COEN 244 (Winter 2018) - Assignment 1

Deadline: Tuesday Jan 30 11:59PM (strict)
Type: Individual Assignment
Weight: This assignment is worth 5% of your final grade

Note: - The assignments must be submitted on Moodle.
- No late submission policy

Q1. (25 marks) Create a class called Customer that has the following data members:
Name (string)
- Address (string)
- Tel (string)
- Date of birth (This should be an object of the class Date that will need to be created. A date is identified by three integers that represent the day, month, and year)

The class should have <u>at least</u> the following member functions:
- One or more constructors
- Changing the customer's address
- Changing the customer's telephone
- Modifying the customer's date of birth
- Printing information about a customer
- A destructor

Create a driver to test the class Customer.

Q2. **(25 marks)** Create a class called Room to represent a hotel room. The class has the following data members:
- Room number (of type integer)
- Room type that can be one of the following two values: Regular or Suite
- Room availability (Boolean). This attribute is true if the room is available; false otherwise

The class should have <u>at least</u> the following member functions:
- One or more constructors
- Checking if a room is available
- Returning the room type
- A function that prints information about a customer
- A destructor

Create a driver to test the class Room.

Q3. (25 marks) Create a class called Reservation that holds reservations of customers. Customers must be assigned rooms during reservation. Assume that a customer can reserve only one room for a given date. The class will have the following data members:

- Reservation number (int)
- Customer (of type Customer)
- Room (of type Room)
- Customer arrival date to the hotel (of type Date)
- Requested duration of the stay in number of nights (integer)

The class should have <u>at least</u> the following member functions:
- One or more constructors
- Assigning a room to a customer
- Returning the room number
- Returning the customer name
- A function that prints information about a reservation
- A destructor

Create a driver to test the class Reservation.

Q4. **(25 marks)** Create a class called Hotel to represent the hotel for which the system is created. The class has the following data members:
- Name (string)
- Address (string)
- Tel (string)
- Number of rooms (integer)
- Rooms (a collection of rooms)

The class should have <u>at least</u> the following member functions:
- One or more constructors
- Typical getters and setters
- Outputting the rooms with their occupation status on a given date
- Outputting the list of customers who reserved rooms in a given date interval
- Outputting the list of customers who reserved rooms of type Suite in a given date interval
- Outputting the list of customers who reserved rooms of type Regular in a given date interval
- Outputting the list of customers whose stay duration is more than or equal to an input number x
- Returning true if there are no more rooms to book (i.e., the hotel is booked up).
- A function that prints information about a hotel
- A destructor

Create a driver to test the class Hotel

Assignment Marking Scheme:
- Program correctness (70%)
- Program output format, clarity, completeness, and accuracy (10%)
- Program indentation and readability (5%)

- Choice of significant names for identifiers (5%)
- Comments - description of variables and constants (5%)
- Comments - description of the key steps of the program (5%)