



Migrosoft	Excel
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Excel Tutorial 1 Getting Started with Excel

Objectives

- Understand the use of spreadsheets and Excel
- Learn the parts of the Excel window
- Scroll through a worksheet and navigate between worksheets
- Create and save a workbook file
- Enter text, numbers, and dates into a worksheet
- Resize, insert, and remove columns and rows
- Select and move cell ranges
- Insert formulas and functions
- Insert, delete, move, and rename worksheets
- Work with editing tools
- Preview and print a workbook

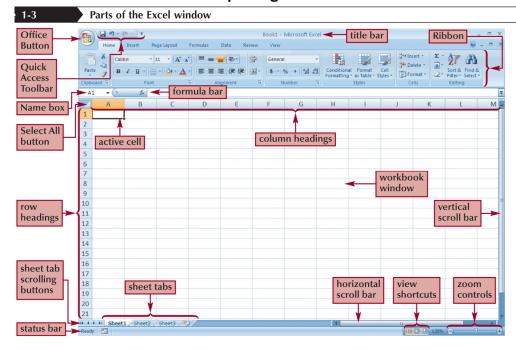
Introducing Excel

- Microsoft Office Excel 2007 (or Excel) is a computer program used to enter, analyze, and present quantitative data
- A spreadsheet is a collection of text and numbers laid out in a rectangular grid.
 > Often used in business for budgeting, inventory management, and decision making
- What-if analysis lets you change one or more values in a spreadsheet and then assess the effect those changes have on the calculated values

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2 B u	udgeted vs. Actual								
3			Jan-10						
4		Budgeted	Actual						
5 Ca	ash balance (start of month)	\$4,500.00	\$4,500.00						
	ash receipts								
_	Cash sales	12,600.00	14,688.00						
8 Ca	ash expenditures								
9 /	Advertising	1,200.00	1,425.00						
	Wages	7,200.00	7,850.00						
	Supplies	3,600.00	4,350.00						
12 To	otal cash expenditures	12,000.00	13,625.00						
13 N	et cash flow	600.00	1,063.00						
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Introducing Excel

Exploring Excel



Exploring Excel

	Description of the Excel window elements
Feature	Description
Office Button	A button that provides access to work book-level features and program settings
Quick Access	A collection of buttons that provide one-click access to commonly used
Toolbar	commands, such as Save, Undo and Repeat
Title bar	A bar that displays the name of the active workbook and the Excel program name
Ribbon	The main set of commands organized by task into tabs and groups
Column headings	The letters that appear along the top of the worksheet window to identify the
	different columns in the worksheet
Workbook window	A window that displays an Excel workbook
Vertical scroll bar	A scroll bar used to scroll vertically through the workbook window
Horizontal scroll bar	A scroll bar used to scroll horizontally through the workbook window
Zoom controls	Controls for magnifying and shrinking the content displayed in the active workbook window
View shortcuts	Buttons used to change how the worksheet content is displayed – Normal, Page Layout, or Page Brea Preview view
Sheet tabs	Tabs that display the names of the worksheets in the workbook
Sheet tab scrolling buttons	Buttons to scroll the list of sheet tabs in the workbook
Row headings	The numbers that appear along the left of the worksheet window to identify the different rows in the worksheet
Select All button	A button used to select all of the cells in the active worksheet
Active Cell	The cell currently selected in the active worksheet
Name box	A box that displays the cell reference of the active cell
Formula bar	A bar that displays the value or formula entered in the active cell

9

Navigating a Worksheet

Excel navigation keys							
Press	To move the active cell						
$\uparrow, \downarrow, \leftarrow, \rightarrow$	Up, down, left or right one cell						
Home	To column A of the current row						
Ctrl+Home	To cell A1						
Ctrl+End	To the last cell in the worksheet that contains data						
Enter	Down on row or to the start of the next row of data						
Shift+Enter	Up one row						
Tab	One column to the right						
Shift+Tab	One column to the left						
Page Up, Page Down	Up or down the screen						
Ctrl+Page Up, Ctrl+Page Down	To the previous or next sheet in the workbook						

Planning a Workbook

Before you begin to enter data into a workbook, you should develop a plan
 Planning analysis sheet

Planning Analysis Sheet

Planning Analysis Sheet

Auther : Amanda Dunn

Date : 01/02/2010

What problems do I want to solve?

- I need to have contact information for each RipCity Digital customer.
- I need to track how many DVDs I create for my customers.
- I need to record how much I charge my customers for my service.
- I need to determine how much revenue RipCity Digital is generating.

What data do I need?

- Each customer's name and contact information
- The date each customer order was placed
- The number of DVDs created for each customer
- The cost of creating each DVD

What calculations do I need to enter?

- The total change for each order
- The total number of DVDs I create for all orders
- The total revenue generated from all orders

What from should may solutions take?

- The customer orders should be placed in a grid with each now containing data on a different on a different customer
- Information about each customer should be placed in separate columns.
- The last column should contain the total charge for each customer.
- The last now should contain the total number of DVDs created and the total revenue from all customer orders.

10

Entering Text, Numbers, and Dates in Cells

- The **formula bar** displays the content of the active cell
- Text data is a combination of letters, numbers, and some symbols
- Number data is any numerical value that can be used in a mathematical calculation
- Date and time data are commonly recognized formats for date and time values

Entering Multiple Lines of Text within a Cell

- Click the cell in which you want to enter the text
- Type the first line of text
- For each additional line of text, press the Alt+Enter keys (that is, hold down the Alt key as you press the Enter key), and then type the text

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	А	В	С	D	E	F	G	Н	I	J	К	L	M
1	Last	First	Address	Date	DVDs	Price per	DVD						
2	Dawes	Gregory	402 Elm St. Merrill, MI 48637			text is w within tl	rrapped ne cell						

Changing Column Width and Row Height

- A **pixel** is a single point on a computer monitor or printout
- The default column width is 8.38 standard-sized characters
- Row heights are expressed in points or pixels, where a **point** is 1/72 of an inch
- **Autofitting** eliminates any empty space by matching the column to the width of its longest cell entry or the row to the height of its tallest cell entry

Changing the Column Width and Row Height

- Drag the right border of the column heading left to decrease the column width or right to increase the column width
- Drag the bottom border of the row heading up to decrease the row height or down to increase the row height

Or

- Double-click the right border of a column heading or the bottom border of a row heading to AutoFit the column or row to the cell contents (or select one or more columns or rows, click the Home tab on the Ribbon, click the Format button in the Cells group, and then click AutoFit Column Width or AutoFit Row Height) Or
- Select one or more columns or rows
- Click the Home tab on the Ribbon, click the Format button in the Cells group, and then click Column Width or Row Height
- Enter the column width or row height you want, and then click the OK button

Inserting a Column or Row

- Select the column(s) or row(s) where you want to insert the new column(s) or row(s); Excel will insert the same number of columns or rows as you select
- In the Cells group on the Home tab, click the Insert button (or right-click a column or row heading or selected column and row headings, and then click Insert on the shortcut menu)

Inserting a Column or Row

New column inserted in the worksheet

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1	Last	First	Address	Phone	Date	DVDs	Price per DVD	of data
			402 Elm St.					shift right
2	Dawes	Gregory	Merrill, MI 48637	(989) 555-3433	3/13/2010	7	\$17.29	
			1025 Drake Ave.					
3	Garcia	Susan	Exeter, NH 03833 🕨	(603) 555-1091	3/14/2010	25	\$15.79	
			5 North Ln.		10.00			
4	Torbet	Dr. Lilla	Oswego, NY 13126	(315) 555-7823	3/17/2010	32	\$12.99	
			24 Mountain Dr.					
5	Rhoden	Tony	Auburn, ME 04210	(207) 555-9915	3/24/2010	20	\$15.79	
6								
7								

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New row inserted in the worksheet

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new	1	A Last	B First	C Address	D Phone	E Date	F DVDs	G Price per DVD	Н	- 1
customer	2	Ferris	Andrew	135 College Ave. Bar Harbor, ME 04609	(207) 555-0101	3/5/2010	2	\$17.29		
	3	Dawes	Gregory	402 Elm St. Merrill, MI 48637	(989) 555-3433	3/13/2010	7	\$17.29		
existing customer	4	Garcia	Susan	1025 Drake Ave. Exeter, NH 03833	(603) 555-1091	3/14/2010	25	\$15.79		_
orders 📂 shift down	5	Torbet	Dr. Lilla	5 North Ln. Oswego, NY 13126	(315) 555-7823	3/17/2010	32	\$12.99		
	6	Rhoden	Tony	24 Mountain Dr. Auburn, ME 04210	(207) 555-9915	3/24/2010	20	\$15.79		
	7									

Deleting and Clearing a Row or Column

- Clearing data from a worksheet removes the data but leaves the blank cells
- Deleting data from the worksheet removes both the data and the cells

Working with Cells and Cell Ranges

- A group of cells is called a **cell range** or **range**
- An adjacent range is a single rectangular block of cells
- A nonadjacent range consists of two or more distinct adjacent ranges
- A range reference indicates the location and size of a cell range

Selecting Cell Ranges

To select an adjacent range:

- Click the cell in the upper-left corner of the adjacent range, drag the pointer to the cell in the lower-right corner of the adjacent range, and then release the mouse button *or*
- Click the cell in the upper-left corner of the adjacent range, press the Shift key as you click the cell in the lower-right corner of the adjacent range, and then release the Shift key

To select a nonadjacent range of cells:

• Select a cell or an adjacent range, press the Ctrl key as you select each additional cell or adjacent range, and then release the Ctrl key

To select all the cells in a worksheet:

• Click the Select All button located at the intersection of the row and column headings (or press the Ctrl+A keys)

Selecting Cell Ranges

Adjacent range A1:G5 selected 4

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1		В	С	D	E	F	G	Н	1
	Last	First	Address	Phone	Date	DVDs	Price per DVD		
2	Ferris	Andrew	135 College Ave. Bar Harbor, ME 04609	(207) 555-0101	3/5/2010	2	\$17.29	selected	1
	Garcia	Susan	1025 Drake Ave. Exeter, NH 03833	(603) 555-1091	3/14/2010	25	\$15.79	cells are highligh	
	Torbet	Dr. Lilla	5 North Ln. Oswego, NY 13126	(315) 555-7823	3/17/2010	32	\$12.99	and	
	Rhoden	Tony	24 Mountain Dr. Auburn, ME 04210	(207) 555-9915	3/24/2010	20	\$15.79	by a thic	

Nonadjacent range A1:A5;F1:G5 selected

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1	Last	First	Address	Phone	Date	DVDs	Price per DV	/D 🔫 🚽	
2	Ferris	Andrew	135 College Ave. Bar Harbor, ME 04609	(207) 555-0101	3/5/2010	2	\$17.2	9 adjace	ent
3	Garcia	Susan	1025 Drake Ave. Exeter, NH 03833	(603) 555-1091	3/14/2010	25	\$15.7	range	F1:G5
4	Torbet	Dr. Lilla	5 North Ln. Oswego, NY 13126	(315) 555-7823	3/17/2010	32	\$12.9		cicu
5	Rhoden	Tony	24 Mountain Dr. Auburn, ME 04210	(207) 555-9915	3/24/2010	20	\$15.7	9	
6									

Moving or Copying a Cell or Range

- Select the cell or range you want to move or copy
- Move the mouse pointer over the border of the selection until the pointer changes shape
- To move the range, click the border and drag the selection to a new location (or, to copy the range, hold down the Ctrl key and drag the selection to a new location) Or
- Select the cell or range you want to move or copy
- In the Clipboard group on the Home tab, click the Cut button or the Copy button (or right-click the selection, and then click Cut or Copy on the shortcut menu)
- Select the cell or upper-left cell of the range where you want to move or copy the content
- In the Clipboard group, click the Paste button (or right-click the selection, and then click Paste on the shortcut menu)

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1	Last	First	Address	Phone	Date	DVDs	Price per DVD		
2	Ferris	Andrew	135 College Ave. Bar Harbor, ME 04609	(207) 555-0101	3/5/2010	2	\$17.29		
3	Garcia	Susan	1025 Drake Ave. Exeter, NH 03833	(603) 555-1091	3/14/2010	25	\$15.79		
1	Torbet	Dr. Lilla	5 North Ln. Oswego, NY 13126	(315) 555-7823	3/17/2010	32	\$12.99		
5	Rhoden	Tony	24 Mountain Dr. Auburn, ME 04210	(207) 555-9915	3/24/2010	20	\$15.79		
5 7 3 9	outline ind the new lo the selecte	dicates cation of	A5:03			nev	reference v location played in a	is	

Moving or Copying a Cell or Range



Cells inserted within a cell range existing selected cells inserted cells range shifted new cells are inserted within the range, shifting the existing cells to the right right two columns existing cells shifted selected down

Inserting and Deleting a Cell Range

new cells are inserted within the range, shifting the existing cells down

Inserting or Deleting a Cell Range

inserted cells

two rows

- Select a range that matches the range you want to insert or delete
- In the Cells group on the Home tab, click the Insert button or the Delete button or

range

- Select the range that matches the range you want to insert or delete
- In the Cells group, click the Insert button arrow and then click the Insert Cells button or click the Delete button arrow and then click the Delete Cells command (or right-click the selected range, and then click Insert or Delete on the shortcut menu)
- Click the option button for the direction in which you want to shift the cells, columns, or rows •
- Click the OK button

Entering a Formula

- A formula is an expression that returns a value
- A formula is written using **operators** that combine different values, returning a single value that ٠ is then displayed in the cell
 - > The most commonly used operators are arithmetic operators
- The order of precedence is a set of predefined rules used to determine the sequence in which • operators are applied in a calculation

		Arith	metic operators
Operation	Arithmetic	Example	Description
	Operator		
Addition	+	=10+A1	Adds 10 to the value in cell A1
		=B1+B2+B3	Adds the values in cells B1, B2 and B3
Subtraction	-	=C9+B2	Subtracts the value in cell B2 from the value in cell C9
		=1-D2	Subtracts the value in cell D2 from 1
Multiplication	*	=C9*B9	Multiplies the values in cells C9 and B9
		=E5*0.06	Multiplies the value in cell E5 by 0.06
Division	/	C9/B9	Divides the value in cell C9 by the value in cell B9
		=D15/12	Divides the value in cell D15 by 12
Exponentiation	^	=B5^3	Raises the value of cell B5 to the third power
		=3^B5	Raises 3 to the value in cell B5

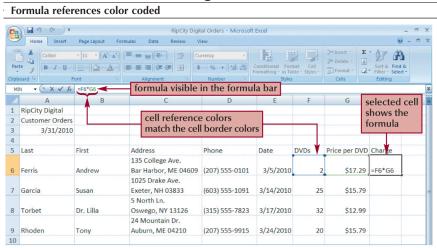
Entering a Formula

Entering a Formula

	Order of precedence rules	
Formula (A1=50, B1=10, C1=5)	Order of Precedence Rule	Result
=A1+B1*C1	Multiplication before addition	100
=(A1+B1)*C1	Expression inside parentheses executed before expression outside	300
=A1/B1-C1	Division before subtraction	0
=A1/(B1=C1)	Expression inside parentheses executed before expression outside	10
=A1/B1*C1	Two operators at same precedence level, leftmost operator evaluated first	25
=A1/(B1*C1)	Expression inside parentheses executed before expression outside	1

Entering a Formula

- Click the cell in which you want the formula results to appear
- Type = and an expression that calculates a value using cell references and arithmetic operators Press the Enter key or press the Tab key to complete the formula



Entering a Formula

Copying and Pasting Formulas

• With formulas, however, Excel adjusts the formula's cell references to reflect the new location of the formula in the worksheet

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н	-	=F8*G8	formula pasted	into cells H	8 and H9		A		¥
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1	RipCity Digital				6			1	
2	Customer Orders					ila copie		results of	
3	3/31/2010				from	this cell		pasted fo	rmula
4	Last	First	Address	Phone	Date	DVDs	Price per DV	D Charge	
6	Ferris	Andrew	135 College Ave. Bar Harbor, ME 04609	(207) 555-0101	3/5/2010	2	\$17.2	9 \$34.58	
7	Garcia	Susan	1025 Drake Ave. Exeter, NH 03833	(603) 555-1091	3/14/2010	25	\$15.7	9 \$394.75	=
8	Torbet	Dr. Lilla	5 North Ln. Oswego, NY 13126	(315) 555-7823	3/17/2010	32	\$12.9	9 \$415.68	
9	Rhoden	Tony	24 Mountain Dr. Auburn, ME 04210	(207) 555-9915	3/24/2010	20	\$15.7	9 \$315.80	
10									B
11									

Introducing Functions

- A **function** is a named operation that returns a value
- For example, to add the values in the range A1:A10, you could enter the following long formula:
 =A1+A2+A3+A4+A5+A6+A7+A8+A9+A10
 Or, you could use the SUM function to accomplish the same thing:
 - =SUM(A1:A10)

Entering a Function

S	UM functior	n being ente	ered						
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1 2 3	RipCity Digital Customer Orders 3/31/2010						surrounds the functio		
4	Last	First	Address	Phone	Date	DVDs V	Price per DVD	Charge	
6	Ferris	Andrew	135 College Ave. Bar Harbor, ME 04609	(207) 555-0101	3/5/2010	2	\$17.29	\$34.58	
7	Garcia	Susan	1025 Drake Ave. Exeter, NH 03833	(603) 555-1091	3/14/2010	25	\$15.79	\$394.75	
8	Torbet	Dr. Lilla	5 North Ln. Oswego, NY 13126	(315) 555-7823	3/17/2010	32	\$12.99	\$415.68	
9	Rhoden	Tony	24 Mountain Dr. Auburn, ME 04210	(207) 555-9915	3/24/2010	20	\$15.79	\$315.80	
10 11 12			creenTip shows t unction being ent		TOTAL	=SUM(F6:	F9 er1, [number2],)		

Entering Functions with AutoSum

- The **AutoSum** button quickly inserts Excel functions that summarize all the values in a column or row using a single statistic
 - Sum of the values in the column or row
 - > Average value in the column or row
 - > Total count of numeric values in the column or row
 - Minimum value in the column or row
 - Maximum value in the column or row

Entering Functions with AutoSum

S	UM function	n entered	with AutoSum						
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M	n 🔹 🄄 🗙 🖌 f 🗴	=SUM(H6:H9)							×
	А	В	С	D	E	F	G	Н	1
1	RipCity Digital								
2	Customer Orders								
3	3/31/2010								
4									
5	Last	First	Address	Phone	Date	DVDs	Price per DVD	Charge	
6	Ferris	Andrew	135 College Ave. Bar Harbor, ME 04609	(207) 555-0101	3/5/2010	2	\$17.29	\$34.58	
7	Garcia	Susan	1025 Drake Ave. Exeter, NH 03833	(603) 555-1091	3/14/2010	25	\$15.79	\$394.75	
8	Torbet	Dr. Lilla	5 North Ln. Oswego, NY 13126	(315) 555-7823	3/17/2010	32	\$12.99	\$415.68	
9	Rhoden	Tony	24 Mountain Dr. Auburn, ME 04210	(207) 555-9915	3/24/2010	20	\$15.79	\$315.80	
10			Excel inserts the SU/	M function	TOTAL	79		=SUM(<mark>H6:</mark> H	19)
11			into the selected ce					UM(number1, [n	umber2],)
12			into the selected ce						

Inserting and Deleting a Worksheet

- To insert a new worksheet into the workbook, right-click a sheet tab, click Insert on the shortcut menu, select a sheet type, and then click the OK button
- You can delete a worksheet from a workbook in two ways:
 - You can right-click the sheet tab of the worksheet you want to delete, and then click Delete on the shortcut menu
 - You can also click the Delete button arrow in the Cells group on the Home tab, and then click Delete Sheet

Renaming a Worksheet

- To rename a worksheet, you double-click the sheet tab to select the sheet name, type a new name for the sheet, and then press the Enter key
- Sheet names cannot exceed 31 characters in length, including blank spaces
- The width of the sheet tab adjusts to the length of the name you enter

Moving and Copying a Worksheet

- You can change the placement of the worksheets in a workbook
- To reposition a worksheet, you click and drag the sheet tab to a new location relative to other worksheets in the workbook
- To copy a worksheet, just press the Ctrl key as you drag and drop the sheet tab

Editing Your Work

- To edit the cell contents, you can work in editing mode
- You can enter editing mode in several ways:
 - double-clicking the cell
 - selecting the cell and pressing the F2 key
 - > selecting the cell and clicking anywhere within the formula bar

Editing Your Work

						Wo	rking in e	diting n	ıode
G	6 - (° X √ ∫ _x	18.29							
4	А	В	С	D	E	F	G	Н	1
1	RipCity Digital								
2	Customer Orders						insertion	point to	o edit
3	3/31/2010						the text		
4									
5	Last	First	Address	Phone	Date	DVDs	Price per DVD	Charge	
			135 College Ave.				V V		
6	Ferris	Andrew	Bar Harbor, ME 04609	(207) 555-0101	3/5/2010	2	18 29	\$34.58	
			1025 Drake Ave.						
7	Garcia	Susan	Exeter, NH 03833	(603) 555-1091	3/14/2010	25	\$15.79	\$394.75	
			5 North Ln.						
8	Torbet	Dr. Lilla	Oswego, NY 13126	(315) 555-7823	3/17/2010	32	\$12.99	\$415.68	
			24 Mountain Dr.						
9	Rhoden	Tony	Auburn, ME 04210	(207) 555-9915	3/24/2010	20	\$15.79	\$315.80	
10					TOTAL	79		\$1,160.81	
11									
12									
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14		1 . 1.							
15		bar indicat							
16	Excel i	s in editing	mode						
17									
Edit	Documentation	Customer Ord	ers 🖓				III (I) (I) 1209		+ (

Using Find and Replace

• You can use the **Find** command to locate numbers and text in the workbook and the **Replace** command to overwrite them

Find and Replace d	lialog box	
search value	Find and Replace Find what Ave. Replace with Ave.ue No Format Set Format	replaces the current occurrence of the search value highlights all
the current sheet	Within: Sheet Match case Search: By Rows Match entire cell contents Look in: Formulas Options <	occurrences of the search value
occurrences of the search value	Replace All Replace Find All Bind Next Close	occurrence of the search value

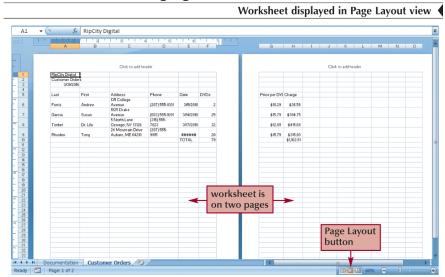
Using the Spelling Checker

• The spelling checker verifies the words in the active worksheet against the program's dictionary

Spelling dialog box		
Spelling dialog box possible misspelled word suggested alternatives	Suggestions:	Ignore Once Ignore All Add to Dictionary Change All AutoCorrect
	Options Undo Last	Cancel

Changing Worksheet Views

- You can view a worksheet in three ways:
 - > Normal view simply shows the contents of the worksheet
 - Page Layout view shows how the worksheet will appear on the page or pages sent to the printer
 - > Page Break Preview displays the location of the different page breaks within the worksheet



Changing Worksheet Views

Changing Worksheet Views

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2	Customer Orders			dotted lin		s			
3	3/31/2010			a page br	eak				
ŧ.									
5	Last	First	Address	Phone	Date	DVDs	Price per DVD	Charge	
			135 College Avenue						
5	Ferris	Andrew	Bar Harbor, ME 04609	(207) 555-0101	3/5/2010	2	\$18,29	2 \$36.58	
			1025 Drake Avenue				1 age	- 2	
1	Garcia	Susan	Exeter, NH 03833	(603) 555-1091	3/14/2010	25	\$15.79	\$394.75	
			5 North Lane						
3	Torbet	Dr. Lila	Oswego, NY 13126	(315) 555-7823	3/17/2010	32	\$12.99	\$415.68	
			24 Mountain Drive						
•	Rhoden	Tony	Auburn, ME 04210	(207) 555-9915	3/24/2010	20	\$15.79	\$315.80	
0					TOTAL	79		\$1,162.81	
1									
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3									
4						_			
5							age Break		
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7									

Working with Portrait and Landscape Orientation

- In **portrait orientation**, the page is taller than it is wide
- In landscape orientation, the page is wider than it is tall
- By default, Excel displays pages in portrait orientation

Working with Portrait and Landscape Orientation

• To change the page orientation:

MAY July 1 and all and a

- > Click the Page Layout tab on the Ribbon
- > In the Page Setup group, click the **Orientation** button, and then click **Landscape**
- > The page orientation switches to landscape

Printing the Workbook

- You can print the contents of your workbook by using the Print command on the Office Button
- The Print command provides three options:
 - You can open the Print dialog box from which you can specify the printer settings, including which printer to use, which worksheets to include in the printout, and the number of copies to print
 - > You can perform a Quick Print using the print options currently set in the Print dialog box
 - Finally, you can preview the workbook before you send it to the printer

Viewing and Printing Worksheet Formulas

- You can view the formulas in a workbook by switching to **formula view**, a view of the workbook contents that displays formulas instead of the resulting values
- To change the worksheet to formula view, press the Ctrl+` keys
- Scaling a printout reduces the width and the height of the printout to fit the number of pages you specify by shrinking the text size as needed

Viewing and Printing Worksheet Formulas

0.		RipCity Digit	al Order Report.xlsx - Microso	oft Excel	
	Home Insert Page Layout	Formulas Data Review	View		(i) _ = =
Ther		ize Print Breaks Background Area Page Setup	Print Titles Width: Automatic Scale: 100% Scale to Fit	View View	ng to Front × 📑 Align × nd to Back × 🔃 Group × ection Pane 🚳 Rotate × Arrange
А	1 🔻 💿 🌆 🕺 RipCity Digita				
1	D	underlying	date values	G	Н
1 2 3	text and numbers remain unchanged	displayed r formatted	ather than the dates		ulas displayed instead e resulting values
4	¥				
5	Phone	Date	DVDs	Price per DVD	Charge
6	(207) 555-0101	40242	2	18.29	=F6*G6
7	(603) 555-1091	40251	25	15.79	=F7*G7
	(315) 555-7823	40254	32	12.99	=F8*G8
8			20	15.79	=F9*G9
8	(207) 555-9915	40261	20	13.75	
	(207) 555-9915	40261 TOTAL	=SUM(F6:F9)	<	=SUM(H6:H9)

Viewing and Printing Worksheet Formulas

Printout scaled to one page

A	Colors + Fonts + Effects +	Layout Formulas	Data Review V Breaks Background Prin Title	t Height: 1 page	ViViPr	ew 🔽 t	orintout v ind heigh o a single	nt set
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Excel Tutorial 2 Formatting a Workbook

Objectives

- Format text, numbers, and dates
- Change font colors and fill colors
- Merge a range into a single cell
- Apply a built-in cell style
- Select a different theme
- Apply a built-in table style
- Add conditional formats to tables with highlight rules and data bars
- Hide worksheet rows
- Insert print titles, set print areas, and insert page breaks
- Enter headers and footers

Formatting Workbooks

- **Formatting** is the process of changing a workbook's appearance by defining the fonts, styles, colors, and decorative features
- A **theme** is a collection of formatting that specifies the fonts, colors, and graphical effects used throughout the workbook
- As you work, **Live Preview** shows the effects of formatting options on the workbook's appearance before you apply them

Formatting Text

- The appearance of text is determined by its **typeface**, which is the specific design used for the characters
 - Font
 - Serif fonts
 - Sans serif fonts
 - Theme font
 - Non-theme font
 - Font Style
 - Font Size
 - Measured in **points**

							Font	list 🖌 Fig
	F	ont a	Bage Laput Font Size a		p Sales Report - Microso View	oft Excel		_ = @ _ =
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theme fonts		4	후 Arial Black 후 Arial Narrow 후 Arial Rounded MT Bold					
	11		The Arial Unicode MS					
-	12 13 14		 AvantGarde <i>Salthazar</i> Baskerville Old Face 					
	15 16 17		Ή Batang Ή BatangChe					

Working with Color

- Theme colors are the 12 colors that belong to the workbook's theme
- Standard and custom colors
- Apply a color by selecting a cell or range of cells, clicking the Font Color or Fill Color button arrow, and then selecting an appropriate color

					Font col	ors (
Home Inset Page 10 theme colors (es	ach	ales Report - Micros	oft Excel			с x
As 5 variations)	道· G	ieneral • \$ • % • 1.68 +03 Number •	Conditional Format Formatting * as Table * St Styles	Cell tyles + Cells	Σ · ΔΥ ΔΑ · Sort & Find & · Filter · Select · Editing	
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A		D	E	F	G	-
1 ExerComp		ScreenTip d the color na	iplays me			
2 the h standard Fitness Standard Colors						
3 Colors More Colors	-					

Formatting Text Selections

• The **Mini toolbar** appears when you select text and contains buttons for commonly used text formats

Mini toolbar used to format text		
Home Insert Page Layout Formulas Data Review	p Sales Report - Microsoft Excel View	_ = ×
Clipboard © Font G Alignment G	General Conditional Format Cell Number Styles	∑ • A Sort & Find & 2 • Filter • Select • Editing
A1 • X • fe ExerComp Cambria • 26 • C A B I A • A A C 1 ExerComp	Mini toolbar remains open F ted text in cell	G

Setting a Background Image

- You can use a picture or image as the background for all the cells in a worksheet
- Click the Page Layout tab on the Ribbon
- Click the **Background** button
- Locate the background, and then click the Insert button

			Background image added to	the Docum	entation she	et 🖣
9		u -) =	ExerComp Sales Report - Microsoft Excel			
-	Home	Insert	Page Layout Formulas Data Review View		() – t	_ = x
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	A		В	С	D	-
1	Exe	rCo	mp			
2	the Intellig	ent path t	o Fitness			
3						
4	Author		Tom Uhen			
5	Date		1/11/2010			
6	Purpose		To report on the 2008 and 2009 sales of the X310 heart rate monitor			
7						

Formatting Data

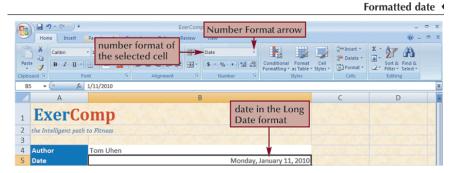
- By default, values appear in the **General number format**, which, for the most part, displays numbers exactly as you enter them
- The Number group on the Home tab has buttons for formatting the appearance of numbers
- Comma style button
- Decrease Decimal button
- Percent Style button
- Increase Decimal button
- Accounting Number Format button

Formatting Data

A	В	С	D	E	F	G
6 Units Sold	Region	2008 Sales	2009 Sales	Increase	% Increase	
7	R01	3,605	3,853	248	6.88%	
8	R02	3,966	3,842	(124)	-3.13%	
units include	R03	3,760	4,035	275	7.31%	percentages in
commas and no	R04	3,777	4,063	286	7.57%	
decimal places	R05	3,974	3,725	(249)	-6.27%	and symbol
accinia places	R06	3,656	3,937	281	7.69%	
13	R07	3,554	3,875	321	9.03%	
14	R08	3,844	3,844	-	0.00%	
15	Total	30,136	31,174	1,038	3.44%	
16						
17 Revenue	Region	2008 Sales	2009 Sales	Increase	% Increase	
18	R01	►\$ 104,364.75	\$ 115,397.35	\$ 11,032.60	10.57%	
19	R02	114,815.70	115,067.90	252.20	0.22%	
first and last	R03	108,852.00	120,848.25	11,996.25	11.02%	
rows display	R04	109,344.15	121,686.85	12,342.70	11.29%	revenues include
the currency	R05	115,047.30	111,563.75	(3,483.55)	-3.03%	commas and two
symbol	R06	105,841.20	117,913.15	12,071.95	11.41%	decimal places
symbol	R07	102,888.30	116,056.25	13,167.95	12.80%	
25	R08	111,283.80	115,127.80	3,844.00	3.45%	
26	Total	→\$ 872,437,20	\$ 933,661.30	\$ 61,224,10	7.02%	

Formatting Dates and Times

• Although dates and times in Excel appear as text, they are actually numbers that measure the interval between the specified date and time and January 1, 1900 at 12:00 a.m.



Aligning Cell Content

- In addition to left and right alignments, you can change the vertical and horizontal alignments of cell content to make a worksheet more readable
- Alignment buttons are located on the Home tab

	Alignment buttons
Buttons	Description
-	Aligns the cell content with the cell's top edge
=	Vertically centers the cell content within the cell
	Aligns the cell content with the cell's bottom edge
	Aligns the cell content with the cell's left edge
	Horizontally centers the cell content within the cell
-	Aligns the cell content with the cell's right edge
	Decreases the size of the indentation used in the cell
	Increases the size of the indentation used in the cell
89×~	Rotates the cell content to an angle within the cell
	Forces the cell text to wrap within the cell borders
	Merges the selected cells into a single cell

Indenting Cell Content

• You increase the indentation by roughly one character each time you click the Increase Indent button in the Alignment group on the Home tab

•••••••••••••••••••••••••••••••••••••••		ExerComp	Sales Report - Microso	ft Excel		- 0
Home Insert	Page Layout Formu	ilas Data Review	View			0 - 5
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The second se	Units Sold		1			
Δ Α	В	C	D	E	F	G
6 Units Sold	Region	2008 Sales	2009 Sales	Increase	% Increase	
7	R01	3,605	3,853	248	6.88%	
8	R02	3,966	3,842	(124)	-3.13%	
9	R03	3,760	4,035	275	7.31%	
.0	R04	3,777	4,063	286	7.57%	
.1	R05	3,974	3,725	(249)	-6.27%	centere
.2	R06	3,656	3,937	281	7.69%	text
.3	R07	3,554	3,875	321	9.03%	
14	R08	3,844	3,844	-	0.00%	
5 text	Total	30,136	31,174	1,038	3.44%	
6 indented						
7 one space	Region	2008 Sales	2009 Sales	Increase	% Increase	
.8	R01	\$ 104,364.75	\$ 115,397.35	\$ 11,032.60	10.57%	
9	R02	114,815.70	115,067.90	252.20	0.22%	
0	R03	108,852.00	120,848.25	11,996.25	11.02%	
1	R04	109,344.15	121,686.85	12,342.70	11.29%	
.2	R05	115,047.30	111,563.75	(3,483.55)	-3.03%	
.3	R06	105,841.20	117,913.15	12,071.95	11.41%	
.4	R07	102,888.30	116,056.25	13,167.95	12.80%	
15	R08	111,283.80	115,127.80	3,844.00	3.45%	
.6	Total	\$ 872,437.20	\$ 933,661.30	\$ 61,224.10	7.02%	

Merging Cells

 One way to align text over several columns or rows is to merge, or combine, several cells into one cell

M	erged range	with centere	d text				
9	1 1 7 • (1 •) 7		ExerCom	p Sales Report - Micros	oft Excel		- ¤ X
		Page Layout Formulas	Data Review	View General		ansert *	<u>ο</u> - • ×
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Clipbo	pard G For		Alignment 5	-	Styles	Cells	Editing
A4	$ f_x$	X310 Yearly Sales Analy	sis text ce	entered in			*
	Α	В	the me	erged cell	E	F	G
1	ExerComp						
2	the Intelligent path	n to Fitness					
3				*			
4			X310 Yearly	/ Sales Analysis			
5							

Rotating Cell Content

- To save space or to provide visual interest to a worksheet, you can rotate the cell contents so that they appear at any angle or orientation
- Select the range
- In the Alignment group, click the **Orientation** button and choose a proper rotation

Rotating Cell Content

F	G	F	E		D		С	В		Α	
		% Increase	Increase		2009 Sales	ales	2008 Sa		Region		6
		6.88%	248	:	3,853	3,605			R01		7
		-3.13%	(124)		3,842	3,966			R02		8
		7.31%	275		4,035	3,760			R03	<u>o</u>	9
		7.57%	286		4,063	3,777			R04	S	10
		-6.27%	(249)	6	3,725	3,974			R05		11
		7.69%	281	1	3,937	3,656			R06		12
		9.03%	321		3,875	3,554			R07		L3
		0.00%	-	F .	3,844	3,844		rotated	R08		L4
		3.44%	1,038	F.	31,174	30,136	o less	take up	Total		15
							n the	space i			16
		% Increase	Increase		2009 Sales	ales	d cells	mergee	Region		17
		10.57%	11,032.60	\$	\$ 115,397.35	364.75	ə 104 ,	Ŭ	R01		18
		0.22%	252.20		115,067.90	815.70	114,		R02		.9
		11.02%	11,996.25		120,848.25	852.00	108,		R03	e	20
		11.29%	12,342.70		121,686.85	344.15	109,		R04	Revenue	21
		-3.03%	(3,483.55)		111,563.75	047.30	115,		R05	Seve	22
		11.41%	12,071.95		117,913.15	841.20	105,		R06	u.	23
		12.80%	13,167.95		116,056.25	888.30	102,		R07		24
		3.45%	3,844.00		115,127.80	283.80	111,		R08		25
		7.02%	61,224.10) \$	\$ 933,661.30	437.20	\$ 872,		Total		26

Adding Cell Borders

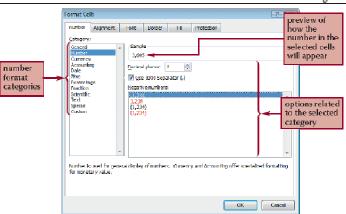
• You can add borders to the left, top, right, or bottom of a cell or range, around an entire cell, or around the outside edges of a range using the **Border button arrow**

	Bo	order	rs added to	cells					
		А	В	С	D	E	F	G	H
	6		Region	2008 Sales	2009 Sales	Increase	% Increase		
	7		R01	3,605	3,853	248	6.88%		
	8		R02	3,966	3,842	(124)	-3.13%		
	9	σ	R03	3,760	4,035	275	7.31%		
	10	S	R04	3,777	4,063	286	7.57%		
	11	Units Sold	R05	3,974	3,725	(249)	-6.27%		
	12		R06	3,656	3,937	281	7.69%		
column	title	es	R07	3,554	3,875	321	9.03%		
have a s	ingle	e	R08	3,844	3,844	-	0.00%		
bottom	bor	der	Total	30,136	31,174	1,038	3.44% -	<	
	16								
L	17	->	Region	2008 Sales	2009 Sales	Increase	% Increase	Total rows	
	18		R01	\$ 104,364.75	\$ 115,397.35	\$ 11,032.60	10.57%	have a	
	19		R02	114,815.70	115,067.90	252.20	0.22%		
	20	63	R03	108,852.00	120,848.25	11,996.25	11.02%	single top	
	21	nu	R04	109,344.15	121,686.85	12,342.70	11.29%	border and	
	22	Revenue	R05	115,047.30	111,563.75	(3,483.55)	-3.03%	a double	
	23	62	R06	105,841.20	117,913.15	12,071.95	11.41%	bottom	
	24		R07	102,888.30	116,056.25	13,167.95	12.80%	border	
	25		R08	111,283.80	115,127.80	3,844.00	3.45%		
	26		Total	\$ 872,437.20	\$ 933,661.30	\$ 61,224.10	7.02% -	< ──	
	н + э		ocumentation Yea	rly Sales / Monthly Sales /	2				
	Ready	1					<u>(</u>	120% 🕤 🛄	0

Working with the

Format Cells Dialog Box

• The Format Cells dialog box has six tabs, each focusing on a different set of formatting options



Number tab in the Format Cells dialog box

Border tab in the	Format Cells dialog box
does not add any lines to the cell or range border line styles selected border line color	adds lines around the cell or range adds lines around the cell or range adds lines within the range gove only provide the range preview of the solected border style 2007 The selected foods stylesambe extled by c2king the or sets, never diagram or the buttors adds lines around the cell or range preview of the solected border of the selected cells the solected cells the solected cells the solected cells the solected cells the solected cells the solected cells

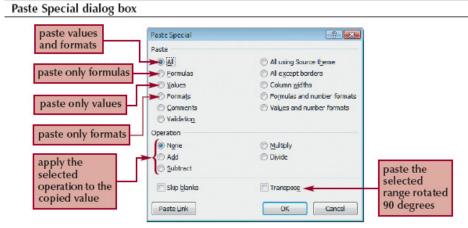
Copying Formats with the Format Painter

- The **Format Painter** copies the formatting from one cell or range to another cell or range, without duplicating any of the data
- Select the range containing the format you wish to copy
- Click the Format Painter button on the Home tab
- Click the cell to which you want to apply the format

Copying Formats with the Paste Options Button

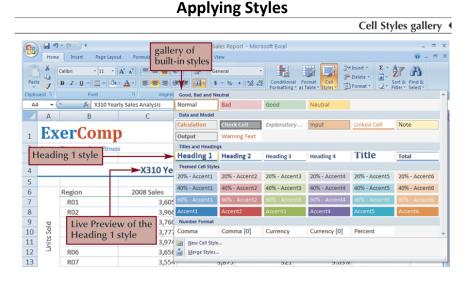
							Using	; th	e Past	te Opt	ions button
	А	В	С	D	E	F	G		Н	1	J
1											
2		Ś	Model	R01	R02	R03	Total				
3		2008 Sales	X310	3,605	3,996	3,760	11,361				pastes onl
4		8	X410	1,875	1,924	2,112	5,911				the formation
5		Ö	X510	850	912	750	2,512	0	N		
6		2	Total	6,330	6,832	6,622	19,784	0		urce Forma	
7					latat at at at at at at at at	****	*****	0		tination Th	Formatting
8								0	Values (rormatting
9		Ś	Model	R01	R02	R03	Total	0	-		r Formatting
10		ale	X310	3,853	3,842	4,035	11,730	0			Formatting
11		S C	X410	2,112	1,801	2,304	6,217	0		urce Colum	
12		2009 Sales	X510	1025	1,115	912	3,052	0		ing Only	_
13		5	Total	6,990	6,758	7,251	20,999	0	Link Cel		13
14				F	aste Opti	ons butto	n 🚽	B ·			
15											

Copying Formats with Paste Special



Applying Styles

- A style is a collection of formatting
- Select the cell or range to which you want to apply a style
- In the Styles group on the Home tab, click the Cell Styles button
- Point to each style in the Cell Styles gallery to see a Live Preview of that style on the selected cell or range
- Click the style you want to apply to the selected cell or range



Working with Themes

• The appearance of these fonts, colors, and cell styles depends on the workbook's current theme

				carry sales u				
	9 - (* -) =		ExerComp Sales	Report - Microsoft Exc	el		-	•
Hom	ne Insert Page La	yout Formulas Dat	a Review View				🥹 –	•
emes eff	ffects * Margins Oriente	The second secon	Background Print Titles	Width: Automatic + Height: Automatic + Scale: 100% Scale to Fit	Gridlines Headings View View Print Print Sheet Options	Bring to Front	Group -	
F1 -	fx fx	ruge setup		State to Th	Janet options	Anang		
A	erComp		rent font is or the headi	E	F	G	Н	
the Int	elligent path to Fitness		or the neath	ig				
		X310 Year	ly Sales Ana	lysis			rent fonts	
5	Region	2008 Sales	2009 Sales	Increase	% Increase		fill colors	
7	R01 R02	3,605	3,853	248 -124	6.88% -3.13%		ear in the	
Pe	R03	3,760	4,035	275	7.31%	two	tables	
o v	R04	3,777	4,063	286	7.57%			_
1 India	R05	3,974	3,725	-249	-6.27%			
2 5 3	R06 R07	3,656	3,937 3,875	281 321	7.69%			
1	R08	3,844	3,844	321	0.00%			
5	Total	30,136	31,174	1,038	3.44%			
5								
7	Region R01	2008 Sales \$ 104,364.75	2009 Sales 115,397.35	Increase \$ 11,032.60	% Increase 10.57%			
,	R01 R02	114,815.70	115,067.90	\$ 11,032.00	0.22%			
	R03	108,852.00	120,848.25	11,996.25	11.02%	<		
, in	R04	109,344.15	121,686.85	12,342.70	11.29%			
eve	R05	115,047.30	111,563.75	(3,483.55)	-3.03%			
	R06	105,841.20	117,913.15	12,071.95	11.41%			
	R07	102,888.30	116,056.25	13,167.95	12.80%			
5	R08	111,283.80	115,127.80	3,844.00	3.45%			
	Total	\$ 872,437.20	\$ 933,661.30	\$ 61,224.10	7.02%			
8								
	Documentation Yearly	Sales Monthly Sales	/97/			81		•
dy 💼						909		

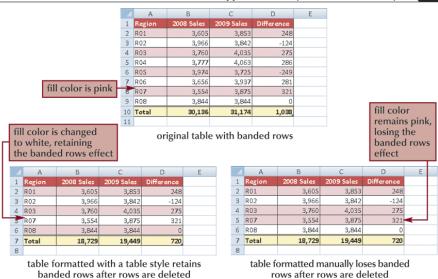
Yearly Sales data with the Aspect theme applied

Applying a Table Style to an Existing Table

- You can treat a range of data as a distinct object in a worksheet known as an Excel table
- Select the range to which you want to apply the table style
- In the Styles group on the Home tab, click the Format as Table button
- Click a table style in the Table Style gallery

Applying a Table Style to an Existing Table

Banded rows effect applied manually and with a table style



Selecting Table Style Options

• After you apply a table style, you can choose which table elements you want included in the style

12	ome Insert	Pag select	ed table	e elemer	view	Table Tools Design	1			0	- 0
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7	Jan	288	345	326	307	364	310	316	352	2,608	
			304	294	297	310	278	275	294	2,330	
8	Feb		220	207	204	216	201	207	207	2 426	
8 9	Mar	294	320	297	304	316	291	297	307	2,426	
8 9 .0 8000	Mar Apr May	294 288	313	300	300	320	284	275	295	2,375	
8 9 .0 8000	Mar Apr May	294									
8 9 0 1 2 3	Mar Apr May Jun Jul	294 288 284	313 329	300 304	300 297	320 313	284 288	275 275	295 310	2,375 2,400	
8 9 10 11 12 13	Mar Apr May Jun Jul	294 288 284 313	313 329 339	300 304 316	300 297 315	320 313 326	284 288 307	275 275 288	295 310 329	2,375 2,400 2,533	
8 9 10 11 12 13 14	Mar Apr May Jun Jul	294 288 284 313 313	313 329 339 332	300 304 316 320	300 297 315 310	320 313 326 313	284 288 307 300	275 275 288 304	295 310 329 336	2,375 2,400 2,533 2,528	
8 9 10 11 12 13 14 15	Mar Apr May Jun Jul Aug	294 288 284 313 313 294	313 329 339 332 339	300 304 316 320 315	300 297 315 310 339	320 313 326 313 339	284 288 307 300 304	275 275 288 304 307	295 310 329 336 323	2,375 2,400 2,533 2,528 2,560	
8 9 10 11 12 13	Mar Apr May Jun Jul Aug Sep	294 288 284 313 313 294 284	313 329 339 332 339 310	300 304 316 320 315 310	300 297 315 310 339 304	320 313 326 313 339 316	284 288 307 300 304 284	275 275 288 304 307 281	295 310 329 336 323 304	2,375 2,400 2,533 2,528 2,560 2,393	
8 9 10 11 12 13 14 15 16	Mar Apr May Jun Jul Aug Sep Oct	294 288 284 313 313 294 284 284	313 329 339 332 339 310 326	300 304 316 320 315 310 304	300 297 315 310 339 304 297	320 313 326 313 339 316 316	284 288 307 300 304 284 281	275 275 288 304 307 281 281	295 310 329 336 323 304 300	2,375 2,400 2,533 2,528 2,560 2,393 2,389	

Introducing Conditional Formats

- A conditional format applies formatting only when a cell's value meets a specified condition
- Select the range or ranges to which you want to add data bars.
- In the Styles group on the Home tab, click the Conditional Formatting button, point to Data Bars, and then click a data bar color Or
- Select the range in which you want to highlight cells that match a specified rule
- In the Styles group, click the Conditional Formatting button, point to Highlight Cells Rules or Top/Bottom Rules, and then click the appropriate rule
- Select the appropriate options in the dialog box, and then click the OK button

Adding Data Bars

- A **data bar** is a horizontal bar added to the background of a cell to provide a visual indicator of the cell's value
- Select the cell(s)
- In the Styles group on the Home tab, click the **Conditional Formatting** button, point to **Data Bars**, and then click the DataBar option you wish to apply

nuary sales for	5		_									
he R01 region	6	M	onth	R01	R02	R03	R04	R05	R06	R07	R08	Total
re lower than	7	Ja	n 🗖	288	345	326	307	364	310	316	352	2,608
	8	Fe	b	278	304	294	297	310	278	275	294	2,330
xpected	9	M	ar	294	320	297	304	316	291	297	307	2,426
	10	4A 5008	or 📘	288	313	300	300	320	284	275	295	2,375
	11	M 50	ay	284	329	304	297	313	288	275	310	2,400
	12	nr Sold in	n	313	339	316	315	326	307	288	329	2,533
	13	Jul 🕄		313	332	320	310	313	300	304	336	2,528
	14	Au Chits	ıg 🛛	294	339	315	339	339	304	307	323	2,560
	15	う Se	p	284	310	310	304	316	284	281	304	2,393
	16	00	t I	284	326	304	297	316	281	281	300	2,389
	17	No	v	339	364	326	320	364	345	294	336	2,688
	18	De	ec 🛛	346	345	348	387	377	384	361	358	2,906
	19	То	tal	3,605	3,966	3,760	3,777	3,974	3,656	3,554	3,844	30,136
	20											
	21	м	onth	R01	R02	R03	R04	R05	R06	R07	R08	Total
	22	Ja	n	352	364	345	352	336	361	325	342	2,777
	23	Fe Docur	h nentation	207 Yearly Sales	326 Monthly Sales	310	313	288	300	297	300	2 431

Adding Data Bars

Hiding Worksheet Data

- Hiding rows, columns, and worksheets is an excellent way to conceal extraneous or distracting information
- In the Cells group on the Home tab, click the **Format** button, point to **Hide & Unhide**, and then click your desired option

Changing the Page Orientation

to Landscape

- Click the Page Layout tab on the Ribbon
- In the Page Setup group, click the **Orientation** button, and then click **Landscape**

Defining the Print Area

- By default, all parts of the active worksheet containing text, formulas, or values are printed
- You can select the cells you want to print, and then define them as a print area
- Select the range, in the Page Setup group on the Page Layout tab, click the **Print Area** button, and then click **Set Print Area**

Inserting Page Breaks

- Excel prints as much as fits on a page and then inserts a **page break** to continue printing the remaining worksheet content on the next page
- Manual page breaks specify exactly where the page breaks occur

Setting and Removing Page Breaks

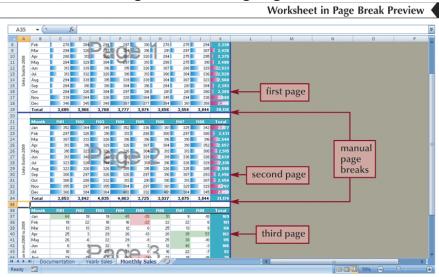
To set a page break:

- Select the first cell below the row where you want to insert a page break
- In the Page Setup group on the Page Layout tab, click the Breaks button, and then click Insert Page Break

To remove a page break:

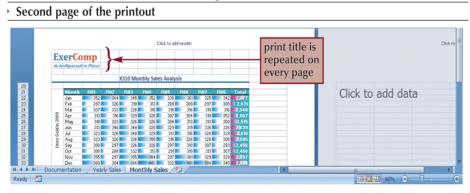
- Select any cell below or to the right of the page break you want to remove
- In the Page Setup group on the Page Layout tab, click the Breaks button, and then click Remove Page Break (or click Reset All Page Breaks to remove all the page breaks from the worksheet)

Setting and Removing Page Breaks



Adding Print Titles

- You can repeat information, such as the company name, by specifying which rows or columns in the worksheet act as **print titles**, information that prints on each page
- In the Page Setup group on the Page Layout tab, click the **Print Titles** button
- Click the **Rows to repeat at top** box, move your pointer over the worksheet, and then select the range
- Click the **OK** button



Adding Print Titles

Adding Headers and Footers

- A header is the text printed in the top margin of each page
- A **footer** is the text printed in the bottom margin of each page
- Scroll to the top of the worksheet, and then click the left section of the header directly above cell A1 to display the Header & Footer Tools contextual tab

Page header ExerComp Sales Report - Microsoft Excel - = x Header & Footer Tools 0 - = x Insert Page Layout Formulas Data Review View Design 📄 🕞 📆 🕑 🧀 🗐 💷 🔜 📝 🧉 💷 🔲 Different First Page Scale with Document Header Footer Page Number Current File File Sheet Picture Format Go to Go to Go to * Number of Pages Date Time Path Name Name Picture Header Footer 🛅 Different Odd & Ev Header & Footer Header & Footer Elen Navigati code to display the current A35 🔻 💿 🕺 🖍 date in the right section B C D A G н code displays the &[Date] Filename: ExerComp Sales Report current filename in the left section ExerComp the Intelligent path to Fitn

Adding Headers and Footers

Page footer

Footer	Page 1 of 3	Prepared by: Tom Uhen
	codes in the center section display the current page and the total number of pages	your name appears here

Excel Tutorial 3 Working with Formulas and Functions

Objectives

- Copy formulas
- Build formulas containing relative, absolute, and mixed references
- Review function syntax
- Insert a function with the Insert Function dialog box
- Search for a function
- Type a function directly in a cell
- Use AutoFill to fill in a formula and complete a series
- Enter the IF logical function
- Insert the date with the TODAY function
- Calculate monthly mortgage payments with the PMT financial function

Formula using a	a re	lative ı	reference					
			А		В		С	D
	1	10	n. annonner fars ann	20		30		
original formula with a relative	2							
with a relative reference	3	=A1		1				
	4							
	5							
(А		В		С	D
formula copied to a new range	1	10		20		30		
to a new range (column and row	2							
references shift based on cell	3	=A1		=B1		=C1		
location)	4							(1)
	5							
		_						
			А		В		С	D
	1		10)	20		30	
formula results	2							
ionnala results	3		10	2	20		30	
	4							1
	5							

Using Relative References

Using Absolute References

			Fo	rmula using an ab	solute reference
		А	В	С	D
	1	10	20	30	
original formula with an absolute	2				
eference	3	=\$A\$1			
	4				
	5				
ormula conied		А	В	С	D
ormula copied nto a new range column and row	1	10	20	30	
column and row	2				7
eferences fixed	3	=\$A\$1	=\$A\$1	=\$A\$1	
egardless of ell location)	4				Ē.
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ormula results	2				
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								Formu	ılas us	ing mix	ed reference
			А			В			С		D
	1	10		2	0		1	30			
original formula with a mixed	2										
reference	3	=A\$1									
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ormula copied			А			В			С		D
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xed on row 1,	2	=A\$1			DĆ4			004			
olumn reference	-	=A\$1 =A\$1			B\$1 B\$1			=C\$1 =C\$1			
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	2	-431			DŞT			-031			
			А			В			С		D
	1			10			20			30	
	2										
ormula results	3			10			20			30	
	4			10			20			30	
	5			10			20			30	

Using Mixed References

Entering Relative, Absolute, and Mixed References

- To enter a relative reference, type the cell reference as it appears in the worksheet. For example, enter B2 for cell B2
- To enter an absolute reference, type \$ (a dollar sign) before both the row and column references. For example, enter \$B\$2
- To enter a mixed reference, type \$ before either the row or column reference. For example, enter \$B2 or B\$2 or
- Select the cell reference you want to change
- Press the F4 key to cycle the reference from relative to absolute to mixed and then back to relative

Understanding Function Syntax

• Every function has to follow a set of rules, or **syntax**, which specifies how the function should be written

Categories of Excel	Functions
Category	Contains functions that
Cube	Retrieve data from multidimensional databases involving online analytical
	processing or OLAP
Database	Retrieve and analyze data stored in databases
Date & Time	Analyze or create date and time values and time intervals
Engineering	Analyze engineering problems
Financial	Have financial applications
Information	Return information about the format, location, or contents of worksheet cells
Logical	Return logical (true-false) values
Lookup &	Look up and return data matching a set of specified conditions from a range
Reference	
Math & Trig	Have math and trigonometry applications
Statistical	Provide statistical analyses of a set of data
Text	Return text values or evaluate text

-- Arguments

	Math, Trig and	Statistical functions
Function	Category	Description
AVERAGE(number1[,number2, number3,])	Statistical	Calculates the average of a collection of numbers, where <i>number1</i> , <i>number2</i> and so forth are either numbers or cell references. Only <i>number1</i> is required. For more than one cell reference or to enter numbers directly into the function, use the optional arguments <i>number2</i> , <i>number3</i> and so forth.
COUNT (value1 [,value2, value3,])	Statistical	Counts how many cells in a range contain numbers, where <i>value1, value2,</i> and so forth are text, numbers, or cell references. Only <i>value1</i> is required. For more than one cell reference or to enter numbers directly into the function, use the optional arguments <i>value2, value3,</i> and so forth.
COUNTA(value1 [,value2, value3,])	Statistical	Counts how many cells are not empty in range value1, value2 and so forth, or how many numbers are listed within value1, value2, and so forth.
INT (number)	Math & Trig	Displays the integer portion of a number, number.
MAX (number1[,number2, number3,])	Statistical	Calculates the maximum value of collection of numbers, where <i>number1, number2</i> , and so forth are either numbers or cell references.
MEDIAN (number1[,number2, number3,])	Statistical	Calculates the median, or middle, value of a collection of numbers, where <i>number1, number2,</i> and so forth are either numbers or cell references.
MIN (number1[,number2, number3,])	Statistical	Calculates the minimum value of a collection of numbers, where <i>number1, number2,</i> and so forth are either numbers or cell references.
RAND ()	Math & Trig	Returns a random number between 0 and 1.
ROUND (number, num_digits)	Math & Trig	Rounds a number to a specified number of digits, where <i>number</i> is the number you want to round and <i>num_digits</i> specifies how many digits to which you want to round the number.
SUM (number1[,number2, number3,])	Math & Trig	Adds a collection of numbers, where <i>number1,</i> <i>number2,</i> and so forth are either numbers or cell references.

Understanding Function Syntax

Inserting a Function

- Click the Formulas tab on the Ribbon
- To insert a function from a specific category, click the appropriate category button in the Function Library group. To search for a function, click the Insert Function button in the Function Library group, enter a description of the function, and then click the Go button
- Select the appropriate function from the list of functions
- Enter the argument values in the Function Arguments dialog box, and then click the OK button

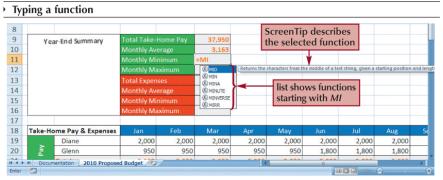
Inserting a Function

Figure 3-8	Function Arguments dialog box
Tip You can click the Collapse Dialog Box button to shrink the Function Argu- ments dialog box to see more of the worksheet, select the range, and then dick the Expand Dialog Box button to restore the dialog box.	Function Arguments Collapse Dialog Box button Ist of values in the range required argument Number: (2150,2550,2550,2550,2550,2550,2550,2550,
Figure 3-10 Tip You can also open the Insert Function dialog box by clicking the Insert Function button on the	Inserting a Function Insert Function dialog box

Figure 3-10	Insert Function dialog box
Tip You can also open the Insert Function dialog box by clicking the Insert Function button on the formula bar.	Insert Function gearch for a function: Caculate an average value of function Caculate an average value Or select a gategory: Recommended Select a functions that match the search description Databeto Returns the average (arithmetic mean) of its arguments, which can be numbers or names, arrays, or references that contain numbers. syntax and description Help on this function Help on this function

Typing a Function

• As you begin to type a function name within a formula, a list of functions that begin with the letters you typed appears



Working with AutoFill

- AutoFill copies content and formats from a cell or range into an adjacent cell or range
- Select the cell or range that contains the formula or formulas you want to copy
- Drag the fill handle in the direction you want to copy the formula(s) and then release the mouse button
- To copy only the formats or only the formulas, click the AutoFill Options button and select the appropriate option
 - Or
- Select the cell or range that contains the formula or formulas you want to copy
- In the Editing group on the Home tab, click the Fill button
- Select the appropriate fill direction and fill type (or click Series, enter the desired fill series options, and then click the OK button)

						Fo	rmulas a	and forn	nats cop	ied wit	h AutoFil
18	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
19	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	
20	950	950	950	1,800	1,800	1,800	950	950	950	950	
21	3,450	3,450	3,450	4,300	4,300	4,300	3,450	3,450	3,450	3,450	
22	850	850	850	850	850	850	850	850	850	850	
23	650	650	650	650	650	650	650	650	650	650	
24	175	165	120	135	145	145	140	140	170	210	
25	75	75	75	75	75	75	75	75	75	75	
26	175	175	175	175	175	175	175	175	175	175	
27	125	125	125	125	125	125	125	125	125	125	
28	0	0	0	900	0	1,900	0	0	0	0	
29	0	0	0	300	0	700	0	0	0	0	AutoFill
30	150	450	120	180	720	400	130	150	250	300	
31	150	150	150	150	150	150	150	150	150	150	Options
32	2,350	2,640	2,265	3,540	2,890	5,170	2,295	2,315	2,445	2,535	button
33	1,100	810	1,185	760	1,410	-870	1,155	1,135	1,005	915	
34											
35	0		1.0		1 1						-
36				s copied			14			fill ha	ndle
Ready	to to	the selec	cted rang	ge			Average: 676	Count: 12 Sur	n: 8,110	120% (=) 0

Working with AutoFill

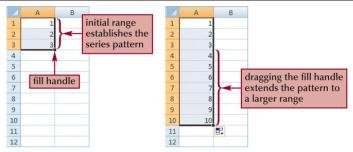
Using the AutoFill Options Button

- By default, AutoFill copies both the formulas and the formats of the original range to the selected range
- You can specify what is copied by using the AutoFill Options button that appears after you release the mouse button



Filling a Series

• AutoFill can also be used to create a series of numbers, dates, or text based on a pattern AutoFill extends a numeric sequence



Fillin	ga	Series	
	БЧ	501105	

AutoFill applied to different series				
Туре	Initial Entry	Extended Series		
Values	1, 2, 3	4, 5, 6,		
	2, 4, 6	8, 10, 12,		
Dates Times	Jan	Feb, Mar, Apr,		
	January	February, March, April,		
	15-Jan, 15-Feb	15-Mar, 15-Apr, 15-May,		
	12/30/2010	12/31/2010, 1/1/2011, 1/2/2011,		
	12/31/2010, 1/31/2011	2/28/2011, 3/31/2011, 4/30/2011,		
	Mon	Tue, Wed, Thu,		
	Monday	Tuesday, Wednesday, Thursday,		
	11:00 AM	12:00PM, 1:00PM, 2:00PM,		
Patterned Text	1 st period	2nd period, 3rd period, 4th period,		
	Region 1	Region 2, Region 3, Region 4,		
	Quarter 3	Quarter 4, Quarter 1, Quarter 2,		
	Qtr 3	Qtr4, Qtr1, Qtr2,		

Creating a Series with AutoFill

- Enter the first few values of the series into a range
- Select the range, and then drag the fill handle of the selected range over the cells you want to fill Or
- Enter the first few values of the series into a range
- Select the entire range into which you want to extend the series
- In the Editing group on the Home tab, click the Fill button, and then click Down, Right, Up, Left, Series, or Justify to set the direction you want to extend the series

Working with Logical Functions

- A logical function is a function that works with values that are either true or false
- The **IF function** is a logical function that returns one value if the statement is true and returns a different value if the statement is false
- IF(logical_test, value_if_true, [value_if_false])

Working with Logical Functions

• A comparison operator is a symbol that indicates the relationship between two values

Comparison operators			
Operator	Statement	Tests Whether	
=	A1 = B1	The value in cell A1 is equal to the value in cell B1	
>	A1 > B1	The value in cell A1 is greater than the value in cell B1	
<	A1 < B1	The value in cell A1 is less than the value in cell B1	
>=	A1 >= B1	The value in cell A1 is greater than or equal to the value in cell	
		B1	
<=	A1 <= B1	The value in cell A1 is less than or equal to the value in cell B1	
<>	A1 <> B1	The value in cell A1 is not equal to the value in cell B1	

Working with Logical Functions

- =IF(A1="YES", "DONE", "RESTART")
- =IF(A1="MAXIMUM", MAX(B1:B10), MIN(B1:B10))
- =IF(D33>0, \$K\$10, 0)

Working with Logical Functions

	Function arguments for the IF functi	on
test condition that is either true or false value returned if the condition is true	Function Arguments ? XX JF Logical_test D33>0 Est - FALSE Volue_if_true \$K\$10 Est - 800 Value_if_fake 0 Est = 0	
value returned if the condition is false	= 0 Checks whether a condition is met, and returns one value if TRUE, and another value if FALSE. Value_if_false is the value that is returned if Logical_test is FALSE. If omitted, FALSE is returned.	
	Formula result = 0 Help on this function OK Cancel]

Working with Date Functions

	Date Functions
Function	Description
DATE (year, month, day)	Creates a date value for the date represented by the year, month and day arguments
DAY (day)	Extracts the day of the month from the <i>date</i> value
MONTH (<i>date</i>)	Extracts the month number from the <i>date</i> value where 1=January, 2=February, and s forth
YEAR(date)	Extracts the year number from the <i>date</i> value
WEEKDAY (date,[return_type])	Calculates the day of the week from the <i>date</i> value, where 1=Sunday, 2=Monday, and so forth; to choose a different numbering scheme, set the optional <i>return_type</i> value to "1" (1=Sunday, 2=Monday,) "2" (1=Monday, 2=Tuesday,), or "3" (0=Monday, 1=Tuesday,)
NOW ()	Displays the current date and time
TODAY ()	Displays the current date

Working with Financial Functions

Einancial func	tions for loans and invostments									
Financial func	Financial functions for loans and investments									
Function	Description									
FV (rate, nper, pmt,[pv=0][type=0])	Returns the future value of an investment, where rate is the interest rate per period, <i>nper</i> is the total number of periods, <i>pmt</i> is the payment in each period, <i>pv</i> is the present value of the investment, and type indicates whether payments should be made at the end of the period (0) or the beginning of the period (1)									
PMT (rate, nper, pv, [fv=0][type=0])	Calculates the payments required each period on a loan or investment									
IPMT (rate, per, nper, pv [fv=0][type=0])	Calculates the amount of a loan payment devoted to paying the loan interest, where <i>per</i> is the number of the payment period									

$DDMT$ (rate per per put $[f_{i}-0][t_{i}=0]$)	Coloulates the amount of a loop normant dougted to
PPMT (rate, per, nper, pv [fv=0][type=0])	Calculates the amount of a loan payment devoted to
	paying off the principal of a loan, where per is the
	number of the payment period
PV (rate, nper, pmt, [fv=0][type=0])	Calculates the present value of a loan or investment
	based on periodic, constant payments
NPER (rate, pmt, pv, [fv=0][type=0])	Calculates the number of periods required to pay off a
	loan or investment
RATE (nper, pmt, pv, [fv=0][type=0])	Calculates the interest rate of a loan or investment based
	on periodic, constant payments

Using the PMT Function to Determine a Monthly Loan Payment

- For loan or investment calculations, you need to know the following information:
 - > The annual interest rate
 - > The payment period, or how often payments are due and interest is compounded
 - > The length of the loan in terms of the number of payment periods
 - > The amount being borrowed or invested
- PMT(rate, nper, pv, [fv=0] [type=0])

Using the PMT Function to Determine a Monthly Loan Payment

	Function Argu	uments dialog box for the PMT
Function Arguments		
PMT		
Rate	85	- 0.005416667
Nper	87	= 240
Pw	58	= 1503.00
Fv		- number
Туре		= number
		= -1192.9/17017
Colculates the payment f	or a loan based on constant payments or	
	IFV is the future value, or payment is made, 0 (as	a cash balance you want to a ttain after the last ero) if omitted.
Formula result = -1192.	91.701.7	
Help on this function		OK Cancel

Using the PMT Function to Determine a Monthly Loan Payment

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4	Interest Payments per Year	12											
5	Interest Rate per Period	0.0054167											
6	Number of Years	20											
7	Number of Payments	240											
8	Loan Amount	160,000	1			d have							
9	Monthly Loan Payment	\$1,192.92		value retu									=
10				the PMT f	unc	tion							

Monthly payment for a \$160,000 loan

Excel Tutorial 4 Working with Charts and Graphics

Objectives

- Create an embedded chart
- Work with chart titles and legends
- Create and format a pie chart
- Work with 3D charts
- Create and format a column chart
- Create and format a line chart
- Use custom formatting with chart axes
- Work with tick marks and scale values
- Create and format a combined chart
- Insert and format a graphic shape
- Create a chart sheet

Creating Charts

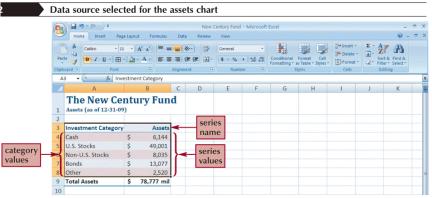
- A chart, or graph, is a visual representation of a set of data
- Select the data source with the range of data you want to chart
- In the Charts group on the Insert tab, click a chart type, and then click a chart subtype in the Chart gallery
- In the Location group on the Chart Tools Design tab, click the Move Chart button to place the chart in a chart sheet or embed it into a worksheet



Creating Charts

Selecting a Data Source

- The **data source** is the range that contains the data you want to display in the chart
- Data series
- > Series name
- > Series values
- Category values

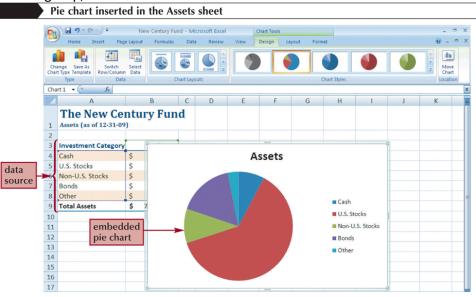


Selecting a Chart Type

	Categories of Excel Chart types
Chart Type	Description
Column	Compares values from different categories. Values are indicated by the height of the columns.
Line	Compares values from different categories. Values are indicated by the height of the line. Often used to show trends and changes over time.
Pie	Compares relative values of different categories to the whole. Values are indicated by the area of the pie slices.
Bar	Compares values from different categories. Values are indicated by the length of the bars.
Area	Compares values from different categories. Similar to the line chart except that areas under the lines contain a fill color.
XY (Scatter)	Show the patterns or relationship between two or more sets of values. Often used in scientific studies and statistical analyses.
Stock	Displays stock market data, including the high, low, opening and closing prices of a stock.
Surface	Compares three sets of values in a three-dimensional chart.
Doughnut	Compares relative values of different categories to the whole. Similar to the pie
	chart except that it can display multiple sets of data.
Bubble	Shows the patterns or relationship between two or more sets of values. Similar to
	the XY (Scatter) chart except the size of the data marker is determined by a third
	value.
Radar	Compares a collection of values from several different data sets.

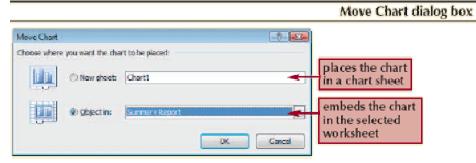
Selecting a Chart Type

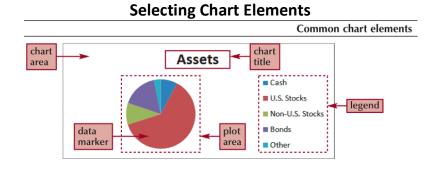
- Click the **Insert** tab on the Ribbon
- In the Charts group, click the **Pie** button



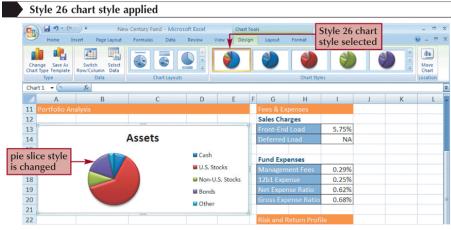
Moving and Resizing Charts

- By default, a chart is inserted as an **embedded chart**, which means the chart is placed in a worksheet next to its data source
- You can also place a chart in a chart sheet
- In the Location group on the Chart Tools Design tab, click the Move Chart button





Choosing a Chart Style and Layout



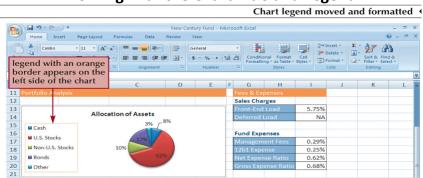
Choosing a Chart Style and Layout

	Pie chart layo	outs
Layout	Name	Pie Chart with
	Layout 1	Chart title, labels and percentages
	Layout 2	Chart title, percentages and legend above the pie
S.L.KE	Layout 3	Legend below the pie
	Layout 4	Label in pie slices
	Layout 5	Chart title and labels in pie slices
	Layout 6	Chart title, percentages and legend to the right of the pie
	Layout 7	Legend to the right of the pie

Working with the Chart Title and Legend

- Click the chart title to select it
- Type the chart title, and then press the Enter key
- Click the Chart Tools Layout tab on the Ribbon
- In the Labels group, click the Legend button, and then click the desired legend position

Working with the Chart Title and Legend



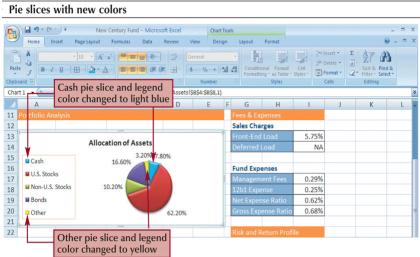
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- Click the chart to select it
- In the Labels group on the Chart Tools Layout tab, click the **Data Labels** button, and then click **More Data Label Options**

Format Data Labels
Label Options number Fili correr Color Barder Styles Shedow 3-0 Fermat Alignment Label Options Label Options Strike Share Parcentage Shadow Botter End Description Best Label Text Label Options Electual Text Shadow Best Bit Include legend key in label Separator Separator

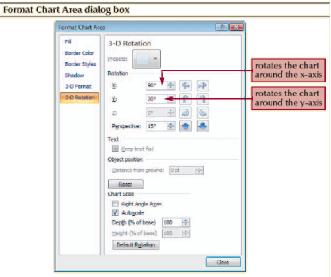
Setting the Pie Slice Colors

- In pie charts with legends, it's best to make the slice colors as distinct as possible to avoid confusion
- Click the pie to select the entire data series, and then click the slice you wish to change
- Change the fill color



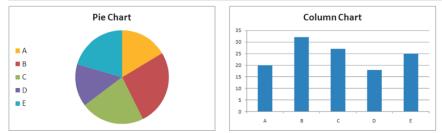
Working with 3D Options

- To increase the 3D effect, you need to rotate the chart
- Click the **Chart Tools Layout** tab on the Ribbon, and then, in the Background group, click the **3-D Rotation** button



Creating a Column Chart

- A **column chart** displays values in different categories as columns; the height of each column is based on its value
- The **bar chart** is a column chart turned on its side, so each bar length is based on its value Same data displayed as a pie chart and a column chart



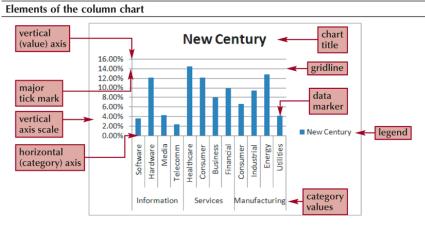
Creating a Column Chart

- Select the range
- Click the Insert tab on the Ribbon
- In the Charts group, click the **Column** button and then choose the chart subtype Column chart moved and resized in the Summary Report worksheet

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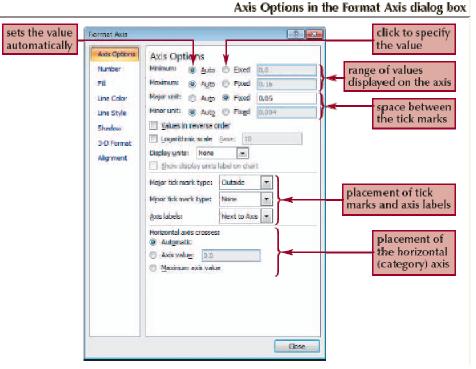
Formatting Column Chart Elements

• Click the Chart Tools Layout tab on the Ribbon

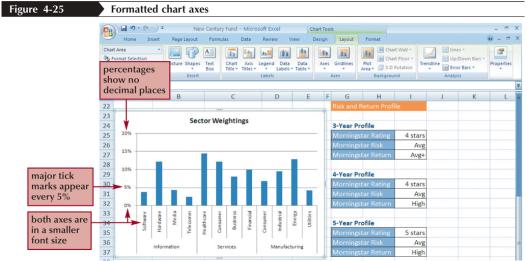


Formatting the Chart Axes

Click the **Chart Tools Layout** tab on the Ribbon



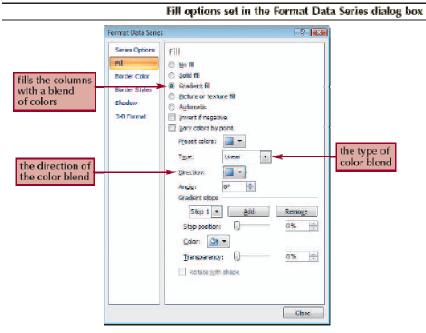
Formatting the Chart Axes



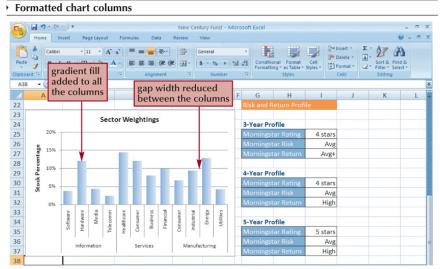
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Formatting Chart Columns

- Click any column in the Sector Weightings chart
- In the Current Selection group on the Chart Tools Layout tab, click Format Selection



Formatting Chart Columns



Creating a Line Chart

- Select the range
- Click the Insert tab on the Ribbon
- In the Charts group, click the Line button, and then click the Line chart
 - Moved and resized line chart

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Formatting Date Labels

- Click the Chart Tools Layout tab on the Ribbon
- In the Axes group, click the Axes button, point to Primary Horizontal Axis, and then click More Primary Horizontal Axis Options

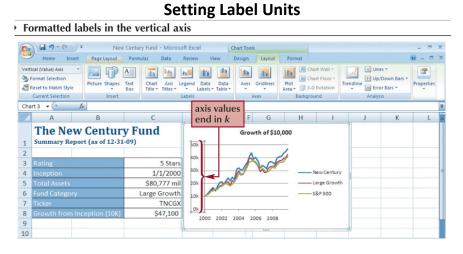
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Formatting Date Labels

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	Close	

Setting Label Units

- In the Axes group on the Chart Tools Layout tab, click the **Axes** button, point to **Primary Vertical Axis**, and then click **More Primary Vertical Axis Options**
- Click the **Display units** arrow and then make your selection



Overlaying a Legend

- In the Labels group on the Chart Tools Layout tab, click the Legend button, and then click More Legend Options
- Click the Show the legend without overlapping the chart check box to remove the check mark



Adding a Data Series to an Existing Chart

- Select the chart to which you want to add a data series
- In the Data group on the Chart Tools Design tab, click the Select Data button
- Click the Add button in the Select Data Source dialog box
- Select the range with the series name and series values you want for the new data series
- Click the OK button in each dialog box

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Adding a Data Series to an Existing Chart

	Edit Series dialog box
Ed it Series	
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Series volues:	
Sector Weightings' \$0\$4:\$0\$15 🔣 - 3,49%, 10	0.17%.
OK Cent	

Select Data Source dialog box

	Select Data Source	2
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to the chart	529 500 2	
	2	
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Creating a Combination Chart

- Select a data series in an existing chart that you want to appear as another chart type
- In the Type group on the Chart Tools Design tab, click the Change Chart Type button, and then click the chart type you want
- Click the OK button

Creating a Combination Chart

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Inserting a Shape

- Click the Insert tab on the Ribbon
- In the Illustrations group, click the **Shapes** button, and then choose the shape you want
- Draw the shape in your worksheet

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4	Inception	1/1/2000	30k						-	
5	Total Assets	\$80,777 mil	20k		New Century					

Aligning and Grouping Shapes

- Hold down the Shift key and then click each shape to select it
- Click the Drawing Tools Format tab on the Ribbon
- In the Arrange group, click the Align button, and then click your alignment option
- To group several shapes into a single unit, select the shapes, and then click the **Group** button in the Arrange group on the Drawing Tools Format tab

Aligning and Grouping Shapes

