③ The Villages of Michigan

You work for The Villages of Michigan, an assisted living center business, at their Detroit location. Because Baby Boomers born between 1946 and 1964 are approaching your target age group for residency, you downloaded free data from the U.S. Census Bureau to analyze population trends. You need to conduct some preliminary assessment along with age profiling. Additionally, you also want to determine what states presently have higher populations of retired people, age 60 and older. You will create subtotals, PivotTables, and PivotCharts to answer these questions.

a. Open *e05m3census*, and then save it as **e05m3census_LastnameFirstname**.

b. Use the Data Subtotals worksheet to create population subtotals for males and females by state. Collapse the outline to show only subtotals. Widen the Male and Female columns as needed.

c. Use the Data worksheet to create a PivotTable in a new worksheet named **Age Profile PivotTable**, and then do the following:
   - Name the PivotTable **M-F by Age Group**.
   - Display age groups to identify each row, and then display male and female population totals per age group.
   - Format the values with **Number style** showing the comma separator with no decimal places. Create custom names for the two value columns.
   - Add another Male field and another Female field after their respective totals. Show these values as percentages of their respective columns. Create custom names for these two columns.

DISCOVER

   - Use the Move option to move Under 5 years and 5 to 9 years to their respective locations at the top of the age groups. Replace *Row Labels* with a descriptive column heading. Note what 10-year age group has the highest population. Keep in mind that this is census data from the year 2000. What does this mean in terms of your business plan?
   - Enable the **Banded Columns option**, and then apply **Pivot Style Light 21**.
   - Wrap column headings, and then adjust column widths as needed.

d. Copy the Age Profile PivotTable worksheet. Position the Age Profile PivotTable (2) worksheet to the immediate right of the Age Profile PivotTable worksheet. Use the (2) worksheet to remove all four value columns, display the total number of people per age group, create a custom column heading, and format the values.

DISCOVER

e. Create a PivotChart, move it to a new sheet named **Age Group PivotChart**, change the chart to a bar chart, remove the legend, and then add an appropriate chart title. Sort the related PivotTable so that the category axis in the PivotChart displays the age groups in ascending order vertically. Hide the field buttons on the PivotChart, if needed.

f. Use the Data worksheet to create another PivotTable in a new worksheet named **Age by State**, and then do the following:
   - Name the PivotTable **Age by State**.
   - Display states to identify each row, age groups to identify columns, and total population values. Enter a descriptive heading to replace the *Row Labels* heading.
   - Format the values with **Number style** showing the comma separator with no decimal places. Adjust value column widths to 8.43″, wrap text, and then right-align the headings.
   - Insert a two-column **Age Range slicer**, apply **Slicer Style Light 2**, and then use the slicer to filter out age ranges below 60 years.

g. Create a State slicer on the Age Profile PivotTable worksheet. Move the slicer to the immediate right of the PivotTable. Display two columns of buttons, set a **4.5″** height, and then set a **4″** width. Apply **Slicer Style Dark 6**, and then enter **Click a state to filter the list** as the slicer caption. Select **Massachusetts** in the slicer.

CAPSTONE EXERCISE

myitlab grader

You are on the budget committee for the formal Valentine's Day Ball at your university. The ball includes dinner and dancing. Your committee prepared a tentative budget outlining income and expenses. The primary sources of income are contributions from student organizations and ticket prices. Expenses include the actual cost of the dinner, facilities, parking, and other costs at a luxurious hotel in the city. Your goal is to balance the income and expenses, decide on the most appropriate ticket price per student, and ensure your budget falls within the limitations you must work with.

Goal Seek

Currently, the estimated budget has a deficit. The fastest way to try to reconcile the income and expenses is to use Goal Seek. The goal is to break even, that is, to have a zero balance. Your instinct is to adjust the ticket price per person to reach the goal.

a. Open *e06c1dance* and save it as **e06c1dance_LastnameFirstname.**

b. Use **Goal Seek** to achieve a $0 balance by changing the ticket price per person.

c. Enter the value of the ticket price per person variable in the Q&A worksheet.

One-Variable Data Table

You believe that between 200 and 500 students will attend. Because the ticket revenue, chair setup, catering cost, and valet parking expenses are dependent on the number of students, you decide to create a one-variable data table to compare the budget effects based on different numbers of students attending.

a. Start in **cell E3**. Complete the series of substitution values ranging from 200 to 500 at increments of 20 students vertically down column E.

b. Enter references to the total revenue, total expenses, and balance formulas in the correct location for a one-variable data table.

c. Complete the one-variable data table, and then format the results with **Accounting Number Format** with two decimal places.

d. ~~Apply custom number formats to make the formula references appear as descriptive column headings. Format the headings and substitution values.~~

e. Answer questions 2 through 4 on the Q&A worksheet. Save the workbook.

Two-Variable Data Table

The break-even point for the one-variable data table is identical to the current model because all other variables are held constant. You want to compare the balances of different combinations of attendees and ticket prices per person using a two-variable data table.

a. Copy the number of attendees substitution values from the one-variable data table, and then paste the values starting in **cell E22.**

b. Type **$50** in **cell F21.** Complete the series of substitution values from **$50** to **$100** at **$10** increments.

c. Enter the reference to the balance formula in the correct location for a two-variable data table.

d. Complete the two-variable data table, and then format the results with **Accounting Number Format** with two decimal places.

e. ~~Apply a fill color to the cells closest to break-even without creating a deficit.~~

f. ~~Apply a custom number format to make the formula reference appear as a descriptive column heading. Format the headings and substitution values.~~

g. Answer questions 5 and 6 on the Q&A worksheet. ~~Question 6 requires three combinations to list. Save the workbook.~~

Scenario Manager

You negotiated different cost per meal and ballroom rental rates based on 500, 400, 300, or 200 attendees. You estimated tentative ticket prices per attendee. To help you decide the target number of attendees, you need to use Scenario Manager.

a. Create a scenario named **500 Attend**, using the number of attendees, meal cost per person, ticket price per person, and ballroom rental variables as the changing cells. Enter these values for the scenario: **500**, **15.95**, **75**, and **12500**.

b. Create a second scenario named **400 Attend**, using the same changing cells. Enter these values for the scenario: **400**, **17.95**, **85**, and **12500**.

c. Create a third scenario named **300 Attend**, using the same changing cells. Enter these values for the scenario: **300**, **19.95**, **90**, and **11995**.

d. Create a fourth scenario named **200 Attend**, using the same changing cells. Enter these values for the scenario: **200**, **22.95**, **95**, and **11995**.

e. Generate a scenario summary report using the total revenue, total expenses, and balance as the results.

f. Clean up the summary as discussed in the chapter.

g. Answer questions 7 through 9 on the Q&A worksheet. Save the workbook.

Use Solver

You realize a perfect break-even point may be unrealistic, but you will donate any positive balance to charity. For this analysis, you will

use Solver to keep the expenses constant while changing the number of attendees and ticket price per person.

a. Load the Solver add-in if it is not already loaded.

b. Set the objective to calculate the highest balance possible.

c. Use the number of attendees and the ticket price per person as changing variable cells.

d. Look at the *Limitations* section of the spreadsheet model.

e. Set a constraint for the number of attendees.

f. Set constraints for the ticket price per person.

g. Set an appropriate integer constraint.

h. Set a constraint that ensures the valet parking expense is less than or equal to the product of the number of parking stalls and the valet price per vehicle.

i. Solve the problem, but keep the original values in the Budget worksheet. Generate the Answer Report. If you get an internal memory error message, remove Solver as an add-in, close the workbook, open the workbook, add Solver in again, and finish using Solver.

j. Answer questions 10 through 13 on the Q&A worksheet. ~~Apply **landscape orientation** to the Q&A worksheet. Save the workbook.~~

k. ~~Create a footer on all four worksheets with your name on the left side, the sheet name code in the center, and the file name code on the right side.~~

l. Save and close the workbook, and submit based on your instructor's directions.