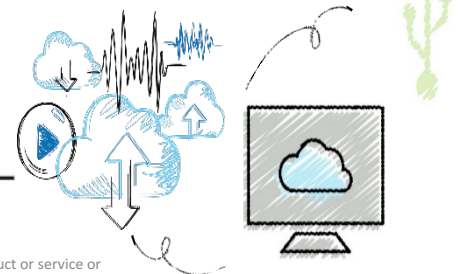


Shelly Cashman: Microsoft Excel 2016

Module 3: Working with Large Worksheets, Charting, and What-If Analysis





Objectives (Slide 1 of 2)

- Rotate text in a cell
- Create a series of month names
- Copy, paste, insert, and delete cells
- Format numbers using format symbols
- Enter and format the system date
- Use absolute and mixed cell references in a formula
- Use the IF function to perform a logical test
- Create and format sparkline charts
- Change sparkline chart types and styles
- Use the Format Painter button to format cells



Objectives (Slide 2 of 2)

- Create a clustered column chart on a separate chart sheet
- Use chart filters to display a subset of data in a chart
- Change the chart style and type
- Reorder worksheet tabs
- Change the worksheet view
- Freeze and unfreeze rows and columns
- Answer what-if questions
- Goal seek to answer what-if questions
- Use the Smart Lookup insight
- Understand accessibility features

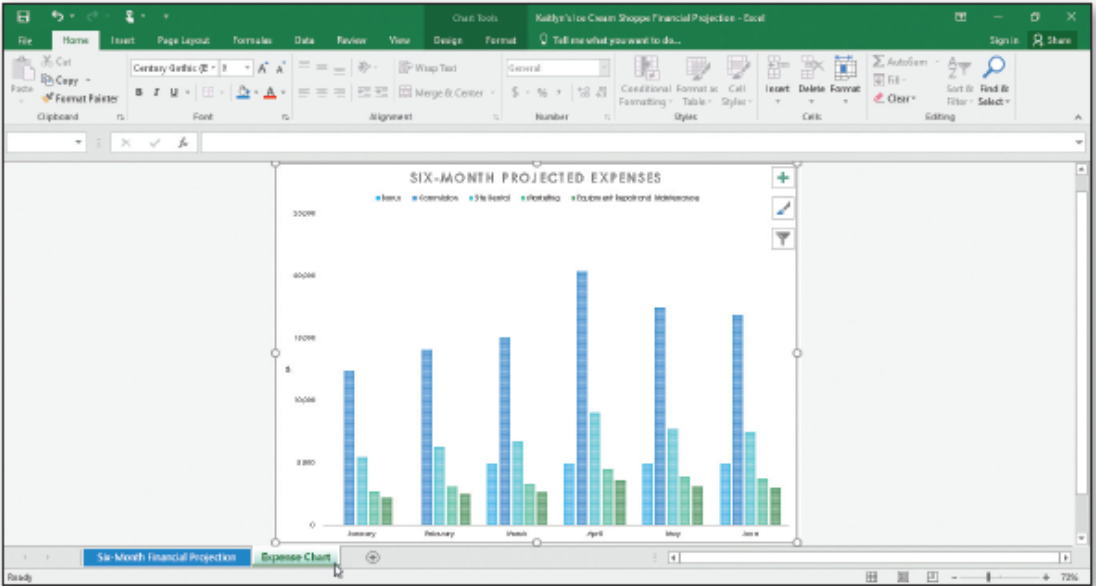


Project – Financial Projection Worksheet with What-If Analysis and Chart

(Slide 1 of 2)

Kaitlyn's Ice Cream Shoppe Financial Projection - Excel

| | January | February | March | April | May | June | Total | Chart |
|----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|-------|
| Revenue | \$55,000.00 | \$62,500.00 | \$67,000.00 | \$90,200.00 | \$77,500.00 | \$74,700.00 | \$427,000.00 | |
| Cost of Goods Sold | 11,687.50 | 13,281.25 | 14,237.50 | 19,176.13 | 16,466.75 | 15,684.38 | 90,237.50 | |
| Gross Margin | \$43,312.50 | \$49,218.75 | \$52,762.50 | \$71,023.86 | \$61,033.25 | \$59,015.62 | \$336,762.50 | |
| Expenses | | | | | | | | |
| Bonus | \$0.00 | \$0.00 | \$5,000.00 | \$5,000.00 | \$5,000.00 | \$5,000.00 | \$20,000.00 | |
| Commission | 12,375.00 | 14,042.50 | 15,075.00 | 20,304.26 | 17,4 | | | |
| Site Rental | 5,500.00 | 6,250.00 | 6,700.00 | 9,025.00 | 7,7 | | | |
| Marketing | 2,750.00 | 3,125.00 | 3,350.00 | 4,512.50 | 3,6 | | | |
| Equipment Repair and Maintenance | 2,200.00 | 2,500.00 | 2,680.00 | 3,610.00 | 3,1 | | | |
| Total Expenses | \$22,825.00 | \$25,937.50 | \$32,805.00 | \$46,450.75 | \$37,1 | | | |
| Operating Income | \$20,487.50 | \$23,281.25 | \$19,957.50 | \$24,563.11 | \$23,4 | | | |





Project – Financial Projection Worksheet with What-If Analysis and Chart

(Slide 2 of 2)

- Roadmap
 - Enter the headings and data in the worksheet
 - Enter formulas and functions in the worksheet
 - Create sparkline charts in a range of cells
 - Format the worksheet
 - Create a column chart on a separate chart sheet
 - Change views of the worksheet
 - Ask what-if questions



Rotating Text and Using the Fill Handle to Create a Series (Slide 1 of 5)

- To Rotate Text in a Cell
 - If necessary, click the HOME tab and then select the cell that will include the text
 - Type the text that you want to rotate into the cell and then click the Enter box
 - Click the Alignment Settings Dialog Box Launcher on the HOME tab to display the Format Cells dialog box
 - Click the desired rotation degrees in the Orientation area to move the indicator in the Orientation area to that point and to display a new orientation in the Degrees box
 - Click the OK button to rotate the text in the active cell and automatically increase the height of the current row to best fit the rotated text



Rotating Text and Using the Fill Handle to Create a Series (Slide 2 of 5)

- To Use the Fill Handle to Create a Series of Month Names
 - Drag the fill handle on the lower-right corner of the desired cell to the right to select the range to fill - Do not release the mouse button
 - Lift your finger or release the mouse button to create a month name series in the selected range and copy the format of the selected cell to the selected range
 - Click the 'Auto Fill Options' button below the lower right corner of the fill area to display the Auto Fill Options menu
 - Click the 'Auto Fill Options' button to hide the Auto Fill Options menu



Rotating Text and Using the Fill Handle to Create a Series (Slide 3 of 5)

Table 3-2 Options Available on the Auto Fill Options Menu

| Auto Fill Option | Description |
|-------------------------|--|
| Copy Cells | Fill destination area with contents using format of source area. Do not create a series. |
| Fill Series | Fill destination area with series using format of source area. This option is the default. |
| Fill Formatting Only | Fill destination area using format of source area. No content is copied unless fill is series. |
| Fill Without Formatting | Fill destination area with contents, without applying the formatting of source area. |
| Fill Months | Series and shows as an option only if source area contains the name of a month |



Rotating Text and Using the Fill Handle to Create a Series (Slide 4 of 5)

- To Increase Column Widths
 - Move the pointer to the boundary between two column headings so that the pointer changes to a split double arrow in preparation of adjusting the column widths
 - Drag the pointer to the right until the ScreenTip displays the desired column width - Do not lift your finger or release the mouse button
 - Lift your finger or release the mouse button to change the width of the column
 - Click a column heading to select the column and then drag through multiple column headings to select the range in which to change the widths
 - Move the pointer to the boundary between any two selected column headings and then drag the pointer to the right until the ScreenTip displays the desired width
 - Lift your finger or release the mouse button to change the width of the selected columns



Rotating Text and Using the Fill Handle to Create a Series (Slide 5 of 5)

- To Enter and Indent Row Titles
 - Select the cell to which you want to apply the indent
 - Click the Increase Indent button on the HOME tab to increase the indentation of the text in the selected cell
 - Select a range of cells and then click the Increase Indent button on the HOME tab to increase the indentation of the text in the selected range



Copying a Range of Cells to a Nonadjacent Destination Area

- To Copy a Range of Cells to a Nonadjacent Destination Area
 - Select the cell or range of cells to copy, and then click the Copy button on the HOME tab to copy the values and formats of the selected range to the Office Clipboard
 - Click the first cell in the destination area
 - Click the Paste button on the HOME tab to copy the values and formats of the last item placed on the Office Clipboard to the destination area



Inserting and Deleting Cells in a Worksheet (Slide 1 of 2)

- To Insert a Row
 - Right-click the row heading below where you want to insert a row to display the shortcut menu and the Mini toolbar
 - Click Insert on the shortcut menu to insert a new row in the worksheet by shifting the selected row and all rows below it down one row



Inserting and Deleting Cells in a Worksheet (Slide 2 of 2)

- To Enter and Format the System Date
 - Select the cell in which you want to insert the date, and then click the Insert Function box in the formula bar to display the Insert Function dialog box
 - Click the 'Or select a category' box arrow and then select Date & Time in the list to populate the 'Select a function' list with date and time functions
 - Scroll down in the 'Select a function list' and then click NOW to select the function
 - Click the OK button to close the Insert Function dialog box
 - Click the OK button to display the system date and time in the selected cell



Absolute Versus Relative Addressing (Slide 1 of 2)

Table 3-6 Examples of Absolute, Relative, and Mixed Cell References

| Cell Reference | Type of Reference | Meaning |
|----------------|-------------------------|--|
| \$B\$4 | Absolute cell reference | Both column and row references remain the same when you copy this cell, because the cell references are absolute |
| B4 | Relative cell reference | Both column and row references are relative. When copied to another cell, both the column and row the cell reference are adjusted to reflect the new location |
| B\$4 | Mixed reference | This cell reference is mixed. The column reference changes when you copy this cell to another column because it is relative. The row reference does not change because it is absolute |
| \$B4 | Mixed reference | This cell reference is mixed. The column reference does not change because it is absolute. The row reference changes when you copy this cell reference to another row because it is relative |



Absolute Versus Relative Addressing (Slide 2 of 2)

- To Enter a Formula Containing Absolute Cell References
 - With the desired cell selected, enter the formula and then press the F4 key to change the most recently typed cell reference from a relative cell reference to an absolute cell reference

The screenshot illustrates the process of entering a formula with absolute references in Excel. The formula bar shows the formula `=B4*(1-B19)`. The spreadsheet displays a table with columns for months (January, February, March) and rows for 'Goods Sold' and 'Margin'. Cell B4 contains the value 55,000.00. Cell B19 contains the formula `=B4*(1-B19)`. Annotations highlight the 'Enter' button in the ribbon and the formula in the formula bar. Arrows point to cell B4, labeled 'cell B4 is relative', and cell B19, labeled 'cell \$B\$19 is absolute'.

| | January | February | March |
|------------|------------------------------|-----------|-----------|
| Goods Sold | 55,000.00 | 62,500.00 | 67,000.00 |
| Margin | <code>=B4*(1-\$B\$19)</code> | | |



Making Decisions-The IF Function (Slide 1 of 2)

- To Enter an IF Function
 - Click the cell to contain the formula, and then click the Insert Function box in the formula bar to display the Insert Function dialog box
 - Click the 'Or select a category' arrow and then select Logical in the list to populate the Select a function list with logic functions
 - Click IF in the Select a function list to select the required function
 - Click the OK button to display the Function Arguments dialog box
 - Enter the logical test in the Logical_test box to enter a logical test for the IF function
 - Type the result of the IF function if the logical test is true in the Value_if_true box
 - Type the result of the IF function if the logical test is false in the Value_if_false box
 - Click the OK button to insert the IF function in the selected cell



Making Decisions-The IF Function (Slide 2 of 2)

- To Copy Formulas with Absolute Cell References Using the Fill Handle
 - Select the range to fill and then point to the fill handle in the lower-right corner of the selected cell to display the crosshair pointer
 - Drag the fill handle to the right to copy the formulas from the source area to the destination area and display the calculated amounts

| | Jan | Feb | Mar | Apr | May |
|----------------------------------|-----------|-----------|-----------|-----------|-----------|
| Revenue | 55,000.00 | 62,500.00 | 67,000.00 | 90,250.00 | 77,500.00 |
| Cost of Goods Sold | 11,687.5 | | | | |
| Gross Margin | 43,312.50 | | | | |
| Expenses | | | | | |
| Bonus | 0 | | | | |
| Commission | 13,750 | | | | |
| Site Rental | 5,500 | | | | |
| Marketing | 2,750 | | | | |
| Equipment Repair and Maintenance | 1,925 | | | | |
| Total Expenses | 23,925 | | | | |
| Operating Income | 19,387.50 | | | | |
| What-If Assumptions | | | | | |
| Margin | 78.75% | | | | |

source area is B5:B16

pointer changes to crosshair

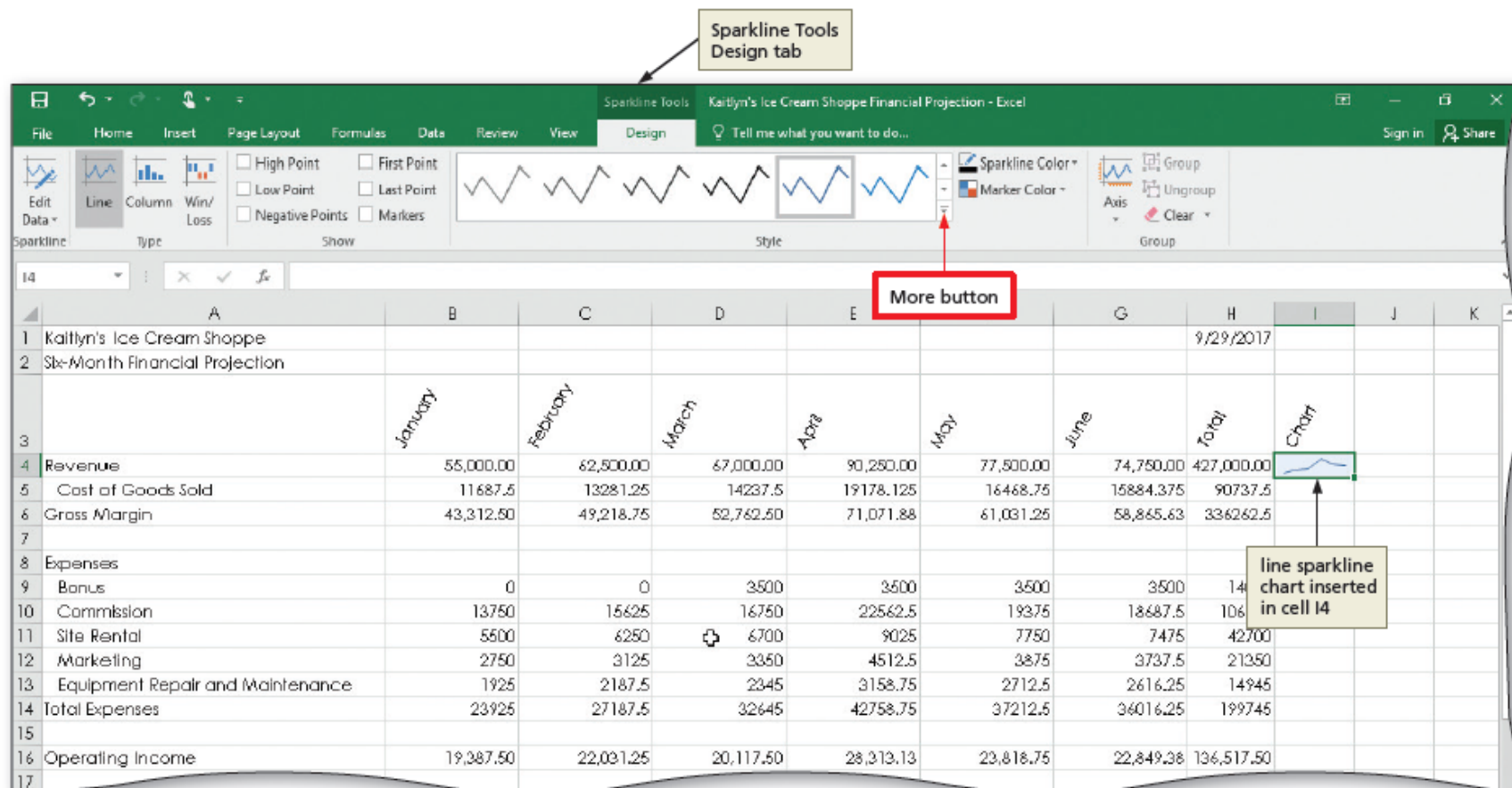


Adding and Formatting Sparkline Charts (Slide 1 of 4)

- To Add a Sparkline Chart to the Worksheet
 - Select the cell in which you want to insert a sparkline chart
 - Display the INSERT tab and then click the Line Sparking button to display the Create Sparklines dialog box
 - Drag through the range of cells of which you want to chart, and then lift your finger or release the mouse button to insert the selected range in the Data Range box
 - Click the OK button to insert a line sparkline chart in the selected cell and display the SPARKLINE TOOLS DESIGN tab



Adding and Formatting Sparkline Charts (Slide 2 of 4)





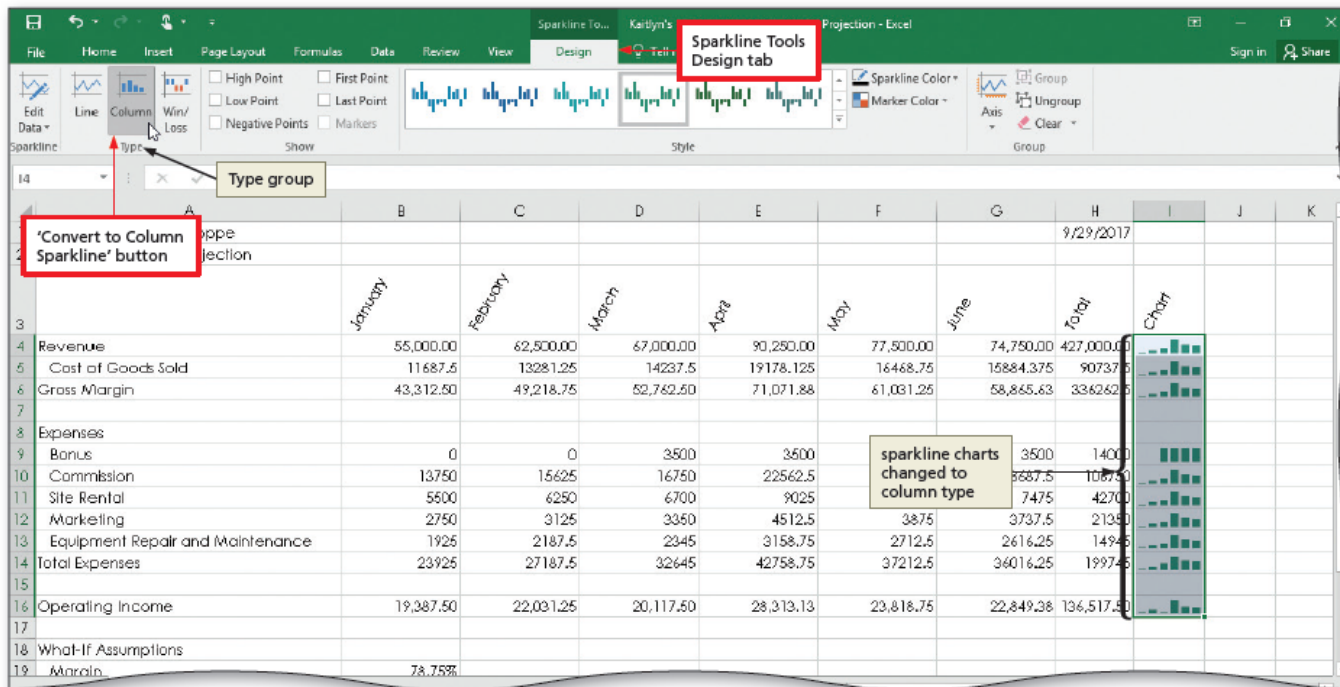
Adding and Formatting Sparkline Charts (Slide 3 of 4)

- To Change the Sparkline Style and Copy the Sparkline Chart
 - Click the More button on the SPARKLINE TOOLS DESIGN tab to display the Sparkline Style gallery
 - Click a desired style in the Sparkline Style gallery to apply the style to the Sparkline chart in the selected cell
 - Point to the fill handle in the cell and then drag through the desired range to copy the line Sparkline chart



Adding and Formatting Sparkline Charts (Slide 4 of 4)

- To Change the Sparkline Type
 - Select the range of the sparkline charts and if necessary, click the SPARKLINE TOOLS DESIGN tab to make it the active tab
 - Click the 'Convert to Column Sparkline' button to change the Sparkline charts in the selected range to the column type





Formatting the Worksheet (Slide 1 of 2)

- To Assign Formats to Nonadjacent Ranges
 - Select the first range to format
 - While holding down the CTRL key, select the nonadjacent ranges and then release the CTRL key to select nonadjacent ranges
 - Click the Number Dialog Box Launcher on the HOME tab to display the Format Cells dialog box
 - Click the desired category and style, and then click the OK button



Formatting the Worksheet (Slide 2 of 2)

- To Copy a Cell's Format Using the Format Painter Button
 - Select the source cell for the format to paint
 - Double-click the Format Painter button on the HOME tab and then move the pointer onto the worksheet to cause the pointer to change to a block plus sign with a paintbrush
 - Click the cell(s) to receive the format to assign the format of the source cell to the destination cell(s)
 - Click the Format Painter button or press the ESC key to stop the format painter



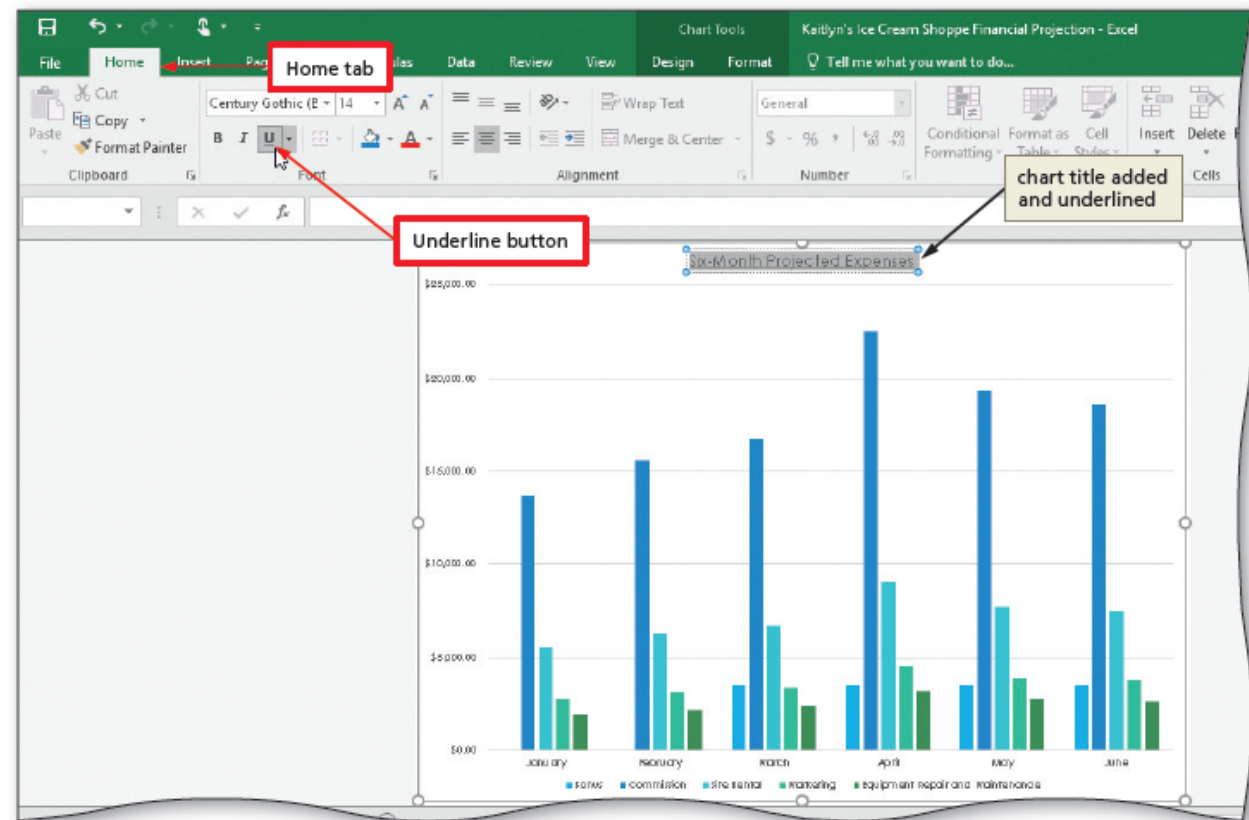
Adding a Clustered Column Chart to the Workbook (Slide 1 of 7)

- To Draw a Clustered Column Chart on a Separate Chart Sheet Using the Recommended Charts Features
 - Select a range to identify the range of the categories
 - Hold down the CTRL key and select a non adjacent data range
 - Click the Recommended Charts button on the INSERT tab to display the Insert Chart dialog box with the Recommended Charts tab active
 - Click the recommended chart to select it and then click the OK button
 - When Excel draws the chart, click the Move Chart button on the CHART TOOLS DESIGN tab to display the Move Chart dialog box
 - Click New sheet and then enter a name in the in the New sheet text box to enter a sheet tab name for the chart sheet
 - Click the OK button to move the chart to a new chart sheet with a new sheet tab name



Adding a Clustered Column Chart to the Workbook (Slide 2 of 7)

- To Insert a Chart Title
 - Click anywhere in the chart title placeholder to select it
 - Select the text in the chart title placeholder and then type a new chart title





Adding a Clustered Column Chart to the Workbook (Slide 3 of 7)

- To Add Data Labels
 - Click the Chart Elements button to display the CHART ELEMENTS gallery
 - Point to Data Labels to display an arrow and then click the arrow to display the Data Labels fly-out menu
 - Click a selection from the Data Labels fly-out menu so that data labels are displayed as desired
 - Click the Chart Elements button to close the gallery



Adding a Clustered Column Chart to the Workbook (Slide 4 of 7)

- To Apply Chart Filters
 - Click the Chart Filters button (on the chart) to display the Chart Filters gallery
 - In the SERIES section, click the desired check boxes to remove their check marks and then click the Apply button to filter these series from the chart
 - Click the Chart Filters button to close the gallery



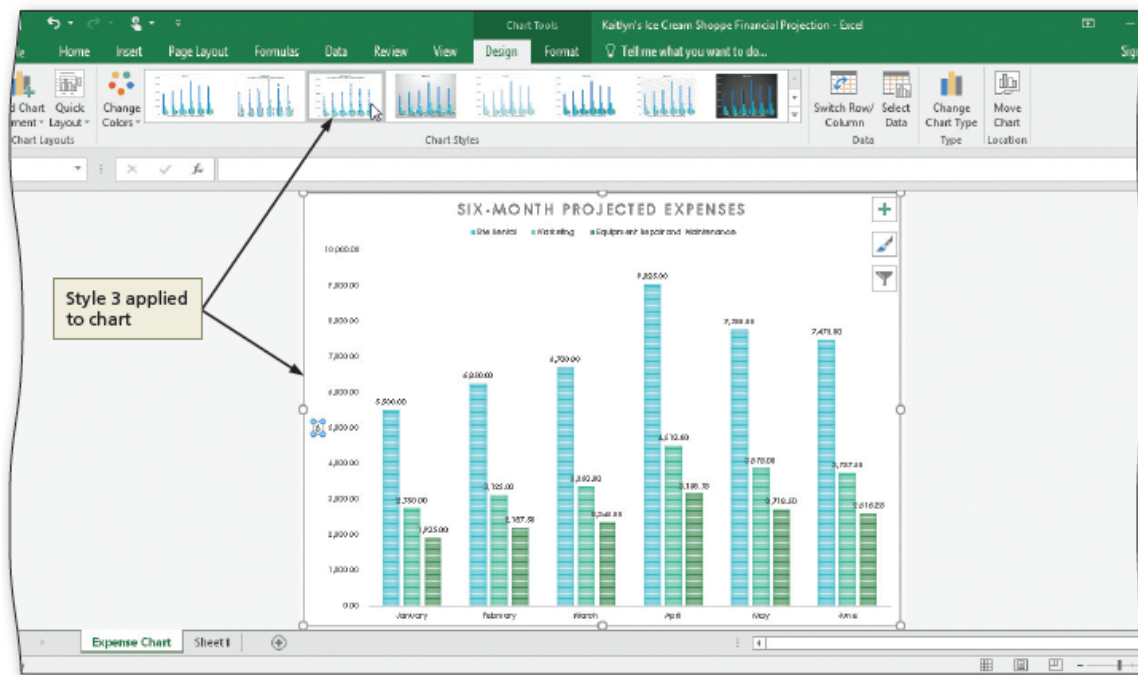
Adding a Clustered Column Chart to the Workbook (Slide 5 of 7)

- To Add an Axis Title to the Chart
 - Click anywhere in the chart area outside the chart to select the chart, and then click the Chart Elements button to display the CHART ELEMENTS gallery
 - Point to Axis Titles to display an arrow and then click the arrow to display the Axis Titles fly-out menu
 - Click an axis on the Axis Titles fly-out menu to add an axis title, and then click the Chart Elements button to remove the CHART ELEMENTS gallery
 - Select the placeholder text in the axis title and replace it with the desired text
 - Right-click the axis title to display a shortcut menu, and then click 'Format Axis Title' on the shortcut menu to open the Format Axis Title task pane
 - Click the TITLE OPTIONS tab, click the 'Size & Properties' button, and then, if necessary, click the ALIGNMENT arrow to expand the ALIGNMENT section
 - Click the Text direction arrow, and then click the desired direction from the direction list to change the orientation of the axis title



Adding a Clustered Column Chart to the Workbook (Slide 6 of 7)

- To Change the Chart Style
 - Click the More button on the CHART TOOLS DESIGN tab to display the Chart Styles gallery
 - Click a style to apply a new style to the chart





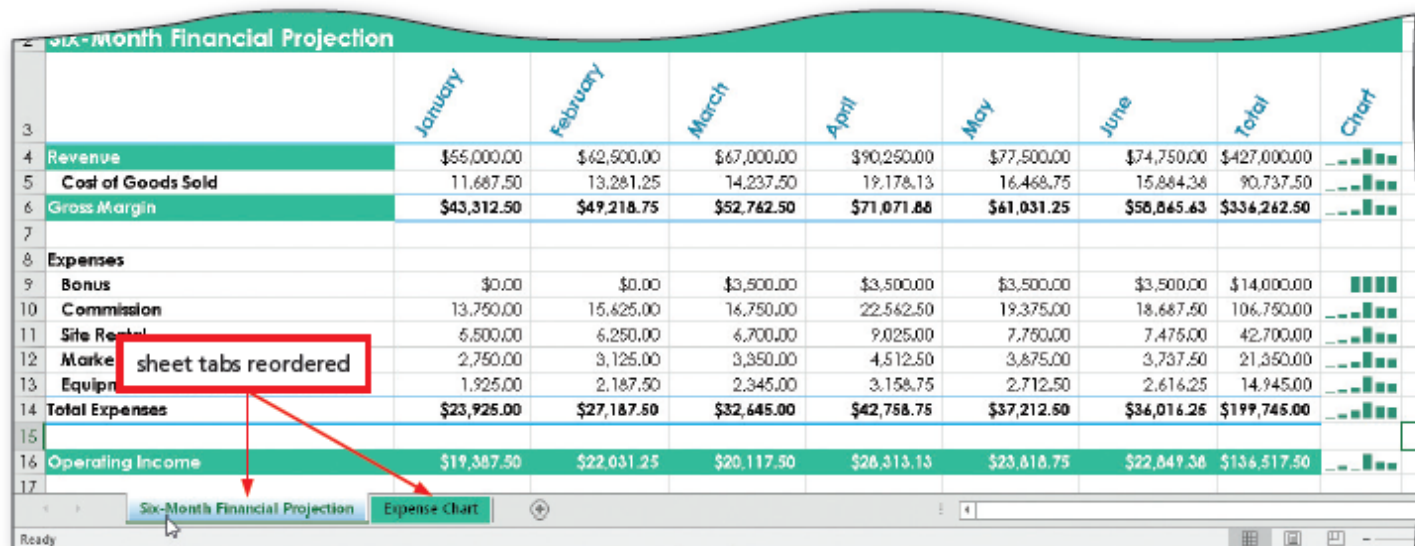
Adding a Clustered Column Chart to the Workbook (Slide 7 of 7)

- To Modify the Chart Axis Number Format
 - Right-click any value on the vertical axis to display the shortcut menu, and then click Format Axis to open the Format Axis task pane
 - If necessary, click the AXIS OPTIONS tab and then scroll until NUMBER is visible
 - Click the NUMBER arrow to expand the NUMBER section and then scroll to display options related to formatting numbers
 - Change the number to the desired format



Organizing the Workbook

- To Reorder the Sheet Tabs
 - Drag a tab to the left or right to rearrange the sequence of the sheets





Changing the View of the Worksheet (Slide 1 of 3)

- To Shrink and Magnify the View of a Worksheet or Chart
 - Display the VIEW tab and then click the Zoom button to display a list of magnifications in the Zoom dialog box
 - Click the desired zoom level, and then click the OK button
 - Click the Zoom in button on the status bar until the worksheet is displayed at the desired magnification



Changing the View of the Worksheet (Slide 2 of 3)

- To Split a Window into Panes
 - Click the cell at the intersection of the four proposed panes to select the cell at which to split the window
 - Click the Split button on the VIEW tab to divide the window into four panes

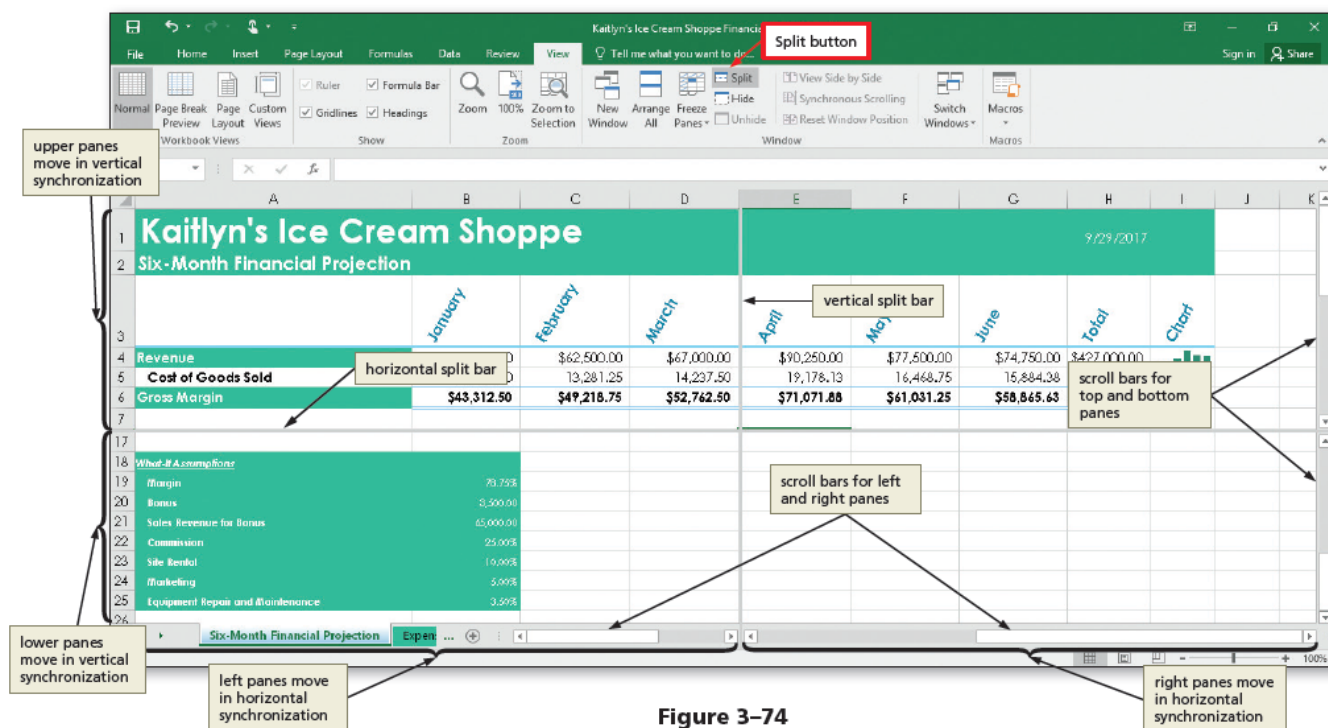


Figure 3-74



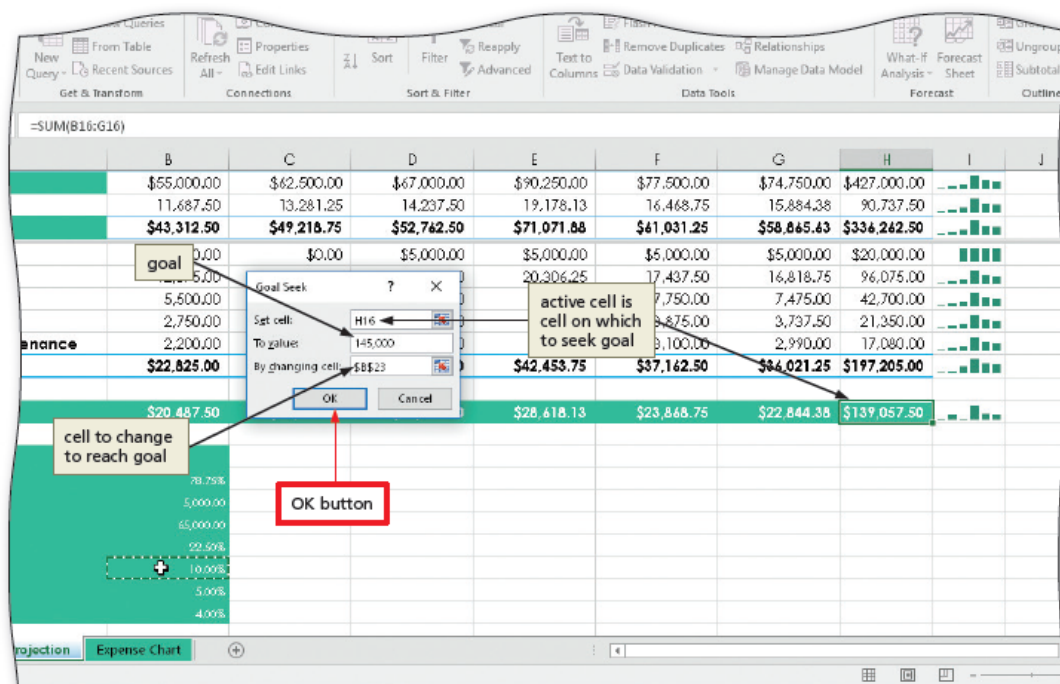
Changing the View of the Worksheet (Slide 3 of 3)

- To Freeze Worksheet Columns and Rows
 - Click the cell at the intersection of the row and column at which to freeze panes
 - Click the Freeze Panes button on the VIEW tab to display the Freeze Panes gallery
 - Click Freeze Panes in the Freeze Panes gallery to freeze rows and columns to the left and above the selected cell



What-If Analysis

- To Goal Seek
 - If you know the result you want a formula to produce, you can use **goal seeking** to determine the value of a cell on which the formula depends
 - Goal Seek command on the Data tab
 - Goal seeking assumes you can change the value of only one cell referenced directly or indirectly to reach a specific goal for a value in another cell





Insights

- To Use the Smart Lookup Insight

Smart Lookup button Review tab Close button

Smart Lookup

Learn more about text you select by seeing definitions, images, and other results from web sources.

Insights group

selected cell

Insights task pane shows information about text in selected cell

| | B | C | D | E | F | G |
|-------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 4 Revenue | \$5,000.00 | \$62,500.00 | \$67,000.00 | \$90,250.00 | \$77,500.00 | \$74,750.00 |
| 5 Cost of Goods sold | 11,687.50 | 13,281.25 | 14,237.50 | 19,178.13 | 16,468.75 | 15,843.75 |
| 6 Gross Margin | \$43,312.50 | \$49,218.75 | \$52,762.50 | \$71,071.88 | \$61,031.25 | \$58,906.25 |
| 7 | | | | | | |
| 8 Expenses | | | | | | |
| 9 Bonus | \$0.00 | \$0.00 | \$5,000.00 | \$5,000.00 | \$5,000.00 | \$5,000.00 |
| 10 Commission | \$75.00 | 14,062.50 | 15,075.00 | 20,306.25 | 17,437.50 | 16,875.00 |
| 11 Site Rental | 5,000.00 | 6,250.00 | 6,700.00 | 9,025.00 | 7,750.00 | 7,437.50 |
| 12 Marketing | 2,750.00 | 3,125.00 | 3,350.00 | 4,612.50 | 3,875.00 | 3,718.75 |
| 13 Equipment Repair and Maintenance | 2,200.00 | 2,500.00 | 2,680.00 | | | 2,937.50 |
| 14 Total Expenses | \$22,825.00 | \$25,937.50 | \$32,805.00 | | | \$35,000.00 |
| 15 | | | | | | |
| 16 Operating Income | \$20,487.50 | \$23,281.25 | \$19,957.50 | \$28,618.13 | \$23,868.75 | \$22,843.75 |
| 17 | | | | | | |
| 18 What-If Assumptions | | | | | | |
| 19 Margin | 78.75% | | | | | |
| 20 Bonus | 5,000.00 | | | | | |
| 21 Sales Revenue for Bonus | 65,000.00 | | | | | |
| 22 Commission | 22,500% | | | | | |
| 23 Site Rental | 10,000% | | | | | |
| 24 Marketing | 4,000% | | | | | |

Insights

Explore Define

Gross margin

Gross margin is the difference between net revenue and cost of goods solds, or COGS, divided by revenue, expressed as a percentage. Generally, it is calculated as the selling price of an item, less the cost ...

en.wikipedia.org · Text under CC-BY-SA license

More

Explore Wikipedia

Gross margin - Wikipedia, the free encyclopedia

Gross margin is the difference between net revenue and cost of goods solds, or COGS, divided by revenue, expressed as a ...

Margin (finance) - Wikipedia, the free encyclopedia

Margin account. A margin account is a loan



Accessibility Features

Previous Next Show All Comments Show Ink Protect Sheet Protect Workbook Share Workbook Know Users to Edit Ranges Track Changes Start Inking Ink

Comments Changes

| | B | C | D | E | F | G | H |
|--|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| | \$55,000.00 | \$62,500.00 | \$67,000.00 | \$90,250.00 | \$77,500.00 | \$74,750.00 | \$42,500.00 |
| | 11,687.50 | 13,281.25 | 14,237.50 | 19,178.13 | 16,468.75 | 15,884.38 | \$9,442.19 |
| | \$43,312.50 | \$49,218.75 | \$52,762.50 | \$71,071.88 | \$61,031.25 | \$58,865.63 | \$33,057.81 |
| | | | | | | | |
| | \$0.00 | \$0.00 | \$5,000.00 | \$5,000.00 | \$5,000.00 | \$5,000.00 | \$2,500.00 |
| | 12,375.00 | 14,062.50 | 15,075.00 | 20,306.25 | 17,437.50 | 16,818.75 | \$9,409.38 |
| | 5,500.00 | 6,250.00 | 6,700.00 | 9,025.00 | 7,750.00 | 7,475.00 | \$4,737.50 |
| | 2,750.00 | 3,125.00 | 3,350.00 | 4,512.50 | 3,875.00 | 3,737.50 | \$2,398.44 |
| | 2,200.00 | 2,500.00 | 2,680.00 | 3,610.00 | 3,090.00 | 2,990.00 | \$1,845.00 |
| | \$22,825.00 | \$25,937.50 | \$32,805.00 | \$42,453.75 | \$35,221.25 | \$34,212.50 | \$19,957.81 |
| | | | | | | | |
| | \$20,487.50 | \$23,281.25 | \$19,957.50 | \$28,618.13 | \$23,868.75 | \$22,844.38 | \$13,929.38 |
| | | | | | | | |
| | 76.75% | | | | | | |
| | 5,000.00 | | | | | | |
| | 65,000.00 | | | | | | |
| | 22.50% | | | | | | |
| | 10.00% | | | | | | |
| | 5.00% | | | | | | |

Expense Chart

Accessibility Checker task pane shows inspection results

Accessibility Checker X

Inspection Results

Errors

- Missing Alt Text
Chart 1 (Expense Chart)

Additional Information

Select and fix each issue listed above to make this document accessible for people with disabilities.

[Read more about making documents accessible](#)