PROG 8010 Assignment 2

You are only required to complete the programming problem that has been assigned to your group. However, you are encouraged to work through as many programming problems as possible.

Each group is to submit one solution to eConestoga. Someone from your group will be selected at random to present their solution to the class. Your mark on the assignment will depend on a combination of the quality, functionality, and adhesion to coding standards of your code. If you are absent without excuse, your mark for the presentation portion of the assignment (20%) is zero.

Group 1/8 Problem – Stadium Seating

There are three seating categories at an athletic stadium. For a baseball game, Class A seats cost $15 each, Class B seats cost $12 each, and Class C seats cost $9 each. Create an application that allows the user to enter the number of tickets sold for each class. The application should be able to display the amount of income generated from each class of ticket sales and the total revenue generated.

Group 2/9 Problem – Tip, Tax and Total

Create an application that lets the user enter the food charge for a meal at a restaurant. When a button is clicked, the application should calculate and display the amount of a 15 percent tip, 7 percent sales tax, and the total of all three amounts.

Group 3/10 Problem – Celsius and Fahrenheit Temperature Converter

Assuming that C is a Celsius temperature, the following formula converts the temperature to Fahrenheit:

$$F = (9/5)C + 32$$

Assuming that F is a Fahrenheit temperature, the following formula converts the temperature to Celsius:

$$C = (5/9)(F – 32)$$

Create an application that allows the user to enter a temperature. The application should have Button controls described as follows:

- A button that reads *Convert to Fahrenheit*. If the user clicks this button, the application should treat the temperature that is entered as a Celsius temperature and convert it to Fahrenheit.
- A button that reads *Convert to Celsius*. If the user clicks this button, the application should treat the temperature that is entered as a Fahrenheit temperature, and convert it to Celsius.

Group 4/11 Problem – Sentence Builder

Create an application with a form containing buttons showing various words, phrases, and punctuation. There should be at least 20 buttons with some nouns, verbs, and adjectives. When the application runs, the user clicks the buttons to build a sentence, which is to be shown in a Label control. The *Clear* button should clear the sentence so the user can start over.

Group 5/12 Problem – Calorie Counter

Using the images provided in the folder Group 5 Images, create an application that displays four fruits and their caloric value (banana: 115, apple: 80, orange: 90, pear: 120). In addition, display the total calories selected and a *Reset* button. When the application starts, the total calories displayed should be zero. Each time the user clicks one of the *Button/Image* controls, the calories for that fruit should be added to the total calories, and the new value for total calories should be displayed. When the user clicks the *Reset* button, the total calories should be reset to zero.

Group 6/7 Problem – Automobile Costs

Create an application that lets the user enter the monthly costs for the following expenses incurred from operating an automobile: loan payment, insurance, gas, oil, tires, and maintenance. The program should then display the total **monthly** cost of these expenses and the total **annual** cost of these expenses.