CIS Department CIS165

Program 3 Due On: Tuesday, March 24, 2020

Objective:

The purpose of this lab project is to practice selection, and to generate headings and reports.

Problem Specification:

You are working for the Family Budget Assistance Center. Your boss has asked you to write and execute a program that will analyze a family's data. Input consists of the following:

Family ID number (int)
Number in family (int)
Income (float)
Total debts (float)

Your program should output the following:

a. An appropriate header.
b. The family's identification number, number in family, income, and total debts.
c. Predicted family living expenses:
   ($4500.50 per family member if size of family greater than 4
   ($4700.30 per family member if size of family = to 4
   ($5000.00 per family member if size of family < 4)
d. The monthly payment necessary to pay off the debt.
   If the debt is more than $4000, you will pay off the debt in two years.
   If the debt is less than or equal to $4000, you will pay off the debt in one year.
e. The amount the family should save (family size * 0.02* (income – debt).
f. Your service fee : (1% of the income if income < =$30,000
   2% of the income if income > $30,000)

Run your program for the following three families:

ID Number	Size	Income	Debt
51	4	28,000.00	4800.00
55	5	39,000.00	3200.00
56	3	40,000.00	1200.48

Requirements:

- Comment thoroughly. Include: your name, course #, date, and a brief explanation of what the program does.
- Following good structured programming practices, you should solve this program by hand before you try and write the code. You should calculate the results for each of the inputs before you write the program, and ensure that your program gives you the expected output for those inputs before running the program.
- Create 5 constants; three for the living expenses per person and two for the service fee rates.
- Calculate using the constants you declared, and whatever values the user enters.
- You can use a flowchart or pseudocode. If you use pseudocode, you should use a flowchart for the decision making parts of the program.
- Output the report as shown below.

Output for the first family could be:

%%%%%%%%%%%%%%%%%%%%%%%%%%%
Family Budget Assistance Center
November 2019
Telephone: (800) 555-1234
%%%%%%%%%%%%%%%%%%%%%%%%%%%

Identification number	**51**
Family size	**4**
Annual income	**$ 28000.00**
Total debt	**$ 4800.00**
Expected living expenses	**$ 18801.20**
Monthly payment	**$ 200.00**
Savings	**$ 1856.00**
Service fee	**$ 280.00**

Grading criteria:

________	15 points	Good programming practices: Proper spacing, comments, use of variables, indentation and appearance of program. Good programming standards.
________	10 points	Pseudocode or flowchart is handed in and is correct.
________	10 points	Flowchart for the if statement is correct.
________	5 points	Description of program is complete
________	5 points	Input statements and prompts used correctly
________	5 points	Constants are used.
________	5 points	Proper headings and titles are printed.
________	10 points	If statement used properly (use nested ifs)
________	5 points	Output is aligned over the decimal points using manipulators.
________	5 points	Assignment statements used properly.
________	20 points	Program runs correctly and produces the intended results.
________	5 points	Three test runs are submitted (program's output)

Submission Details:

Submit a print-out of: The program, a hierarchical (structure) chart, a flowchart or pseudo-code, flowchart of the decision logic (if statements), three test runs.