Logic Chapter 11

William Elizondo

Short Answer

3. How can you design a menu-driven program so that the menu is redisplayed after the selected operation has been performed?

**The key to a menu-driven program that keeps showing the menu is a loop.**

4.What is the difference between a program that uses a single-level menu and a program that uses a multiple-level menu?

**In a single menu everything is there at once in a flat list. In a multiple level menu options are organized into categories with submenus branching out from these categories.**

5. When a program has a lot of items for the user to select from, why should you avoid displaying all of the items on one menu?

**Users often have trouble sorting through the items in a menu when given too many choices.**

Algorithm Workbench

1.Design an algorithm that displays the following menu, gets the user’s selection, and validates the selection

START

DISPLAY "Main menu"

DISPLAY "1. Open a new document"

DISPLAY "2. Close the current document"

DISPLAY "3. Print the current document"

DISPLAY "4. Exit the program"

DISPLAY "Enter your selection: "

INPUT selection

WHILE selection < 1 OR selection > 4

DISPLAY "Invalid selection. Please enter a number between 1 and 4."

INPUT selection

IF selection == 1

DISPLAY "Opening a new document..."

ELSE IF selection == 2

DISPLAY "Closing the current document..."

ELSE IF selection == 3

DISPLAY "Printing the current document..."

ELSE IF selection == 4

DISPLAY "Exiting the program..."

END WHILE

END

2.Design a case structure that can be used with the algorithm you designed for question 1. The case structure should call a module named openDocument if the user selected item 1, should call a module named closeDocument if the user selected item 2, and should call a module named printDocument if the user selected item 3.  
  
START

DISPLAY "Main menu"

DISPLAY "1. Open a new document"

DISPLAY "2. Close the current document"

DISPLAY "3. Print the current document"

DISPLAY "4. Exit the program"

DISPLAY "Enter your selection: "

INPUT selection

WHILE selection < 1 OR selection > 4

DISPLAY "Invalid selection. Please enter a number between 1 and 4."

INPUT selection

CASE OF selection

WHEN 1:

CALL openDocument()

WHEN 2:

CALL closeDocument()

WHEN 3:

CALL printDocument()

WHEN 4:

DISPLAY "Exiting the program..."

END CASE

END

MODULE openDocument

DISPLAY "Opening a new document..."

END MODULE

MODULE closeDocument

DISPLAY "Closing the current document..."

END MODULE

MODULE printDocument

DISPLAY "Printing the current document..."

END MODULE

3.Put the algorithms that you designed for questions 1 and 2 together inside a loop that redisplays the menu after the user’s selected operation is performed, or exits if the user selects item 4 from the menu

START

WHILE TRUE

DISPLAY "Main menu"

DISPLAY "1. Open a new document"

DISPLAY "2. Close the current document"

DISPLAY "3. Print the current document"

DISPLAY "4. Exit the program"

DISPLAY "Enter your selection: "

INPUT selection

WHILE selection < 1 OR selection > 4

DISPLAY "Invalid selection. Please enter a number between 1 and 4."

INPUT selection

CASE OF selection

WHEN 1:

CALL openDocument()

WHEN 2:

CALL closeDocument()

WHEN 3:

CALL printDocument()

WHEN 4:

DISPLAY "Exiting the program..."

END WHILE

END CASE

END WHILE

END

MODULE openDocument

DISPLAY "Opening a new document..."

END MODULE

MODULE closeDocument

DISPLAY "Closing the current document..."

END MODULE

MODULE printDocument

DISPLAY "Printing the current document..."

END MODULE