CS 31 Worksheet 5

This worksheet is entirely **optional**, and meant for extra practice. Some problems will be more challenging than others and are designed to have you apply your knowledge beyond the examples presented in lecture, discussion or projects. All exams will be done on paper, so it is in your best interest to practice these problems by hand and not rely on a compiler.

Concepts

Structs, enumerations

1) Consider the datatype required to store a day of the week value. Why would an enumeration be an appropriate choice for this kind of information? Consider the datatype required to store the last name of a textbook author. Why would an enumeration not be an appropriate choice for this kind of information?

2) For the declaration:

```
enum Color { BLUE = 1, YELLOW, RED = 0, PINK = 2, BLACK,
             ORANGE, TEAL=3, GREEN=4 };
```

Which of the named constant values will have the value 0?
Which of the named constant values will have the value 1?
Which of the named constant values will have the value 2?
Which of the named constant values will have the value 3?
Which of the named constant values will have the value 4?

3) Based on the earlier declaration of Color, define an array named colorArray of 4 colors and set each element to have a value that matches its index. In other words, colorArray[0] should be set to a color that has the underlying value 0. colorArray[1] should be set to a color value that has the underlying value 1. And so on…

Programming Problems

1) Define a struct named PersonalInfo that has three data members:
   - m_Name (a string)
   - m_Address (a string)
   - m_Phone(a string)

   Define this structure so that it is stored in the file PersonalInfo.h.
   Create a main( ) stored in the file Source.cpp which includes this struct file and declares two variables of this struct type, one with your information and with the information of one your neighbors in the discussion section.

2) Define a struct named HighScore that has two data members:

- m_Player (a string)
- m_Score (an int)

Write a program that allows a user to enter high scores of a game, keeping tracking of the name of the user and their score. Add the ability to show the highest score for the best ten users by creating an array with 10 HighScore.