

Independent Project 8-5

At Placer Hills Real Estate, the commission and fee split between the listing and selling agents depends on price tiers (levels). You create a one-variable data table to display commissions and net earnings for various split rates. You copy the sheet and edit it to show results for another price tier. Additionally, you create scenarios for selling price and commission, generate summary statistics, and create a forecast sheet.

Skills Covered in This Project

- Build a one variable data table.
- Use *Solver*.
- Create and manage scenarios.
- Generate descriptive statistics.
- Create a forecast sheet.

Step 1: Download start file

1. Open the **PlacerHills-08** workbook and click the **Enable Editing** button. The file will be renamed automatically to include your name.
2. Review formulas.
 - a. Select cell **C14** on the **Tier 2** worksheet. The total commission is calculated by multiplying the selling price by the listing rate.
 - b. Select cell **C15**. The nested *IF* function checks the selling price (C12) to determine the commission split percentage (column D).
 - c. Select cell **C16**. The nested *IF* function checks the selling price (C12) to determine the fee percentage (column E) and multiplies the commission (C15) to calculate the fee in dollars.
 - d. Select cell **C17**. The net commission is calculated by subtracting fees from the PHRE amount.
3. Build one-variable data tables.
 - a. Select cell **C20** and create a reference to cell **C15**.
 - b. Select cell **D20** and create a reference to cell **C17**. Both formulas in the data table refer to cell **C12**, the one variable.
 - c. Use cell **D8** as the column input for the data table. (Figure 8-110).
 - d. Decrease the decimal two times for the results in the data table.
 - e. Make a copy of the **Tier 2** worksheet and name the copy **Tier 1**.
 - f. Edit the label in cell **A23** to show **Tier 1**.
 - g. Edit the selling price in cell **C12** to **\$1,000,000**.
 - h. Recalculate the data table with cell **D7** as the column input for **Tier 1**.
4. Name cell ranges.
 - a. Click the **Price Solver** worksheet tab.
 - b. Click cell **C12** and name the range **Selling_Price**. You cannot use spaces in a range name.
 - c. Name cell **C14** as **Total_Commission** and cell **C17** as **PHRE_Commission**.
5. Install the *Solver Add-in* and the *Analysis ToolPak*.
6. Use *Solver* to find target PHRE net commission amounts.
 - a. Build a *Solver* problem with cell **C17** as the objective cell. For the first solution, set the objective to a value of **50000** by changing cell **C12**. Save the results as a scenario named **\$50,000**.

Price Tier	Minimum Price	Maximum Price	Commission Split	Fees
1	\$ -	\$ 1,499,999	25%	9.0%
2	\$ 1,500,000	\$ 5,499,999	35%	11.0%
3	\$ 5,500,000	\$ 9,499,999	45%	12.5%
4	\$ 9,500,000	\$ 13,499,999	55%	13.5%

Selling Price	\$ 4,500,000
Listing Commission	6%
Total Commission	\$ 270,000
PHRE Split	\$ 94,500
Fee Calculation	\$ 10,395
Net Commission	\$ 84,105

Possible Rates	Split	Net Pay
25%	\$ 94,500.00	\$ 84,105.00
30%		
35%		
40%		
45%		
50%		
55%		
60%		

8-110 Data table setup for Tier 2

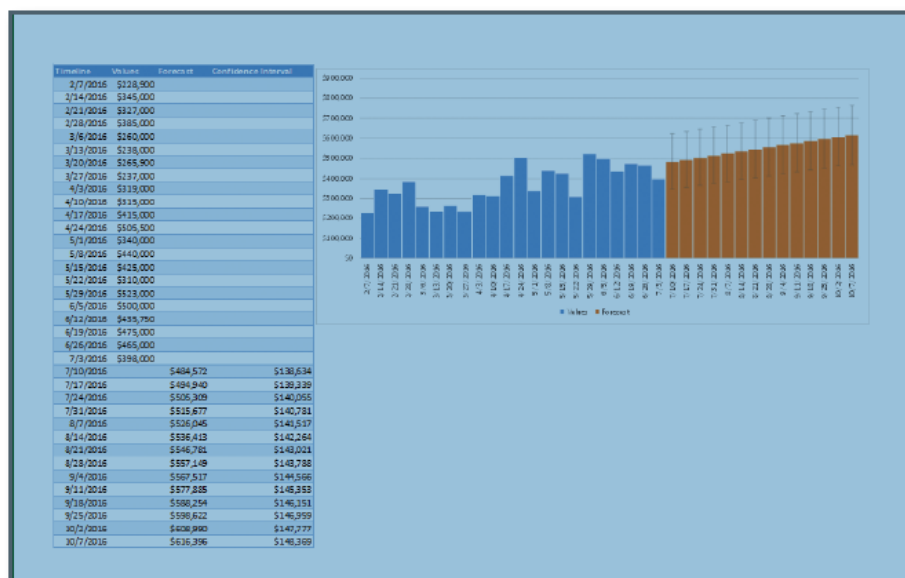
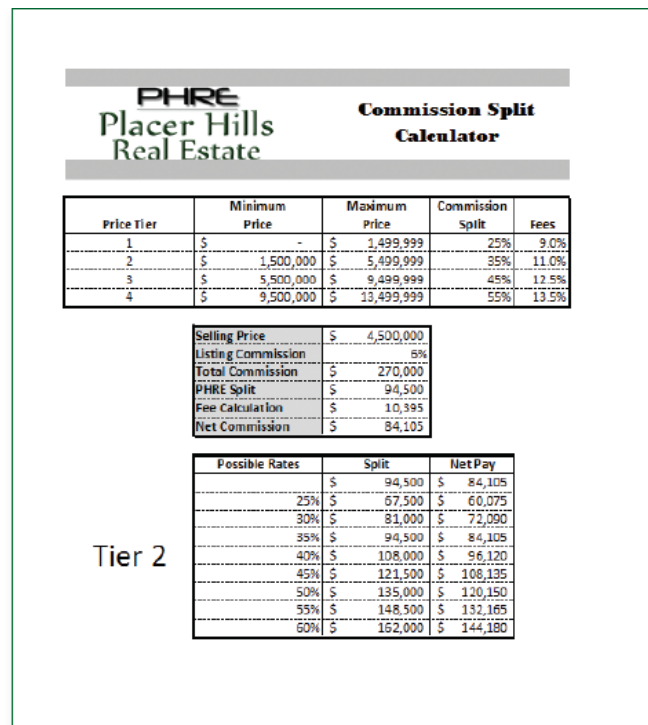
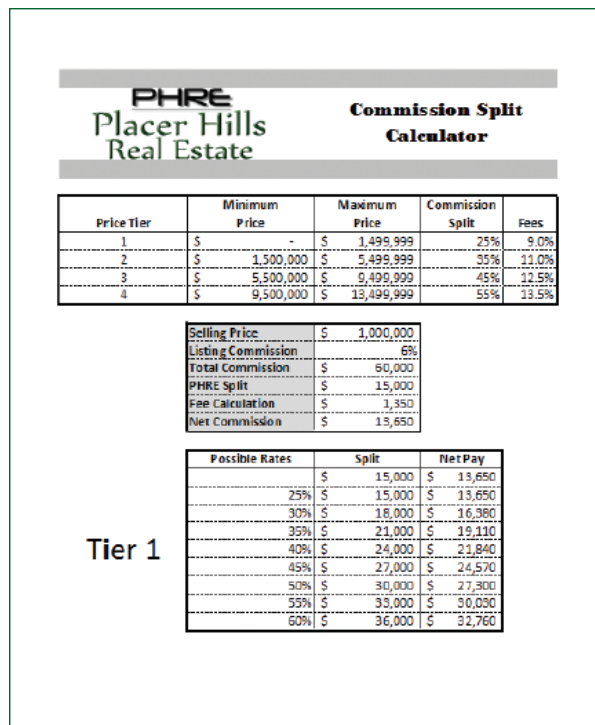
- b. Restore the original values and run another *Solver* problem to find a selling price for a PHRE commission of 75000. Save these results as a scenario named **\$75,000**.
 - c. Restore the original values and run a third *Solver* problem to find a selling price for a net commission of \$100,000. Save these results as a scenario.
7. Manage scenarios.
 - a. Show the **\$50,000** scenario in the worksheet.
 - b. Create a **Scenario summary** report for cells **C12, C14, and C17**.
8. Generate *Descriptive Statistics* for recent sales.
 - a. Click the **Sales Forecast** sheet tab.
 - b. Generate **Descriptive Statistics** for cells **E4:E26** and note that the label is in the first row.
 - c. Select the **Output Range** button, click the entry box, and select cell **G4**.
 - d. Select the **Summary statistics** box and include the largest and smallest (*Kth* values) in the report.
 - e. **AutoFit** column **G** (Figure 8-111).
9. Create a forecast sheet for the date and price data on the **Sales Forecast** sheet using a column chart. End the forecast three months from the last date in the table. Position the chart object with its top-left corner in cell **E1**. Size the chart object to reach cell **P20**. Name the generated sheet as **Forecast**.
10. Save and close the workbook (Figure 8-112).
11. Upload and save your project file.
12. Submit project for grading.

Sale Price	
Mean	370593.2
Standard Error	19986.61
Median	365000
Mode	#N/A
Standard Deviation	93745.5
Sample Variance	8.79E+09
Kurtosis	-1.23251
Skewness	0.01939
Range	294100
Minimum	228900
Maximum	523000
Sum	8153050
Count	22
Largest(1)	523000
Smallest(1)	228900

8-111 Descriptive statistics for sales

Step 2:
Upload &
Save

Step 3:
Grade my
Project



Scenario Summary				
		Current Values:		
		\$50,000	\$75,000	\$100,000
Changing Cells:				
Selling_Price		\$ 2,616,431	\$ 2,616,431	\$ 3,924,647
Result Cells:				
Selling_Price		\$ 2,616,431	\$ 2,616,431	\$ 3,924,647
Total_Commission		\$ 156,986	\$ 156,986	\$ 235,479
PHRE_Commission		\$ 50,000	\$ 50,000	\$ 100,000

Notes: Current Values column represents values of changing cells at time Scenario Summary Report was created. Changing cells for each scenario are highlighted in gray.

8-112 Completed worksheets for Excel 8-5