box.*	
3. Click the **Search** button. *The results display in the main pane of the window.*	
4. Select the desired search result. *The help topic opens in the same pane.*	Scroll if necessary, and click **Statistical Functions.**

Click the **Home** button. Then, close the **Excel Help** window.

2.3 Looking Further for Answers

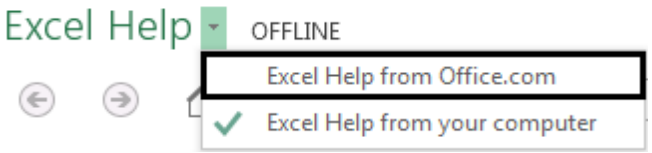
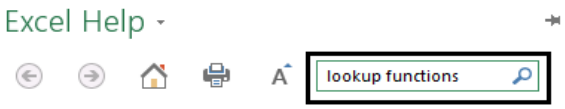
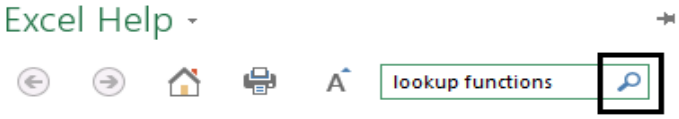
Concepts

You can look for further answers online if you are connected to Internet. You need to change the settings of Excel Help so that online help is displayed whenever you need assistance.

Steps

To use Online Excel Help:

If necessary, open a new blank workbook.

1. Select the **Help** icon on the **Title Bar**. *The **Excel Help** window opens, displaying a number of topics.*	Click the **?** icon
2. Select the arrow besides **Excel Help** list. *The Excel Help options are displayed.*	
3. Select **Excel Help from Office.com** *Online help settings will be applied for new search.*	
4. Type **Lookup Functions** into the **Search** box. *The text appears in the **Search** box.*	
5. Click the **Search** button. *The online help results are displayed in the main pane of the window.*	
6. Select the desired search result. *The help topic opens in the same pane.*	Scroll if necessary, and click **lookup functions.**

2.4 Review Exercise

Getting Help

1. Open Excel and select the **Help** icon.
2. Change the Help settings to display **Excel help from your computer**.
3. Clear the **Search Help** text box and search for **conditional formatting**.
4. Select the desired search result and view the information.
5. Change the Help settings to display **Excel help from Office.com**.
6. Navigate to the **Excel Help** Home page using the **Home** button.
7. Type ***Bar Chart*** in the **Search** box and select the desired result.
8. Close the Internet Explorer window, **Excel Help** and **Excel**.

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LESSON 3 -
BASIC WORKBOOK SKILLS

In this section, you will learn about:

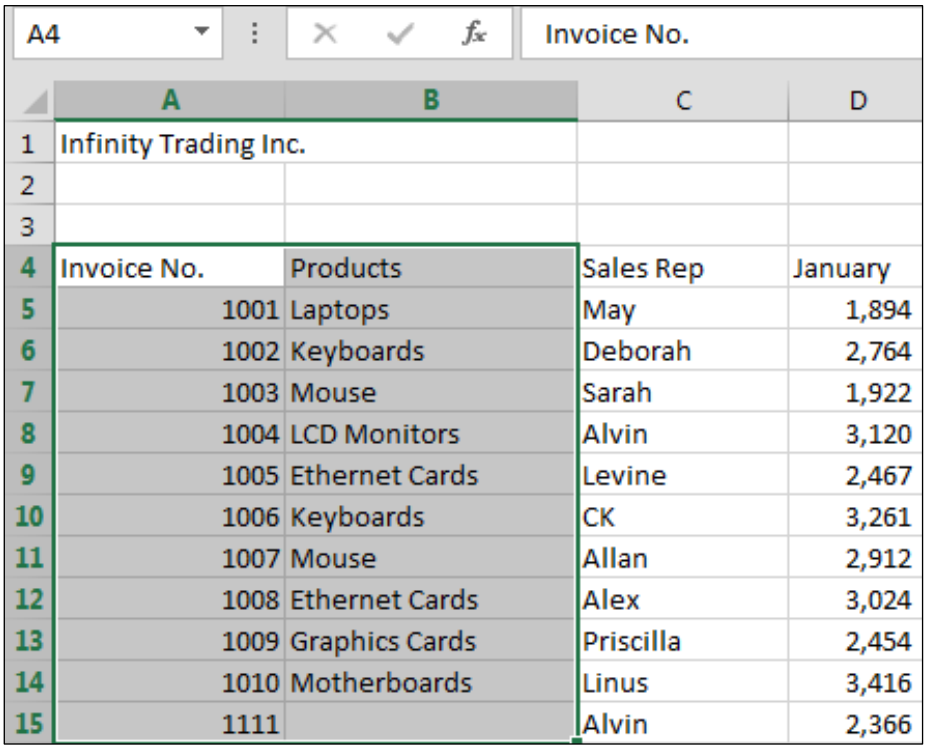
- Using the keyboard to select cells
- Using key tips
- Using the mouse to scroll
- Using the scroll bar shortcut menu
- Using go to
- Entering text
- Entering numbers
- Shortcuts for data entry
- Editing data
- Spell check
- Creating a new folder when saving
- Saving the workbook with another name
- Save a workbook as another file type

3.1 Using the Keyboard to Select Cells

Concepts

You can use the keyboard to select cells or a range of cells in the worksheet. This is done by clicking into the appropriate cell and using the arrow keys on the keyboard to move left, right, up, and down in the worksheet.

To select a rectangle area around the active cell, hold down the SHIFT key and press the arrow keys.



Selected Cells

Steps

To navigate using the keyboard:

Open **Navigation.xlsx.**

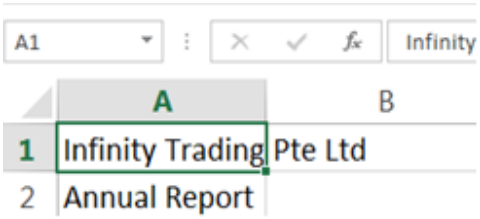
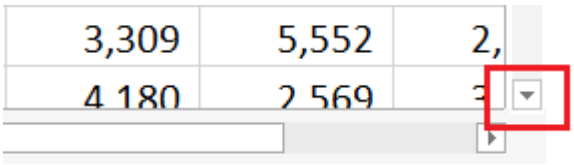
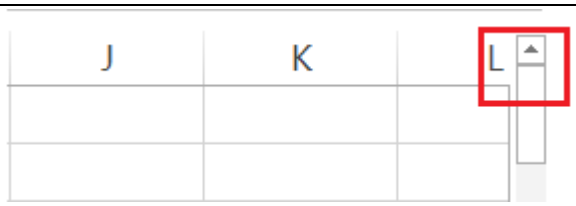
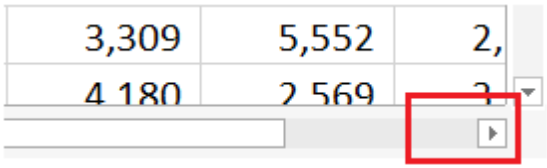
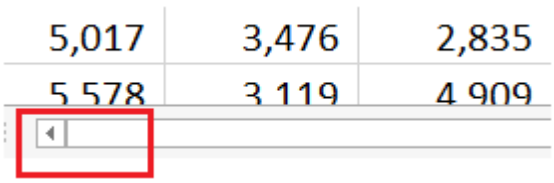
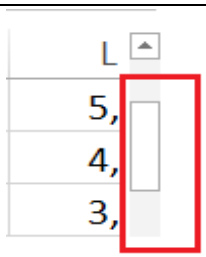
1. Press the **DOWN** arrow key to move one cell down. *The active cell moves one cell down.*	

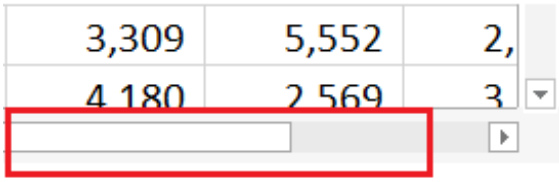
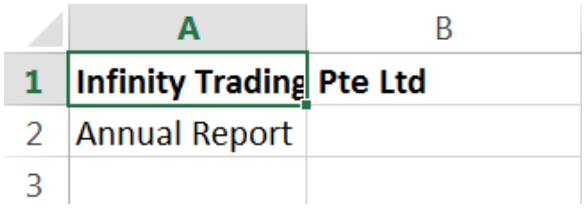
2. Press the **RIGHT** arrow key to move one cell to the right. *The active cell moves one cell to the right.*	
3. Press the **UP** arrow key to move one cell up. *The active cell moves one cell up.*	
4. Press the **LEFT** arrow key to move one cell to the left. *The active cell moves one cell to the left.*	
5. Press the **Page Down** key to move one screen down. *The active cell moves down one screen.*	Page Down
6. Press **Alt + Page Down** to move one screen to the right. *The active cell moves one screen to the right.*	Alt + Page Down
7. Press **Page UP** key to move one screen up. *The active cell moves up one screen.*	Page Up
8. Press **Alt + Page Up** to move one screen to the left. *The active cell moves one screen to the left.*	Alt + Page Up
9. Press **Ctrl + Home** to move to the first cell in the worksheet. *The active cell moves to the first cell in the worksheet.*	Ctrl + Home

3.2 Using the Mouse to Scroll

Steps

To navigate through the worksheet using the mouse, open **Selection.xls**:

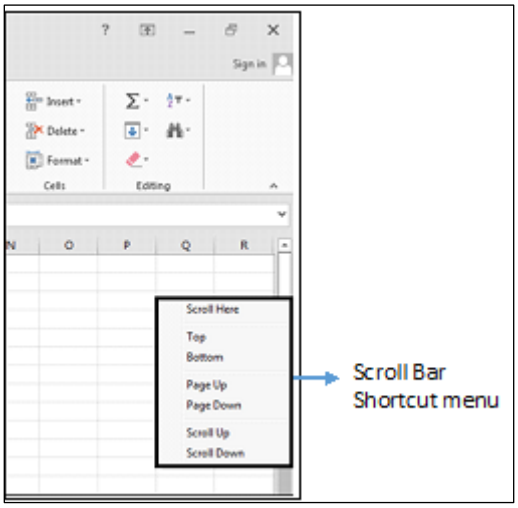
1. Click cell **A1** *The **Active Cell** moves to the first cell in the worksheet.*	
2. Click the **Scroll Arrow** at the bottom of the vertical scrollbar 5 times *The display scrolls down 5 rows but the Active Cell remains unchanged.*	
3. Click the **Scroll Arrow** at the top of the vertical scrollbar 5 times *The display scrolls up 5 rows. The Active Cell remains unchanged.*	
4. Click the **Scroll Arrow** at the right end of the horizontal scrollbar 5 times *The display scrolls 5 columns to the right. The Active Cell remains unchanged.*	
5. Click the **Scroll Arrow** at the left end of the horizontal scrollbar 5 times *The display scrolls 5 columns to the left. The Active Cell remains unchanged.*	
6. Drag the vertical **Scroll Box** all the way **down**. *The display scrolls within the utilised area of the worksheet (down to row 101).*	

7. Drag the horizontal **Scroll Box** all the way to the **right**. *The display scroll within the utilised area of the worksheet (up to column O).*	
8. Hold down the **[Shift]** key and then drag the horizontal scroll bar to the right. *The display scrolls beyond the utilised area of the worksheet.*	
9. Press **[Ctrl + Home]** to move the active cell back the first cell in the worksheet. *The Active Cell moves to cell A1.*	

3.3 Using the Scroll Bar Shortcut Menu

Concepts

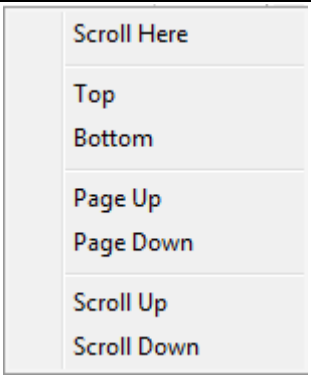
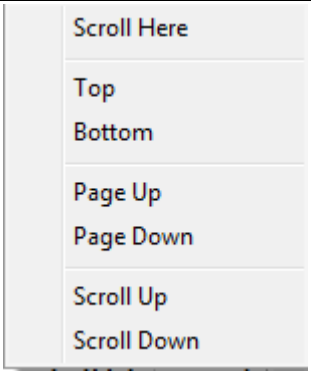
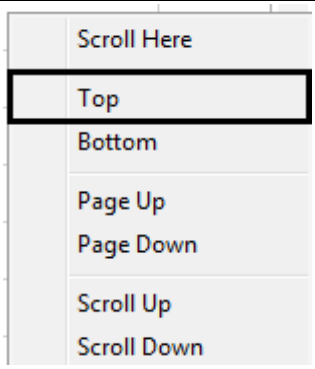
When you right-click on the vertical or horizontal scroll bars, a menu appears to let you quickly scroll through the worksheet. You can use the menu to scroll to the top, bottom, left edge, right edge, one page up, one page down, one page left or one page right within the worksheet. You can right-click anywhere on the scroll bars and make the sheet scroll to the selected location.



Steps

To use the Scroll Bar shortcut menu to scroll through the worksheet:

If needed, select cell **A1**.

1. Right-click on the mid-point of the vertical scroll bar. *A shortcut menu is displayed.*	
2. Click **Scroll Here**. *The shortcut menu disappears and the worksheet scrolls to the position specified.*	
3. Right-click anywhere on the vertical scroll bar. *A shortcut menu is displayed.*	
4. Select **Top**. *The worksheet scrolls to the top of the worksheet.*	

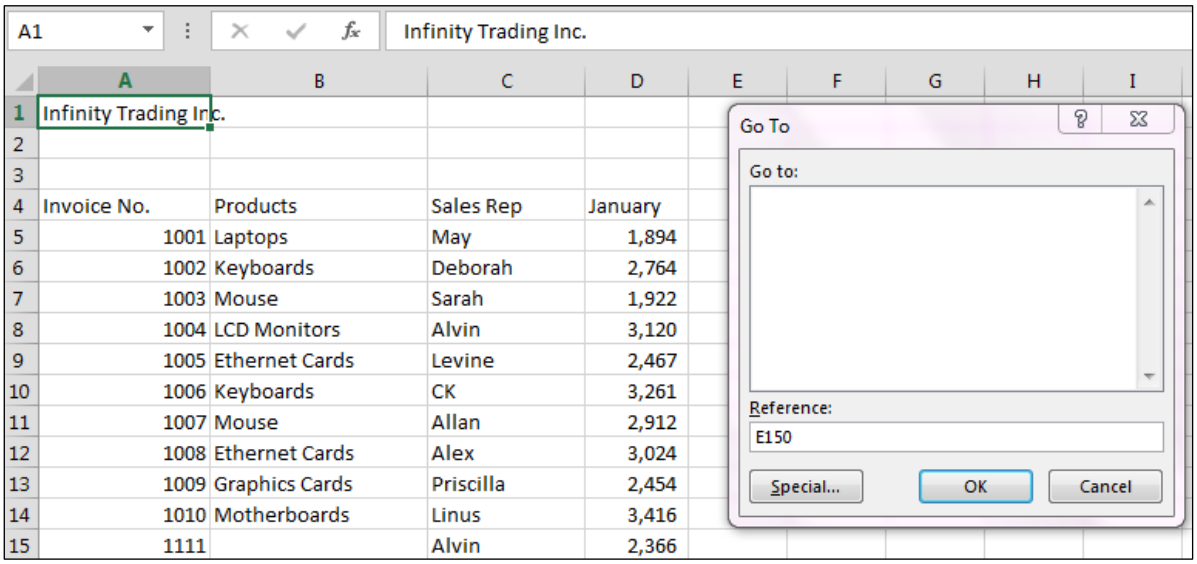
5. Right mouse click anywhere on the vertical scroll bar. *A shortcut menu is displayed.*	
6. Select **Page Down**. *The worksheet scrolls one page down.*	

Practice the Concept: Right-click in the horizontal scroll bar and select the **Left Edge** command. Notice that the worksheet scrolls to display column **A**. Right-click in the vertical scroll bar and select the Top command. Notice that the worksheet scrolls to display row **1**.

3.4 Using Go To

Concepts

You can use the **Go To** command to find and select cells or select cells that contain specific data or types of data such as formulas, blank cells or cells that contain data validation.

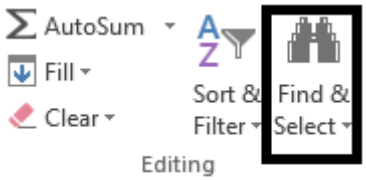


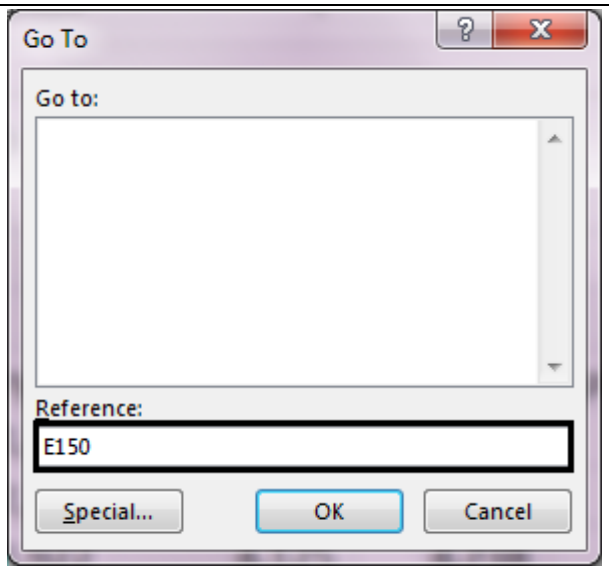
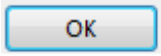
Go To Window

Steps

To use **Go To** to navigate to a specific cell in the worksheet:

If necessary, select cell A1.

1. Select the **HOME** tab. *The **HOME** tab is displayed.*	Click
2. Select **Find & Select** in the **Editing** group. *The menu appears below.*	 Click
3. Select **Go To…** *The Go To dialog box appears.*	Click **Go To…**

4. Type the cell reference **E150** in the Reference box. *The cell reference is entered in the Reference box.*	
5. Click **OK.** *The **Go To** dialog box closes and the active cell moves to cell E150.*	Click 

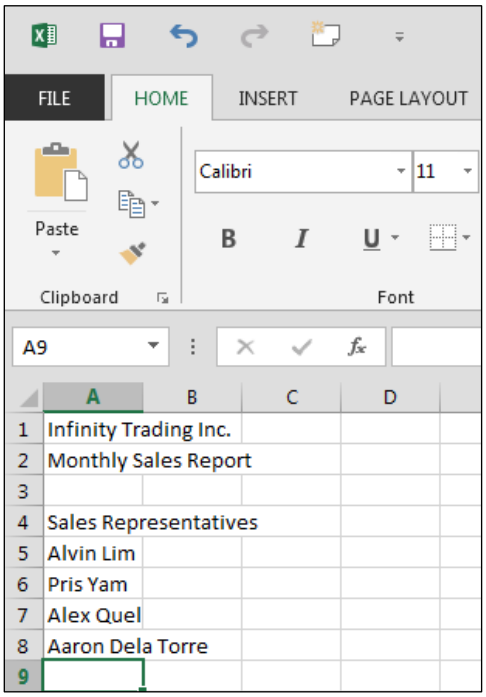
Practice the Concept: Open the **Go To** dialog box by pressing **[F5]** and go to cell **AZ25**. Then use **[Ctrl+G]** to open the **Go To** dialog box and go to cell **A1**.

3.5 Entering Text

Concepts

You can enter text into cells by selecting the cell and then typing the text directly in the cell or in the formula bar. Unless formatted differently, the text is aligned to the left. If the length of the entered text is too long to fit in the cell, it will spill over to the adjacent cell if it is empty.

It is important to understand that a cell in a worksheet should only contain one element, or type, of data: For example, first name details in one cell and surname details in an adjacent cell.

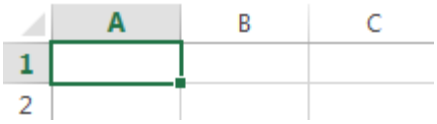
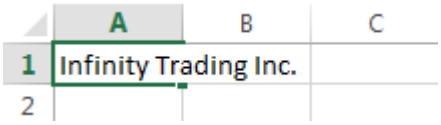
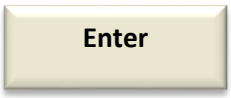


Text in Cells

Steps

To enter text into a worksheet:

If necessary, open a new blank workbook.

1. Click cell **A1.** *Cell A1 becomes the **Active Cell.***	
2. Type the **Infinity Trading Inc.** *The text appears in cell A1 and in the formula bar.*	
3. Press the **Enter** key on your keyboard. *The **Active Cell** moves one cell down.*	

Continue by filling in data as shown below:

	A	B	C
1	Infinity Trading Inc.		
2	Monthly Sales Report		
3			
4	Sales Representatives		
5	Alvin Lim		
6	Pris Yam		
7	Alex Quek		
8	Aaron Dela Torre		

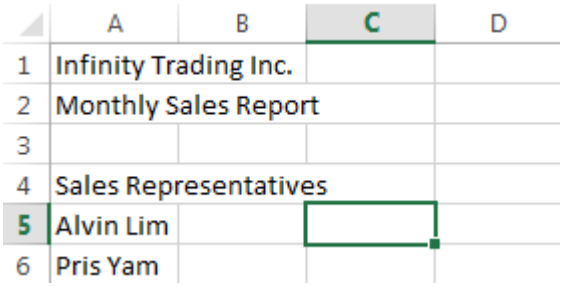
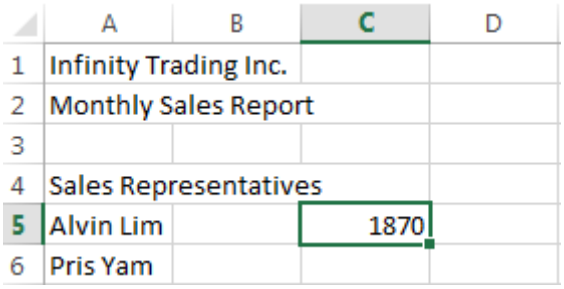
Notice that the text **Infinity Trading Inc**. spreads across cells A1 to B1. Click cell A1. The **Formula Bar** shows that all the text is in cell A1. Click cell B1, notice the **Formula Bar** shows that this cell is empty. Since there is no text in cell B1, the text in cell A1 uses the space in cell B1 to display the text.

You can also edit a cell that already has content in it by selecting the appropriate cell and modifying, or deleting the cell contents.

3.6 Entering Numbers

Steps

To enter numbers into cell in the worksheet.

1. Click cell **C5.** *Cell C5 becomes the **Active Cell.***	
2. Type **1870** in the cell. *The number is displayed in the cell and in the **Formula Bar.***	

3. Press the **Enter** key on your keyboard. *The **Active Cell** moves one cell down.*	

Continue by filling in data as shown below:

	A	B	C	D
1	Infinity Trading Inc.			
2	Monthly Sales Report			
3				
4	Sales Representatives			
5	Alvin Lim		1870	
6	Pris Yam		2360	
7	Alex Quek		3890	
8	Aaron Dela Torre			

3.7 Shortcuts for Data Entry

Concepts

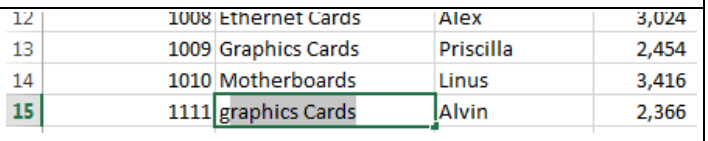
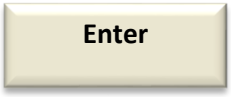
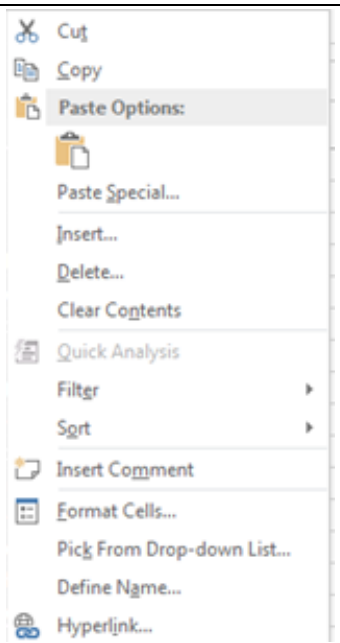
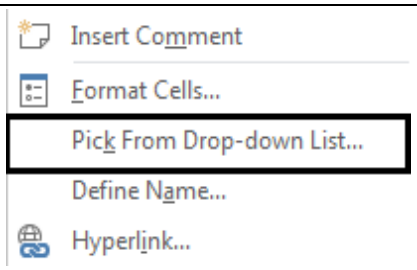
When you have to enter repetitive text in a column, there are a few ways you can avoid having to type the text over and over again. When you type the first few characters of text that match previously entered text in the same column, Microsoft Excel will complete the entry for you.

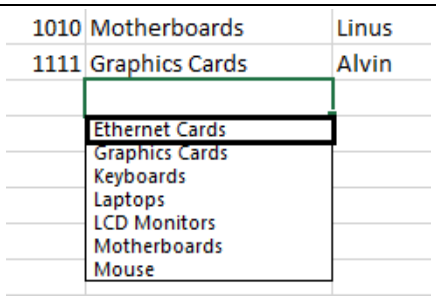
This feature only works with text or a combination of text and numbers. Numbers and dates will not be automatically completed. Another feature that helps you with data entry is **Pick from Drop-down** list. This feature allows you to select the data you want to enter from a list of previously entered data.

Steps

To use data entry shortcuts to repeat an entry in a column:

Open **Navigation.xlsx** from the Student Data Folder.

1. Select cell **B15.** *The Active Cell moves to cell B15.*	Select cell **B15.**
2. Begin by typing the letter **G** in the cell. *Notice that the text Graphics Cards appears in the cell.*	
3. Press **Enter** on your keyboard. *The active cell moves to the next row and the completed text is entered in cell B15.*	
4. Right mouse click on cell **B16**. *A menu of options is displayed.*	
5. Select **Pick From Drop-down List**. *A list of previously entered data is displayed.*	

6. Select **Ethernet Cards** from the list. *The selected text is entered in cell B16.*	

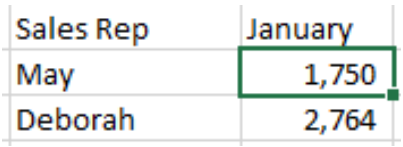
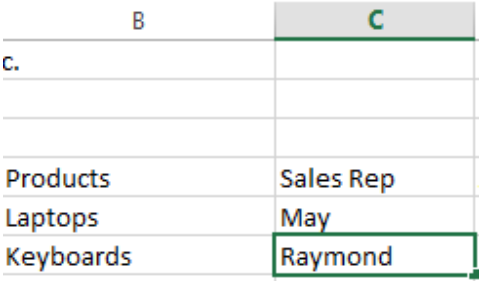
3.8 Editing Data

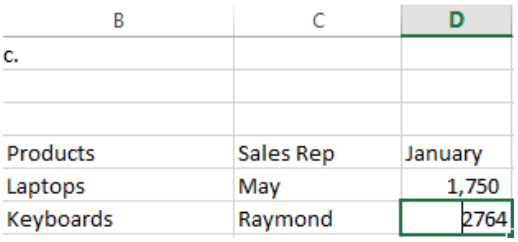
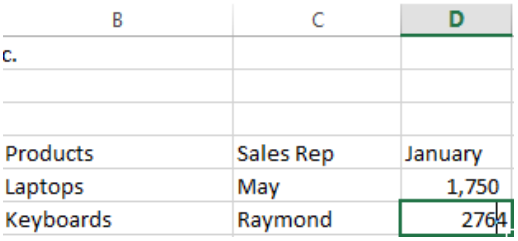
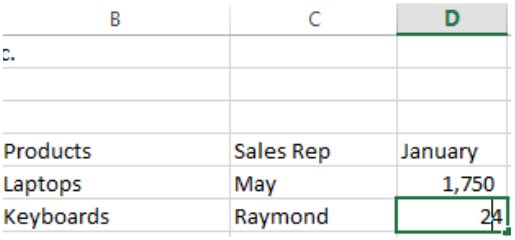
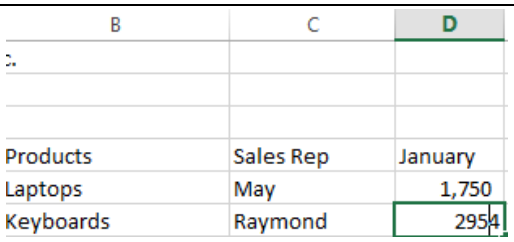
Concepts

When you need to edit the data in a cell, you can edit directly in the cell or edit the data in the formula bar.

Steps

To edit cell entries in a worksheet.

1. Select cell **D5.** *The active cell moves to cell D5.*	Select cell **D5.**
2. Type **1750** in the cell. *The data appears in the cell and in the **Formula Bar.***	
3. Select cell **C6.** *Cell C6 becomes the Active Cell.*	Select cell **C6.**
4. Type Raymond in the selected cell. *The data appears in the cell and formula bar.*	

5. Press **Enter** on your keyboard. *The active cell moves to the next row.*	Enter
6. Double-click on cell **D6**. *The cell is displayed in editing mode.*	
7. Position the insertion point to the **right of the number 6**. *The insertion point moves to the selected location.*	
8. Press **Backspace** twice. *Two of the numbers are deleted.*	
9. Type **95** at the insertion point. *The changes are displayed in the cell and in the formula bar.*	
10. Press **Enter**. *The active cell moves to the cell below, and the changes are confirmed.*	Enter
11. Select cell **D7**. *The Active Cell moves to cell D7.*	Select cell **D7**
12. Press **Delete**. *The data in cell D7 is deleted.*	Delete

Practice the Concept:

Change the number **3120** in cell **D8** to **4320**.

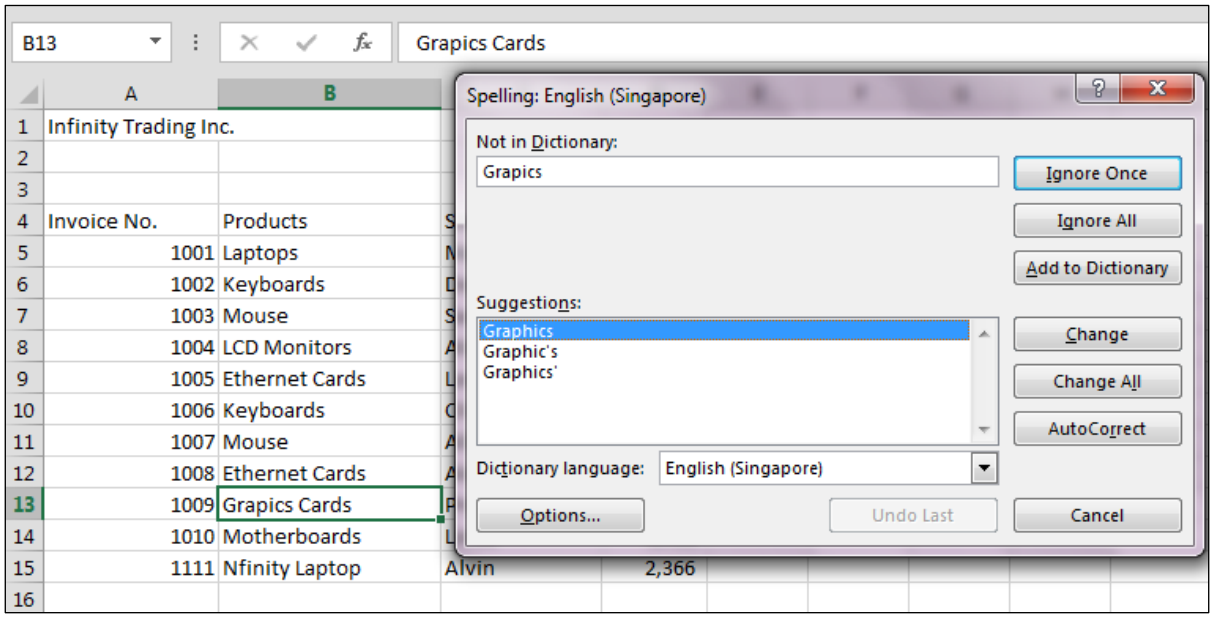
Delete the entries in cells **C14** and **D14**

Close the workbook without saving**.**

3.9 SPELL CHECK

Concepts

The spelling tool allows you to automatically find and then correct spelling mistakes in your workbook.



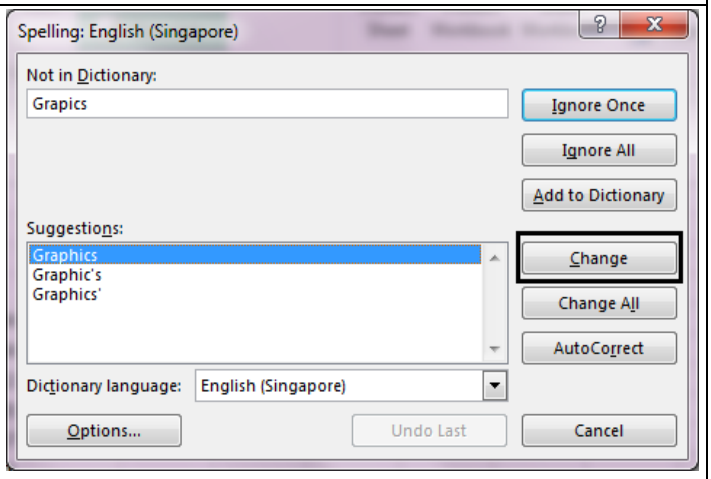
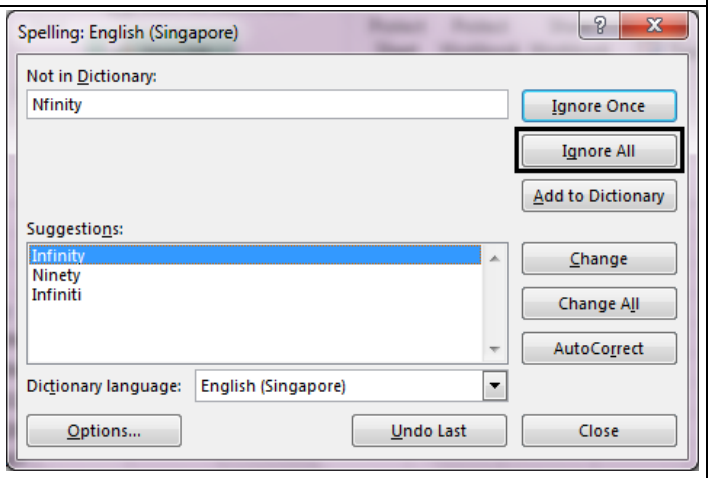
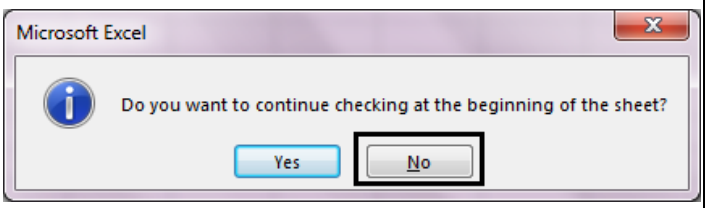
Steps

To check the worksheet for spelling errors:

From the **Student Folder**, open **SpellCheck.xlsx.**

If necessary, select cell **A1**.

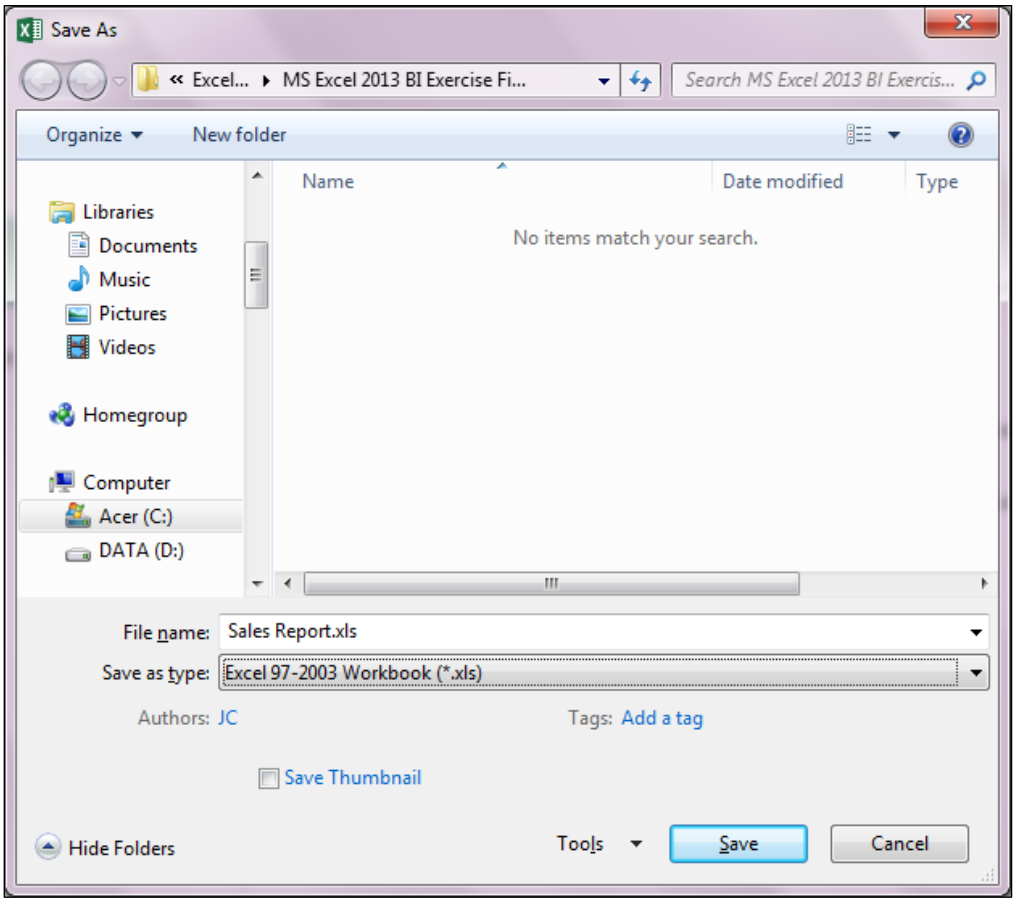
1. Click the **REVIEW** tab. *The ribbon displays the commands under the **REVIEW** tab.*	REVIEW

2. Click the **Spelling** button in the **Proofing** group. *The Spelling dialog box opens and the cell containing the first error in the worksheet is selected.*	
3. Click **Change.** *The mispelled word "Grapics" is replaced with the word Graphics and the next misspelled word is selected.*	
4. The next word identified is **Nfinity,** click **Ignore All** to stop Excel from identifying this word as misspelled. *The entry is not replaced and the next mispelled word is selected.*	
5. Continue checking the rest of the worksheet and correct the errors. Click **No,** if you are prompted to continue checking at the beginning of the sheet. *The Spelling Checker window closes.*	

3.10 Saving the Workbook with another Name

Concepts

After making changes to the file, you might want to keep the original file intact and save the file with the latest modification as another file. You can use Save As to save a copy of a workbook with another name, another folder or another file type.

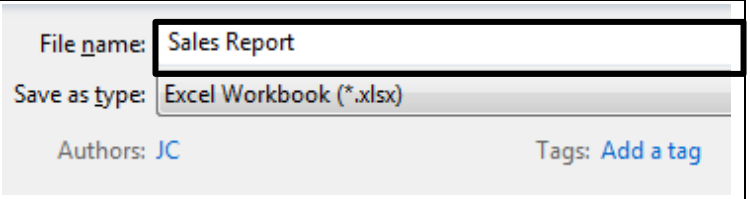
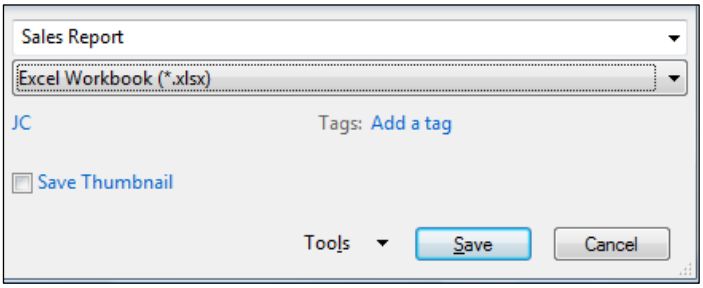
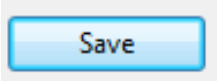


Save As Dialog Box

Steps

To rename an existing workbook:

1. Click the **FILE** tab. *The Backstage view appears.*	
2. Click the **Save As** button. *The Save As dialog box is displayed.*	Click

3. Click **Current Folder** from the **Save As** backstage view.	Click **Current Folder.**
4. Type **Sales Report** in the **File Name** box. *The text is displayed in the File Name box.*	
5. Select the Save as type list. *The list of file types is displayed.*	
6. Click the **Save** button to save the file. *The Save As dialog box closes and the workbook is saved.*	Click 

Close the workbook.

3.11 Saving a Workbook as Another File Type

Concepts

You can save a workbook as another file type, such as template, text file, a software specific file extension or another version number.

- **Template** – it can be useful to save a workbook as a template if it contains a structure that you are likely use again; for example, a quarterly report.
- **Text file** – if you want to save the data in the spreadsheet to be used in another application, such as a database, you can save the workbook as a text file.
- **Software specific file** – you can save the workbook as another file type, such as Portal Document Format (.pdf).
- **Version number** – you can save a version of the workbook that can, for example, be opened by older versions of Excel, such as Excel 1997 – 2003.

Steps

1. On the **FILE** tab, click **Save As.** *The Save As options appear.*	Click **Save As**
2. Select the location, for example **Computer**, then click **Browse.** *A window with a options for locations appears.*	Click **Browse**
3. Click on the **Save as Type** drowdown list and click a file type. *A dropdown list of file types appears, such as Excel Template, Excel 1997-2003 Workbook, Text (tab delimited), PDF.*	Select **Excel Template**
4. Choose a location and select **Save.** *The save as dialog box will close and the new file type will save.*	Select **My Documents** and click **Save**

Close the workbook and delete it from **My Documents**.

3.12 REVIEW EXERCISE

Using Basic Workbook Skills

1. Create a new workbook.
2. Use the keyboard to move the active cell around the worksheet.
3. Use the Go To dialog box to select cell **M90**. Then, return to cell **A1**.
4. Enter the text and numbers beginning in cell **A1** as shown in the following table:

	A	**B**
1	Region	
2	Northern	20986
3	Southern	35284
4	Central	40436
5	Western	10675
6	Midwest	

5. Delete the entry in cell **A6**.
6. Select cell **A1**.
7. Save the workbook to the student data folder with the name **Region**.
8. Close the workbook.
9. Open **RegionSales.xlsx**.
10. Use the **AutoComplete** feature to enter the name **Jones, P.** in cell **B9**.
11. Use the **Pick From Drop-down List** feature in cell **B10** to enter the name **Banes, M.**
12. Edit cell **C6**; change the value from **3952.68** to **3932.68**.
13. Enter the number **43567.50** in cell **C9**. ***Note:*** *Notice that the ending zero (0) is dropped.*
14. Enter the number **33500.7** in cell **C10**.

15. Create a new workbook based on the **Personal Monthly Budget** template. Change the **Actual Monthly Income** figure in cell **E7** to **2000**. Change the **Extra income** figure in cell **E8** to **0**. View the **Actual Balance** figure in cell **J6**.

16. Save the workbook with the name **My Budget** to the student data folder.

17. Close the workbook.

18. Use the Open dialog box and delete the **Regions** folder and its contents. Close the Open dialog box.

Upon completion of this review exercise, delete the new files that have been created.

LESSON 4 - SELECTION

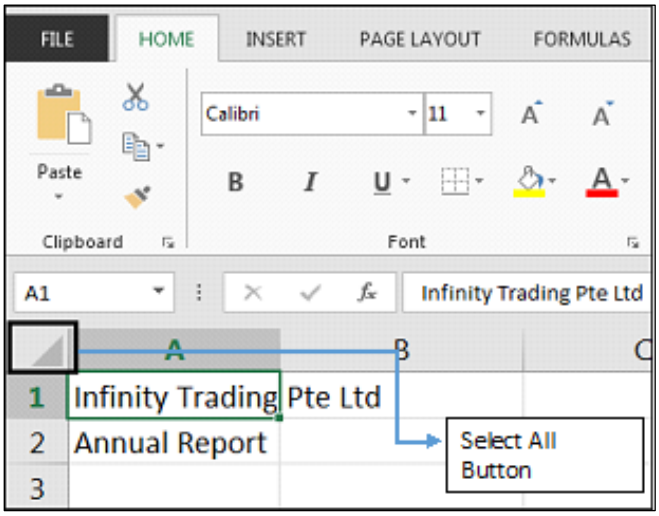
In this section, you will learn about:

- Selecting a cell
- Selecting a range of adjacent cells
- Selecting a range of non-adjacent cells
- Selecting the entire worksheet
- Selecting a row
- Selecting a range of adjacent rows
- Selecting a range of non-adjacent rows
- Selecting an entire column
- Selecting a range of columns
- Selecting a range of non-adjacent columns

4.1 Selecting a Cell

Concepts

You can quickly select cells, ranges, rows, or columns, or all data on a worksheet — for example, to format the data in the selection, or to insert other cells, rows, or columns. You can also select all or part of the cell contents and turn on Editing mode so that you can modify the data.

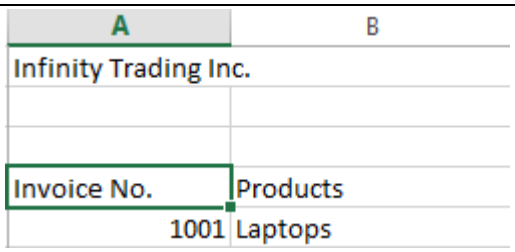


Selecting Cells

Steps

To select a cell:

Open **Selection.xlsx.**

1. Select cell **A4**. *The active cell moves to cell A4.*	

4.2 Selecting a Range of Adjacent Cells

Steps

To select a range of adjacent cells:

1. Click on cell **A4** and then **drag to** cell **D10**. Release the mouse button. *The range is selected.*	

A	B	C	D
Infinity Trading Inc.			
Invoice No.	Products	Sales Rep	January
1001	Laptops	May	1,894
1002	Keyboards	Deborah	2,764
1003	Mouse	Sarah	1,922
1004	LCD Monitors	Alvin	3,120
1005	Ethernet Cards	Levine	2,467
1006	Keyboards	CK	3,261

Click any cell in the worksheet to deselect the range.

4.3 Selecting a Range of Non-Adjacent Cells

Steps

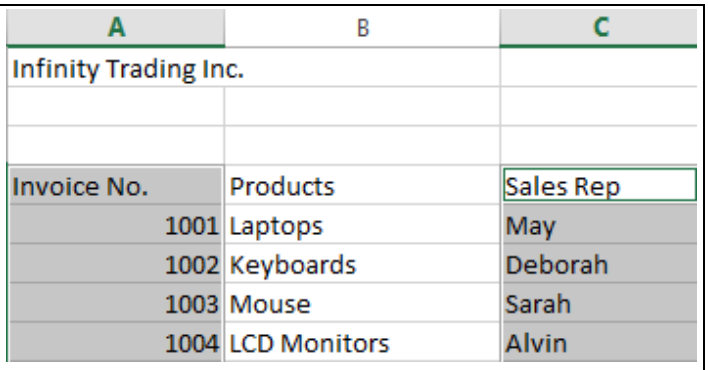
To select a range of non-adjacent cells:

1. Click on cell **A4** and then **drag to** cell **A10**. Release the mouse button. *The range is selected.*	
2. **Press and Hold down** the **Ctrl** key on the keyboard. *The Ctrl key is pressed.*	

A	B
Infinity Trading Inc.	
Invoice No.	Products
1001	Laptops
1002	Keyboards
1003	Mouse
1004	LCD Monitors
1005	Ethernet Cards
1006	Keyboards

3. Click on cell **C4** and then **drag to** cell **C10**. Release the mouse button and Ctrl key.

   Two ranges are selected.



Click any cell in the worksheet to deselect the range.

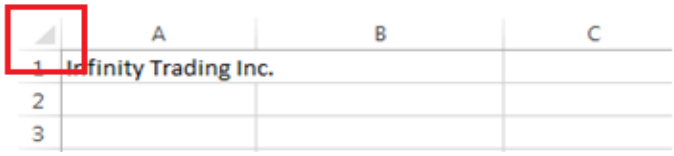
4.4 Selecting the Entire Worksheet

Steps

To select all cells in a worksheet:

1. Click the **Select All** button.

   All the cells in the worksheet are selected.



Click any cell in the worksheet to deselect the range.

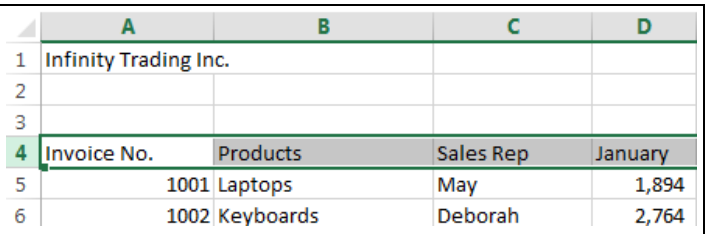
4.5 Selecting a Row

Steps

To select a row:

1. Click **row heading 4**.

   Row 4 is selected.

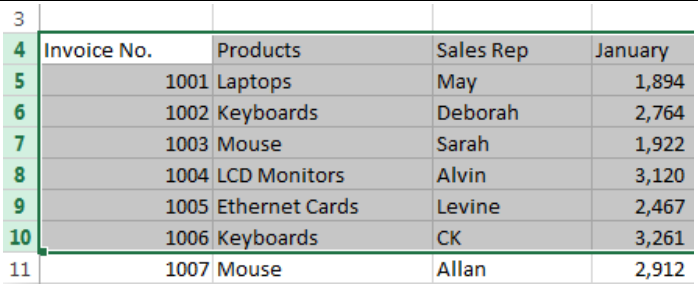


Click any cell in the worksheet to deselect the range.

4.6 Selecting a Range of Adjacent Rows

Steps

To select a range of contiguous rows.

1. Click on **row heading 4** and **drag to row heading 10**. Release the mouse button. *The rows are selected.*	

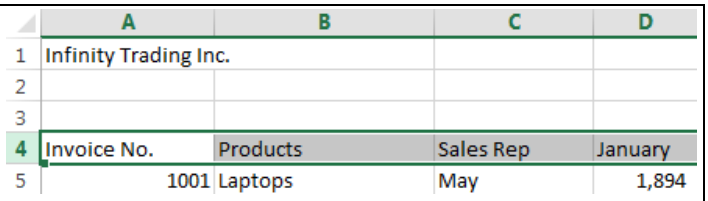
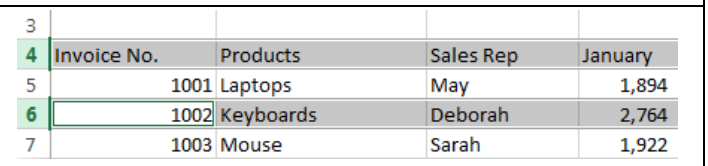
3				
4	Invoice No.	Products	Sales Rep	January
5	1001	Laptops	May	1,894
6	1002	Keyboards	Deborah	2,764
7	1003	Mouse	Sarah	1,922
8	1004	LCD Monitors	Alvin	3,120
9	1005	Ethernet Cards	Levine	2,467
10	1006	Keyboards	CK	3,261
11	1007	Mouse	Allan	2,912

Click any cell in the worksheet to deselect the range.

4.7 Selecting a Range of Non-Adjacent Rows

Steps

To select a range of non-contiguous rows.

1. If needed, click **row heading 4**. *Row 4 is selected.*	
2. **Press and Hold down** the **Ctrl** key on the keyboard. *The Ctrl key is pressed.*	
3. Click **row heading 6**. Release the mouse button and Ctrl key. *Rows 4 and 6 are selected.*	

	A	B	C	D
1	Infinity Trading Inc.			
2				
3				
4	Invoice No.	Products	Sales Rep	January
5	1001	Laptops	May	1,894

Ctrl

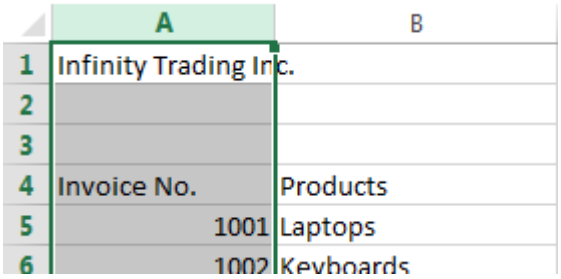
3				
4	Invoice No.	Products	Sales Rep	January
5	1001	Laptops	May	1,894
6	1002	Keyboards	Deborah	2,764
7	1003	Mouse	Sarah	1,922

Click any cell in the worksheet to deselect the range.

4.8 Selecting an Entire Column

Steps

To select an entire column:

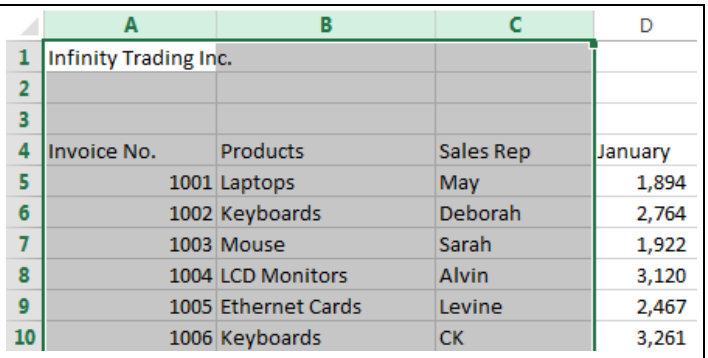
1. Click on **column heading A**. *Column A is selected.*	

Click any cell in the worksheet to deselect the range.

4.9 Selecting a Range of Columns

Steps

To select a range of columns:

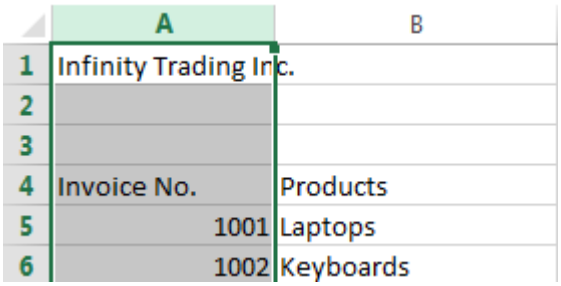
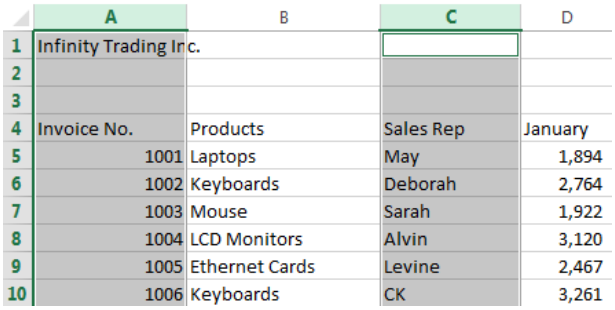
1. Click on **column heading A** and **drag to column heading C**. Release the mouse button. *The columns are selected.*	

Click any cell in the worksheet to deselect the range.

4.10 Selecting a Range of Non-Adjacent Columns

Steps

To select a range of non-adjacent columns:

1. Click on **column heading A**. *Column A is selected.*	
2. **Press and Hold down** the **Ctrl** key on the keyboard. *The Ctrl key is pressed.*	
3. Click **column heading C**. Release the mouse button and Ctrl key. *Columns A and C are selected.*	

Click any cell in the worksheet to deselect the range.

Close the workbook without saving.

4.11 Review Exercise

Work with selection

1. Open **ExSelection.xlsx**.
2. Use the mouse to select **A5:C8**.
3. Select the following non-adjacent ranges: **A5:A8** and **C5:C8**.
4. Click anywhere in the workbook to deselect the cells.
5. Close the workbook without saving it.

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LESSON 5 -
WORKING WITH COLUMNS AND ROWS

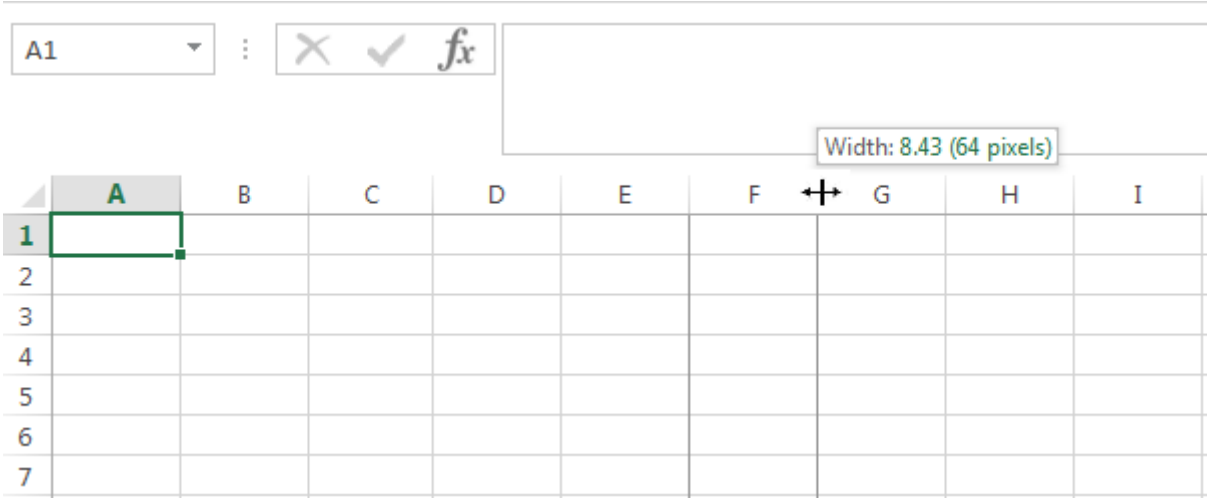
In this section, you will learn about:

- Adjusting the column width
- Adjusting the row height
- Automatically adjusting columns
- Inserting columns and rows
- Deleting columns and rows
- Freezing and unfreezing columns and rows

5.1 Adjusting Column Width

Concepts

The default column width in a worksheet is 8.43 characters, but you can specify a width of anywhere between 0 (zero) and 255. Zero (0) column width hides the column, while 255 represents the number of characters that can be displayed in a cell that is formatted using the standard font.

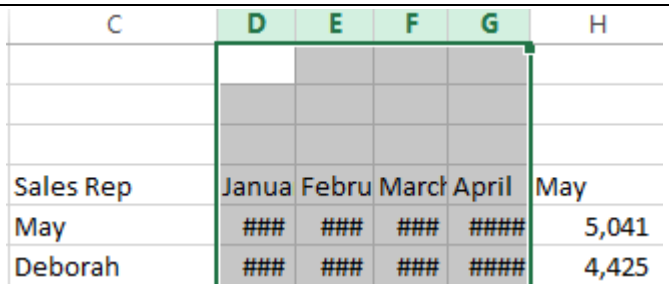


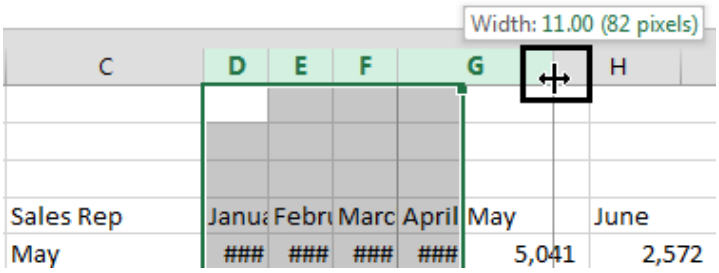
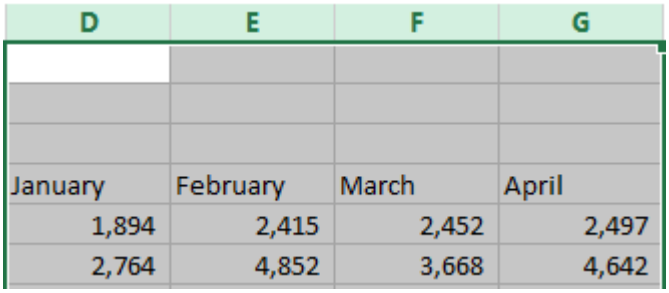
Default Column Width

Steps

From the **Student Folder**, open **ColsRows.xlsx**.

To adjust the width of columns:

1. Select columns **D** to **G**, and then release the mouse button. *Columns D to G are selected.*	

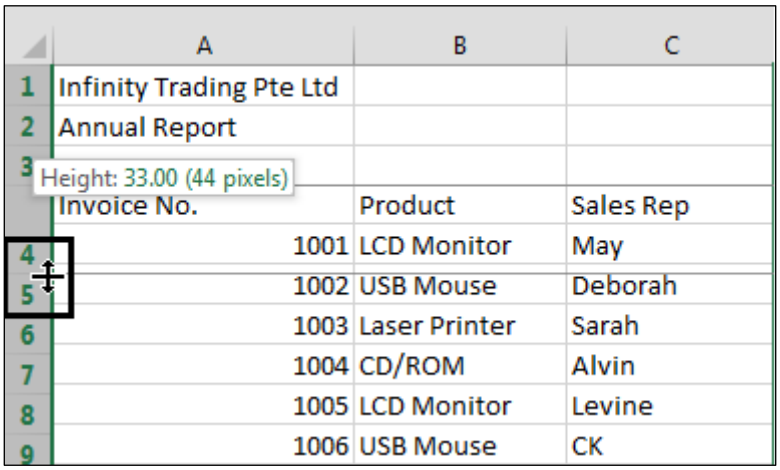
2. Drag the line to the right of column G heading until the Screen Tip displays **11.00.** *The width of the columns are adjusted accordingly.*	
3. Release the mouse button. *The data in the columns is displayed.*	

Click any cell to deselect the range.

5.2 Adjusting the Row Height

Concepts

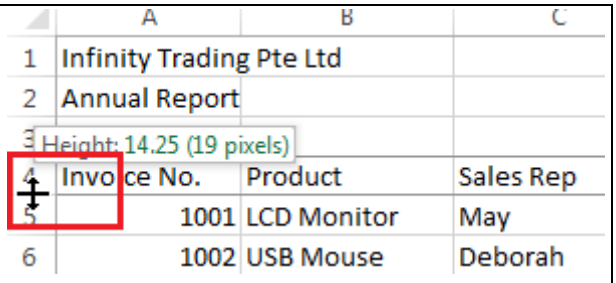
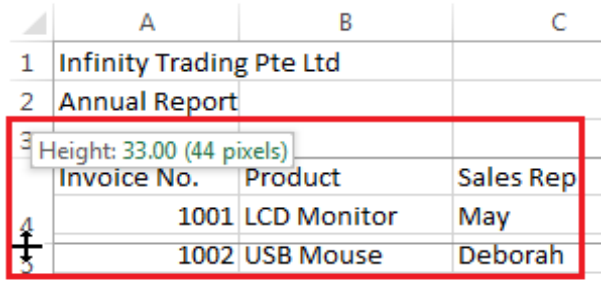
You can specify a row height of 0 (zero) to 409. This value represents the height measurement in points (1 point equals approximately 1/72 inch or 0.035 cm). The default row height is 12.75 points (approximately 1/6 inch or 0.4 cm). Zero (0) row height hides the row.



Adjusting a Row Height

Steps

To adjust the row height:

1. Point to the line below the row 4 heading. *The mouse pointer changes to a double arrow.*	
2. Click and drag the line down untli the screen tip displays **33.00.** Then release the mouse button. *The row height is adjusted accordingly.*	

Click any cell to deselect the range.

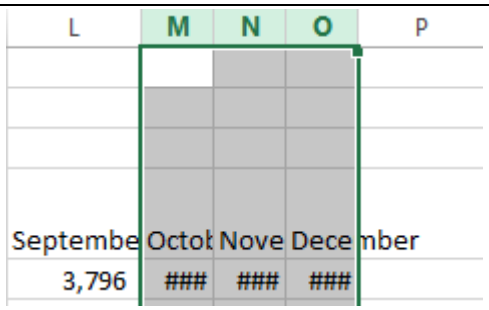
5.3 Automatically Adjusting Column

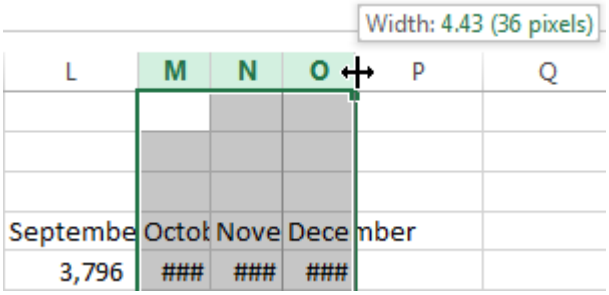
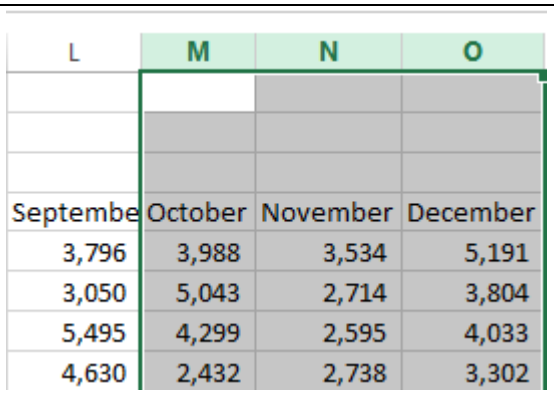
Concepts

AutoFit allows you to automatically adjust columns and rows so that all data is displayed properly.

Steps

To adjust columns to automatically fit entries:

1. Select columns **M through O.** *Columns M through O are selected.*	

2. Point to the line to the right of column **O** heading. *The mouse pointer shows a double arrow.*	
3. Double-click on the line to the right of the column O heading. *The width of the columns are automatically adjusted to the appropriate width.*	

Click any cell to deselect the range.

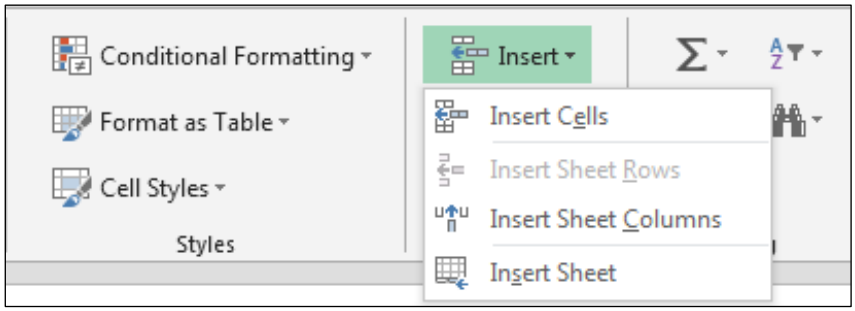
5.4 Inserting Columns and Rows

Concepts

When you insert blank cells in a worksheet, they go above or to the left of the active or selected cell. Excel will shift other cells in the same column down, or cells in the same row to the right, to facilitate the newly inserted cells. As well as

this, you can insert entire rows above a selected row and entire columns to the left of a selected row.

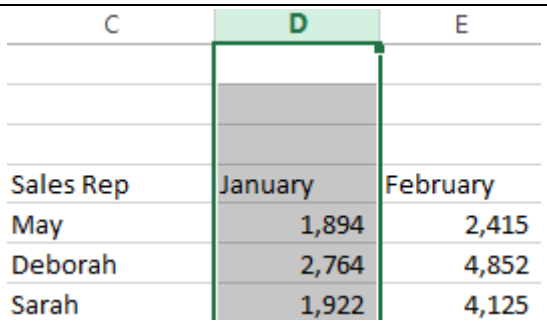
A Microsoft Excel 2013 worksheet has a maximum size of 16,384 columns wide by 1,048,576 rows tall.

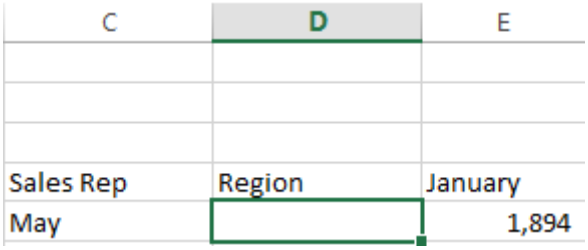
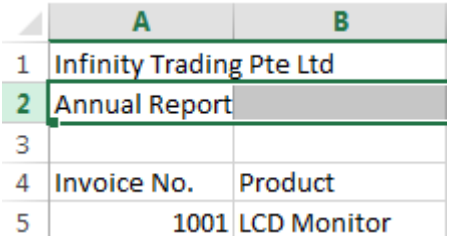
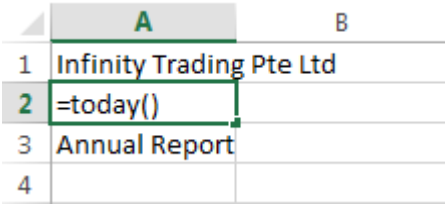


Inserting Cells

Steps

To insert columns and rows in a worksheet, open **Selection.xls** if necessary:

1. Select **column D**. *Column D is selected.*	
2. Select the **HOME** tab. *The **HOME** tab is selected and the relevant commands are displayed on the ribbon.*	
3. Click the **Insert** button in the **Cells** group. *The Insert List is displayed below.*	Click
4. Select **Insert Sheet Columns** from the list. *A new column is inserted in column D.*	Click **Insert Sheet Columns**

5. Type **Region** in cell **D4**, then press **Enter**. *The word Region is displayed in cell D4.*	
6. Select **row 2**. *Row 2 is selected.*	
7. Select the **HOME** tab. *The **HOME** tab is selected and the relevant commands are displayed on the ribbon.*	
8. Click the **Insert** button in the **Cells** group. *The Insert List is displayed below.*	Click
9. Select **Insert Sheet Rows** from the list. *A new row is inserted in row 2.*	Click **Insert Sheet Rows**
10. Type the formula **=today()** in cell A2, then press **Enter**. *The current date is displayed in cell A2.*	

Quick Tip: You can also insert columns and rows by right-clicking on a column or row heading and selecting Insert from the menu.

5.5 Deleting Columns and Rows

Concepts

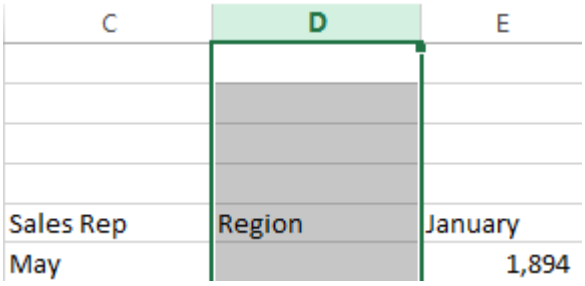
You can delete a selected row and column. Before you delete, it is important to realise that any data located in the rows or columns being deleted will be deleted

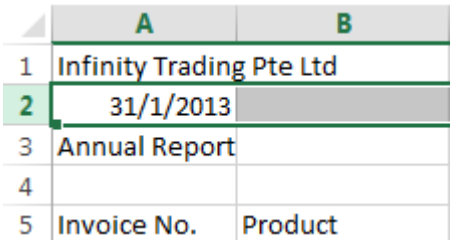
as well. If you make a mistake use the Undo button from the Quick Access Toolbar.

Deleting Cells

Steps

To delete columns and rows from a worksheet:

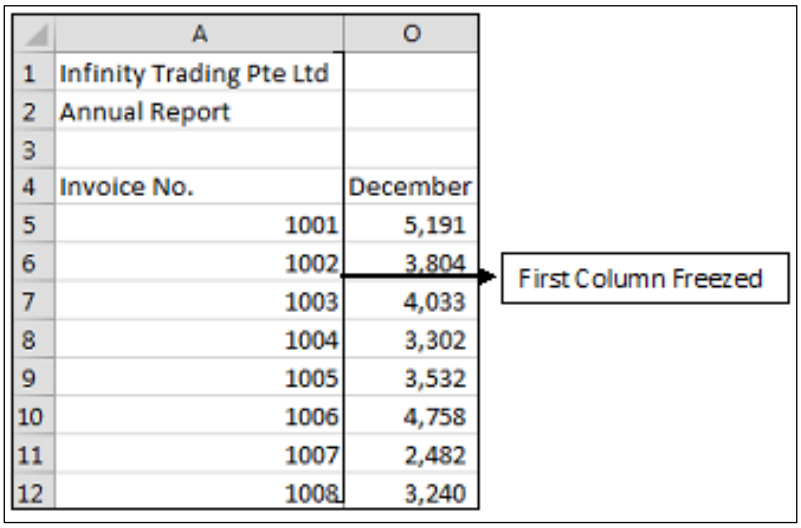
1. Select **column D**. *Column D is selected.*	
2. Select the **HOME** tab. *The **HOME** tab is selected and the relevant commands are displayed on the ribbon.*	
3. Select the **Delete** button in the **Cells** group. *The Delete list is displayed below.*	Click
4. Select **Delete Sheet Columns** from the list. *The selected column is deleted.* **Quick Tip:** Right-click on a column heading then select **Delete** from the shortcut menu to quickly delete a column.	Click **Delete Sheet Columns**

5. Select **row 2**. *Row 2 is selected.* **Note:** The date format displayed may vary.	
6. Select the **HOME** tab. *The **HOME** tab is selected and the relevant commands are displayed on the ribbon.*	
7. Select the **Delete** button in the **Cells** group. *The Delete list is displayed.*	Click
8. Select **Delete Sheet Rows** from the list displayed. *The selected row is deleted.* **Quick Tip:** Right mouse click on a row heading then select **Delete** from the shortcut menu to quickly delete a row.	Click **Delete Sheet Rows**

5.6 Freezing and Unfreezing Columns and Rows

Concepts

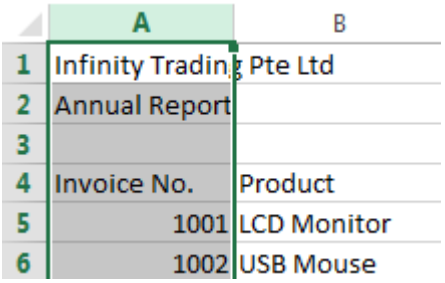
In Excel you can lock specific rows and columns by freezing or splitting panes. This allows you to scroll to other areas of the worksheet while a particular section remains visible as you do so. This can be used, for example, when comparing data over a long-period of time while keeping titles or a row of key figures fixed for you to use as a reference point.

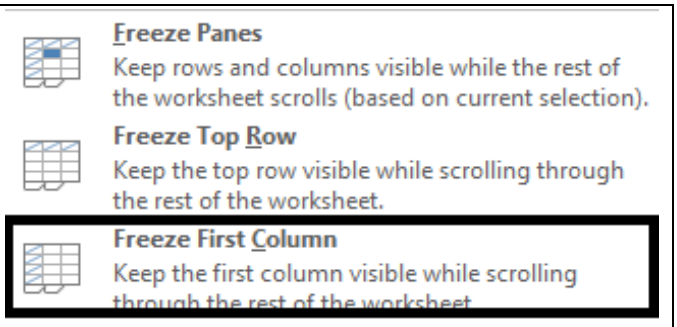
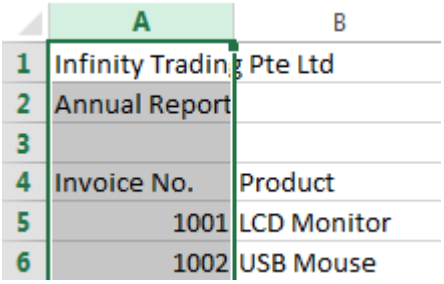
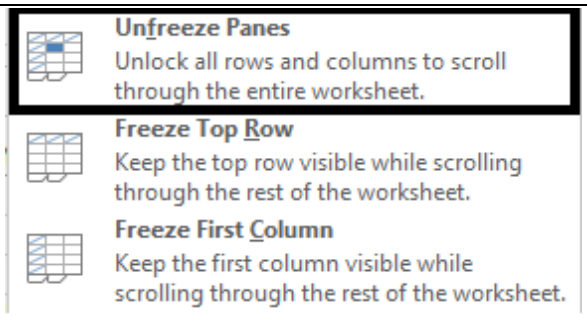
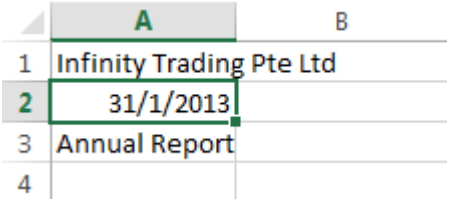


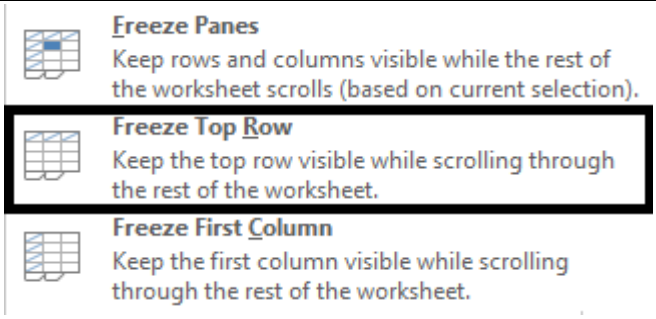
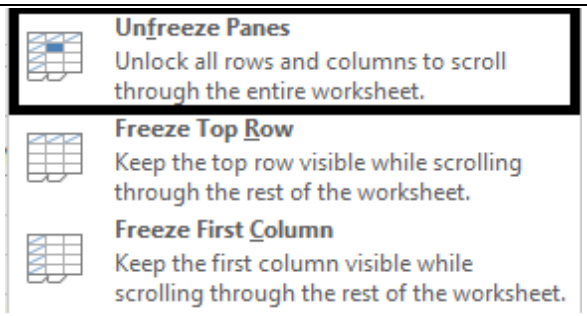
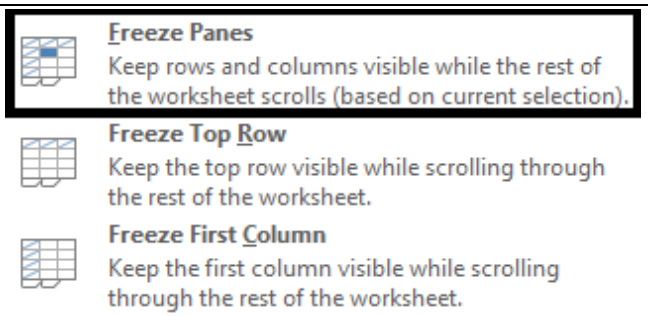
Frozen Column

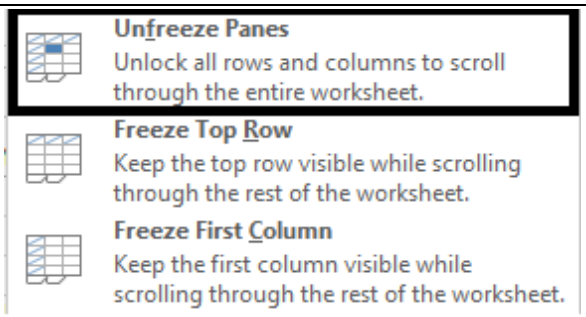
Steps

To freeze and unfreeze columns and rows in a worksheet, open **selection.xlsx** if necessary:

1. Select **column A**. *Column A is selected.*	
2. Select the **VIEW** tab. *The **VIEW** tab is selected and the relevant commands are displayed on the ribbon.*	
3. Click the **Freeze Panes** button in the **Window** group. *The Freeze Panes list is displayed.*	

4. Click **Freeze First Column** from the list. *The first column is frozen. Scroll right and notice that column A is frozen on the screen.*	
5. Select **column A** to unfreeze or select any cell in the worksheet *Column A is selected.*	
6. Select the **VIEW** tab. *The **VIEW** tab is selected and the relevant commands are displayed on the ribbon.*	
7. Click the **Freeze Panes** button in the **Window** group. *The Freeze Panes list is displayed.*	
8. Click **Unfreeze Panes** from the list. *The first column is unfreezed. Scroll right and notice that column A is not visible in the screen.*	
9. Select **row 2** or any other cell in the worksheet. *Row 2 is selected.*	

10. Select the **VIEW** tab. *The **VIEW** tab is selected and the relevant commands are displayed on the ribbon.*	
11. Click the **Freeze Panes** button in the **Window** group. *The Freeze Panes list is displayed.*	
12. Click **Freeze Top Row** from the list. *The first row is frozen*	
13. Select **Unfreeze Panes** from the **Freeze Panes** list in the **Window** group. *The top row freeze is removed.*	
14. Click cell B**6** to freeze the salesdetails' column headings **in row 5** and the invoice number displayed in **column A.** *B6 is selected.*	Click cell **B6.**
15. Select **Freeze Panes** from the **Freeze Panes** list in the **Window** group. *The top 5 rows and 1 column are freezed.*	

16. Click any cell and select **Unfeeze Panes** from the **Freeze Panes** list in the **Window** group. *The top 5 rows and 1 column are unfreezed.*	

Close the workbook without saving any changes.

5.7 Review Exercise

Work with columns and rows

1. Open **ExColsRows.xlsx**.
2. Select columns **B** through **E**. Change the width to **15.00**.
3. Select rows **2** through **7**. Change the height to **33.00**.
4. Select column **F**. Use the **AutoFit** feature to make the column wide enough to display the text in cell **F1**. AutoFit column **I** as well.
5. Insert a blank column before column **I**.
6. Insert three blank rows at the top of the worksheet.
7. Type **Infinity Trading Pte Ltd.** into cell **A1**, and type **Regional Sales** into cell **A2**.
8. Insert two blank rows before row **10**.
9. Delete the blank row **10** and the blank column **I**.
10. Close the workbook without saving it.

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LESSON 6 -
NUMBER FORMATTING

In this section, you will learn about:

- Number formats
- Accounting number style
- Percent style
- Comma style
- Decimal places

6.1 About Number Formats

Concepts

You can format cells to change the way numbers and text appear in the worksheet. Formatting does not change the underlying value of a cell. That underlying value appears on the **Formula Bar** when the cell is selected and is what is used in calculations.

Formatting improves the overall appearance of a worksheet and makes numbers easier to read. Using formatting, you can add features such as currency symbols (€), percent symbols (%), and commas (,), as well as specify a fixed number of decimal places.

Number formatting can be applied to a single cell, entire columns or rows, a select range of cells, or the whole worksheet.

The default format for cells containing a value is the General Format. This style has no specific format and displays values as plain numbers – no dollar symbols, commas etc.

General Format	Number Format	Accounting Format		Currency Format	Comma Style Format
2605	2605.00	$	2,605.00	$2,605.00	2,605.00
1872	1872.00	$	1,872.00	$1,872.00	1,872.00
0	0.00	$	-	$0.00	-
4749	4749.00	$	4,749.00	$4,749.00	4,749.00
2452	2452.00	$	2,452.00	$2,452.00	2,452.00

Number Formats in Excel

6.2 Accounting Number Style

Concepts

The Accounting format is also used for formatting monetary values, but with this format the currency symbols and decimal points of numbers in a column are aligned. In addition, the Accounting format displays zeros as dashes and negative numbers in parentheses.

General Format	Accounting Format	
2605	$	2,605.00
1872	$	1,872.00
0	$	-
4749	$	4,749.00
2452	$	2,452.00

General Format vs Accounting Format

Steps

Open **FormatNum.xlsx**.

To format cells using the **Accounting Number Format** button:

1. Select cells **B10 to F10.** *Cells B10 to F10 is selected.*	Select the cell range **B10:F10**
2. Select the **HOME** tab. *The **HOME** tab is selected and the relevant commands are displayed on the ribbon.*	
3. Click the **Accounting Number Format** button in the **Number group**. *The Accounting number format is applied to the selected cell.*	Click

Quick Tip: To select a different currency, click the arrow on the right of the **Accounting Number Format** button, and then select the currency you want from the list.

6.3 Percent Style

Concepts

Applying the Percentage format to existing numbers in a workbook results in those numbers being multiplied by 100 to convert them to percentages.

For example, if a cell contains the number **5**, Excel multiplies that number by 100, which means that you will see **500.00%** after you apply the Percentage format. This may not be what you expected.

To accurately display percentages, before you format the numbers as a percentage, make sure that they have been calculated as percentages, and that they are displayed in decimal format. Percentages are calculated by using the equation **amount / total = percentage**.

For example, if a cell contains the formula **=5/100**, the result of that calculation is **0.05**. If you then format **0.05** as a percentage, the number will be correctly displayed as **5%**.

% of Total	Percent Style Format
0.182342697	18%
0.135746195	14%
0.212160218	21%
0.237252972	24%
0.232497918	23%

Percent Style Format

Steps

To use the **Percent Style** button to format cells:

1. Select cells **G5 through G9.** *Cells G5 through G9 is selected.*	Select cells **G5:G9**
2. Select the **HOME** tab. *The **HOME** tab is selected and the relevant commands are displayed on the ribbon.*	HOME
3. Click the **Percent Style** button in the **Number** group. *The percent style is applied to the selected cells.*	Click %

6.4 Comma Style

Concepts

The Comma Style format, or the thousands separator inserts commas in larger numbers to separate thousands, hundred thousands, etc.

The Comma Style format also displays two decimal places and puts negative values in parentheses. It doesn't display dollar signs.

General Format	Comma Style Format
2605	2,605.00
1872	1,872.00
0	-
4749	4,749.00
2452	2,452.00

Comma Style Format

Steps

To use the Comma Style to format cells:

1. Select cells **B5 through F9**. *Cells B5 through F9 is selected.*	Select cells **B5:F9**
2. Select the **HOME** tab. *The **HOME** tab is selected and the relevant commands are displayed on the ribbon.*	HOME
3. Click the **Comma Style** button in the **Number** group. *The comma style is applied to the selected cells.*	Click ,

6.5 Decimal Places

Concepts

For numbers that are already entered on a worksheet, you can increase or decrease the number of places that are displayed after the decimal point by using the Increase Decimal and Decrease Decimal buttons.

By default, Excel displays 2 decimal places when you apply a built-in number format, such as a currency format or a percentage, to the cells or data. However, you can change the number of decimal places that you want to use when you apply a number format. To have Excel enter the decimal points for you, you can specify a fixed decimal point for numbers.

Number Format	Increase Decimal (to display 3 digits)
2605.23	2605.230
1872.79	1872.790
0.00	0.000
4749.50	4749.500
2452.60	2452.600

Number Format	Decrease Decimal (to display 1 digit)
2605.230	2605.2
1872.790	1872.8
0.000	0.0
4749.550	4749.6
2452.600	2452.6

Steps

To change the decimal places in cells:

1. Select cells **B5 through F9.** *Cells B5 through F9 is selected.*	Select cells **B5:F9.**
2. Select the **HOME** tab. *The **HOME** tab is selected and the relevant commands are displayed on the ribbon.*	
3. Click the **Decrease Decimal** button twice. *The number of decimal places in the cell is decreased. No decimals are displayed in the selected cells.*	

Practice the Concept: Select cells **B10 through F10**, format comma style and then format the numbers to display **no decimals**.

Close the workbook without saving the file.

6.6 Review Exercise

Format numbers in a worksheet

1. Open **ExFormatNum.xlsx**.
2. Format the range **B3:E7** with the **Comma** style and decrease the number of decimal places to none.
3. Format the range **G3:I8** with the **Comma** style. (The cells display pound signs (#) because the columns are not wide enough to display the formatted numbers). Decrease the number of decimal places to none.
4. Close the workbook without saving the changes.

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LESSON 7 -
TEXT FORMATTING

In this section, you will learn about:

- Formatting text
- Changing the font
- Changing the font size
- Bold and italic
- Underlining text
- Font colour
- Rotating text
- Text wrapping
- Cell alignment

7.1 Formatting Text

Concepts

You can format cells to change the way text appear in the worksheet. Formatting does not change the underlying value of a cell but can improve the overall appearance of a worksheet. You can apply formats to a cell before or after you enter the data. Formatting can be applied to one cell; a range of cells, columns, or rows; or the entire worksheet.

Text alignment controls how the text lines up within cells. You can use the controls on the **HOME** tab to work with cell alignment. Cell alignment refers to how the text interacts with the available space in the cell.

Orientation refers to the direction of the text, which runs horizontally from left to right by default. You can edit this by using the Orientation button on the **HOME** tab, allowing you to use vertical or slanted text so that labels in a heading row take up less space horizontally.

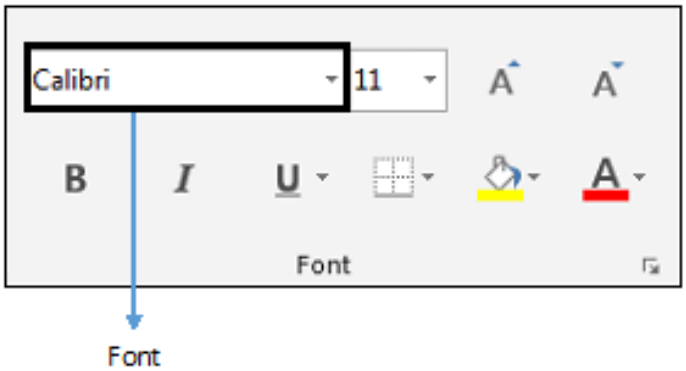
	A	B	C	D	E	F	G
1	**Infinity Trading Inc.**						
2	**Sales Report**						
3							
4	**Sales Re**	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**	**Annual**	**% of Total**
5	*Robb*	2,605	2,818	3,627	2,991	12,041	17%
6	*Mark*	1,872	2,668	2,450	1,974	8,964	13%
7	*Alvin*	3,974	4,172	4,888	4,950	17,984	26%
8	*Alex*	4,749	4,447	3,346	3,125	15,667	22%
9	*Eric*	2,452	4,562	3,624	4,715	15,353	22%
10	Total	$ 15,652	$ 18,667	$ 17,935	$ 17,755	$ 70,009	

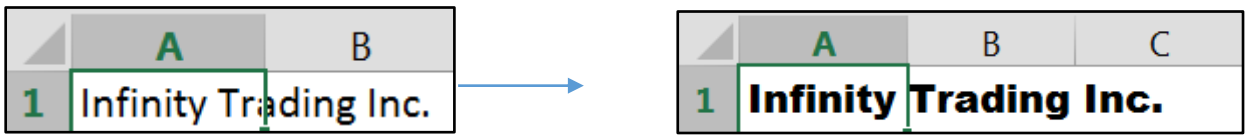
Formatted Worksheet

7.2 Changing the Font

Concepts

Calibri (Body) in font size 11 is the default font Microsoft Excel uses. However, this can be changed to another font and font size which is then applied to all new workbooks that you create.





Cell Font Changed from Calibri to Arial Black

Steps

Open **FormatText.xlsx**.

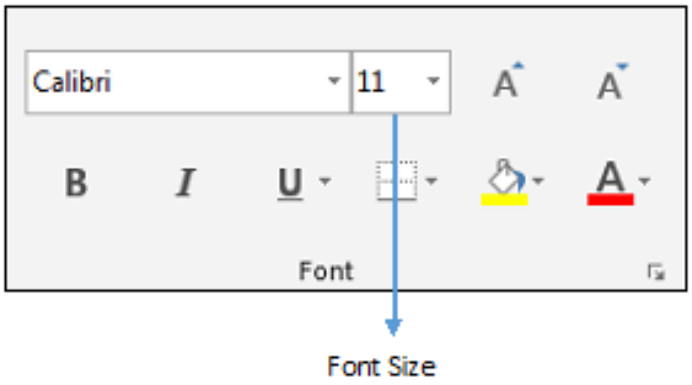
To change the font of existing text:

1. Select cells **A1 through A2**. *Cells A1 through A2 are selected.*	Select cell **A1:A2**
2. Select the **HOME** tab. *The **HOME** tab is selected and the relevant commands are displayed on the ribbon.*	
3. Click the arrow on the right-hand side of the **Font** button in the **Font** group. *The list of fonts is displayed.*	
4. Scroll down the list, and then select **Arial Black**. *The Arial Black font is applied to the selected cells.*	Select

7.3 Changing Font Size

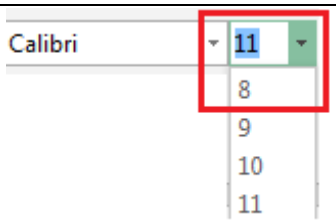
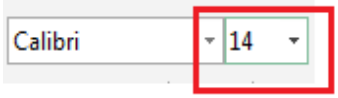
Concepts

You can change the font or font size for selected cells or ranges in a worksheet.



Steps

To change the font size of existing data:

1. Select cells **A4 through G4**. *Cells A4 through G4 is selected.*	Select cell **A4:G4.**
2. Select the **HOME** tab. *The **HOME** tab is selected and the relevant commands are displayed on the ribbon.*	
3. Click the arrow on the right-hand side of the Font Size button. *The list of font sizes is displayed.*	
4. Click font size **14**. *The font size is applied to the selected cells.*	

Quick Tip: You can also use the **Increase Font Size** and **Decrease Font Size** buttons to change the font size of text in your worksheet. Select cells **A4 through**

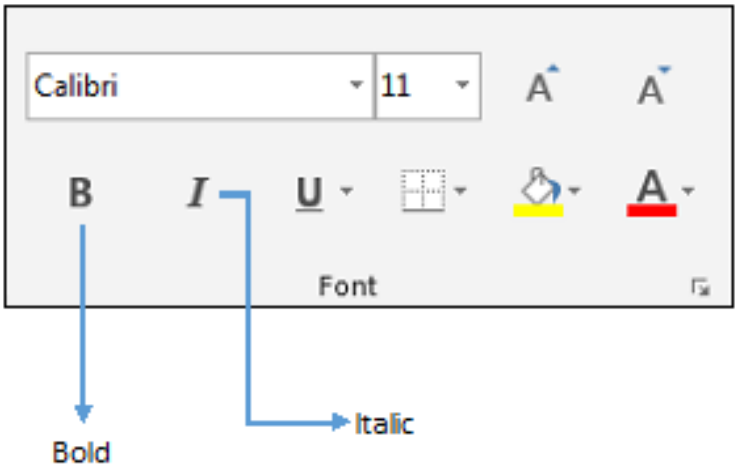
G4, and then click the Decrease Font Size button once. The selected cells change font size accordingly.

Increase / Decrease Font Size buttons

7.4 Bold and Italic

Concepts

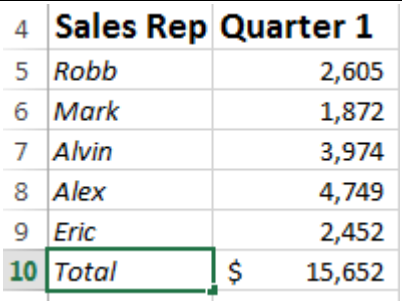
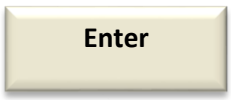
You can display the text as **bold** and *italic* for selected cells or ranges in a worksheet.



Steps

To bold and italicise existing text:

1. Select cells **A4 through G4.** *Cells A4 through G4 is selected.*	Select cell **A4:G4**
2. Select the **HOME** tab. *The **HOME** tab is selected and the relevant commands are displayed on the ribbon.*	

3. Click the **Bold** button in the **Font** group. *The Bold format is applied to the selected cells.*	Click
4. Select cells **A5 through A9**. *Cells A5 through A9 is selected.*	Select cell **A5:A9**
5. Select the **HOME** tab. *The **HOME** tab is selected and the relevant commands are displayed on the ribbon.*	
6. Click the **Italic** button in the **Font** group. *The Italic format is applied to the selected cells.*	Click
7. Select cell **A10**. *Cell A10 is selected.*	Select cell **A10**
8. Type **Total** in the selected cell. *The word Total is displayed in cell A10 and in the formula bar.*	
9. Press the **Enter** key. *The active cell moves to the cell below and the Italic formatting is applied to the text.*	

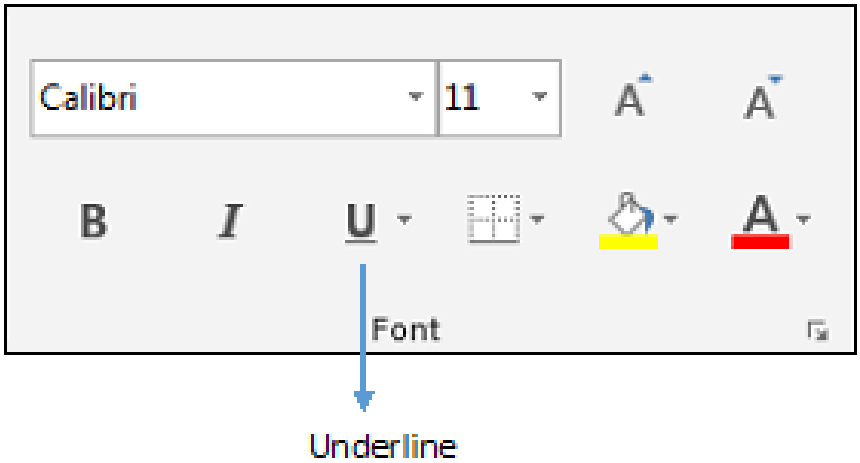
Practice the Concept: Select cell **A10**, and then click the **Italic** button to remove the Italic formatting. Apply **Bold** formatting to cells **A10 through F10**.

Quick Tip: You can use keyboard shortcuts to apply bold (**Ctrl + B**) or italic (**Ctrl + I**) formatting to text in selected cells.

7.5 Underlining Text

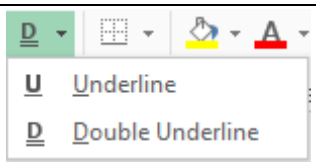
Concepts

You can display the text in selected cells or cell ranges as underlined or double underlined.



Steps

To underline or double underline cell entries:

1. Select cells **B10 through F10**. *Cells B10 through F10 is selected.*	Select cell **B10:F10**
2. Select the **HOME** tab. *The **HOME** tab is selected and the relevant commands are displayed on the ribbon.*	
3. Click the **Underline** button in the **Font** group. *The Underline format is applied to the selected cells.*	Click
4. To double underline the selected cells, click the **Underline** button arrow in the **Font** group and select **Double Underline**.	

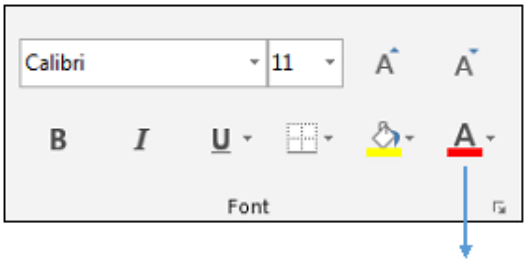
7.6 Font Colour

Concepts

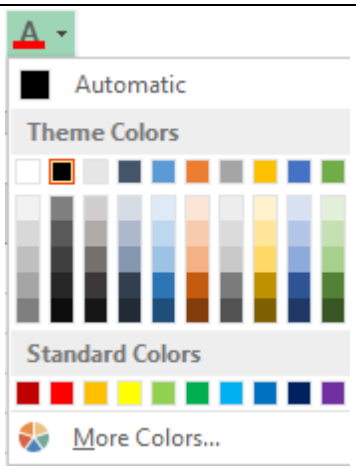
You can change the font colour of the selected cells or range of cells in a worksheet.

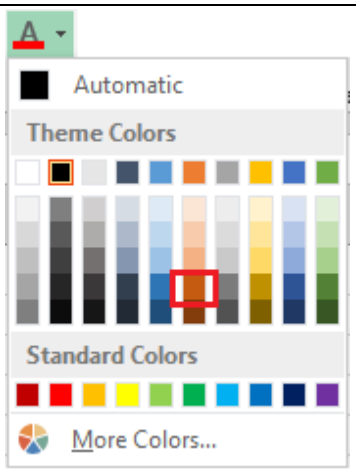
Steps

To change the font colour of cell entries:



Font Colour

1. Select cells **A1 through A2**. *Cells A1 through A2 is selected.*	Select cell **A1:A2**
2. Select the **HOME** tab. *The **HOME** tab is selected and the relevant commands are displayed on the ribbon.*	
3. Click the arrow on the right-hand side of the **Font Color** button in the **Font** group. *The colour palette is displayed.*	

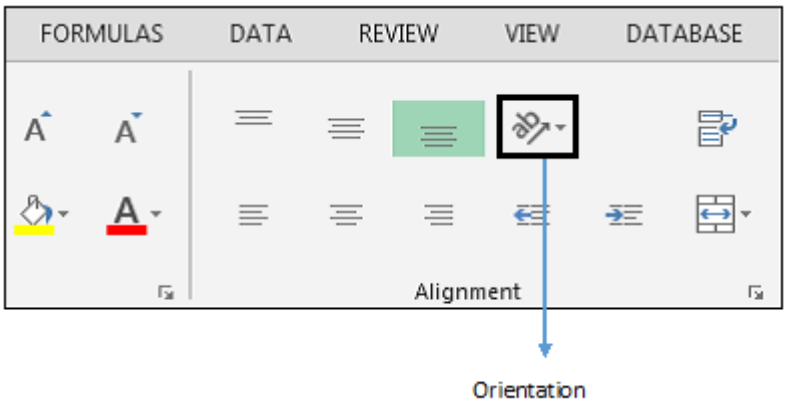
4. Click the **Red, Accent 2, Darker 50%** (6th row, 6th column of colors) *The color of the data changes to the specified color.*	

Practice the Concept: Select the range **A5:A9**. Change the font colour to **Tan, Background 2, Darker 75% (5th row, 3rd column).** Deselect the range by clicking any cell.

7.7 Rotating Text

Concepts

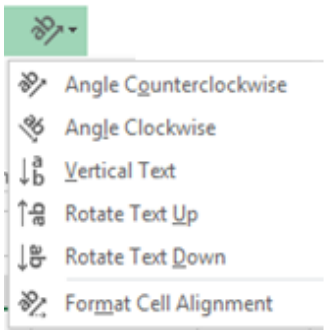
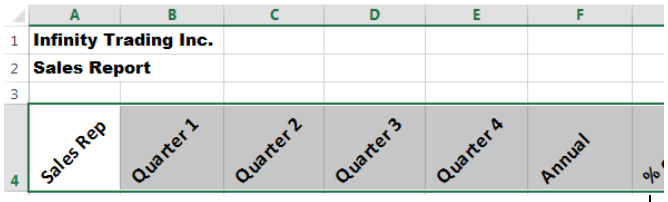
If you have a number of headings in rows that are quite long, rotating the text can help to keep the data and worksheets in an appropriate layout. The rotated text will appear within the same width as the columns to maintain the correct structure.



Steps

To rotate text in a cell:

1. Select cells **A4 through G4**. *Cells A4 through G4 is selected.*	Select cell **A4:G4**

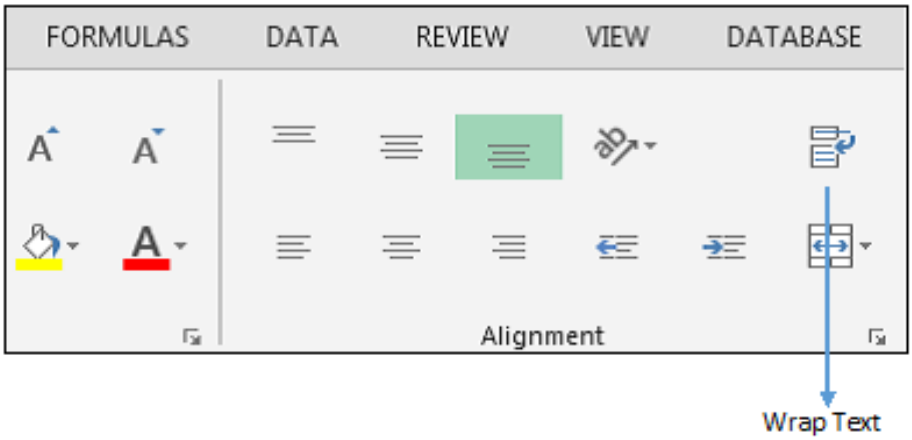
2. Select the **HOME** tab. *The **HOME** tab is selected and the relevant commands are displayed on the ribbon.*	
3. Click the **Orientation** button in the **Alignment** group. *The Orientation menu is displayed.*	
4. Select **Angle Counterclockwise** from the menu. *The selection is formatted with the specified format.*	

Practice the Concept: Select cells A4 through G4, click the Orientation button, and then click on Angle Counterclockwise to disable it. The cell contents return to the original orientation.

7.8 Text Wrapping

Concepts

When entering text in cell that is too narrow, the text either flows over to the next cell or does not display completely in the cell. To display the entire cell entry, you can adjust the column width or make the text wrap within the cell. Wrapping text makes the text flow down within the cell instead of flowing to the next cell.



Steps

To apply text wrapping to contents within a cell:

1. Select cell **A1**. *Cell A1 is selected.*	Select cell **A1**
2. Select the **HOME** tab. *The **HOME** tab is selected and the relevant commands are displayed on the ribbon.*	
3. Click the **Wrap Text** button in the **Alignment** group. *The selected text wraps with the cell.*	Click

Practice the Concept: Select cell A2, and then apply wrap text. Select cell A1, and then deselect Wrap Text to restore it to its original formatting.

Steps

To apply text wrapping to contents within a cell range:

1. Select cell **A1** and cell **A2**. *Cell A1 is selected.*	Select cell **A1** and cell **A2**.
2. Select the **HOME** tab. *The **HOME** tab is selected and the relevant commands are displayed on the ribbon.*	
3. Click the **Wrap Text** button in the **Alignment** group. *The selected text wraps with the cells.*	Click

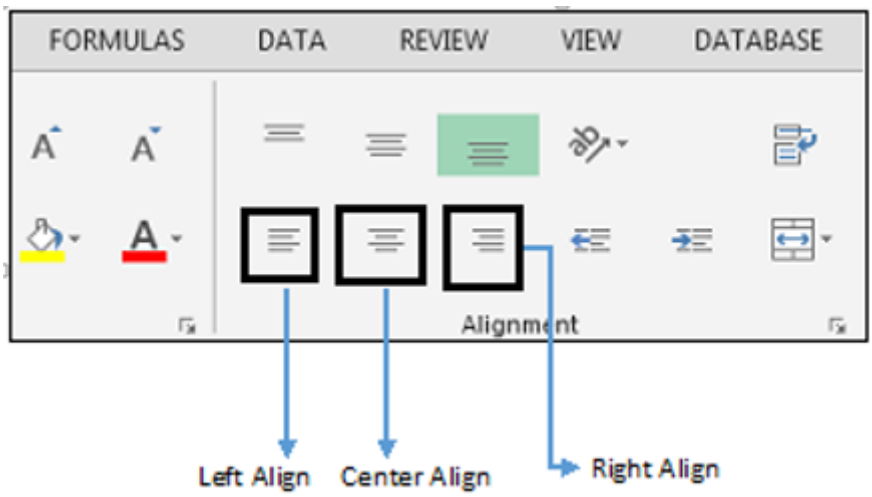
7.9 Cell Alignment

Concepts

The default alignment of text data, such as labels and column titles is on the left side of a cell.

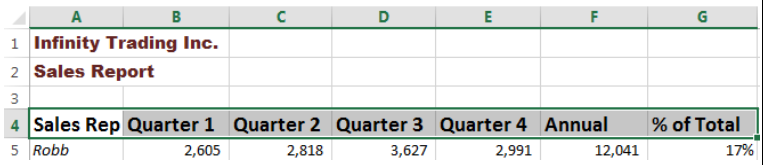
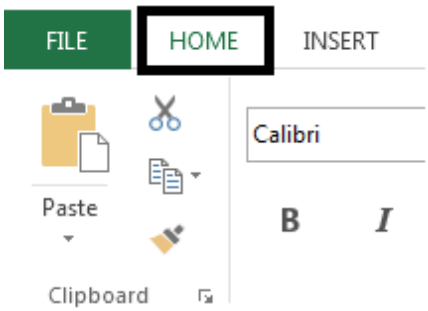
Numbers, formulas, and dates, which are referred to as values, are right aligned by default.

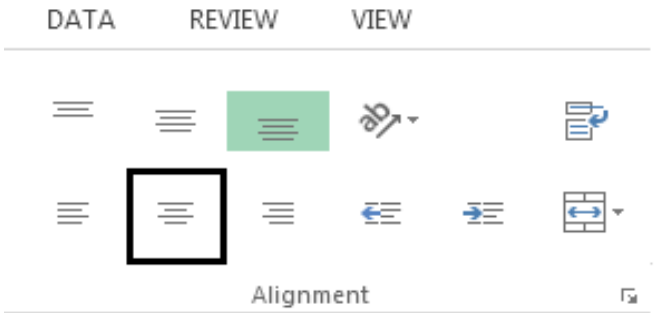
Excel's default alignments are not necessarily the best choice for the data. So, Excel makes it easy to improve the layout and appearance of a worksheet by using the cell alignment icons on the **HOME** tab of the ribbon.



Steps

To change the alignment of cells:

1. Select cells A4 through G4. *Cells A4 through G4 is selected.*	
2. Select the **HOME** tab. *The **HOME** tab is selected and the relevant commands are displayed on the ribbon.*	

3. Click the **Center** button in the Alignment group. *The cell contents of the selected cells are aligned accordingly.*	

Practice the Concept: Select cell **A4**, and then select the **Align Text Left** button.

7.10 Review Exercise

Format text in a worksheet

1. Open **ExFormatText.xlsx**.
2. Change the font in the range **A1:J8** to **Arial Rounded MT Bold.**
3. Change the font size of the range **A1:J2** to **12**.
4. Bold the ranges **A1:J2** and **A3:A8**.
5. Italicise the range **J3:J7**. Left align the range **J2:J7**. Then, centre the range **J2:J7** instead.
6. Underline the range **B7:I7**.
7. Change the font colour of the range **B2:J2** to **Red** (second colour under Standard Colours).
8. Apply the selected font colour to the range **A3:A8**.
9. Rotate the text in the range **B2:G2** forty-five degrees to the right. Then, right align the range **B2:E2**.
10. Wrap the text in cell **A1**. Then restore the text in A1 to its original format.
11. Close the workbook without saving it.

LESSON 8 -
CELL FORMATTING

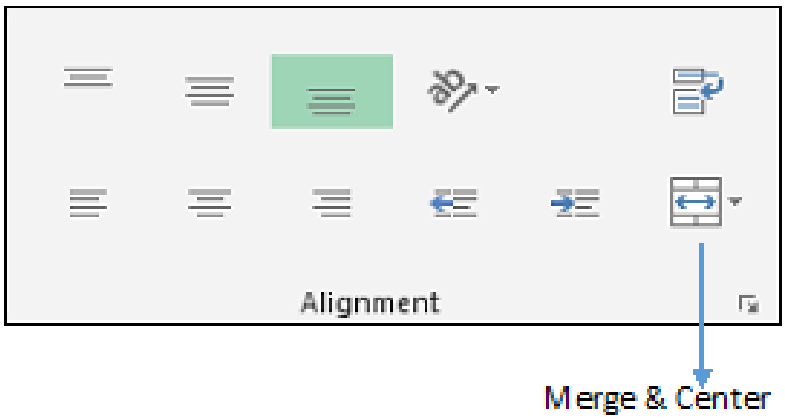
In this section, you will learn about:

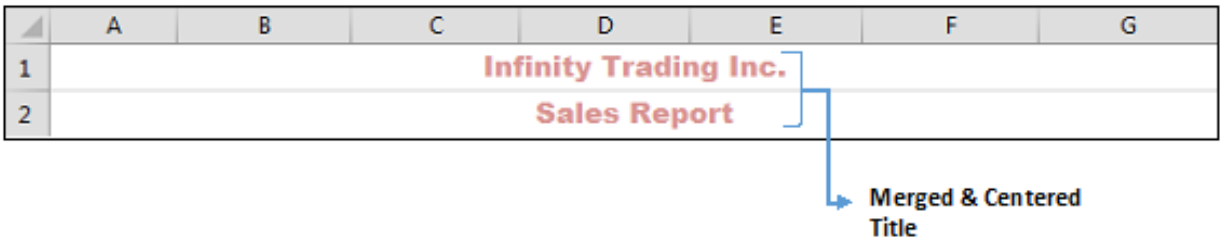
- Merging cells
- Vertical alignment
- Splitting cells
- Adding borders
- Drawing borders
- Adding fill colour to cells
- Format painter
- Inserting cut or copied cells
- Deleting cells

8.1 Merging Cells

Concepts

In Excel 2013, you can merge two or more adjacent cells into one cell and display the contents of one cell in the merged cell. A title is commonly centered over the data in the worksheet.





Steps

Open **FormatCell.xlsx**, and open the Sales worksheet.

To use the **Merge & Center** button to merge and centre data:

If necessary, select the **Sales** sheet.

1. Select cells **A1 through G1.** *Cells A1 through G1 is selected.*	Select cells **A1:G1.**
2. Select the **HOME** tab. *The **HOME** tab is selected and the relevant commands are displayed on the ribbon.*	HOME

3. Click the **Merge & Center** button in the **Alignment** group. *The selected cells are merged and the text is center aligned.*	

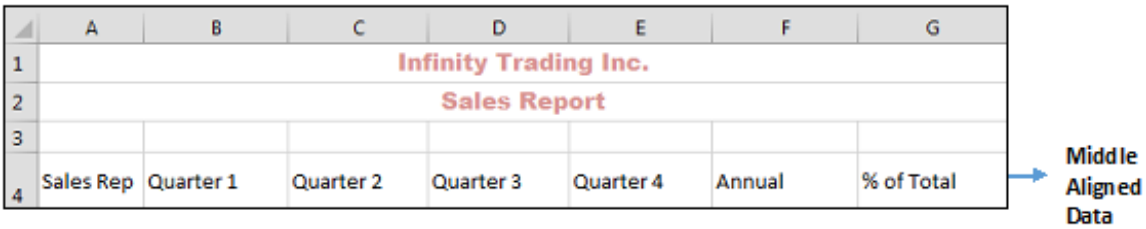
Practice the Concept: Select cells A2 through G2, and then click the **Merge & Center** button to merge the cells and centre the text.

8.2 Vertical Alignment

Concepts

In Excel 2013, it is possible to change the horizontal and vertical alignment of cell data. Text is left-aligned and values and dates are right-aligned by default. You can use the buttons in the Alignment group of the **HOME** tab to alter the alignment.

Values formatted as Accounting can only display as right-aligned, but it is possible to change alignment on all other formatting styles.



Steps

To vertically align the contents in a cell:

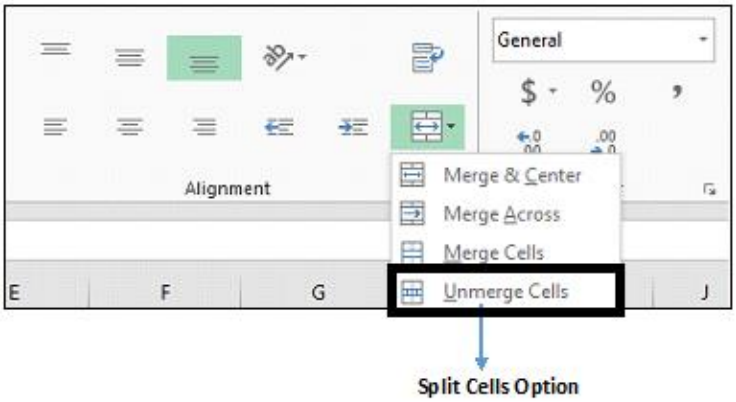
1. Select cells **A4 through G4**. *Cells A4 through G4 is selected.*	Select cells **A4:G4**
2. Select the **HOME** tab. *The **HOME** tab is selected and the relevant commands are displayed on the ribbon.*	

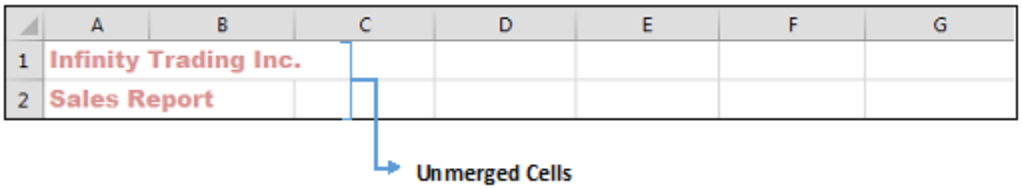
3. Click the **Middle Align** button in the **Alignment** group. *The selected text is vertically aligned to the middle of the cell.*	

8.3 Splitting Cells

Concepts

You can split the merged cells of an Excel worksheet. Use the buttons in the Alignment group of the **HOME** tab.

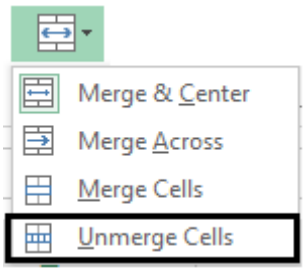




Steps

To use the **Merge & Center** button to split a merged cell:

1. Select cell **A1**. *Cell A1 is selected.*	Select cells **A1**
2. Select the **HOME** tab. *The **HOME** tab is selected and the relevant commands are displayed on the ribbon.*	

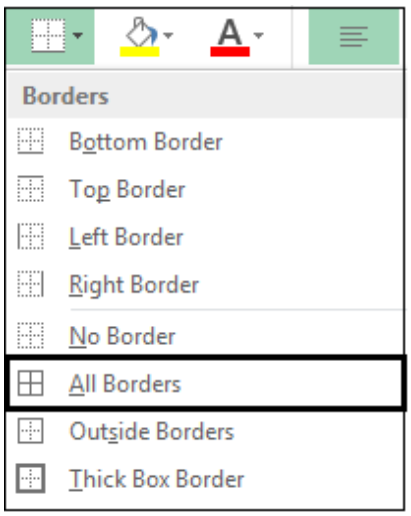
3. Click the arrow besides the **Merge & Center** button in the **Alignment** group. *The merge & center list is displayed below.*	
4. Click **Unmerge Cells** from the list displayed. *The merged cells are split into individual cells and the text is aligned left.*	
5. Click **Align Left** button from the **Alignment** group to display the text. *The selected text is aligned left.*	

Practice the Concept: Select cell A2, and then click the **Merge & Center** button to split the cells.

8.4 Adding Borders

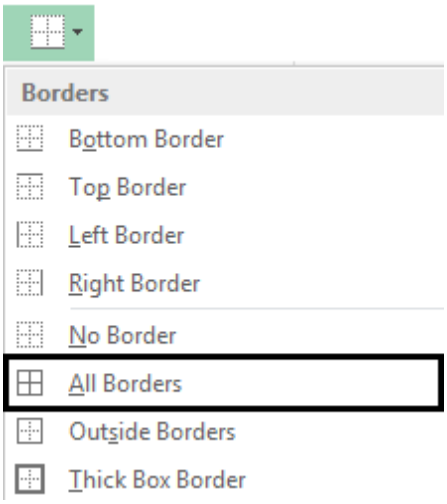
Concepts

By using predefined border styles, you can quickly add a border around cells or ranges of cells. You can create a custom border if the predefined cell borders do not meet your needs.



Steps

To add borders to selected cells:

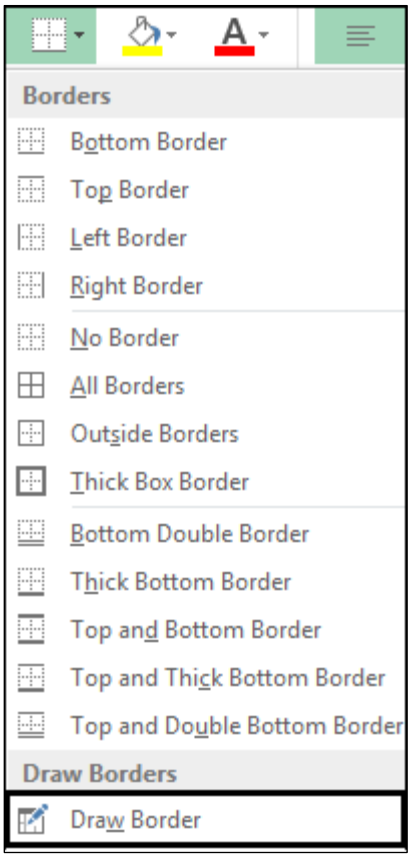
1. Select cells **A4 through G10**. *Cells A4 through G10 is selected.*	Select cells **A4:G10**
2. Select the **HOME** tab. *The **HOME** tab is selected and the relevant commands are displayed on the ribbon.*	
3. Click the arrow on the right-hand side of the **Borders** button in the **Font** group. *The Borders menu is displayed.*	
4. Select **All Borders** from the **Borders** menu. *The borders style is applied to the selected cells and the borders menu disappears.*	

Practice the Concept: Select cells **B10 through G10**, and then apply the **Bottom Double Border** style.

8.5 Drawing Borders

Concepts

You can also draw borders using the **Draw Border** button to create custom borders.

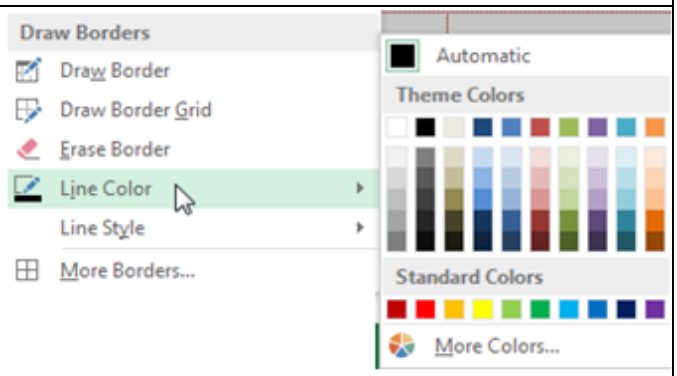
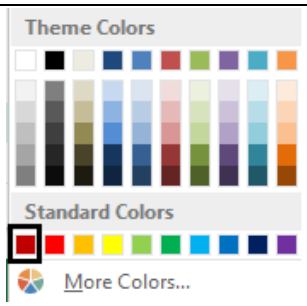


Expenses Report				
Sales Rep	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Robb	288	154	228	117
Mark	307	357	293	141
Alvin	462	106	477	460
Alex	344	186	142	560
Eric	448	341	140	291

Steps

To draw cell borders:

Select the **Expenses** worksheet and highlight A4:E9.

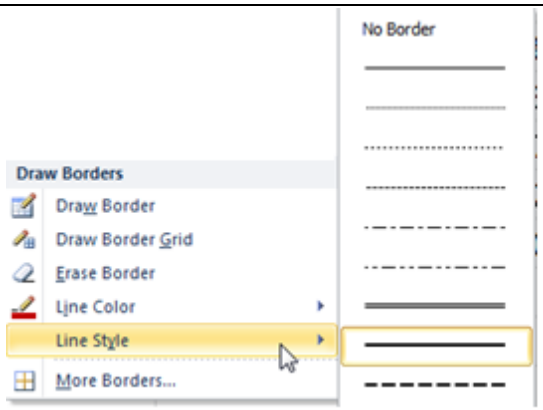
1. Click the arrow on the right-hand side of the **Borders** button in the **Font** group. *The Borders menu is displayed.*	
2. Click **Draw Border.** *The mouse pointer displays a pencil. Drag the mouse pointer to draw the border around the selected table.*	
3. Click the arrow on the right-hand side of the **Borders** button again, and then point to **Line Color.** *The color palette is displayed.*	
4. Select **Dark Red** from the color palette (first color under **Standard Colors**). *The Dark Red color is selected and the Borders menu disappears.*	
5. Click and drag the pencil on the **gridline below the Expenses Report** heading from columns **A through E**. *The gridline is highlighted as you drag.*	
6. Release the mouse button. *The specified border color and style is applied to the selected gridline.*	
7. Click the arrow on the right-hand side of the **Border** button in the **Font** group. *The Borders menu is displayed.*	

8. Click **Draw Border Grid**.

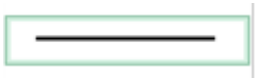
   The mouse pointer displays a pencil and grid.

9. Click the arrow on the right-hand side of the **Borders** button again, and then point to **Line Style.**

   The Line Style menu is displayed.



10. Select the **9th** item in the **Line Style** menu.



11. Click and drag the mouse pointer to select cells **A4 through E9**, and then release the mouse button.

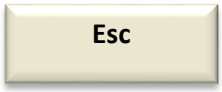
    The selected line style is applied to the cells.

Expenses Report

Sales Rep	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Robb	288	154	228	117
Mark	307	357	293	141
Alvin	462	106	477	460
Alex	344	186	142	560
Eric	448	341	140	291

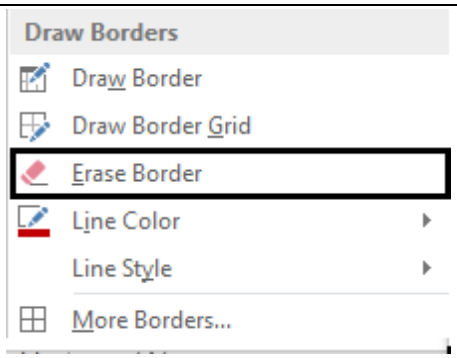
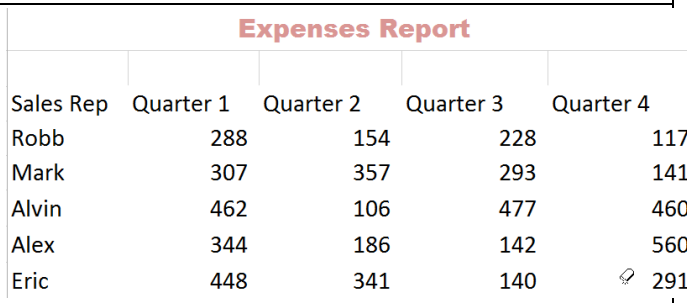
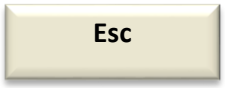
12. Press the **Esc** key to deactivate the **Draw Border Grid** feature.

    The mouse pointer returns to normal and the Draw Border feature is deactivated.



13. Click the arrow on the right-hand side of the **Border** button in the **Font** group.

    The Borders menu is displayed.

14. Click **Erase Border**. *The mouse pointer displays an eraser.*	
15. Click and drag the eraser on the border **below** the **Expenses Report** heading, and then release the mouse button. *The border below Expenses Report is erased.*	
16. Press the **Esc** key on the keyboard to deactivate the **Erase Border** feature. *The Erase Border feature is deactivated.*	

Practice the Concept: Use the **Draw Border** feature to apply a thin solid line, black border around cells **A4 through E4**.

Use the **Draw Borde**r feature to draw a diagonal border from the bottom left corner to the top right corner of cell **A4**.

Use the **Erase Border** feature to erase the diagonal line in cell **A4**.

8.6 Adding Fill Colour to Cells

Concepts

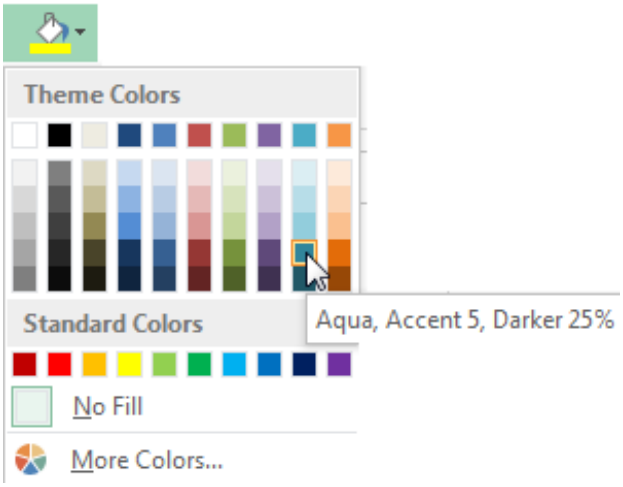
The Fill Color button is used to apply colour shading to cells and drawing objects. You can choose from a variety of colours with varying degrees of brightness and darkness.

	A	B	C	D	E	F	G
1	Infinity	Trading Inc.					
2	Sales Report						
3							
4	Sales Rep	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Annual	% of Total

Steps

To use the **Fill Color** button to add colour shading to a cell:

If necessary, select the **Expenses** sheet.

1. Select cell **A1**. *Cell A1 is selected.*	Select cells **A1**
2. Select the **HOME** tab. *The **HOME** tab is selected and the relevant commands are displayed on the ribbon.*	
3. Click the arrow on the right-hand side of the **Fill Color** button. *The color palette is displayed.*	
4. Select the **Aqua, Accent 5, Darker 25%** color (5th row, 9th column). *The color is applied to the selected cells.*	

Practice the Concept: Select cells A4 through G4, and then apply the **Red, Accent 2, Lighter 40%** fill colour.

8.7 Format Painter

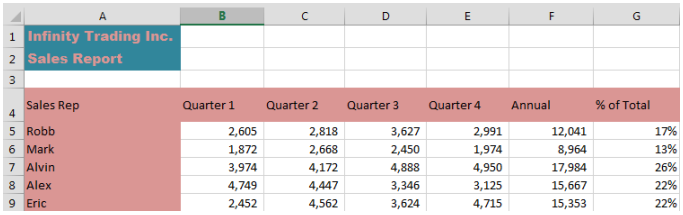
Concepts

The format painter is used to quickly "paint" the formatting of one cell onto another cell. You can use the tool to format one cell at a time, a range of adjacent cells or non-adjacent cells.

	A	B	C	D	E	F	G
1	Infinity Trading Inc.						
2	Sales Report						
3							
4	Sales Rep	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Annual	% of Total
5	Robb	2,605	2,818	3,627	2,991	12,041	17%
6	Mark	1,872	2,668	2,450	1,974	8,964	13%
7	Alvin	3,974	4,172	4,888	4,950	17,984	26%
8	Alex	4,749	4,447	3,346	3,125	15,667	22%
9	Eric	2,452	4,562	3,624	4,715	15,353	22%

Steps

To use the **Format Painter** button to copy and paste formatting:

1. Select cell **A4**. *Cell A4 is selected.*	Select cells **A4**
2. Select the **HOME** tab. *The **HOME** tab is selected and the relevant commands are displayed on the ribbon.*	
3. Click the **Format Painter** button in the **Clipboard** group. *The Format Painter button is selected and the mouse pointer displays a paintbrush.*	
4. Click and drag the paintbrush over cells **A5 through A9.** *The formatting is applied to cells A5 through A9 and the paintbrush disappears.*	

	A	B	C	D	E	F	G
1	Infinity Trading Inc.						
2	Sales Report						
3							
4	Sales Rep	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Annual	% of Total
5	Robb	2,605	2,818	3,627	2,991	12,041	17%
6	Mark	1,872	2,668	2,450	1,974	8,964	13%
7	Alvin	3,974	4,172	4,888	4,950	17,984	26%
8	Alex	4,749	4,447	3,346	3,125	15,667	22%
9	Eric	2,452	4,562	3,624	4,715	15,353	22%

Close the workbook without saving.

8.8 Inserting Cut or Copied Cells

Concepts

You can insert cut or copied cells from one worksheet to another worksheet or within the same worksheet or between open spreadsheets.

A	B	C	D	E	F	G	H	I
Infinity Trading Inc.								
Profit Report								
Sales Rep	January	February	March	Qtr 1	April	May	June	Qtr 2
Robb	1,947	2,765	3,859	8,571	3,872	2,319	4,747	10,938
Mark	2,398	4,170	2,108	8,676	2,819	2,071	4,462	9,352
Alvin	3,860	2,997	2,403	9,260	4,764	4,058	2,817	11,639
Alex	2,919	4,133	3,860	10,912	4,683	3,895	1,940	10,518
Eric	2,471	3,782	4,009	10,262	3,778	2,899	3,467	10,144

Qtr 2 Data Inserted

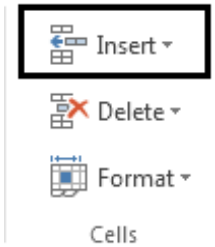
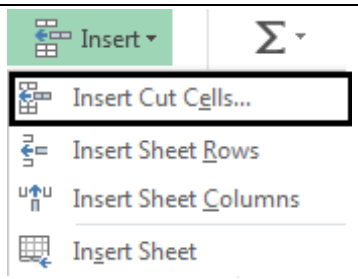
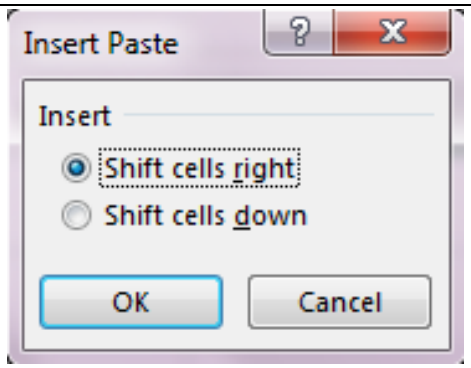
Steps

To insert cut or copied cells:

Open **FormatCellC.xlsx**.

If needed, select the **Report** worksheet.

1. Select cells **A12 through D17**. *Cells A12 through D17 is selected.*	Select cells **A12:D17**
2. Select the **HOME** tab. *The **HOME** tab is selected and the relevant commands are displayed on the ribbon.*	
3. Click the **Cut** button in the **Clipboard** group. *The selected cells are cut and a marquee border is displayed around the selection.*	
4. Select cell **F4**. *Cell F4 is selected.*	Select cells **F4**

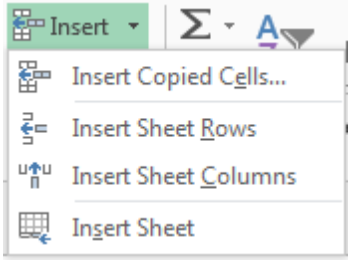
5. Click the **Insert** button in the **Cells** group. *The Insert menu appears.*	
6. Click **Insert Cut Cells**. *The **Insert Paste** dialog box is displayed.*	
7. If needed, select **Shift cells right**, and then click **OK**. *The cut cells are moved and inserted in the selected location and the existing data shifts to the right.*	

Steps

To copy a cell or cell range to a different worksheet.

If needed, select the **Report** worksheet.

1. Select cells **F4 through I9**. *Cells F4 through I9 is selected.*	Select cells **F4:I9**
2. Select the **HOME** tab. *The **HOME** tab is selected and the relevant commands are displayed on the ribbon.*	
3. Click the **Copy** button in the **Clipboard** group. *The selected cells are copied and a marquee border is displayed around the selection.*	Click

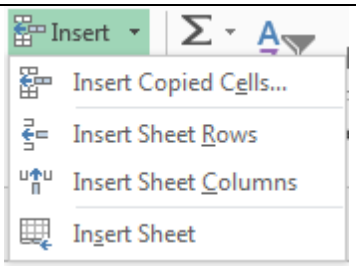
4. Select sheet **Q2.** *Sheet **Q2** is selected.*	Click on sheet **Q2**
5. Select **A3** *Cell **A3** is selected.*	Click **A3**
6. Click the **Insert** button in the **Cells** group. *The Insert menu appears.*	
7. Insert the Copied Cells.	Click **Insert Copied Cells**
8. If needed, select **Shift cells down**, and then click **OK**. *The copied cells are copied and inserted in the selected location.*	Click **OK**

Steps

To copy a cell or cell range to a different workbook:

Open **FormatCellC.xlsx**. If needed, select the **Report** worksheet. Also open **FormatNum.xlsx** and select **Sheet2**.

1. In **FormatCellC.xlsx** in the Report worksheet, select cells **F4 through I9**. *Cells F4 through I9 is selected.*	Select cells **F4:I9**
2. Select the **HOME** tab. *The **HOME** tab is selected and the relevant commands are displayed on the ribbon.*	
3. Click the **Copy** button in the **Clipboard** group. *The selected cells are copied and a marquee border is displayed around the selection.*	Click

4. Switch to **FormatNum.xlsx** and select **Sheet2.** ***Sheet2*** *is selected.*	Click **Sheet2**
5. Select **A3** ***A3*** *is selected.*	Click **A3**
6. Click the **Insert** button in the **Cells** group. *The Insert menu appears.*	
7. Insert the Copied Cells. *The copied cells are inserted.*	Click **Insert Copied Cells**
8. If needed, select **Shift cells down**, and then click **OK**. *The copied cells are inserted in* ***FormatNum.xlsx*** *on* ***Sheet2****.*	Click **OK**

Close **FormatCellC.xlsx** and **FormatNum.xlsx** without saving.

8.9 Deleting Cells

Concepts

If you are deleting rows or columns, other rows or columns automatically shift up or to the left.

Note: To quickly repeat deleting cells, rows, or columns, select the next cells, rows, or columns, and then press **CTRL+Y**.

	A	B	C
1	Infinity Trading Inc.		
2	Profit Report		
3			
4	Sales Rep	January	March
5	Mark	2,398	2,108
6	Alvin	3,860	2,403
7	Alex	2,919	3,860
8	Eric	2,471	4,009

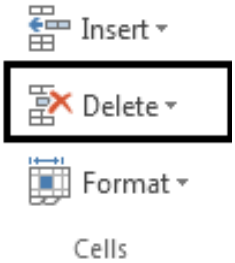
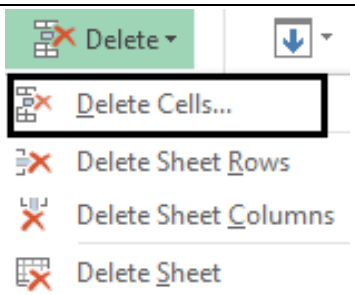
February Data Deleted

Steps

To delete cells in a worksheet:

Open **FormatCellC.xlsx**.

Select the **Q1** worksheet.

1. Select cells **A5 through D5**. *Cells A5 through D5 is selected.*	Select cells **A5:D5**
2. Select the **HOME** tab. *The **HOME** tab is selected and the relevant commands are displayed on the ribbon.*	
3. Click the **Delete** button in the **Cells** group. *The Delete list is displayed.*	
4. Click **Delete Cells…** from the list displayed. *The seleted cells are deleted and the remaining cells shift up.*	

Practice the Concept: Select cells C4 through C8 and then delete the selected cells, moving the remaining data to the left.

8.10 Review Exercise

Format cells to improve the appearance of a worksheet.

1. Open **ExFormatCell.xlsx**.
2. Add a **Thick Box Border** to the range **A4:J4**. AutoFit column **J** to view the right edge of the border.
3. Apply the same thick border style to the range **A11:J11**.
4. Shade the range **A4:A11** in **Aqua, Accent 5, Lighter 60%** (third row, ninth column).
5. Repeat the aqua shading in the range **B4:J4**.
6. Merge and centre the text in cell **A1** across the range **A1:J1**.
7. Use the **Format Painter** to copy the formats from cell **A1** to cell **A2**.
8. Split cell **A2** by removing the merge and centre format.
9. Centre cell **A1** vertically.
10. Use the **Borders** menu to draw a black, double line along the bottom edge of cells **A2:J2**.
11. Scroll to cell **P1**. Cut cells **P10:V10**. Then, insert the cut cells into the range **P5:V5**.
12. Insert cells in column **AA**, rows **15** and **16** only. (***Hint: AA15:AA16***.) Shift the cells to the right. Type **200** in cell **AA15** and **25** in cell **AA16**.
13. Delete the range **P15:V15**, shifting the cells up.
14. Close the workbook without saving it.

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LESSON 9 -
WORKING WITH TABLES

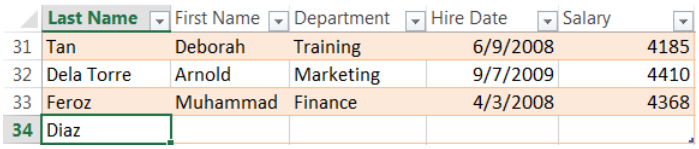
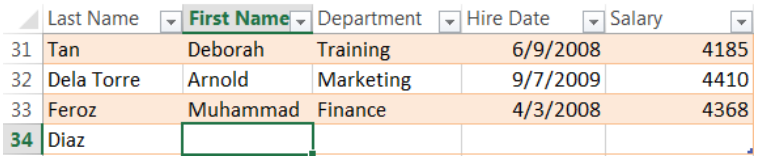
In this section, you will learn about:

- Adding table rows
- Adding table columns

9.1 Adding Table Rows and Columns

Steps

Open **Table.xlsx** to add new rows of data to the table:

1. Select cell **A34**. *Cells A34 is selected.*	Select cells **A34**
2. Type **Diaz** in the selected cell. *The text appears in cell A34.*	
3. Press **Tab**. *The active cell moves to the next cell and a new row is added to the table.*	

Practice the Concept: Enter the rest of the data as indicated in the table below:

	A	B	C	D	E
34	Diaz	David	Sales	08-07-2006	3324
35	Daniels	Fred	Marketing	09-06-2007	2936

Practice the Concept: Select cell **F4**, type bonus and then press [**Enter**]. The table expands to include the new column.

9.2 Review Exercise

Use table features

1. Open **ExTable.xlsx**.
2. Insert a new column in the table between **Product** and **Inv Num**. Then delete the new column.
3. Scroll as necessary and select cell G67. Press **[Tab]** and enter the following data:

Column	Data
Product	Gloves
Inv Num	4230
Sales Rep	John Carpenter
Date Sold	7/23/2007
Price Each	12
Qty Sold	19

4. Close the workbook without saving it.

LESSON 10 - FORMULAS

In this section, you will learn about:

- Using basic formulas
- Entering formulas
- Basic functions
- Using the AutoSum button
- Using the AutoSum list
- Using formula autocomplete
- Editing functions
- Using the auto calculate
- Modifying formulas using the range border
- Error checking
- Creating an absolute reference
- Using the IF function

10.1 Using Basic Formulas

Concepts

Formulas are used to perform calculations on values entered into the cells of a worksheet. A **formula** is an equation that performs a calculation. Excel can execute many formulas, including those that add, subtract, multiply, and divide.

One of the most useful features of Excel is called a cell reference. Cell reference identifies the location of a cell, and this cell reference can be used in formulas.

Excel uses standard operators for equations, such as a **plus sign** for addition (+), a **minus sign** for subtraction (-), an **asterisk** for multiplication (*), and a **forward slash** for division (/).

When you write formulas in Excel, you must begin with an **equal sign** (=) because the cell contains, or is equal to, the formula and its value.

The mathematical operators that can be used in a formula are listed in the following table:

Operator	Performs
+ (plus sign)	Addition
- (minus sign)	Subtraction
* (asterisk)	Multiplication
/ (slash)	Division
( ) (parentheses)	Controls the order of mathematical operations; calculations within parentheses are performed first.
% (percent)	Converts a number into a percentage; for example, when you type **10%**, Excel reads the value as .10.
^ (caret)	Exponentiation; for example, when you type **2^3**, Excel reads the value as 2*2*2.

Addition	+	=10+10
Subtraction	-	=10-10
Multiplication	*	=10*10
Division	/	=10/10
Exponents	^	=10^10

When more than one operator appears in a formula, it is calculated using the standard mathematical order of precedence. This order determines which operations are carried out first. The order of precedence is as follows:

- Parentheses
- Exponentiation
- Multiplication and division
- Addition and subtraction.

For example, the result of **2+3*4** is 14, but the result of **(2+3)*4** is 20.

10.2 Entering Formulas

Concepts

Formulas begin with an equal sign (=) to tell Excel to perform a calculation and usually contain cell addresses. The equal sign prevents Excel from interpreting the formula as text, since all cell addresses begin with letters. You enter a formula in the cell where you want the result to appear.

When you enter a formula into a cell, you can either type the cell addresses referenced or use the mouse to select the cells and allow Excel to enter the cell addresses into the formula automatically.

As you type or select cell addresses, Excel places a coloured border with squares at each corner around each referenced cell. Excel uses a different colour border for each cell referenced in the formula.

Steps

From the **Student Folder**, open **Formula.xlsx.**

To enter a formula into a cell:

Create a formula to compute the Net Profit for District 1 by selecting the Total Sales in cell B16 and subtracting the Expenses in cell B17.

1. Select the cell in which you want to enter the formula, **B18**. *The cell becomes the **Active Cell**.*	District 1 District 2 Total Sales 65004 18400 Expenses 7426 Net Profit
2. Type an equal sign (**=**) to begin the formula. *An equal sign (=) appears in the **Formula Bar** and in the cell.*	District 1 Total Sales 65004 Expenses Net Profit =
3. Enter the first cell referenced in the formula, **B16**. *The cell address appears in the **Formula Bar** and in colour in the cell, a matching coloured border appears around the referenced cell.*	District 1 Total Sales 65004 Expenses Net Profit =B16
4. Enter the first mathematical operator, **-**. *The operator appears in the formula bar and in the cell.*	District 1 District 2 65004 18400 =B16-
5. Enter the next cell referenced in the formula, **B17**. *The cell address appears in the **Formula Bar** and in a different colour in the cell, a matching coloured border appears around the referenced cell.*	District 1 District 2 65004 18400 7426 =B16-B17
6. When you have finished creating the formula, press **[Enter]**. *The result of the formula appears in the cell, and the coloured borders of the referenced cells no longer appear.*	Press **[Enter]**

Select cell **B18**. Notice that the formula appears in the formula bar and the result of the formula appears in the cell. The result of the formula is **57578**. Now change the Total Sales for District **1** to **74500**. Notice that the formula recalculates the Net Profit in cell B18 to **67074**.

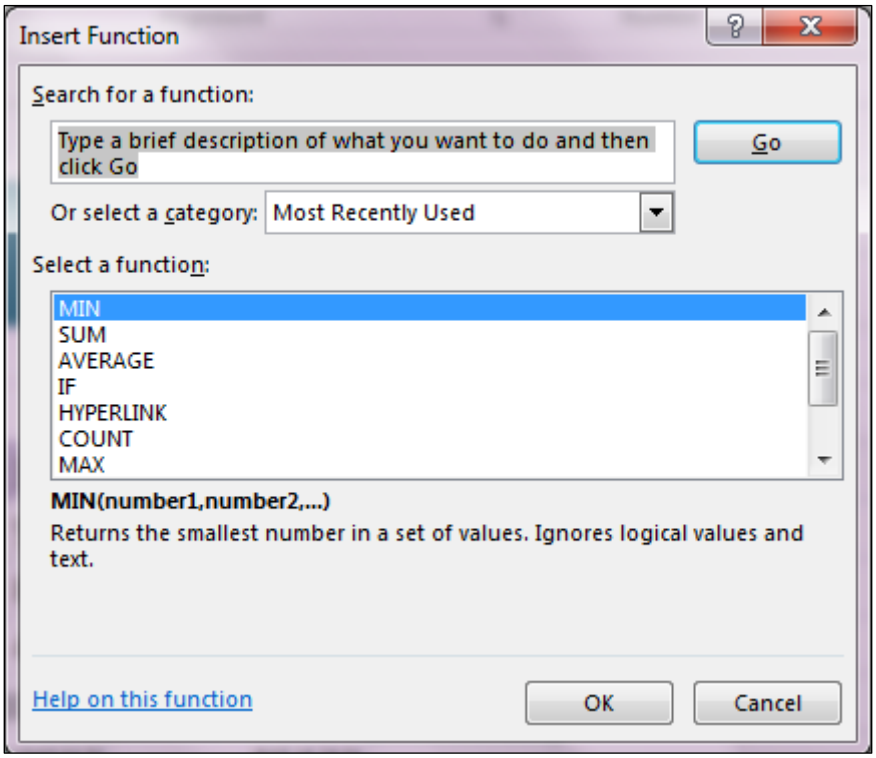
Practice the Concept: District 2 is projecting that expenses will be 8% of sales. To calculate the Expenses for District 2, select cell **C17** and type an **=** (equal sign) to start the formula. Type **C16*.08** to multiply the Total Sales for District 2 by 8%, and press **[Enter]** to complete the formula. The result should be **1472**. (**Note:** You could have also typed **=C16*8%**.)

Now use the mouse to create a formula that calculates the Net Profit for District 2. Start by typing an equal sign (**=**) into cell **C18**. Then, click cell **C16**, type a minus sign (-) and click cell **C17**. Finally, press **[Enter]** to complete the formula. The result should be **16928**.

10.3 Basic Functions

Concepts

There is a long list of Excel's built-in formulas that make it easy to perform complex mathematical operations. These formulas are organised into categories which you can view. You can use the Insert Function button to insert the basic functions.



Insert Function Dialog Box

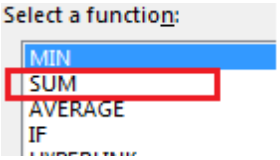
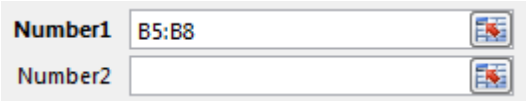
The basic functions used are:

Function	Name	Description
Sum	SUM	The sum of the values
Average	AVERAGE	The average of the values
Minimum	MIN	The smallest value
Maximum	MAX	The largest value
Count	COUNT	The number of data values

Counta	COUNTA	The number of data values in non-blank cells
Round	ROUND	Numbers rounded to whole numbers

Steps

To use functions:

1. Select the cell into which you want to enter the formula. *The selected cell becomes the **Active Cell**.*	Click cell **B9.**
2. On the **FORMULAS** tab in the **Functions Library** group, click the **Insert Function** button. *The Insert Function dialog box is displayed.*	Click
3. Select **SUM** from the **Select a function** list and click the **OK** button**.**	
4. Select the **Collapse Dialog** button for the argument you want to edit. *The Function Arguments dialog box collapses.*	Click the **Number 1**
5. Select the range you want to use in the calculation. *The range is selected as you drag.*	
6. Release the mouse button *The range appears in the collapsed Function Arguments dialog box, as well as in the formula in both the **Formula Bar** and the cell.*	Release the mouse button
7. Click the **Expand Dialog** button *The Function Arguments dialog box expands.*	Click

8. Select **OK**. *The Function Arguments dialog box closes, and the result of the formula appears in the cell.*	Click OK
9. Press **[Enter]**. *The result of the formula appears in the **Active Cell**.*	Press **[Enter]**

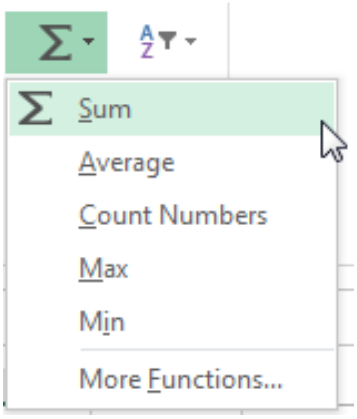
The result of the function should be **7490**. Select cell **B9** and notice the **SUM** function in the formula bar.

Delete **B9** cell contents.

10.4 Using the AutoSum Button

Steps

To use the **AutoSum** button to total the values in a column or row:

1. Select the cell into which you want to enter the formula. *The selected cell becomes the **Active Cell**.*	Click cell **B9.**
2. Click the arrow of the **AutoSum** button in the **Function Library** group on the **FORMULAS** tab. *The suggested range is surrounded by a coloured border, and a function ScreenTip appears.*	
3. Press **[Enter]**. *The result of the formula appears in the **Active Cell**.*	Press **[Enter].**

The result of the function should be **7490**. Select cell **B9** and notice the **SUM** function in the formula bar.

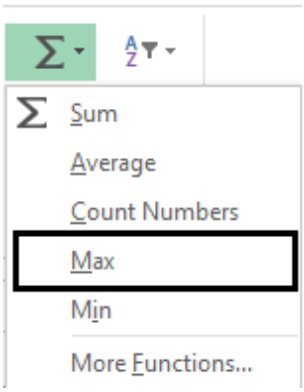
Practice the Concept: Use the **AutoSum** button to total the sales figures for Feb in cell **C9** and for Mar in cell **D9**. The results should be **7495** and **7628**.

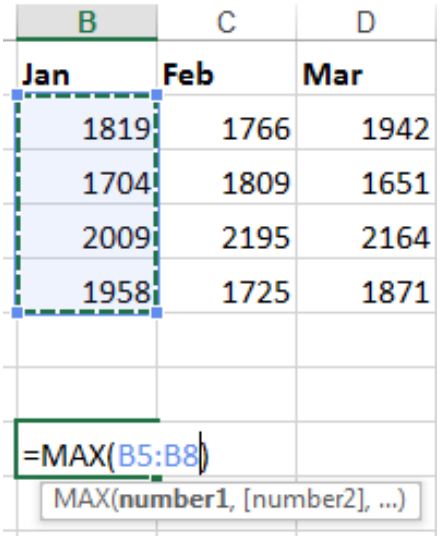
10.5 Using the AutoSum List

Step

You can also use formula options other than sum, such as minimum or maximum, using the AutoSum list.

To use the **AutoSum** list:

1. Select the cell into which you want to enter the formula. *The selected cell becomes the **Active Cell**.*	Select cell **B11.**
2. Select the arrow part of the **AutoSum** button on the **FORMULA** tab. *A list of additional functions appears.*	
3. Select the desired function. *The suggested range is surrounded by a blinking, coloured border, and a function ScreenTip appears.*	

4. Drag to select the range you want to calculate, if necessary. *The range is selected as you drag.*	
5. Release the mouse button. *The blinking, coloured border appears around the selected range.*	Release the mouse button
6. Hit **[Enter]**. *The result of the formula appears in the cell.*	Press **[Enter]**

The result of the formula in B11 should be **2009**.

10.6 USING AUTOCOMPLETE

Concepts

Although the **AutoSum** list assists you in creating formulas for the most commonly used functions, you may prefer to manually enter a function.

The **SUM**, **AVERAGE**, **MAX**, **MIN**, and **COUNT** functions are entered with the same syntax, including beginning the function with an equal sign (**=**) and then typing the name of the function and an open parenthesis. You then enter the cell range by dragging to select the cells or by typing the first and last cells in the range. These functions are defined in the following table:

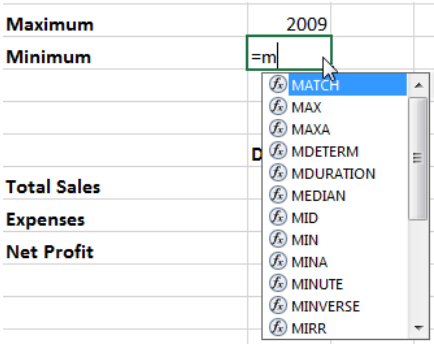
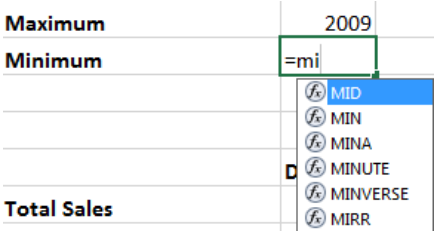
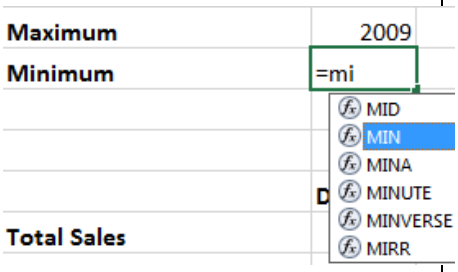
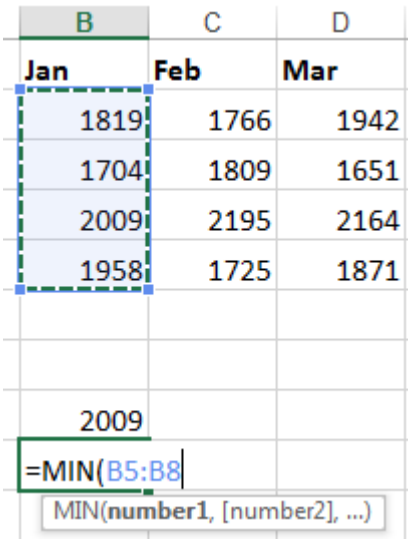
Function	Example	Description
SUM	=SUM(A1:A20)	Totals all the numbers in a range.
AVERAGE	=AVERAGE(A1:A20)	Returns the average of a range of numbers; if a cell in the range is empty, it is not used in calculating the average; if a cell in the range contains the number zero, it is used in calculating the average.
MAX	=MAX(A1:A20)	Returns the highest value in a range of numbers.
MIN	=MIN(A1:A20)	Returns the lowest value in a range of numbers.
COUNT	=COUNT(A1:A20)	Returns the number of cells in the range that contain numbers.
COUNTA	=COUNTA(A1:A20)	Returns the number of cells in the range that contain data (e.g. text or numbers).
ROUND	=ROUND(A1,0)	The numbers are rounded to the nearest whole number.

After you type an = (equal sign) and the beginning letters of a formula, the **Formula AutoComplete** feature displays valid functions, names and text strings that match the letters in a dynamic drop-down list.

Steps

To use Formula AutoComplete to create a formula using a basic function.

1. Select the cell into which you want to enter the formula. *The active cell moves accordingly.*	Select cell **B12**
2. Begin the formula by typing the equal character **[=].** *The equal character [=] is entered in the selected cell.*	Type **=**

3. Type the first letter of the formula. *The **Formula AutoComplete** drop-down list is displayed with the first option highlighted and a ScreenTip describing its use.*	
4. Type the next letter in the formula. *A list of options becomes shorter.*	
5. Press the down arrow on the keyboard to highlight the desired option. *The desired function is highlighted*	
6. Press the **[Tab]** key to select the desired function. *The **Formula AutoComplete** drop-down list closes, the function is inserted in the cell with the insertion point positioned immediately after the opening parenthesis and a ScreenTip describes the structure of the function.*	Press **[Tab]**
7. Select the range of cells to be calculated. *The range is outlined as you drag and a ScreenTip indicates how many columns and rows are selected.*	

8. Release the mouse button. *The formula appears in the Formula Bar and in the cell, and a blinking border with coloured corners appears around the selected cells.*	Release the mouse button
9. Press **[Enter]**. *The result of the formula appears in the cell.*	Press **[Enter]**

The result of the formula should be **1704**.

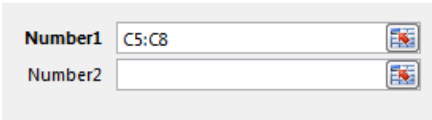
Practice the Concept: Select cell **E5** and type the function **=sum(B5:D5)**. Notice that a coloured border surrounds the range as you type. Press **[Enter]** to complete the function. The result should be **5527**. Copy this function to the cell range E6:E8.

10.7 Editing Functions

Steps

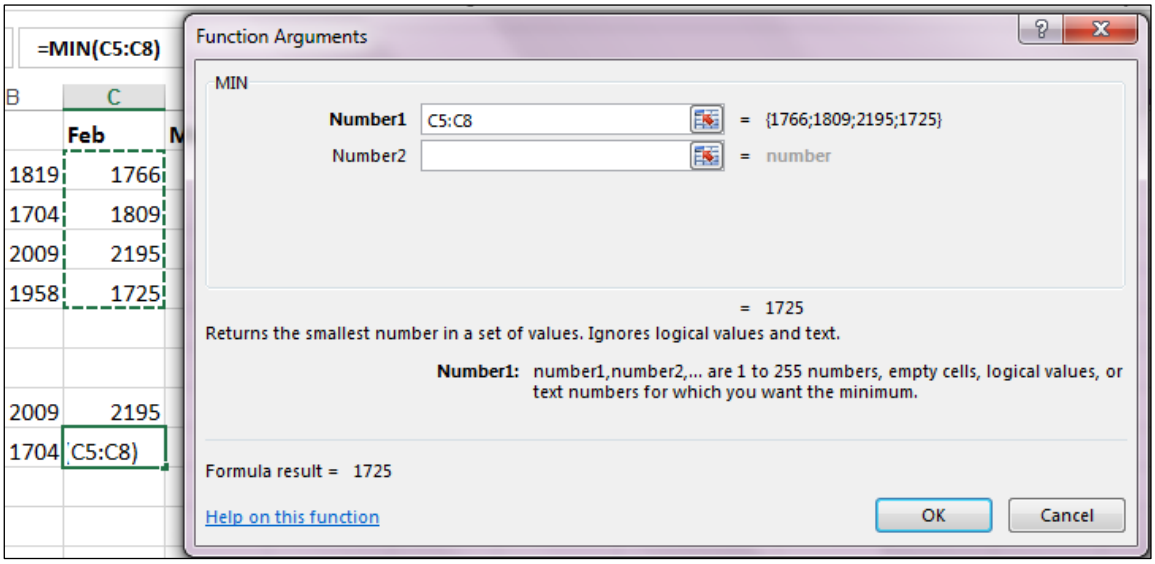
To edit a function:

Select cell C12 and use the **AutoSum** list to insert the **MIN** function; **accept the suggested range**.

1. Select the cell containing the function you want to edit. *The active cell moves accordingly.*	Select cell **C12**
2. Select the **Insert Function** button on the **FORMULA** tab. *The Function Arguments dialog box opens.*	
3. Select the **Collapse Dialog** button for the argument you want to edit. *The Function Arguments dialog box collapses.*	Click the **Number 1**
4. Select the range you want to use in the calculation. *The range is selected as you drag.*	

5. Release the mouse button *The range appears in the collapsed Function Arguments dialog box, as well as in the formula in both the **Formula Bar** and the cell.*	Release the mouse button
6. Select the **Expand Dialog** button *The Function Arguments dialog box expands.*	Click
7. Select **OK**. *The Function Arguments dialog box closes, and the result of the formula appears in the cell.*	Click OK

The result of the calculation should be **1725**.



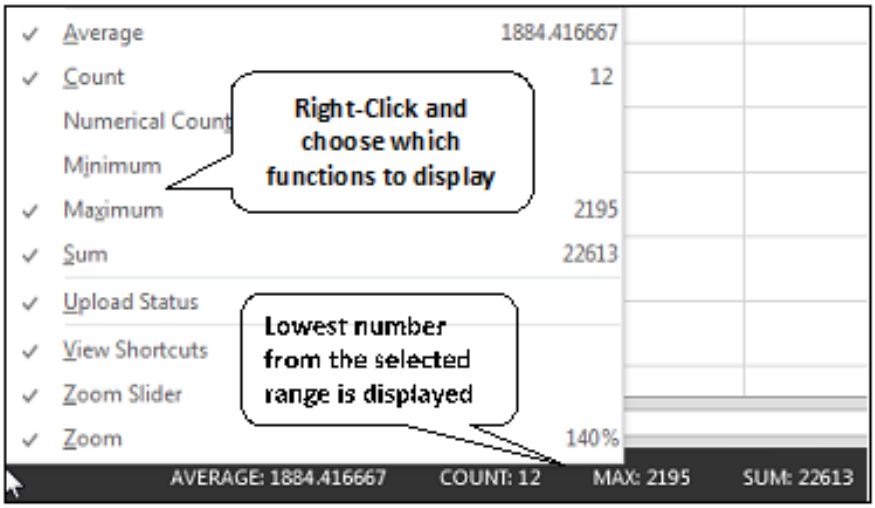
Function Arguments Dialog Box

10.8 Using Auto Calculate

Concepts

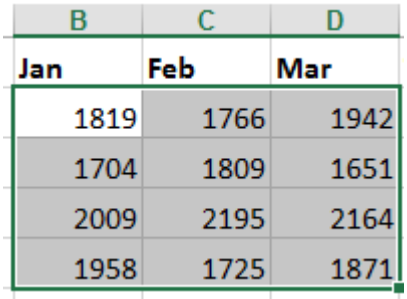
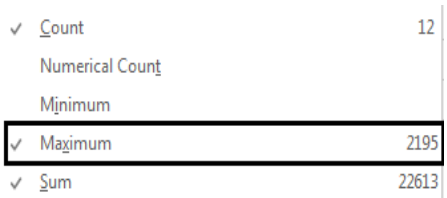
The fastest way to perform a calculation on a range of cells is by using the AutoCalculate feature. And the best part is, you don't even have to type in a formula – it's automatic! Whenever you highlight a range of cells, the sum of that range is displayed in the status bar.

However, you aren't limited to just the SUM function. You can also calculate the Average, Count, Count Nums, Maximum, and Minimum of the range simply by right clicking on the Status Bar and choosing the desired function.



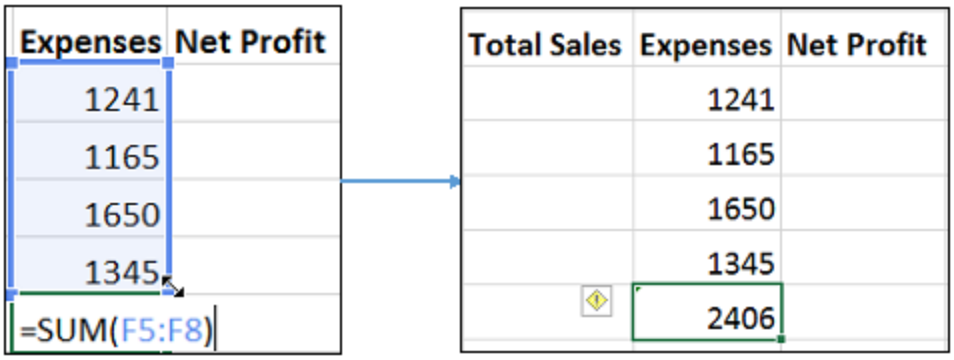
Steps

To use the **AutoCalculate** feature:

1. Select the range you want to calculate. *The range is selected as you drag.*	
2. Release the mouse button. *The results of the enabled **AutoCalculate** functions are displayed in the **Status Bar**.*	Release the mouse button
3. To enable additional **AutoCalculate** results, right-click anywhere on the **Status Bar**. *The **Customize Status Bar** menu appears.*	Right-click on the **Status Bar**
4. Select the desired **AutoCalculate** function(s). *The selected function(s) appear in the **Status Bar**.*	
5. Select the **Status Bar**. *The **Customize Status Bar** menu closes.*	Left-click on the **Status Bar**

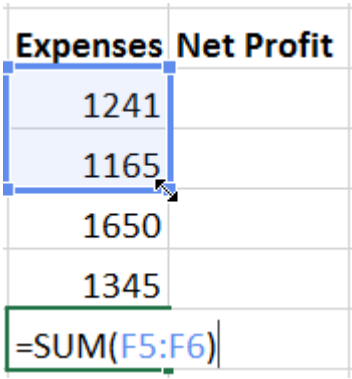
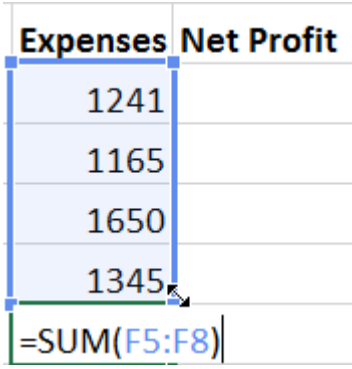
Click any cell to deselect the range.

10.9 Modifying Formulas Using Range Borders



Steps

To use range borders to modify a formula:

1. Double-click the cell **F9** containing the formula you want to edit. *The formula range references and their corresponding range borders appear in the same colour.*	Double click on cell **F9**
2. To change the size of a referenced range, point to the square range handle at the appropriate corner of the range border. *The mouse pointer changes to a black, diagonal, double-headed arrow.*	
3. Drag the range border to the desired position. *The range changes as you drag.*	

4. Hit **[Enter]**. *The result of the modified formula appears in the cell.*	Press **[Enter]**

Undo your last action so that it displays the total of only F5:F6. Notice that Excel shows a green arrow at the top left corner of the cell as it detects there may be some error in the calculation.

10.10 Error Checking

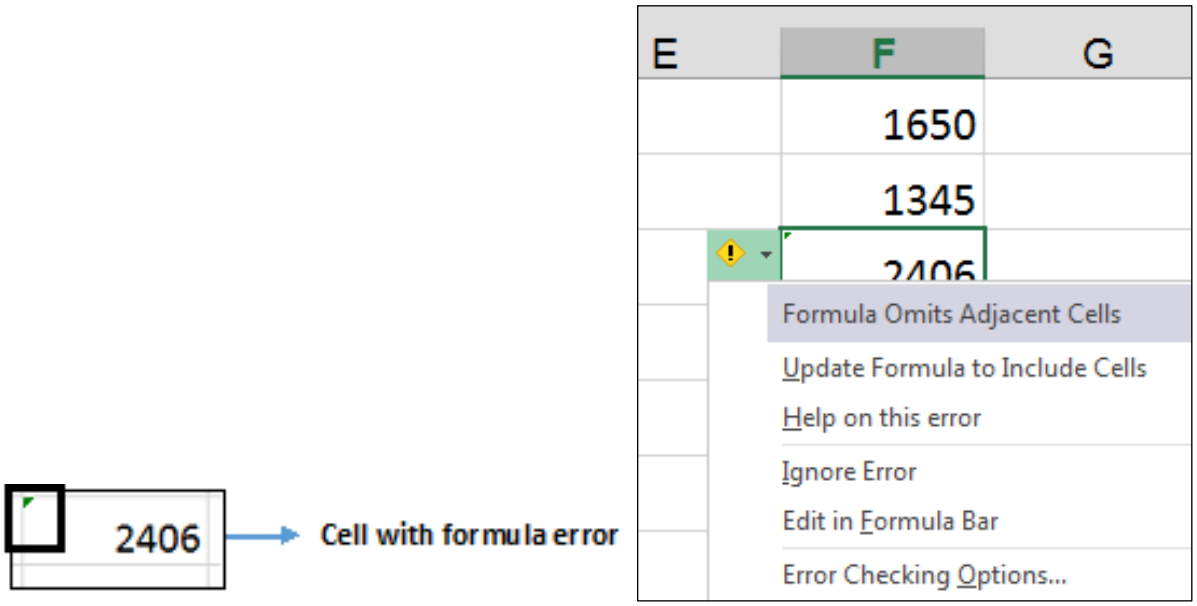
Concepts

It is possible to implement certain rules to check for errors in formulas, similar to a spelling checker. While the rules do not guarantee that your worksheet is error-free, they can go a long way toward identifying repeated mistakes.

Standard error values associated with using formulas include:

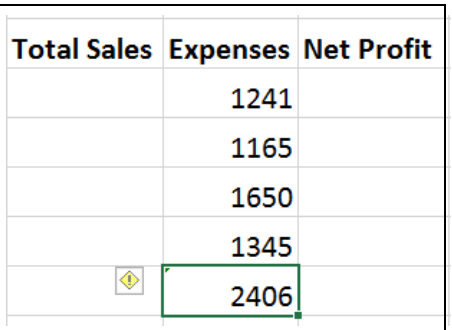
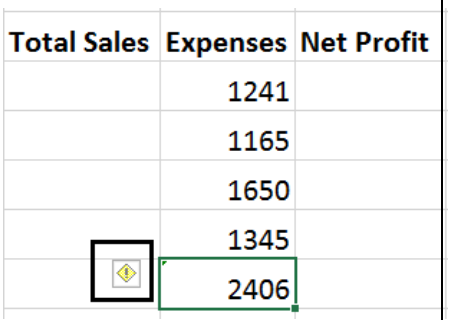
Error	Cause
#NAME?	Does not recognise text in formula
#DIV/0!	Number is divided by zero
#REF!	Cell reference is not valid
#####	Column is not wide enough to display value
#Value!	Wrong type of argument or operand is used
#N/A	Value is not available to a function or formula
#NUM!	Invalid numeric values in a formula or function
#NULL!	Cell references are not separated correctly in a formulas

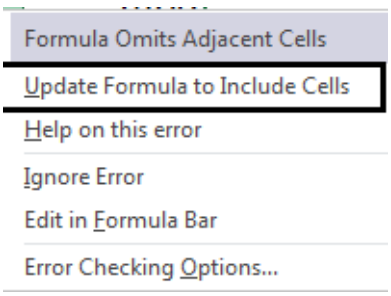
You can resolve an error by using the options that appear, or you can ignore the error by clicking **Ignore Error**. If you ignore an error in a particular cell, the error in that cell does not appear in further error checks. However, you can reset all previously ignored errors so that they appear again.



Steps

To use error checking options to correct an error in a formula:

1. Select a cell displaying a green triangle in the upper, left corner. *The cell is selected, and the error checking smart tag appears to its left.*	
2. Point to the error checking smart tag to display the ScreenTip. *A ScreenTip displays the reason for the identified error.*	
3. Click the error checking smart tag to display a list of error checking options. *A list of available error checking options appears.*	

4. Select the desired option *The error is corrected, the smart tag list closes, and the cell is no longer identified as containing an error.*	

You can also perform an error checking search throughout a worksheet by going to **REVIEW,** clicking the **Error Checking** button in the **Formulas Auditing** group and selecting either **Update Formula** or **Ignore Error** when errors are found in the worksheet.

10.11 Creating an Absolute Reference

Concepts

There are two basic types of cell references in Excel: relative and absolute. The difference between absolute and relative cell references becomes apparent when you copy formulas from one cell to another.

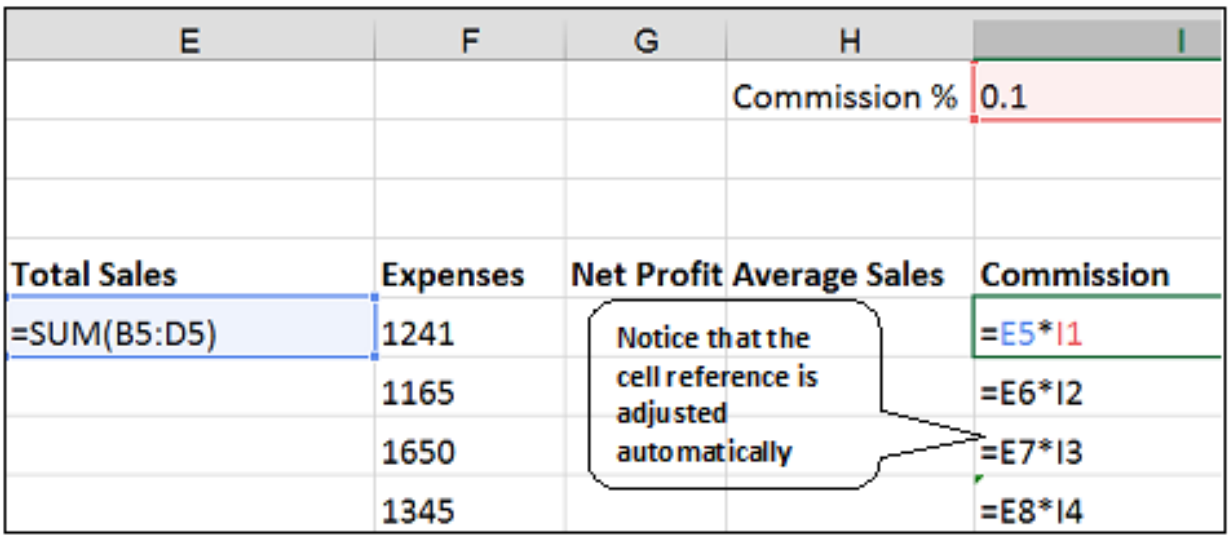
When you copy a formula containing relative references, the references are adjusted to the new location. For example, if you create a formula to total column A, and you then copy that formula to columns B and C, the cell references are adjusted to total the corresponding values in columns B and C. Relative references are the default.

Absolute references always refer to the same cell, regardless of where the formula is copied. Absolute cell references are useful when you do not want a cell reference to change when a formula is copied to another location. For example, if you create a formula to calculate the commission for a group of salespeople and the commission rate of 10% appears in cell C1, you want the formula to always refer to cell C1, no matter where it may be copied. Making the reference to cell C1 absolute ensures that the commission calculation is always based on cell C1, even if you copy the formula to another location. Putting a value such as a commission rate in a cell, rather than in each formula, is a good idea; if the commission rate changes, you only have to change the value in cell C1 and all commissions based on the formula will automatically update.

An absolute reference is designated by a dollar sign ($) before both the column letter and row number. You can press the **[F4]** key after typing the cell reference

and Excel will add both dollar signs ($) to make the cell reference absolute. If you continue to press the **[F4]** key, you cycle through each of the four types of references:

Cell Entry	Type of Reference	Result
C1	Relative	Both the row number and column letter are adjusted when copied.
$C1	Mixed	The column letter is not adjusted when copied.
C$1	Mixed	The row number is not adjusted when copied.
C1	Absolute	Neither the column letter nor the row number is adjusted when copied.



Steps

Create a formula with an absolute reference.

Copy the commission formula in cell **I5** and paste it into cells **I6:I8**. Notice that the formulas did not give the correct results for rows 6 to 8. View the formulas in **I6**, **I7** and **I8**. The commission is not calculated because due to relative referencing, the formulas do not reference the commission rate in cell **H1**. Delete the contents in cells **I5:I8**.

1. Select the cell in which you want to enter the formula. *The active cell moves accordingly.*	Click cell **I5**

2. Type the desired formula. *The formula appears in the **Formula Bar** and in the cell.*	Type ***=E5*I1***
3. Click anywhere in the cell reference you want to make absolute, either in the **Formula Bar** or in the cell itself. *The insertion point appears in the cell reference.*	Click in the text **E5** in the **Formula Bar**
4. Press **[F4]** as needed, until the desired type of cell reference appears. *Dollar signs ($) appear before both the column letter and the row number.*	Press **[F4]** once
5. Press **[Enter]**. *The result of the formula appears in the cell.*	Press **[Enter]**

Select cell **I5**; look at the formula in the **Formula Bar**. The cell reference **I1** indicates an absolute reference.

Practice the Concept: Copy the formula from cell **I5** to the range **I6:I8**. Press **[Esc]** to remove the blinking marquee and the **Paste Options** button.

Select cell **I6** and look at the formula in the **Formula Bar**.. The first cell reference is relative and now references cell E6. The second cell reference in the formula is absolute and continues to reference cell I1.

Close **Formula.xlsx** without saving**.**

10.12 Using the IF Function

Concepts

Logical functions calculate outcomes based on criteria. If the criteria are true, one action is taken; if the criteria are false, a different action is taken.

Logical functions can be used in a range of situations. For example, you can use a logical function to decide if a student has passed a test. If a mark is greater than or equals a specified value, the student passes. If the mark is less than the specified amount, the student fails.

The IF function returns one value if a condition is true and another value if a condition is false. In the example above, if the test score is greater than or equal to the pass mark, a true value is returned. If the score is less than the pass mark, a false value is returned.

You can use the IF function to display text as a result of a logical test, but you must enclose the text you want to display in quotation marks.

For example, the formula =IF(A1>10,"Over 10","10 or less") returns "Over 10" if A1 is greater than 10, and "10 or less" if A1 is less than or equal to 10.

The syntax of an IF function is:

=IF(logical test, value_if_true, value_if_false)

Component	Description
logical test	This can contain cell references, text in quotes, cell names, and numbers. The items are compared using the following operators: **=** equal to **<>** not equal to **>** greater than **>=** greater than or equal to **<** less than **<=** less than or equal to
value_if_true	The outcome if the logical test is true. It can be a number, formula, cell reference, cell name, text in quotes, or another function.
value if false	The outcome if the logical test is false. It can be a number, formula, cell reference, cell name, text in quotes, or another function.

Steps

To use the IF function:

Open the **Sales72.xlsx**. Display the **Bonus** worksheet. You want to calculate a bonus of 10% of sales for a team of salespeople, but they will only receive this bonus if they exceed their quota.

1. Select the cell in which you want the result of the IF function to appear. *The cell is selected.*	Click cell G8
2. Input **=if** and an open parenthesis (**(**). ***=if(*** *appears in the cell and on the formula bar. As you start typing a function, a Screen Tip is displayed to help you enter valid arguments.*	Type ***=if(***
3. Input the logical test. *The text appears in the cell and on the formula bar.*	Type ***e8>f8***
4. Input a comma (**,**). *The comma (**,**) appears in the cell and on the formula bar.*	Type **,**

5. Input the action to be taken if the logical test is true. *The text appears in the cell and on the formula bar.*	Type ***e8*10%***
6. Input a comma (**,**). *The comma (**,**) appears in the cell and on the formula bar.*	Type **,**
7. Input the action to be taken if the logical test is false. *The text appears in the cell and on the formula bar.*	Type ***0***
8. Input the closing parenthesis (**)**) . *The closing parenthesis (**)**) appears in the cell and on the formula bar.*	Type ***)***
9. Hit **[Enter]**. *The result of the IF function appears in the cell.*	Press **[Enter]**

Notice that since the first quarter sales total for **Deb Tan** was below his quota, a zero (**0**) was entered as his bonus.

Enter similar formulas in the range G9:G13 to calculate bonuses for the other sales people. Then, click anywhere in the worksheet to deselect the range.

Close the workbook without saving it.

10.13 Review Exercise

Create and work with formulas

1. Open **ExFormula.xlsx**.
2. In cell **B9**, use the **AutoSum** button to total the sales for Qtr 1.
3. In cell **F5**, use the **AutoSum** button to total the sales for the Northern region.
4. Select the blank cells in the range **F6:F8** and use the **AutoSum** button to total the sales for the three regions at the same time. Check each formula on the formula bar to make sure that columns B through E were calculated for each row.
5. In cell **H5**, create a formula that subtracts the expenses in cell **G5** from the total sales in cell **F5** for the Northern region.
6. In cell **I5**, type a function that averages the Northern region sales for the four quarters in the range **B5:E5**.
7. In cell **I6**, use the **AutoSum** list to enter a function that averages the Southern region sales for the four quarters in the range **B6:E6**.
8. In cell **I7**, use the **Insert Function** button to average the Central region sales for the four quarters in the range **B7:E7**.
9. In cell **I8**, use any method to average the Western region sales for the four quarters in the range **B8:E8**.
10. In cell **H1**, use the **AutoSum** list to find the maximum quarterly sales for all regions (the range **B5:E8**).
11. Use the **AutoCalculate** feature to verify the answer in cell **H1**.
12. Use the **AutoCalculate** feature to find the sum of all sales (the range **B5:E8**).
13. In cell **B14**, create a formula that calculates an increase of **15%** on the total sales in cell **B9**. (***Hint:*** *Try multiplying cell B9 by 1.15. Refer to the formula in cell C13 if you need an example.*)
14. In cell **B15**, create a formula that calculates an increase of **20%** on the total sales in cell **B9**. (***Hint:*** *Try multiplying cell B9 by 120%.*)
15. Use the range borders to edit the formula in cell **B9**. Drag the range border to include both the first and second quarter sales for all regions. Observe the changed results in cells B9, C13, C14 and C15. Then, change the formula back to include only the original range of **B5:B8**.
16. Close the workbook without saving it.

LESSON 11 -
CUT, COPY, AND PASTE

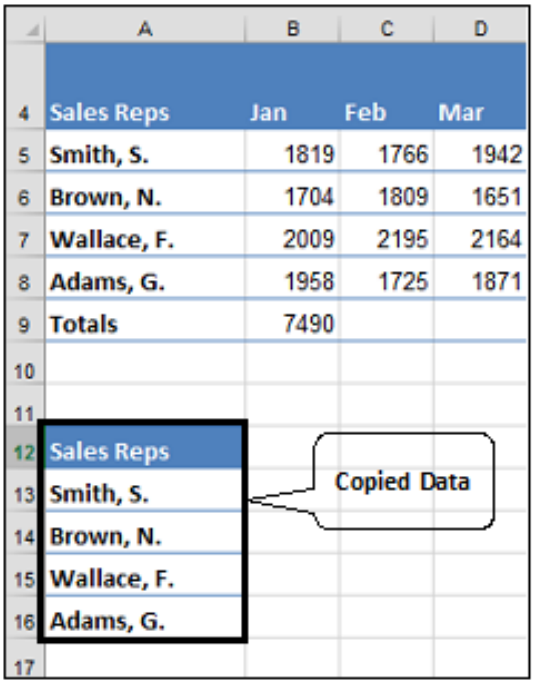
In this section, you will learn about:

- Copying and pasting data
- Cutting data
- Copying formulas
- Paste options
- Paste list
- Filling cells
- Drag-and-drop editing
- Undo and redo

11.1 Copying and Pasting Data

Concepts

When you copy cells that contain text or numbers, Excel creates a copy of the contents when they are pasted to another location.



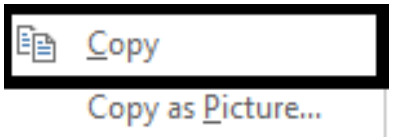
Steps

From the **Student Folder**, open **CopyPaste.xlsx**.

To copy and paste data:

If necessary, display the **HOME** tab.

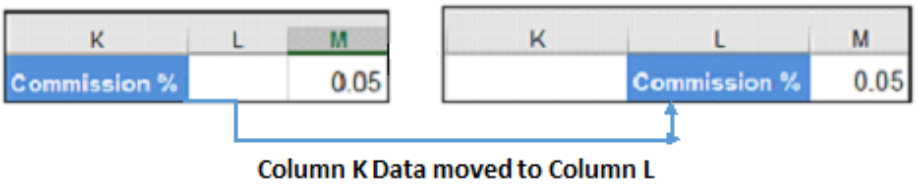
1. Select the cell range **A4:A8** you want to copy. *The range is selected as you drag.*	Select cell **A4:A8**
2. Select **Copy** arrow in the **Clipboard** group on the **HOME** tab. *The Copy menu is displayed below.*	

3. Select **Copy** from the menu displayed**.** *A blinking marquee appears around the selected cell or range and its contents are copied to the Office Clipboard.*	
4. Select the cell or range into which you want to paste the cell contents. *The cell or range is selected.*	Select cell **A12**
5. Select the top part of the **Paste** button in the **Clipboard** group on the **HOME** tab. *The contents of the Office Clipboard are pasted into the selected range.*	

Press **[Esc]** to remove the blinking marquee and hide the **Paste Options** button.

Select **A12:A16**, if necessary, and delete the copied text. Click in a blank cell to deselect the range.

11.2 Cutting Data



Steps

To cut and paste data:

If necessary, display the **HOME** tab.

1. Select the cell K1. *The cell or range is selected.*	Click the cell **K1**

2. Select **Cut** in the **Clipboard** group on the **HOME** tab. *A blinking marquee appears around the selected cell or range and its contents are placed on the Office Clipboard.*	
3. Select the cell or range into which you want to paste the cell contents. *The cell or range is selected.*	Select the cell **L1**
4. Select the top part of the **Paste** button in the **Clipboard** group on the **HOME** tab. *The contents of the Office Clipboard are pasted into the selected range.*	

Press **[Esc]** to remove the blinking marquee and hide the **Paste Options** button.

11.3 Copying Formulas

Concepts

When you copy cells containing formulas, Excel adjusts the cell references to the row or column where the formula is pasted. For example, if the formula **=B5+B6+B7+B8** calculates the total of three cells in column B and you copy that formula to the adjacent cell in column C, Excel adjusts the formula to **=C5+C6+C7+C8** so that the total of the three corresponding cells in column C are calculated.

Sales Reps	Jan	Feb	Mar
Smith, S.	1819	1766	1942
Brown, N.	1704	1809	1651
Wallace, F.	2009	2195	2164
Adams, G.	1958	1725	1871
Totals	=B5+B6+B7+B8	=C5+C6+C7+C8	=D5+D6+D7+D8

Formulas Copied

When you move cells containing formulas, Excel does not adjust the cell references in the formulas. The formulas still refer to the original cells for the

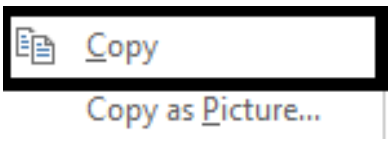
calculation. If you move both the formula and the cells containing the data, the cell references in the formula adjust to the new location of the data.

The **Paste** button in the **Clipboard** group on the **HOME** tab provides a **Paste** list.

Steps

To copy and paste formulas:

If necessary, display the **HOME** tab.

1. Select the cell containing the formula you want to copy. *The cell is selected.*	Click cell **E5**
2. Select **Copy** in the **Clipboard** group on the **HOME** tab. *The Copy menu is displayed below*	
3. Select **Copy** from the menu displayed**.** *A blinking marquee appears around the selected cell or range and its contents are copied to the Office Clipboard.*	
4. Select the cell or range into which you want to paste the formula. *The range is selected as you drag.*	Drag to select **E6:E8**
5. Select the top part of the **Paste** button in the **Clipboard** group on the **HOME** tab. *The contents of the Office Clipboard are pasted into the selected cell or range, the cell references in the formula change accordingly, and the **Paste Options** button appears.*	

Press **[Esc]** to remove the blinking marquee and hide the **Paste Options** button.

Select cell **E6** and look at the function in the **Formula Bar**. Notice that the **SUM** function that was copied from row 5 has adjusted its cell references to refer to the data in row 6 (**=SUM(B6:D6)**). Select cell **E7** and then cell **E8** and look at the adjusted formulas in the **Formula Bar**.

Practice the Concept: Copy the formula in cell **H5** and paste it into the range **H6:H8**. Check the **Formula Bar** for each cell to see how the formula was adjusted for each row.

Press **[Esc]** to remove the blinking marquee and hide the **Paste Options** button.

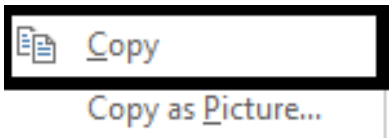
11.4 PASTE OPTIONS

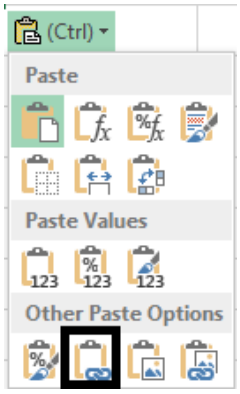
Concepts

The Paste Options button appears in Excel after you paste data into a cell, located in the bottom right-hand corner of the cell. If you click on the button you are given a variety of choices that determine how the data can be pasted into that cell.

Steps

To use the **Paste Options** button.

1. Select the cell or range you want to move or copy. *The cell or range is selected.*	Click cell **E5**
2. Select the **Cut** or **Copy** button in the **Clipboard** group on the **HOME** tab, as desired. *A copy menu is displayed below.*	
3. Select **Copy** from the menu displayed**.** *A blinking marquee appears around the selected cell or range and its contents are copied to the Office Clipboard.*	
4. Select the cell or range into which you want to paste the cut or copied data. *The cell or range is selected.*	Click cell **E18**
5. Select the top part of the **Paste** button in the **Clipboard** group on the **HOME** tab. *The data is pasted and the **Paste Options** button appears.*	

6. Select the **Paste Options** button. *A menu of available paste options appears.*	
7. Select the **Link Cells** option from the **Paste Options** menu. *The pasted data changes accordingly.*	
8. To hide the **Paste Options** button, press **[Esc]**. *The **Paste Options** button closes and the cell from which the data was copied is deselected.*	Press **[Esc]**

Practice the Concept: Change the number in cell **B5** to **1950** and press **[Enter]** Notice that both cells E5 and E18 are updated accordingly. Copy the text **Sales Report** in cell **A2** and paste it into cell **E16**. Select the **Paste Options** button and the **Match Destination Formatting** option to paste the text without its original formatting.

11.5 Paste List

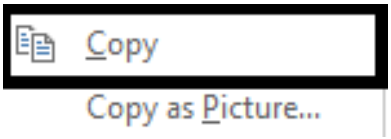
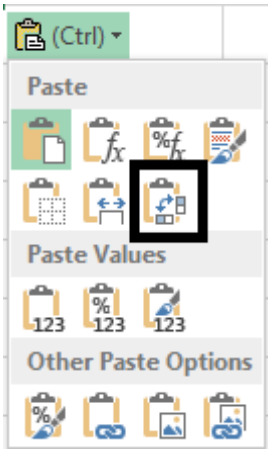
Concepts

As noted above, after you click the Paste Options button, you are presented with a list of options for how you would like that data to appear in the cell.

Steps

Use the **Paste** list.

1. Select the cell or range you want to move or copy. *The cell or range is selected.*	Drag **A5:A8**
2. Select the **Cut** or **Copy** button in the **Clipboard** group on the **HOME** tab, as desired. *A copy menu is displayed below.*	

3. Select **Copy** from the menu displayed**.** *A blinking marquee appears around the selected cell or range and its contents are copied to the Office Clipboard.*	
4. Select the cell or range into which you want to paste the cut or copied data. *The cell or range is selected.*	Click cell **E17**
5. Select the bottom part of the **Paste** button in the **Clipboard** group on the **HOME** tab. *A list of available paste options appears.*	
6. Select the **Transpose** option. *The contents are pasted accordingly.*	

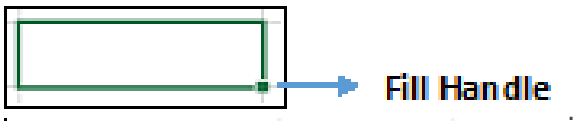
Notice that the transposed vertical row headings now appear as column headings.

Practice the Concept: Copy cell E6. Select cell F18 and use the **Paste** list to paste the value of the formula. Look at the formula bar. Notice that only the value was pasted, not the formula. Change the number in cell B6 to **1850**. Notice that cell E6 updates the results of the formula to **5310**, but cell F18 still displays the constant **5164**.

11.6 Filling Cells

Concepts

It is possible to enter data automatically in Excel using the Auto Fill feature. This feature operates by using data or patterns in existing cells, allowing you to drag and fill in several cells using the fill handle.



Steps

To fill a range.

1. Select the cell containing the data you want to copy. *The selected cell becomes the **Active Cell**.*	Click cell **B9**
2. Point to the fill handle at the bottom-right corner of the selected cell. *The mouse pointer changes into a solid, black plus sign (**+**).*	
3. Drag the fill handle over the range you want to fill. *The range is outlined with a shaded border as you drag.*	Drag the fill handle over **C9:I9**
4. Release the mouse button. *The selected range is filled and the **Auto Fill Options** button appears.*	Release the mouse button

Click each of the filled cells. Notice that the formula has been adjusted for each one, relative to its location.

Practice the Concept: Use the fill handle to copy the formula in cell **G5** to the range **G6:G8**. Click any cell to deselect the range.

11.7 Drag-and-Drop Editing

Concepts

The mouse technique Drag-and-Drop allows you to pick up a cell selection and drop it into a new area on the worksheet.

Steps

To use drag-and-drop editing to move and copy cells:

1. Select the cell or range you want to move. *The cell is selected or the range is selected as you drag.*	Drag to select **A9:I9**
2. Release the mouse button. *The cell or range is selected.*	Release the mouse button
3. Point to the border of the selected cell or range. *The mouse pointer changes, a four-headed arrow is added to the standard pointer.*	Point to the border of **A9:I9**
4. Drag the cell or range to the desired location. *A shaded outline of the cell or range is displayed as you drag and a ScreenTip appears beside the mouse pointer showing the location currently occupied by the outline.*	Drag the range to **A13:I13**
5. Release the mouse button. *The cell contents move to the new location.*	Release the mouse button
6. Select the cell or range you want to copy. *The cell is selected or the range is selected as you drag.*	Drag to select **A4:I4**
7. Point to the border of the selected cell or range. *The mouse pointer changes, a four-headed arrow is added to the standard pointer.*	Point to the border of **A4:I4**
8. Hold down the **[Ctrl]** key. *The mouse pointer changes, the four-headed arrow disappears and a plus sign (+) appears beside the standard pointer.*	Hold **[Ctrl]**
9. While holding **[Ctrl]**, drag the range to the desired location. *A shaded outline of the range is displayed as you drag and a ScreenTip appears beside the mouse pointer showing the location currently occupied by the outline.*	Hold **[Ctrl]** and drag the range to **A12:I12**

10. Release the mouse button. *The cell contents are copied to the new location.*	Release the mouse button
11. Release the **[Ctrl]** key. *The mouse pointer reverts to the standard pointer.*	Release the **[Ctrl]** key

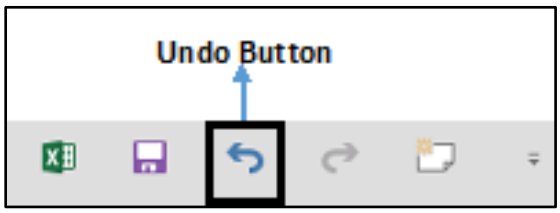
Practice the Concept: Use drag-and-drop editing to move the cell contents of the range **A13:I13** back to the range **A9:I9**. Delete the cell contents of the range **A12:I12**. Click any cell to deselect the range.

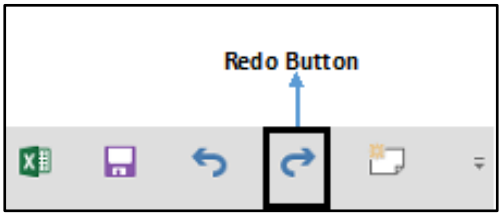
11.8 Undo and Redo

Concepts

The **Undo** feature allows you to reverse the results of the previous command or action.

Once you have used the **Undo** feature, the **Redo** feature becomes available. The **Redo** feature allows you to restore the results of the command or action you reversed with the **Undo** feature. Both features can be accessed on the **Quick Access Toolbar**.





Steps

To use the **Undo** and **Redo** features.

Delete the contents of cell C5 and move cell B9 to A11.

1. To undo the previous command or action, select the left-hand part of the **Undo** button on the **Quick Access Toolbar**. *The previous command or action is reversed.*	
2. To redo the undone command or action, select the left-hand part of the **Redo** button on the **Quick Access Toolbar**. *The command or action is redone.*	
3. To undo multiple consecutive actions, select the arrow on the right-hand part of the **Undo** button. *A list of actions appears, with the most recent action at the top of the list.*	
4. To redo multiple consecutive actions, select the arrow on the right-hand part of the **Redo** button. *A list of actions appears, with the most recently undone action at the top of the list.*	

11.9 REVIEW EXERCISE

Copy and move formulas and data

1. Open **ExCopyPaste.xlsx**.
2. Copy the range **A4:A8** and paste to cell **A14.** .
3. Copy the range **B4:E4** and paste to cell **B14**.
4. Use the **Copy** and **Paste** buttons to copy the formula in cell **H5** to the range **H6:H8**.
5. Use the fill handle to copy the formula in cell **I5** to the range **I6:I8**.
6. Use the fill handle to copy the formula in cell **B9** to the range **C9:I9**.
7. In cell **B15**, enter a formula that multiplies the contents in cell **B5** by the projected increase in cell **D12**. In the Formula Bar, select D12 and the press **F4** on the keyboard.
8. Use the fill handle to copy the contents in cell **B15** to the range **C15:E15**.
9. Select the range **B15:E15**, if necessary, and use the fill handle to copy the contents down to rows **16**, **17**, and **18**.
10. Change the projected increase in cell **D12** from **1.08** to **1.12**. Notice that all the projected values update automatically when you enter the new value for cell D12. In cell **A12**, change the text in the label from **8%** to **12%**.
11. Use drag-and-drop editing to move the cell contents in the range **E14:E18** to the range **G14:G18**. View the formulas in each of the cells G14:G18; notice that since you did not move the source data, the cell references did not change.
12. Use the **Undo** button to reverse the previous action.
13. Use drag-and-drop editing to copy the cell contents in the range **F4:F8** to the range **F14:F18**. Look at each of the cells F14:F18; notice that the cell references changed to reflect the new location.
14. Copy the range **H4:H9** and use the **Paste** list to paste the values to cell **K4**. View the contents of cells K5:K9 in the **Formula Bar**; notice that only the values of the formulas were pasted.
15. Change the expenses in cell **G5** to **50000**. Notice that cell H5 updates the net profit while cell K5 retains its original value.
16. Close the workbook without saving it.

LESSON 12 -
DATA MANAGEMENT

In this section, you will learn about:

- Sorting
- Finding data
- Replacing data
- Finding and replacing cell formats

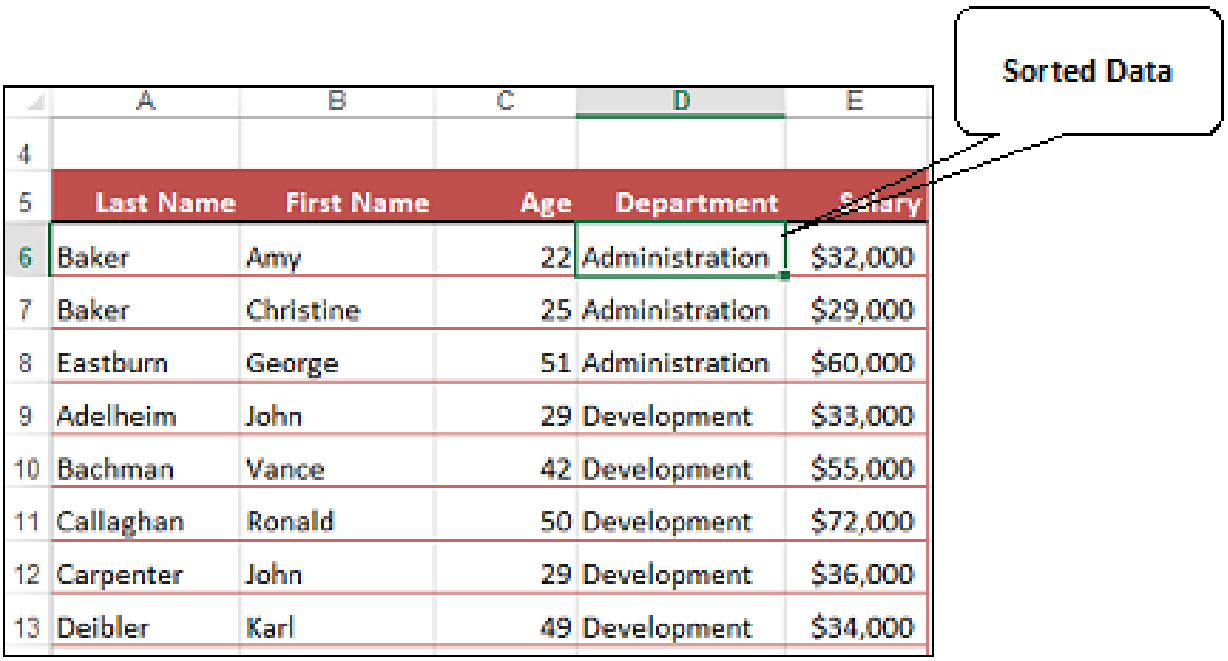
12.1 SORTING

Concepts

Sorting data is an integral part of data analysis. Sorting data helps you quickly visualise and understand your data better, organise and find the data that you want, and ultimately make more effective decisions.

Tip: To assist you when sorting data, you should, when you are creating a list, avoid blank rows and columns in the main body of the list. An exception to this is when you might want to insert a blank row before the Total row.

Sorting data is useful in a variety of contexts. You might want to put a list of names in alphabetical order, compile a list of levels of stock from highest to lowest, or order rows by colours or icons. You can quickly sort your data by using the A-Z and Z-A Sort buttons on the Ribbon's **DATA** tab.



	A	B	C	D	E
4					
5	Last Name	First Name	Age	Department	Salary
6	Baker	Amy	22	Administration	$32,000
7	Baker	Christine	25	Administration	$29,000
8	Eastburn	George	51	Administration	$60,000
9	Adelheim	John	29	Development	$33,000
10	Bachman	Vance	42	Development	$55,000
11	Callaghan	Ronald	50	Development	$72,000
12	Carpenter	John	29	Development	$36,000
13	Deibler	Karl	49	Development	$34,000

Steps

From the **Student Folder**, open **Sort.xlsx.**

To sort a list in ascending or descending order.

If necessary, display the **DATA** tab.

1. Select any cell in the column you want to sort. *The cell is selected.*	Click cell **D6**
2. Click the **Sort A to Z** button in the **Sort & Filter** group on the **DATA** tab. *The list is sorted in ascending or descending order accordingly.*	

Use the **Undo** button on the **Quick Access Toolbar** to undo all sorting and return the table to its unsorted state.

12.2 FINDING DATA

Concepts

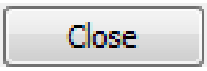
Excel‘s Find and Replace feature can be a powerful tool. You use Find and Replace to search for — and optionally replace — text or values in a worksheet. You can narrow the search results by specifying formatting to look for as well as other search options, including Match Case.

Steps

To find data in a range.

Display the **Employees** worksheet.

1. Select the range you want to search. *The range is selected.*	Drag **A6:E23**
2. Select the **HOME** tab. *The **HOME** tab is displayed.*	Click **HOME**
3. Select the **Find & Select** button. *The Find and Select dialog box opens to the **Find** page.*	
4. Select the **Find** button. *The Find dialog box opens.*	Click **Find**

5. Type the value you want to find in the **Find what** box. *The entry appears in the **Find what** box.*	Type ***edwards***
6. Select the **Find Next** button. *The first occurrence of the **Find what** entry becomes the active cell.*	Click
7. Select the **Find All** button. *The first occurrence of the **Find what** entry becomes the active cell, and a list of all found occurrences appears in the Find and Replace dialog box.*	Click
8. Click any entry in the **Find All** list to activate that cell. *The selected cell becomes the active cell.*	Click **A20** in the **Cell** column
9. Select **Close**. *The Find and Replace dialog box closes.*	Click 

12.3 Replacing Data

Concepts

You can use Excel's Find and Replace feature to change data. For example, if you prepare a report or project plan and then you realise that all the department called "**development**" needs to be changed to "**R&D**", you can use find-replace (CTRL+H) to do this for you.

Steps

To replace data in a range:

1. Select the range that contains the characters you want to replace. *The range is selected.*	Drag **A6:E23**
2. Select the **HOME** tab. *The **HOME** tab is displayed.*	Click **HOME**
3. Select the **Find & Select** button. *The Find and Replace dialog box opens with the **Replace** page displayed.*	

4. Select the **Replace** command. *The Find & Replace dialog box opens.*	Click **Replace...**
5. Select the **Find what** box. *The text is selected, or the insertion point appears in the **Find what** box.*	Click in the **Find what** box
6. Type the value you want to find. *The value appears in the **Find what** box.*	Type ***development***
7. Select the **Replace with** box. *The insertion point appears in the **Replace with** box.*	Press **[Tab]**
8. Type the desired replacement characters. *The characters appear in the **Replace with** box.*	Type ***R&D***
9. Select the **Find Next** button. *The first occurrence of the **Find what** entry becomes the active cell.*	Click Find Next
10. Select **Replace** to replace the current occurrence with the replacement characters, **Replace All** to replace all occurrences with the replacement characters, or **Find Next** to skip the current occurrence. *The characters are either replaced or skipped, and the active cell moves to the next occurrence of the entry in the **Find what** box.*	Click Replace
11. Continue replacing or skipping occurrences as desired. *All remaining matching occurrences are replaced or skipped, and a Microsoft Excel message box opens when the search is complete.*	Click Replace All
12. Select the **OK** button when you are prompted that the search is complete. *The Microsoft Excel message box closes.*	Click OK
13. Select the **Close** button. *The Find and Replace dialog box closes.*	Click Close

Click anywhere in the worksheet area to deselect the range.

12.4 Finding and Replacing Cell Formats

Concepts

You can use Excel's Find and Replace feature to change data. For example, if you prepare a report or project plan and then you realise that all of the red colour cells need to change to blue. Then, you can use find-replace (CTRL+H) to do this for you.

Steps

To find and replace data and formats.

If necessary, display the **Employees** worksheet.

1. Select the range containing the formatting you want to find or replace. *The range is selected.*	Drag **A6:E23**
2. Select the **HOME** tab. *The **HOME** tab is displayed.*	Click **HOME**
3. Select the **Find & Select** button in the **Editing** group. *The Find and Select list opens.*	
4. Select the **Replace** command. *The Find and Replace dialog box opens.*	
5. Select the **Find what** box. *The text is selected, or the insertion point appears in the **Find what** box.*	Click in the **Find what** box
6. Type the characters you want to find or delete the existing characters to find formatting only. *The characters appear in or are deleted from the **Find what** box.*	Type ***production***
7. Select the **Replace with** box. *The insertion point appears in the **Replace with** box.*	Press **[Tab]**

8. Type the desired replacement characters or delete the existing characters to replace formatting only. *The characters appear in or are deleted from the **Replace with** box.*	Press **[Delete]**, if necessary
9. Select the **Options** button. *The Find and Replace dialog box expands to display the advanced search options.*	Click Options >>
10. Select the **Format** button for either the **Find what** or the **Replace with** box, as desired. *The Find Format or Replace Format dialog box opens accordingly.*	Click Format... to the right of **Replace with**
11. Select the tab on which the formatting you want to find or use as a replacement is located. *The corresponding page appears.*	Click the **Font** tab
12. Select the desired formatting options. *The options are selected.*	Select **Italic** under **Font style**
13. Select the **OK** button. *The Find Format or Replace Format dialog box closes, and the corresponding **No Format Set** message is replaced with the word **Preview**, formatted accordingly.*	Click OK
14. Select the **Find Next** button. *The active cell moves to first occurrence of the **Find what** entry.*	Click Find Next
15. Select the **Replace** button to replace the current occurrence with the replacement formatting, **Replace All** to replace all occurrences, or **Find Next** to skip the current occurrence. *The current occurrence is replaced, and the next occurrence of the **Find what** entry becomes the active cell.*	Click Replace
16. Continue replacing or skipping occurrences as desired. *All occurrences are replaced, and a Microsoft Excel message box opens.*	Click Replace All

17. Select **OK**. *The Microsoft Excel message box closes.*	Click OK
18. Select the **Close** button. *The Find and Replace dialog box closes.*	Click Close

Click in a cell to deselect the range.

Close the Find and Replace dialog box.

Close **Sort.xlsx.**

12.5 REVIEW EXERCISE

Manage data in a worksheet

1. Open **ExSort.xlsx**.
2. Sort the list in the **Employees** worksheet in descending order by hire date.
3. Sort the list in the **Administration** worksheet in ascending order by last name.
4. Display the **Employees** worksheet.
5. Use the Find and Replace dialog box to find employees with a status of **2**. Notice that Excel locates any entry in the worksheet containing the number **2**.
6. Select the **Match entire cells contents** option in the Find and Replace dialog box. Now, use the **Find All** button to find all employees with a status of **2**. Notice that Excel locates entries that contain only the number **2**, for a total of 16 found occurrences.
7. Find and replace all occurrences of a status of **7** with a status of **5**. Be sure to find entire cells only.
8. Close the workbook without saving it.

LESSON 13 -
CREATING CHARTS

In this section, you will learn about:

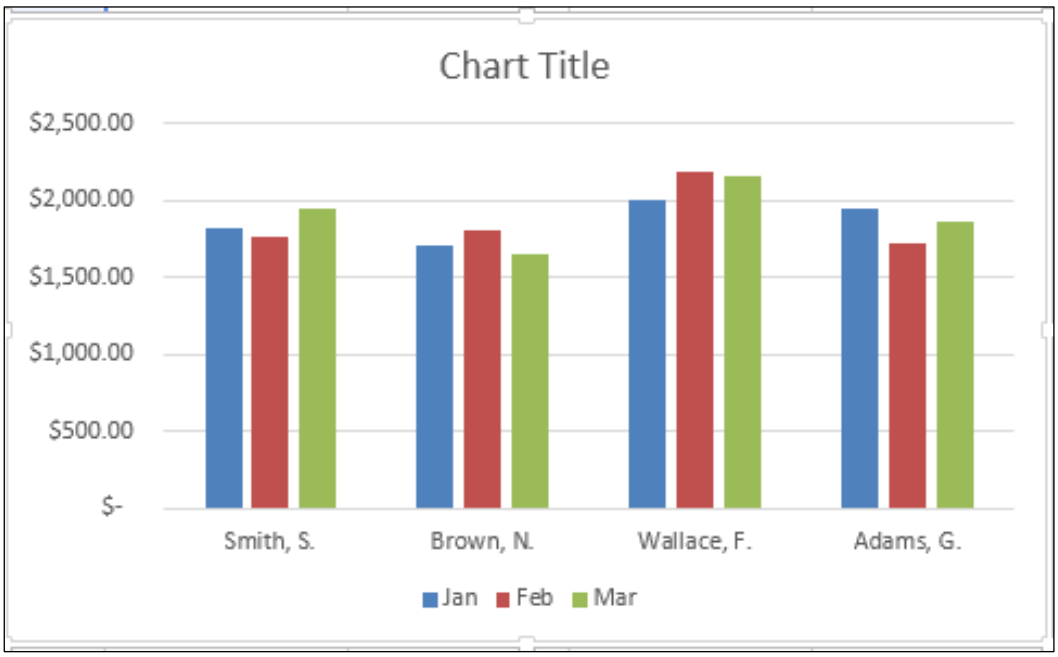
- Inserting a column chart
- Inserting a line chart
- Inserting a bar chart
- Inserting a pie chart
- Resizing a chart
- Deleting a chart
- Adding a chart title
- Changing the chart background
- Changing a column, bar, line, or pie slice colours
- Changing the chart type
- Changing the chart layout
- Copying and moving charts

13.1 Inserting a Column Chart

Concepts

You can create basic charts in Excel by selecting a suggested chart type. It is also possible to modify the chart, apply predefined styles and layouts, and add formatting to create a professional-looking chart.

Data which has been arranged in columns or rows on a worksheet can be plotted in a column chart. A column chart usually displays categories along the horizontal (category) axis and values along the vertical (value) axis.



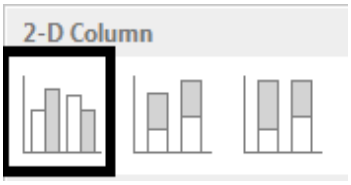
Excel Column Chart

Steps

To create a column chart:

From the **Student Folder**, open **Chart.xlsx**.

If necessary, select the **INSERT** tab.

1. Select the cell range containing the data you want to chart *The range is selected.*	Select range **A2:D6**
2. Select the **Column** button in the **Charts** group. *The **Column Chart** gallery opens.*	
3. Select the 2-D Clustered Column chart subtype from the gallery. *The gallery closes and the chart appears in the worksheet. CHART TOOLS contextual tab is displayed.*	

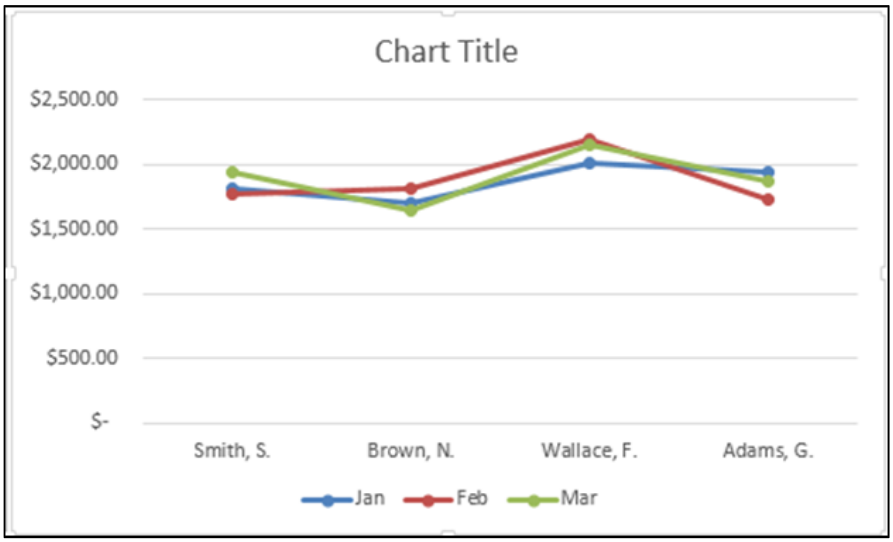
An embedded Clustered column chart is inserted in the worksheet. Select the chart by clicking it. Press the **Delete** key to delete the chart.

13.2 Inserting a Line Chart

Concepts

Line charts are mostly used to plot changes in data over a period of time, such as monthly temperature changes or daily changes in stock market prices.

Similar to most other charts, line charts have a vertical axis and a horizontal axis. If you are plotting changes in data over time, time is plotted along the horizontal or x-axis and your other data, such as rainfall amounts is plotted as individual points along the vertical or y-axis.



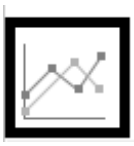
Excel Line Chart

Steps

To create a line chart:

From the **Student Folder**, open **Chart.xlsx**.

If necessary, select the **INSERT** tab.

1. Select the cell range containing the data you want to chart *The range is selected.*	Select range **A2:D6**
2. Select the **Line** button in the **Charts** group. *The **Line Chart** gallery opens.*	
3. Select the **Line with Markers** chart subtype from the gallery. *The gallery closes and the chart appears in the worksheet. CHART TOOLS contextual tab is displayed.*	

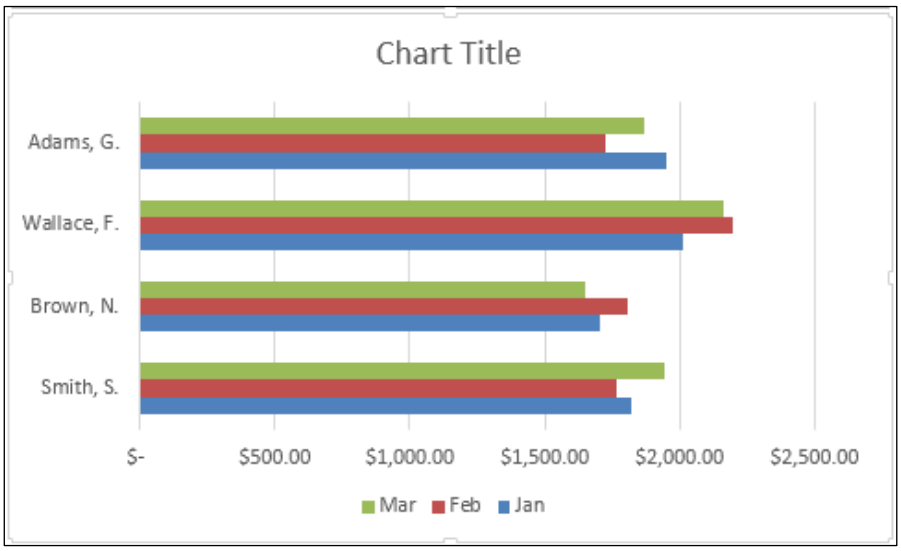
An embedded **Line with markers** chart is inserted in the worksheet.

Select the chart and press the Delete key to delete the chart.

13.3 Inserting a Bar Chart

Concepts

Bar charts are similar to column charts, but the difference is that bar charts display horizontal bars.



Excel Bar Chart

Steps

To create a bar chart:

From the Student Data directory, open **Chart.xlsx.**

If necessary, select the **INSERT** tab on the **Ribbon** and the **Sheet1** sheet.

1. Select the cell range containing the data you want to chart *The range is selected.*	Select range **A2:D6**

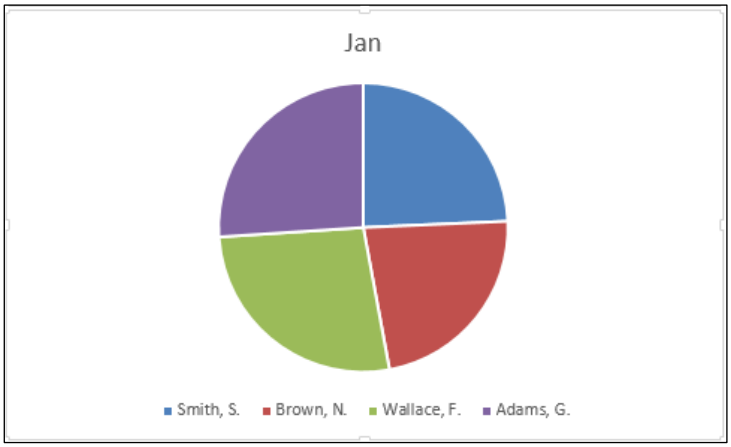
2. Select the **Bar** button in the **Charts** group. *The **Bar Chart** gallery opens.*	
3. Select the **Clustered Bar chart** subtype from the gallery. *The gallery closes and the chart appears in the worksheet. CHART TOOLS contextual tab is displayed.*	

An embedded **Clustered Bar chart** is inserted in the worksheet. Select the chart and Press the Delete key to delete the chart.

13.4 Inserting a Pie Chart

Concepts

Pie charts are excellent for displaying data points as a percentage of the whole.



Excel Pie Chart

Steps

To create a pie chart:

From the **Student Folder**, open **Chart.xlsx**.

If necessary, select the **INSERT** tab.

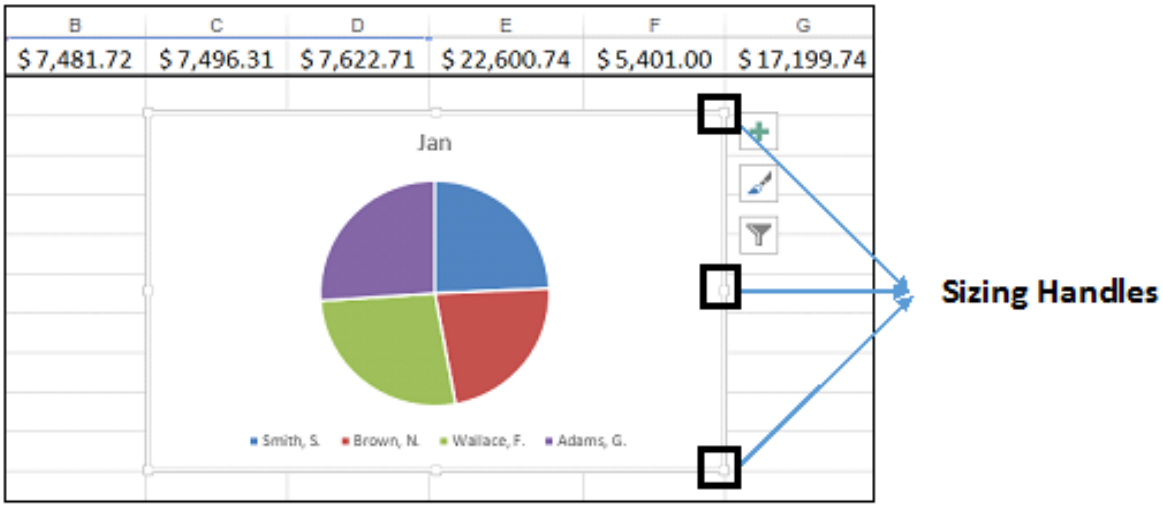
1. Select the cell range containing the data you want to chart *The range is selected.*	Select range **A2:B6**
2. Select the **Pie** button in the **Charts** group. *The **Pie Chart** gallery opens.*	
3. Select the **Pie** subtype from the gallery. *The gallery closes and the chart appears in the worksheet. CHART TOOLS contextual tab is displayed.*	

An embedded **2D Pie chart** is inserted in the worksheet.

13.5 Moving and Resizing a Chart

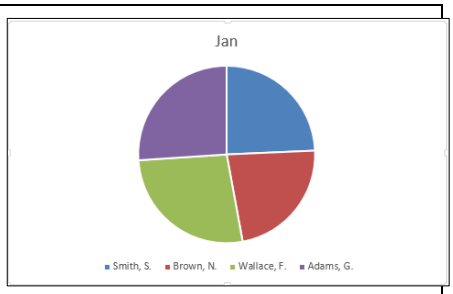
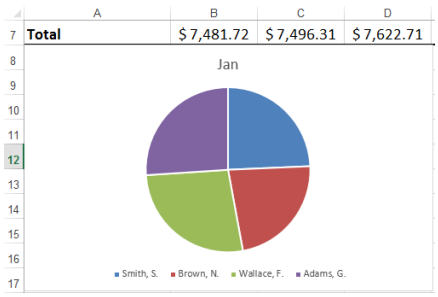
Concepts

Excel charts can be moved both within a worksheet and to another one. They can also be resized to fit correctly within the worksheet using the sizing handles.



Steps

To move and resize a chart.

1. Select the chart you want to move. *A frame* with *sizing handles appears around the chart.*	
2. Drag the chart to the cell **C8**. *An outline of the chart appears as you drag and the chart appears in the new location when you release the mouse button.*	
3. To move the chart to another worksheet, select **Move Chart** in the **DESIGN** tab. *The Move Chart dialog box will open.*	Click **DESIGN** then **Move Chart**
4. Check the **New sheet** checkbox and click **OK.** *The chart will be moved to the selected sheet.*	Click **New sheet** then **OK**
5. To resize a chart, point to the desired sizing handle. *The mouse pointer changes into a double-headed arrow.*	Scroll if necessary and point to the lower, right sizing handle

6. Drag the sizing handle to the cell **F17.** *The chart expands or contracts as you drag and the resized chart appears when you release the mouse button.*	Drag the lower right sizing handle to the lower, right corner of cell H26

13.6 Adding Chart Title

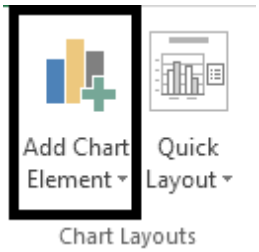
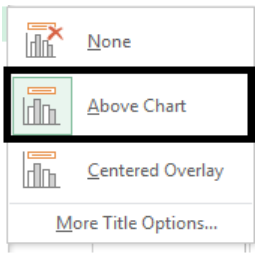
Concepts

Adding a chart title in Excel can help identify work in a worksheet, as well as adding a finishing touch to a chart, especially if used for presenting data in the future.

Steps

To add a title to a chart:

If necessary select the chart.

1. Select the **Add Chart Element** button in the **Chart Layouts** group. *The **Chart Element** list is displayed.*	
2. Select the **Chart Title** button from the list displayed. *The **Chart Titles** menu opens.*	
3. Select the **Above Chart** option. *The title is displayed on the chart, the **Chart Titles** menu closes and the insertion point appears in the formula bar.*	
4. Type the desired text as necessary. *The text appears in the formula bar.*	Type ***January Sales***
5. Select the **[Enter]** key**.** *The text appears in the title box.*	Click **[Enter]**

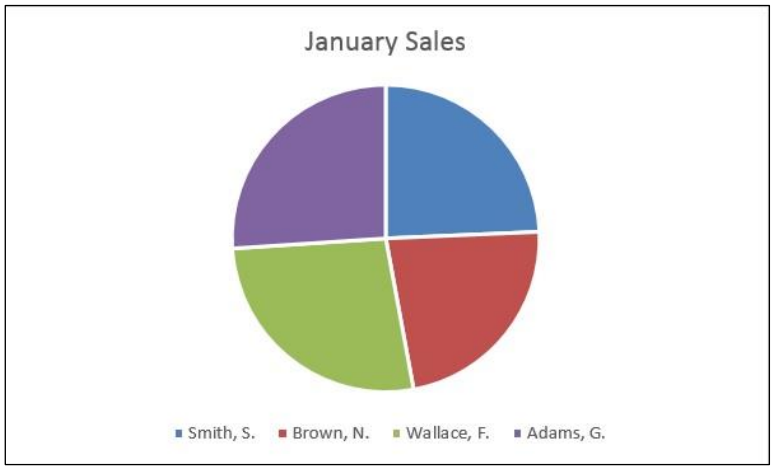


Chart Title Added to Pie Chart

To format the chart title, select the title “January Sales”, click **HOME** tab, and select the desired font type and font size from the font group. You can edit the title by selecting it and making the desired changes. To remove the chart title, select the title, press [Delete].

You can also change the font size and colour of a chart title by going to the **HOME** tab, and using the font size and font colour options in the **Font** group. These steps can also be applied to chart axes and chart legend text.

13.7 Changing the Chart Background

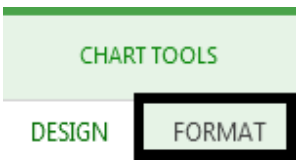
Concepts

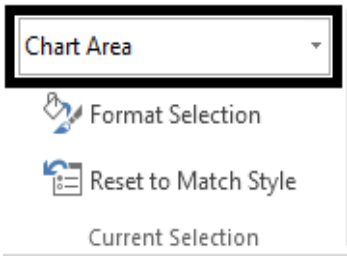
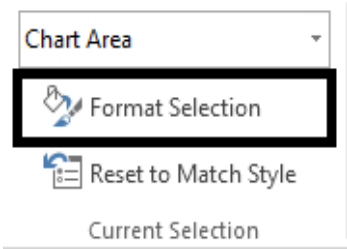
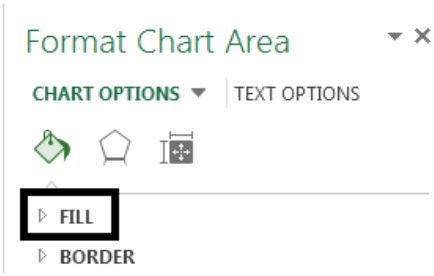
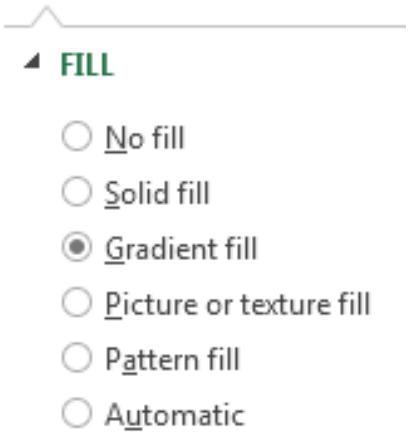
Changing the background of a chart can add depth to the chart’s data, and make the colours of a chart more defined.

Steps

To change the chart background.

If necessary, select the **Design** tab on the **Ribbon** and the **Sheet1** sheet.

1. Select the **FORMAT** tab from the CHART TOOLS contextual tab.. *The Format tab is selected and the relevant commands are displayed on the ribbon.*	

2. Select the **Chart Area** option in the **Current Selection** group. *The Chart Area list opens.*	
3. Select the **Format Selection** option from the **Current Selection** group. *Format Chart Area pane is displayed on the right pane.*	
4. Select the **FILL** option from the right pane. *The FILL list is displayed*	
5. Select **Gradient fill** from the list displayed. *The selected fill option is applied on the chart background.*	

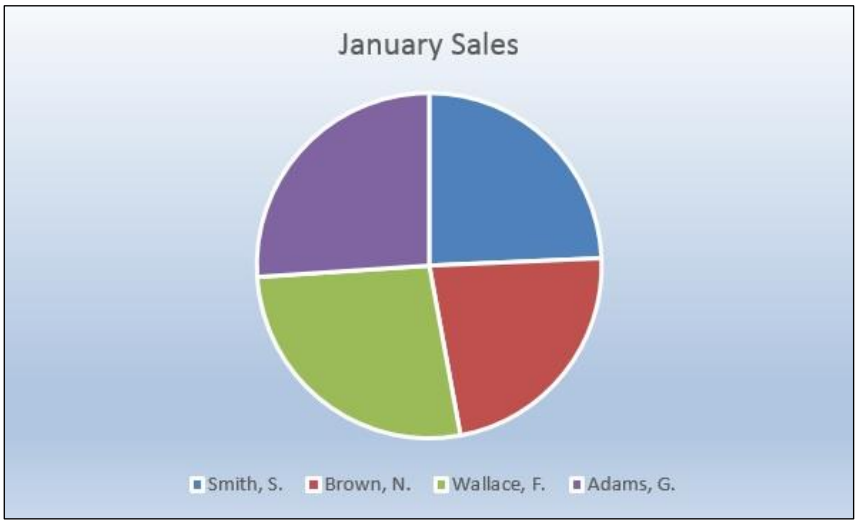


Chart Background Updated on Pie Chart

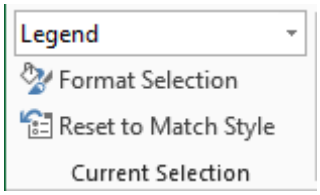
13.8 To format a chart title, chart axis, chart legend.

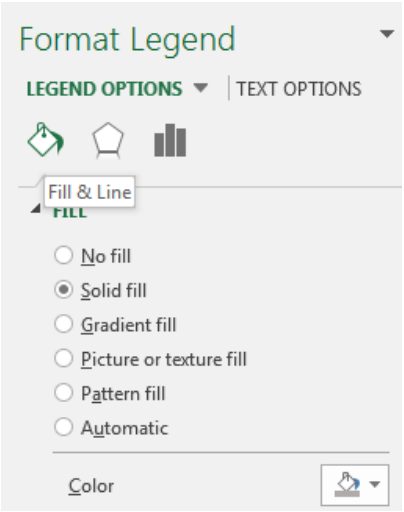
Concepts

When you create a chart the legend is by default displayed below the chart. The legend is linked to the graphically displayed data in the plot area of the chart and helps you to better understand what the chart represents. You can format a legend by changing its fill colour or by changing the font size and colour of the legend text.

Steps

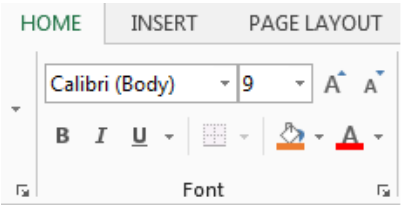
To change the Legend fill colour select the chart.

1. Select the chart legend. *The chart legend is selected.*	Click the chart legend
2. On the **FORMAT** tab, in the Current Selection group, click the Format Selection button.	Click 

3. Click Fill & Line.	
4. Select the Solid fill option.	Click **Solid fill**
5. Select the Color button.	Click the **Color button**
6. Click the colour required. *The desired colour is selected.*	Click the appropriate colour

Steps

To change the font size and colour of the chart legend text, chart title text or chart axis select the chart.

1. Select the chart title text, chart axis or chart legend text to change.	Click the appropriate option
2. On the **HOME** tab, in the Font group, click the Font Size or Font Color buttons.	
3. Click the font size or font colour required.	Click the appropriate font size or font colour

13.9 CHANGING A COLUMN, BAR, LINE OR PIE SLICE COLOURS

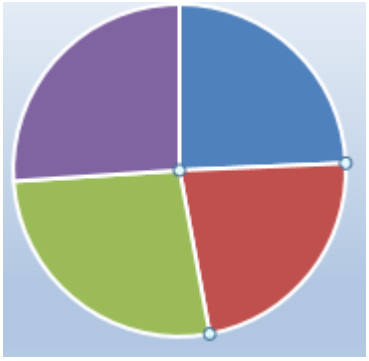
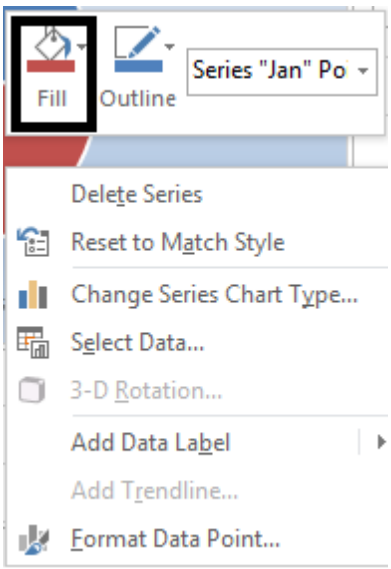
Concepts

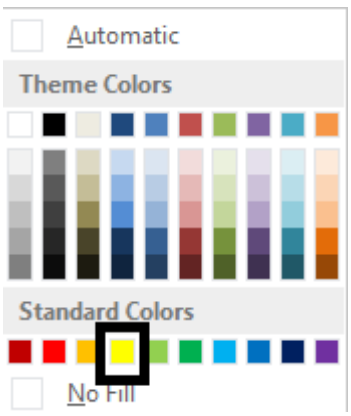
You can format the column, bar or pie slice colours and give a different look to your chart. Depending on the chart type, you can change the colour of a data series (represented by rectangles of the same colour) in a column or bar chart, a data point (represented by a single data value), or a pie slice in a pie chart.

Steps

To change the pie slice colours:

If necessary, select the **DESIGN** tab.

1. Select the chart. *Selection handles appear around the chart.*	Click in the chart area, if necessary
2. Select the **lower right** quadrant slice of the chart.	
3. Right-click on the selected slice for which you want to change the colour and select the **Fill** option *The shortcut menu is displayed and fill list with different colours are displayed.*	

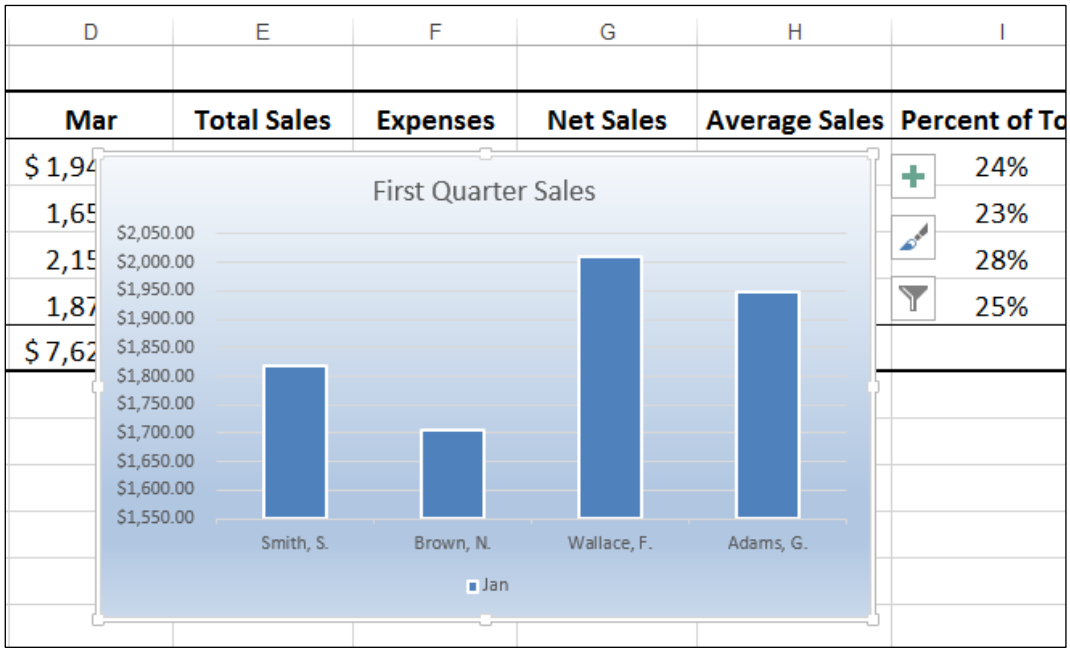
4. Select the desired colour from the gallery. *The selected colour is applied on the slice.*	

Click any cell in the worksheet to deselect the chart.

13.10 Changing the Chart Type

Concepts

You can change the chart type of the whole chart to give it a different look, or you can select a different chart type for any single data series, which turns the chart into a combination chart. There are a large range of different chart types, including a clustered column chart, 3-D clustered column chart, line chart, bar chart, and more.

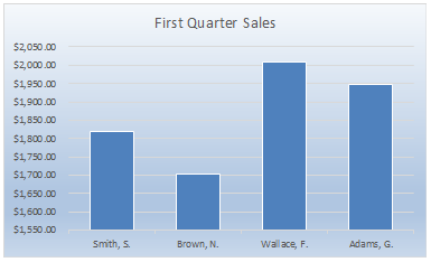
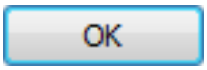


Updated Chart Type

Steps

To change the chart Type:

If necessary, select the **DESIGN** tab.

1. Select the chart. *Selection handles appear around the chart.*	Click in the chart area, if necessary
2. Select the **Change Chart Type** button in the **Type** group. *The **Change Chart Type dialog box** is displayed.*	
3. Select the **Recommended Charts** tab. *The Recommended Charts are displayed.*	Click **Recommended Charts** tab
4. Select the desired chart from the gallery in the right pane of the dialog box. *The chart is highlighted in the gallery*.	Clustered Column 
5. Select the **OK** button. *The Change chart type dialog box closes and the new chart type is displayed.*	Click 

13.11 Adding Data Labels to a Chart

Concepts

A data label in a chart helps you to quickly identify data series in a chart at particular points. They are linked to the data values by default and automatically update when changes are implemented to these values.

Steps

1. Select the chart. *The chart is selected.*	Click the chart

2. On the **DESIGN** tab, in the Chart Layouts group, select the **Add Chart Element** button. *The **Add Chart Element** options will appear.*	Click **Add Chart Element**
3. Choose Data Labels. *Data labels options will appear.*	Click **Data Labels**
4. Choose the location required for the data labels. *Choose from the list of data label locations to apply to the chart.*	Select the appropriate location.

Tip: If you select **More Data Label Options…** from the **Data Label**s options list, you can choose options such as displaying values or percentages as data labels.

13.12 Changing the Chart Layout

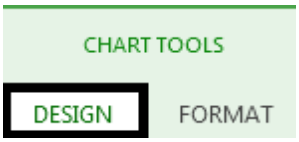
Concepts

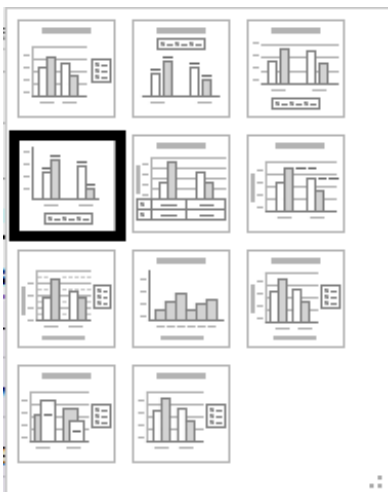
Excel 2013 offers some useful chart layouts which can be used to give charts a new and interesting look. Besides supporting a dozen of styles, many layouts alter the positions of data labels, which is helpful in a situation when you're not sure where to position data labels.

Steps

To change the chart layout:

If necessary, select the chart.

1. Select the **DESIGN** tab of the **Ribbon**. *The **DESIGN** tab appears.*	
2. Select the Quick Layout button in the **Chart Layout** group. *The Chart Layout gallery opens.*	

3. Select the Layout 4 from the Chart Layout gallery. *The selected layout is applied to the chart.*	

13.13 Copying and Moving Charts

Steps

Change the chart location by moving a chart to a new sheet.

If necessary, select the chart.

1. Select the chart. *The chart is selected.*	Click the chart.

2. Select the **Move Chart** button in the **Location** group. *The Move Chart dialog box opens.*	
3. Select the **New sheet** option. *The **New sheet** option is selected.*	Click ○ **New sheet:**
4. Select the **OK** button. *The Move Chart dialog box closes, and the chart is moved to a chart sheet.*	Click OK.

13.14 DELETING A CHART

Steps

To delete a chart:

1. Select the chart. *The chart is selected.*	Click the chart area, if necessary
2. Press keyboard **Delete**. *The selected chart is deleted.*	Delete

Close the workbook without saving.

13.15 Review Exercise

Create and format an embedded chart

1. Open the **ExChart.xlsx** file.
2. Select the range A4:D10 on the **Totals** sheet.
3. Insert a **3-D Column chart**.
4. Move and resize the chart so that in spans cells A12 through G25.
5. Change the chart type to a **Clustered Column**.
6. Move the chart to a new sheet called **Totals chart**.
7. Close the workbook without saving it.

LESSON 14 -
USING PAGE SETUP

In this section, you will learn about:

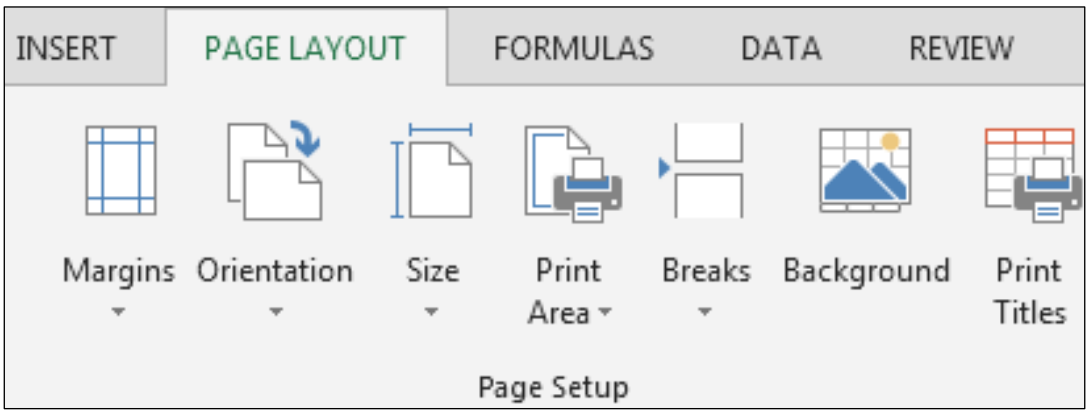
- Worksheet margins
- Worksheet orientation
- Worksheet page size
- Headers and footers
- Header and footer fields
- Scaling your worksheet to fit a page(s)
- Repeating row and column labels
- Changing sheet options

14.1 Worksheet Margins

Concepts

Page margins are the blank spaces located between the worksheet data and the edges of the printed page. You can insert headers, footers, and page numbers in the page margins.

You can use predefined margins, specify custom margins, or centre the worksheet horizontally / vertically on the page. This will help you better align a worksheet on a printed page.



Page Setup options in Excel

Steps

From the **Student Folder**, open **Margin.xlsx**.

To change worksheet margins.

1. Select the **PAGE LAYOUT** tab on the **Ribbon**. *The **PAGE LAYOUT** tab is displayed.*	Click **PAGE LAYOUT**
2. Select the **Margins** button. *The **Margins** gallery opens.*	Click **Margins**

3. To use pre-defined margins, select the desired option from the **Margins** gallery. *Excel applies the selected margins, and page break indicator lines appear in the worksheet.*	Click **Wide**

To set specific margins, select **Custom Margins…**, and set top, bottom, left, and right margins.

Practice the concept: Click the **Margins** button again and select **Narrow** from the **Margins** gallery. Notice the new position of the page break indicator lines.

14.2 WORKSHEET ORIENTATION

Concepts

In Excel, you select portrait or landscape page orientation, which affects the layout of the printed page. You also can adjust the size setting to match the size of the paper you plan to use to print your worksheet.

Steps

To change the worksheet orientation:

1. Select the **PAGE LAYOUT** tab on the **Ribbon**. *The **PAGE LAYOUT** tab is displayed.*	Click **PAGE LAYOUT**
2. Select the **Orientation** button. *The **Orientation** gallery opens.*	Click **Orientation**
3. Select **Portrait** or **Landscape**. *The desired orientation is selected and the **Orientation** gallery closes.*	Click **Portrait**

14.3 Worksheet Page Size

Steps

To change the page size:

1. Select the **PAGE LAYOUT** tab on the **Ribbon**. *The **PAGE LAYOUT** tab is displayed.*	Click **PAGE LAYOUT**
2. Select the **Size** button. *The **Size** gallery opens.*	Click **Size**
3. Select the **desired size**. *The desired size is selected and the **Size** gallery closes.*	Click **A3**

It is also possible to adjust page setup to fit worksheet contents on a specified number of pages by opening the **PAGE LAYOUT** tab, going to the **Scale to Fit** group, and entering the number of pages required in the **Width** and **Height** boxes.

14.4 Headers and Footers

Concepts

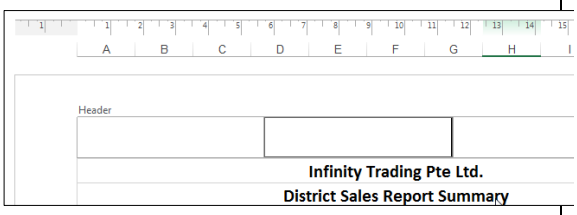
You can add headers or footers at the top or bottom of a printed worksheet. For example, you might create a footer that has page numbers, the date and time, and the name of your file. You can insert headers or footers in Page Layout view where you can see them, or you can use the Page Setup dialog box.

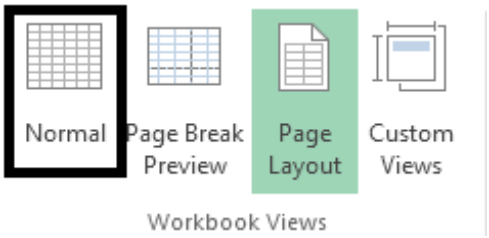
Headers and footers are not displayed on the worksheet in Normal view — they are only displayed in Page Layout view and on the printed pages.

Steps

To create a header and footer for the current worksheet.

1. Select the **VIEW** tab. *The **VIEW** tab is displayed.*	Click **VIEW**

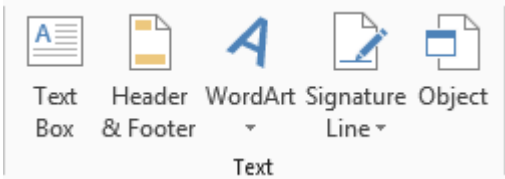
2. Select **Page Layout** from the **Workbook Views** group. *The Page Layout view is applied.*	Click **Page Layout**
3. Scroll up to elect the **Header & Footer** area in the worksheet**.** *Excel switches to **Page Layout** view, the **Header and Footer Tools** contextual **Design** tab is displayed to the right of the standard tabs, three Header section boxes appear above the worksheet and the insertion point is positioned in the centre section box.*	
4. Select the desired section box. *The insertion point is positioned in the selected box.*	Click in the **Left** section box
5. Type the desired text. *The text appears in the section box.*	Type ***Date printed-***
6. To insert an information code, select the appropriate button in the **Header and Footer Elements** group on the **Design** tab *The code appears in the section box.*	Click
7. To enter Footer information, select the **Go to Footer** button in the **Navigation** group on the **Design** tab. *Excel displays the Footer section boxes and the insertion point is positioned in the corresponding Footer section box.*	Click
8. Select the desired section box. *The insertion point is positioned in the selected box.*	Click in the **Left** section box
9. Type the desired text or select the desired code in the **Header and Footer Elements** group. *The text or code appears in the section box.*	Click

10. Select any cell in the worksheet. *The cell is selected.*	Click **A1**
11. Select the **VIEW** tab. *The **VIEW** tab is displayed*	Click **VIEW**
12. Select the Normal button in the Workbook Views group. *The worksheet returns to Normal view*.	Click 

Practice the concept: Click in the **Center** section box. Notice that the date, rather than the code, is now displayed in the left section box. Type **Monthly Sales Figures.**

Steps

To edit or delete text in headers, footers in a worksheet.

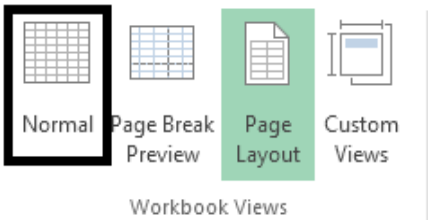
1. On the **INSERT** tab, in the **Text** group, click the **Header & Footer** button. *By default, the header section opens; to go to the footer, on the **DESIGN** tab, in the **Navigation** group, click the **Go to Footer** button.*	
2. Edit or **delete** the text as required. *The text will be deleted.*	Delete the appropriate text

14.5 Header and Footer Fields

Steps

To use built-in headers and footers.

1. Select the **INSERT** tab. *The **INSERT** tab is displayed.*	Click **INSERT**
2. Select **Page Layout** from the **Workbook Views** group. *The Page Layout view is applied.*	Click
3. Scroll up to elect the **Header & Footer** area in the worksheet**.** *Excel switches to **Page Layout** view, the **Header and Footer Tools** contextual **Design** tab is displayed to the right of the standard tabs, three Header section boxes appear above the worksheet and the insertion point is positioned in the centre section box*	Scroll up to select the Header Section.
4. To insert a built-in Header, select the **Header** button in the **Header & Footer** group on the **Design** tab. *The **Header** menu opens.*	 Click
5. Select the desired option from the **Header** menu. *The selected Header text appears in the section boxes, the **Design** tab closes and the **INSERT** tab is displayed.*	Click **Sheet1, Confidential, Page 1**
6. Click anywhere in the Header. *The Design tab is displayed.*	Click in the Header area

7. To insert a built-in Footer, select the **Footer** button in the **Header & Footer** group on the **Design** tab. *The **Footer** menu opens.*	Click
8. Select the desired option from the **Footer** menu. *The selected Footer text appears in the section boxes, the **DESIGN** tab closes and the **INSERT** tab is displayed.*	Click the last option in the **Footer** menu
9. Select the **VIEW** tab. *The **VIEW** tab is displayed.*	Click **VIEW**
10. Select the **Normal** button in the **Workbook Views** group. *The worksheet changes to **Normal** view.*	Click 

14.6 Scaling your Worksheet to fit your page(s)

Concepts

To better fit printed pages, you can scale a worksheet for printing by shrinking or enlarging its size. You can specify the number of pages that you want to fit the worksheet in when printed, and adjust the worksheet scale to fit the paper width of printed pages.

Steps

To scale a worksheet to fit on fewer pages:

Preview the worksheet. Scroll through the pages; notice that the printed worksheet will be 6 pages long. Then, close print preview.

1. Select the **PAGE LAYOUT** tab. *The **PAGE LAYOUT** tab appears.*	Click **PAGE LAYOUT**
2. Select the arrow on the right-hand part of the **Width** button in the **Scale to Fit** group. *The **Width** list opens.*	Click on the **Width** button
3. Select how many pages wide you want the printout to be. *The option is selected and the **Scale** percentage is adjusted.*	Click **1 page**
4. Select the arrow on the right-hand part of the **Height** button in the **Scale to Fit** group. *The **Width** list opens.*	Click on the **Height** button
5. Select how many pages tall you want the printout to be. *The option is selected and the **Scale** percentage is adjusted.*	Click **2 pages**

Open print preview; notice that there are now only 2 printed pages. Then, close print preview.

Practice the Concept: Select the **Scale to Fit** launcher arrow to open the Page Setup dialog box. Return the worksheet to its original settings by changing the **Adjust to** figure under **Scaling** to **100%**. Click the **OK** button. Notice that the **Width** and **Height** options in the **Scale to Fit** group have reset to **Automatic**.

14.7 Repeating Row and Column Labels

Concepts

If a worksheet spans more than one page, you can print row and column headings or labels on every page, which ensures that the data is properly labelled.

Steps

To repeat row or column labels on each printed page.

Preview the document in the Backstage view. View pages 2 & 3. Notice that there are no labels above the columns. View pages 4, 5 & 6. Notice that there are no labels to the left of the column.

1. Select the **PAGE LAYOUT** tab. *The **PAGE LAYOUT** tab appears.*	Click **PAGE LAYOUT**
2. Select the **Print Titles** button. *The Page Setup dialog box appears with the **Sheet** page displayed.*	
3. Select the **Collapse Dialog** button to the right of the **Rows to repeat at top** box under **Print titles**. *The Page Setup dialog box collapses.*	Click **Rows to repeat at top**
4. To repeat the labels in a single row, click anywhere in the row, or drag to select multiple rows. *A flashing outline indicates the rows selected as you drag.*	Drag cells **A1** to **A4** to select rows 1 to 4
5. Release the mouse button. *The rows are selected.*	Release the mouse button
6. Click the **Expand Dialog** button. *The Page Setup dialog box expands and the range appears in the **Rows to repeat at top** box.*	Click
7. Select the **Collapse Dialog** button to the right of the **Columns to repeat at left** box under **Print titles**. *The Page Setup dialog box collapses.*	Click **Columns to repeat at left**
8. To repeat the labels in a single column, click anywhere in the column, or drag to select multiple columns. *A flashing outline indicates the column selected.*	Click cell **A1** to select column A
9. Release the mouse button. *The column is selected.*	Release the mouse button
10. Click the **Expand Dialog** button. *The Page Setup dialog box expands and the range appears in the corresponding box.*	Click

11. Select **OK**. *The Page Setup dialog box closes.*	Click OK

Preview pages 1 to 3. Notice that the titles in cells A1 and A2 and the months of the year in row 4 appear at the top of each page. View pages 4 to 6. Notice that the titles in column A appear at the left of each page, and the titles in cells A1 and A2 and the months of the year in row 4 appear at the top of each page. Close Print Preview.

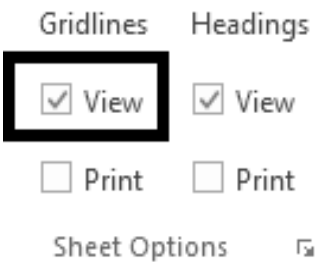
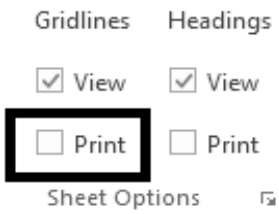
14.8 Changing Sheet Options

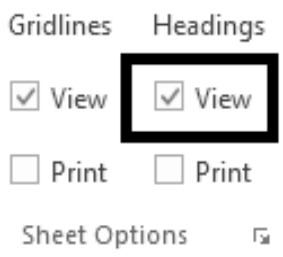
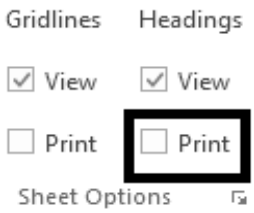
Concepts

There are various options in Excel that you can modify to make setting up your workbooks quicker and easier according to your preferences.

Steps

To change gridlines and headings options:

1. Select the **PAGE LAYOUT**. *The **PAGE LAYOUT** tab is displayed.*	Click **PAGE LAYOUT**
2. To hide or display the on-screen gridlines, deselect or select the **View** option under **Gridlines** in the **Sheet Options** group, as desired. *The gridlines are hidden or displayed accordingly.*	
3. To enable or disable gridlines for printing, select or deselect the **Print** option under **Gridlines** in the **Sheet Options** group, as desired. *The gridlines are enabled or disabled for printing accordingly.*	

4. To hide or display the on-screen column and row headings, deselect or select the **View** option under **Headings** in the **Sheet Options** group, as desired. *The headings are hidden or displayed accordingly.*	
5. To enable or disable column and row headings for printing, select or deselect the **Print** option under **Headings** in the **Sheet Options** group, as desired. *The headings are enabled or disabled for printing accordingly.*	

Close **Margin.xlsx** without saving.

14.9 Review Exercise

Using Page Setup

1. Open **ExMargin.xlsx**.
2. Change all the margins to **.5** and the header and footer margins to **.25**.
3. Centre the worksheet horizontally on the page.
4. Change the orientation to landscape, and scale the worksheet to fit on 1 page wide by 3 pages tall.
5. Select the built-in footer **Page 1 of ?**.
6. Create a custom header by adding the title **District Sales Report**. Make the title centred.
7. Create a custom footer. Add the file name at the left and the date at the right. Do not remove the page numbers in the centre.
8. Select any cell in the worksheet, then return to **Normal** view.
9. Set the option to print the gridlines.
10. Repeat the months of the year (row 4) at the top of each printed page.
11. Repeat the district and product names (column A) at the left of each printed page.
12. Preview all pages of the worksheet.
13. Vertically centre the worksheet and return the scaling to **100%**.
18. Return the worksheet to **Normal** view.
19. Close the workbook without saving it.

LESSON 15 -
PRINTING

In this section, you will learn about:

- Print Preview
- Printing the current worksheet
- Printing a selected range
- Printing a page range
- Printing multiple copies

15.1 Print Preview

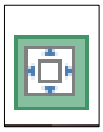
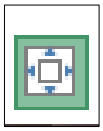
Concepts

Preview and printing is carried out in Microsoft Office Backstage view.

Steps

From the **Student Folder**, open **Print.xlsx**.

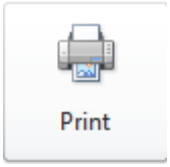
To Preview the current worksheet before printing:

1. Select the **FILE** tab *The **Backstage** view appears.*	Click
2. Select the **Print** option *The Preview of the document is displayed on the right pane.*	Click
3. Select the Zoom to Page button. *The preview zooms in.*	Click 
4. Select the Zoom to Page button again. *The preview zooms out.*	Click 
5. Select the **Next Page arrow** to view the next page in a multiple page printout. *The next page appears in print preview.*	Click
6. Select **Previous Page arrow** to view the previous page in a multiple page printout. *The previous page appears in print preview.*	Click

15.2 Printing the Current Worksheet

Steps

To print the current worksheet:

1. Select the **FILE** tab. *The **Backstage** view appears.*	Click
2. Select the **Print** option. *The Preview of the document is displayed on the right pane.*	Click
3. To choose the printer you want to use, select the **Printer** list. *A list of available printers appears.*	
4. Select the desired printer from the list. *The printer is selected.*	Click the highlighted printer
5. To set options for the selected printer, select the **Properties** button. *The printer settings dialog box for the selected printer opens (the available settings vary according to the type of printer).*	Click **Printer Properties**
6. Select **Print**.	Click 

15.3 Apply Automatic Title Rows to All Printed Pages

Concepts

Applying automatic title rows to all printed pages of a worksheet is useful for long tables that may contain a lot of data. Having a title on each page to differentiate the rows will be effective in keeping track of what you are viewing.

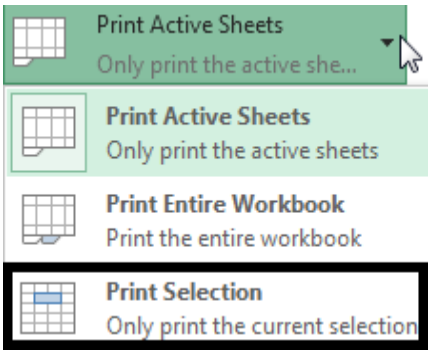
Steps

1. Go to the Page Setup group in the **PAGE LAYOUT** tab. *The Page Setup section will appear.*	Click **PAGE LAYOUT**
2. Choose the **Print Titles** option. *The **Page Setup** dialogue box will appear.*	Click **Print Titles**
3. In the **Rows to repeat at top** box, click the box at the right hand side. *You can select the rows you wish to repeat.*	Click
4. Select the row you want to repeat at the top of the printed pages. *The row is selected.*	Click **Row 4** in the worksheet
5. Implement your selection.	Click **OK**

15.4 Printing a Selected Range

Steps

To print a selected worksheet range:

1. Select the range you want to print. *The range is selected as you drag.*	Drag to select **A1:H10**
2. Release the mouse button. *The range is selected.*	Release the mouse button
3. Hold **[Ctrl]** and select additional ranges, if desired. *The additional ranges are selected as you drag.*	Hold **[Ctrl]** and drag to select **A18:H22**
4. Release the mouse button. *The additional range is selected.*	Release the mouse button
5. Select the **FILE** tab. *The **Backstage** view appears.*	Click
7. Select the **Print** option *The Preview of the document is displayed on the right pane.*	Click
8. Select Print Selection from the Settings list. *The option is selected.*	
9. Select **Print**. *Print preview closes, and Excel prints the selected ranges.*	

Click any cell to deselect the range.

15.5 Printing a Page Range

Steps

To print a page range:

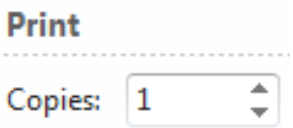
1. Select the **FILE** tab *The **Backstage** view appears.*	Click FILE
2. Select the **Print** option. *The Preview of the document is displayed on the right pane.*	Click Print
3. Enter the page range you want to print. *The numbers appear in the **Pages** boxes.*	Enter 2 in the first box and 3 in the second box of the pages option. Pages: to
4. Select **Print**. *The Print dialog box opens*.	Click Print

15.6 Printing Multiple Copies

Steps

To print multiple copies of a worksheet:

1. Select the range **A4:H10**.	Select the range **A4:H10**.
2. Select the **FILE** tab *The **Backstage** view appears.*	Click FILE

3. Select the **Print** option *The Preview of the document is displayed on the right pane.*	Click
4. Enter the number of copies you want to print in the **Copies** spin box. *The number appears in the **Copies** spin box.*	Click the up arrow in the **Copies** spin box to display **2** in the **Copies** box 
5. Select **Print**. *The Print dialog box opens.*	Click

Close **Print.xlsx** without saving.

15.7 Review Exercise

Printing

1. Open **ExPrint.xlsx.**
2. Preview the worksheet.
3. Zoom to page; then zoom out.
4. Use the **Print** button to print the current worksheet.
5. Select the data for District 1 and 2 from January through the QTR 2 totals (**A4:I16**).
6. Print two copies of the selected range.
7. Print just pages 2 and 3 of the worksheet.
8. Close the workbook without saving it.

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ICDL Syllabus

Ref	ICDL Task Item	Location
1.1.1	Open, close a spreadsheet application. Open, close spreadsheets.	*1.1 Starting Excel 2013* *1.5 Opening a Workbook* *1.7 Closing a Workbook* *1.12 Exiting Excel*
1.1.2	Create a new spreadsheet based on default template.	*1.4 Creating a Workbook*
1.1.3	Save a spreadsheet to a location on a drive. Save a spreadsheet under another name to a location on a drive	*1.6 Saving a New Workbook* *3.10 Saving the Workbook with Another Name*
1.1.4	Save a spreadsheet as another file type like: template, text file, software specific file extension, version number.	*3.11 Save a Workbook as Another File Type*
1.1.5	Switch between open spreadsheets.	*1.5 Opening a Workbook*
1.2.1	Set basic options/preferences in the application: user name, default folder to open, save spreadsheets.	*1.3 Excel Options*
1.2.2	Use available Help functions.	*2.1 Using Microsoft Excel Help and Resources* *2.2 Working with Excel Help*
1.2.3	Use magnification/zoom tools.	*1.11 Using Magnification /Zoom Tools*
1.2.4	Display, hide built-in toolbars. Restore, minimise the ribbon.	*1.10 Hiding the Ribbon*

Ref	ICDL Task Item	Location
2.1.1	Understand that a cell in a worksheet should contain only one element of data, (for example, first name detail in one cell, surname detail in adjacent cell).	*3.5 Entering Text*
2.1.2	Recognise good practice in creating lists: avoid blank rows and columns in the main body of list, insert blank row before Total row, ensure cells bordering list are blank.	*12.1 Sorting*
2.1.3	Enter a number, date, text in a cell	*3.6 Entering Numbers* *3.5 Entering text*
2.1.4	Select a cell, range of adjacent cells, range of non-adjacent cells, entire worksheet.	*4.1 Selecting a Cell* *4.2 Selecting a range of Adjacent Cells* *4.3 Selecting a range of Non-adjacent Cells* *4.4 Selecting the entire worksheet*
2.2.1	Edit cell content, modify existing cell content	*3.7 Entering Text* *3.8 Editing Data*
2.2.2	Use the undo, redo command	*11.8 Undo and Redo*
2.2.3	Use the search command for specific content in a worksheet.	*12.3 Finding Data*
2.2.4	Use the replace command for specific content in a worksheet.	*12.4 Replacing Data*
2.2.5	Sort a cell range by one criterion in ascending, descending alphabetic order.	*12.1 Sorting*

Ref	ICDL Task Item	Location
2.3.1	Copy the content of a cell, cell range within a worksheet, between worksheets, between open spreadsheets.	*8.8 Inserting Cut or Copied Cells*
2.3.2	Use the autofill tool/copy handle tool to copy, increment data	*11.6 Filling Cells*
2.3.3	Move the content of a cell, cell range within a worksheet, between worksheets, between open spreadsheets.	8.8 Inserting Cut or Copied Cells
2.3.4	Delete cell contents	*3.8 Editing Data*
3.1.1	Select a row, range of adjacent rows, range of non-adjacent rows.	*4.5 Selecting a Row* *4.6 Selecting a Range of Adjacent rows* *4.7 Selecting a Row of Non-Adjacent rows*
3.1.2	Select a column, range of adjacent columns, range of non- adjacent columns.	*4.8 Selecting an Entire Column* *4.9 Selecting a Range of Columns* *4.10 Selecting a Range of Non-Adjacent Columns*
3.1.3	Insert, delete rows and columns.	*5.4 Inserting Columns and Rows* *5.5 Deleting Columns and Rows*

Ref	ICDL Task Item	Location
3.1.4	Modify column widths, row heights to a specified value, to optimal width or height.	*5.1 Adjusting the Columns Width* *5.2 Adjusting the Row Height* *5.3 Automatically Adjusting Column*
3.1.5	Freeze, unfreeze row and/or column titles.	*5.6 Freezing and Unfreezing Columns and Rows*
3.2.1	Switch between worksheets.	*1.8 Working with Worksheets*
3.2.2	Insert a new worksheet, delete a worksheet.	*1.8 Working with Worksheets*
3.2.3	Recognise good practice in naming worksheets: use meaningful worksheet names rather than accept default names.	*1.8 Working with Worksheets*
3.2.4	Copy, move, rename a worksheet within a spreadsheet.	*1.8 Working with Worksheets*
4.1.1	Recognise good practice in formula creation: refer to cell references rather than type numbers into formulas.	*10.1 Using Basic Formulas*
4.1.2	Create formulas using cell references and arithmetic operators (addition, subtraction, multiplication, division).	*10.1 Using Basic Formulas* *10.2 Entering Formulas*
4.1.3	Identify and understand standard error values associated with using formulas: #NAME?, #DIV/0!, #REF!.	*10.10 Error Checking*
4.1.4	Understand and use relative, absolute cell referencing in formulas.	*10.11 Creating an Absolute Reference*
4.2.1	Use sum, average, minimum, maximum, count, counta, round functions.	*10.3 Basic Functions*

Ref	ICDL Task Item	Location
4.2.2	Use the logical function if (yielding one of two specific values) with comparison operator: =, >, <.	*10.12 Using the IF Function*
5.1.1	Format cells to display numbers to a specific number of decimal places, to display numbers with, without a separator to indicate thousands.	*6.4 Comma Style* *6.5 Decimal Places*
5.1.2	Format cells to display a date style, to display a currency symbol	*6.2 Accounting Number Style*
5.1.3	Format cells to display numbers as percentages.	*6.3 Percent Style*
5.2.1	Change cell content appearance font sizes, font types.	*7.2 Changing the Font* *7.3 Changing Font Size*
5.2.2	Apply formatting to cell contents: bold, italic, underline, double underline.	*7.4 Bold and Italic* *7.5 Underling Text*
5.2.3	Apply different colours to cell content, cell background	*7.6 Font Colour*
5.2.4	Copy the formatting from a cell, cell range to another cell, cell range.	*8.7 Format Painter*
5.3.1	Apply text wrapping to contents within a cell, cell range.	*7.8 Text Wrapping*
5.3.2	Align cell contents: horizontally vertically. Adjust cell content orientation	*8.2 Vertical Alignment*
5.3.3	Merge cells and centre a title in a merged cell.	*8.1 Merging Cells*
5.3.4	Add border effects to a cell, cell range: lines, colours.	*8.4 Adding Borders* *8.5 Drawing Borders*

Ref	ICDL Task Item	Location
6.1.1	Create different types of charts from spreadsheet data: column chart, bar chart, line chart, pie chart.	*13.1 Inserting a Column Chart* *13.2 Inserting a Line Chart* *13.3 Inserting a Bar Chart* *13.4 Inserting a Pie Chart*
6.1.2	Select a chart.	*13.1 Inserting a Column Chart*
6.1.3	Change the chart type	*13.10 Changing the Chart Type*
6.1.4	Move, resize, delete a chart.	*13.5 Moving and Resizing a Chart*
6.2.1	Add, remove, edit a chart title	*13.6 Adding Chart Title*
6.2.2	Add data labels to a chart: values/numbers, percentages.	*13.11 Adding Data Labels to a Chart*
6.2.3	Change chart area background colour, legend fill colour.	*13.8 To Format a Chart Legend* *13.7 Changing the Chart Background*
6.2.4	Change the column, bar, line, pie slice colours in the chart	*13.9 Changing a column, bar, line or pie slice colours*
6.2.5	Change font size and colour of chart title, chart axes, chart legend text.	*13.8 To Format A Chart Title, Chart Axis, Chart Legend.*
7.1.1	Change worksheet margins: top, bottom, left, right.	*14.1 Worksheet Margins*
7.1.2	Change worksheet orientation: portrait, landscape, paper size	*14.2 Worksheet Orientation*
7.1.3	Adjust page setup to fit worksheet contents on a specified number of pages.	*14.6 Scaling Your Worksheet To Fit Your Page(S)*

Ref	ICDL Task Item	Location
7.1.4	Add, edit, delete text in headers, footers in a worksheet.	*14.4 Header and Footers*
7.1.5	Insert and delete fields: page numbering information, date, time, file name, worksheet name into headers, footers.	*14.4 Header and Footers* *14.5 Header and Footer Fields*
7.2.1	Check and correct spreadsheet calculations and text.	*3.9 Spell Check* *10.10 Error Checking*
7.2.2	Turn on, off display of gridlines, display of row and column, headings for printing purposes	*14.8 Changing Sheet Options*
7.2.3	Apply automatic title row(s) printing on every page of a printed worksheet.	*15.3 Apply Automatic Title Rows To All Printed Pages*
7.2.4	Preview a worksheet.	*15.1 Print Preview*
7.2.5	Print a selected cell range from a worksheet, an entire worksheet, number of copies of a worksheet, the entire spreadsheet, a selected chart.	*15.2 Printing the Current Worksheet* *15.4 Printing a Selected Range* *15.5 Printing a Page Range* *15.6 Printing Multiple Copies*

Congratulations! You have reached the end of the ICDL Spreadsheets book.
You have learned about the key skills relating to spreadsheet applications, including:

- Working with spreadsheets and saving them in different file formats.
- Choosing built-in options, such as the Help function, within the application to enhance productivity.
- Entering data into cells; using good practice in creating lists.
- Select, sort and copy, move and delete data.
- Edit rows and columns in a worksheet.
- Copy, move, delete, and appropriately rename worksheets.
- How to create mathematical and logical formulas using standard spreadsheet functions; use good practice in formula creation; recognise error values in formulas.
- Formatting numbers and text content in a spreadsheet.
- Choose, create, and format charts to communicate information meaningfully.
- Adjust spreadsheet page settings.
- Check and correct spreadsheet content before finally printing spreadsheets.

Having reached this stage of your learning, you should now be ready to undertake ICDL certification testing. For further information on taking this test, please contact your ICDL test centre.

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