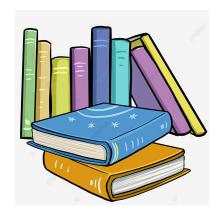CSE 108 (Object Oriented Programming Sessional)
January 2022 Term

Practice of Week 4 on OOP : Book Class

In this practice lab, we will implement a class named **Book** that will encapsulate a book object. It will have three properties, namely, isbn, title and price. You are given a skeletal code for the class in a file named Book.cpp. You need to complete the class definition and write a suitable *main* function to demonstrate the functionalities of the class. Write all your codes in the given Book.cpp file. Then rename the file with your seven digit roll number and finally upload to Moodle under the appropriate submission link.

Specifically you are required to perform the following tasks.

1. Write down the following constructors for the Book class.

   a. A constructor with no arguments, i.e., the default constructor. It will initialize ISBN to a negative number, price to zero and title to "No Title".

   b. A constructor that takes three arguments, namely title, isbn and price and initializes the properties of the book object accordingly. Use dynamic memory allocation as required.

   c. A copy constructor.

2. Write a destructor function that will free memory allocated to the variables representing properties of a book object.

3. Write setter and getter functions for each of the properties of the Book class.

4. Define a member function **void** *print*() that will print the information of a book. You may use the below output format. The italic text means the actual value.

    title: *title*, isbn: *isbn,* price: *price*

5. Write a member function **int** *isTheSameBook(*Book *b)* that will check whether the caller book and the book in the argument are the same book. Two books are the same if they have the same ISBN number.

6. Define a member function **Book** *generateNewEdition*(int *isbn*, int *price*) that will return a new Book object that will have the same title as the calling book but isbn and price are set according to the arguments. The new book can be considered a new edition of the calling book.

7. Complete the *main* function in the supplied cpp file to demonstrate functionalities of the Book class.