CSC 2111 Lab 14

Objectives:

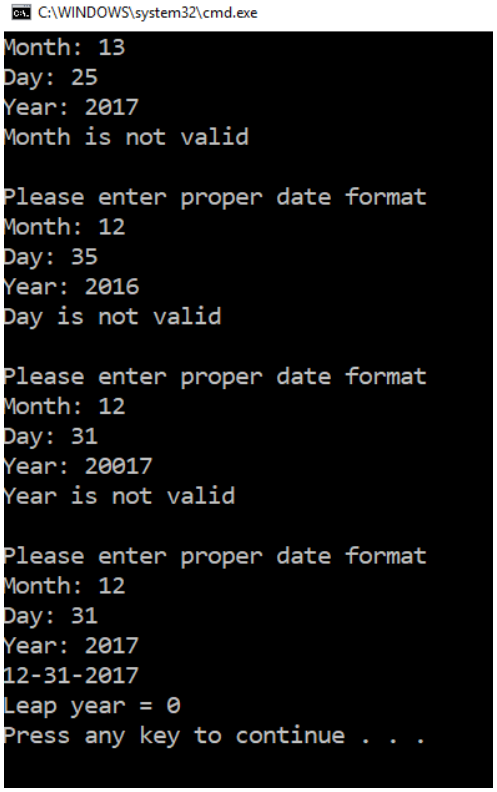
1. Classes and Data Abstraction
2. User-defined classes
3. Implementation of a class in separate files
4. Learn about inheritance
5. Learn about composition/aggregation

Question 1 (40 marks):

A basic **class** *dateType* is designed to implement the date in a program, but the member function setDate does not check whether the date is in valid format.

a. Rewrite the definition of the function setDate so that the values for the month (1 to 12), day (1 to 31), and year (4 digits) are checked before storing the date into the member variables.
b. Add a member function, isLeapYear, to check whether a year is a leap year.

Sample Output



Question 2 (60 marks):

Part – 1:

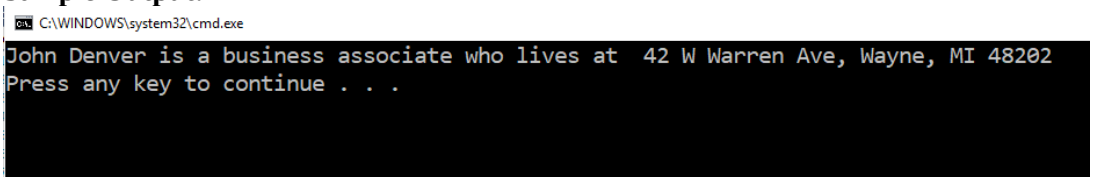
Define a **class** *addressType*, that can store a street address, city, state, and ZIP code. Use the appropriate functions to print and store the address. Also, use constructors to automatically initialize the member variables.

Part – 2:

Derive a **class** *extPersonType* from the **class** *personType*. Add a member variable to this **class** to classify the person as a family member, friend, or business associate. (Hint: you can use an Integer data type to save this information. For example, 1 for family member, 2 for friend and 3 for business associate).

In addition, add a member variable to store the address (using *addressType* object). Add proper statements on in the main function to test you code. Use constructors to automatically initialize the member variables.

Sample Output:



Submission guideline:

- You MUST follow the submission guideline. Otherwise you might lose your points.
- So your submission folder structure should be:
  - LastnameFirstnameLab14.zip
    - program1.zip
      - dateType.h
      - dateTypeImp.cpp
      - mian.cpp
    - program2.zip
      - addressType.h
      - addressType.cpp
      - personType.h
      - personType.cpp
      - extPersonType.h
      - extPersonType.cpp
      - main.cpp