

Weekly Assignment 8 – Instructions

Chapter 8 - Case Project 1 – Smart Home

Overall Requirements Document

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SMART HOME MONTHLY ELECTRIC SAVINGS

Design a Windows Desktop application and write the code that will execute according to the program requirements in Figure 8-100 and the Use Case Definition in Figure 8-101. Before writing the code, create an event-planning document for each event in the program. The completed program is shown in Figure 8-102.

REQUIREMENTS DOCUMENT

Date: April 2, 2019

Date Submitted:

Application Title: Smart Home Monthly Electric Savings

Purpose: This Windows application opens a text file that lists the monthly savings of a smart home's electric bill in comparison to a previous year without smart device activation. A smart thermostat, lighting system, and water heater were installed one year ago and the text file lists the savings each month. The user selects a month read from the text file and displays that month's electric bill savings. A Button object displays the average monthly savings with the smart home devices and the month with the most significant savings.

Program Procedures: In a Windows application, a user can view the individual monthly savings of a smart home's electric bill.

Algorithms, Processing, and Conditions:

1. The user views a Windows application that contains a title, graphic, and a ComboBox object displaying the months of the year. The ComboBox object is filled from a text file named savings.txt that is opened and read by the application from the USB drive (drive d:). The text file contains each month with the electric bill savings from that month.
2. After the user selects the month from the ComboBox object, that month's savings is displayed and the Display Statistics button is shown. When the user clicks the button, the average monthly savings and the month with the most significant savings is displayed.

Notes and Restrictions: The user must select a month from the ComboBox object before the Button object is displayed.

Comments:

1. The savings.txt file is available on CengageBrain.com.
2. Obtain an image for this program from CengageBrain.com. The name of the picture on the Windows form is smarthome.

FIGURE 8-100

Screenshot of GUI

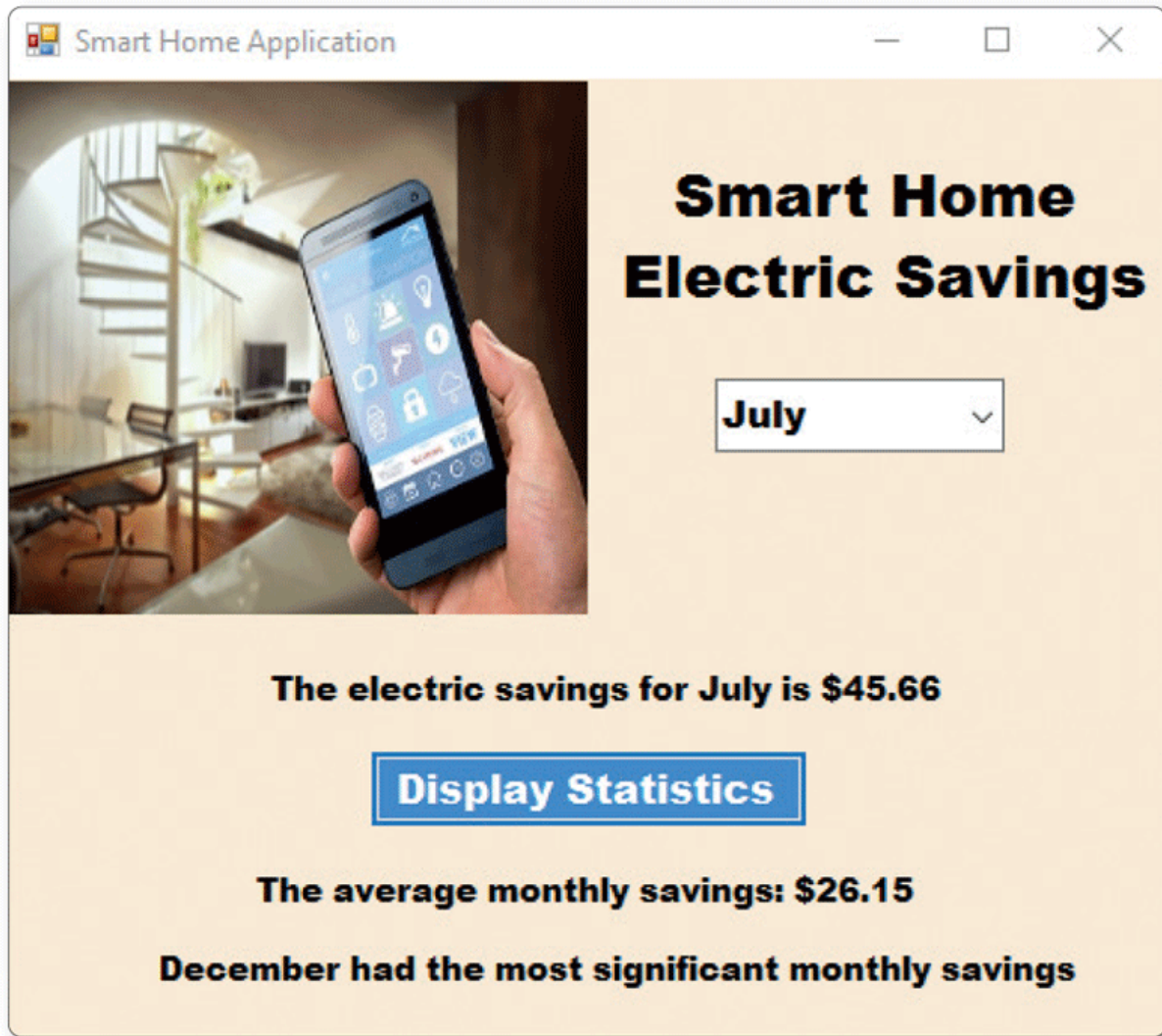


FIGURE 8-102

Alexander Kirch/Shutterstock.com

Watch the guided program development videos first, then watch the video walkthrough of this project. The skills and techniques demonstrated in the guided project are exactly the ones you will use here.