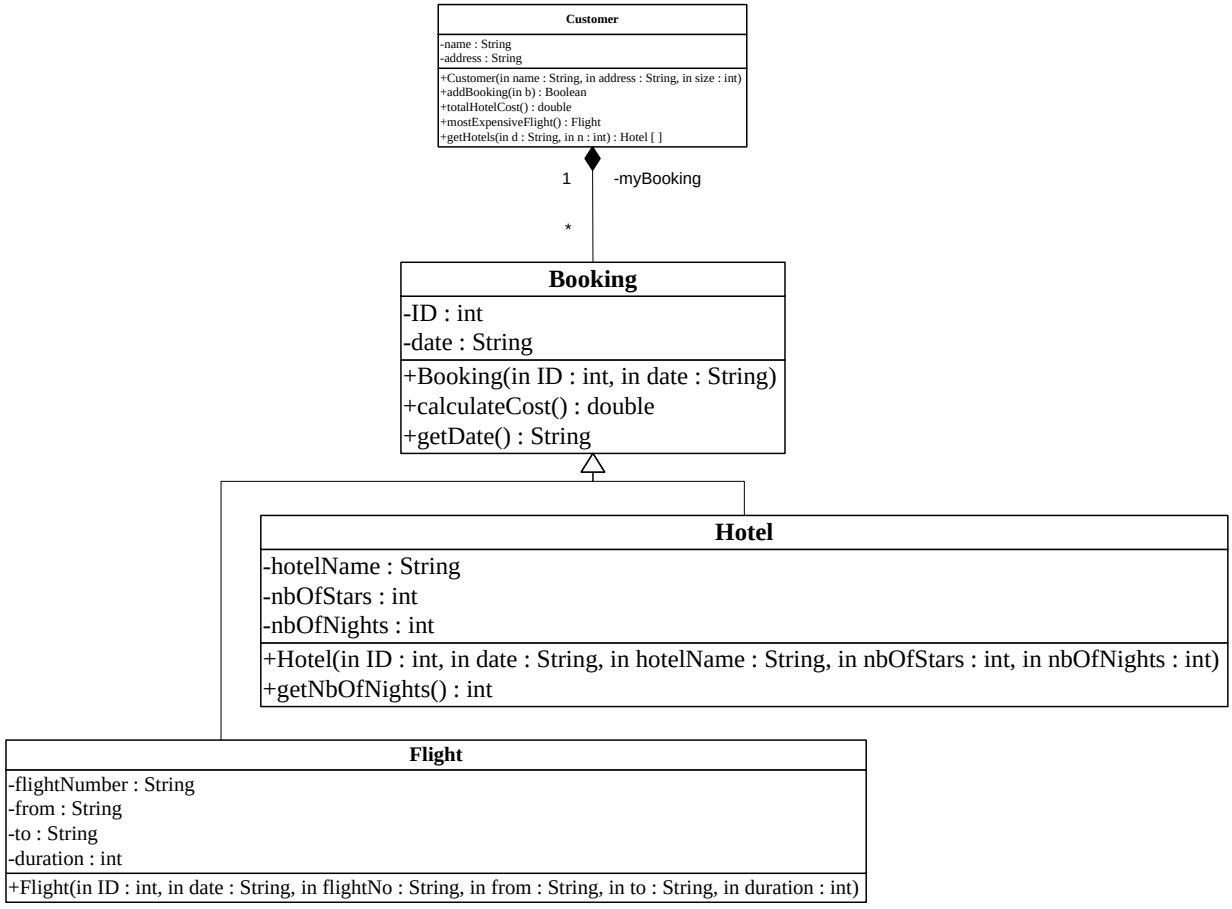
King Saud University
College of Computer and Information Sciences
Department of Computer Science
CSC113 – Computer Programming II – Midterm 1 Exam – Spring 2016

Exercise1:



Booking class***:***

- Attributes:
  - ***ID***: the ID of the Booking.
  - ***date:*** the date of the Booking.
- Methods:
  - ***Booking (ID:*** *int****, date:*** *String****)***: constructor
  - ***getDate()*****:** this method returns the date of the Booking.
  - ***calculateCost()*****:** this method returns the cost of the Booking. It is calculated as follows:
    - For ***Hotel Booking:*** cost = Number of Stars * 175 * Number of Nights.
    - For ***Flight Booking***: cost = Flight Duration * 10.

Hotel class

- Attributes:
  - ***hotelName:*** the name of the Hotel.
  - ***nbOfStars***: the number of stars of the Hotel.
  - ***nbOfNights:*** the number of nights spent in the Hotel.
- Methods:
  - ***Hotel (ID:*** *int****, date:*** *String****, hotelName:*** *String****, nbOfStars:*** *int****, nbOfNights:*** *int****)***: constructor.
  - ***getNbOfNights()***: this method returns the number of nights spent in the Hotel.

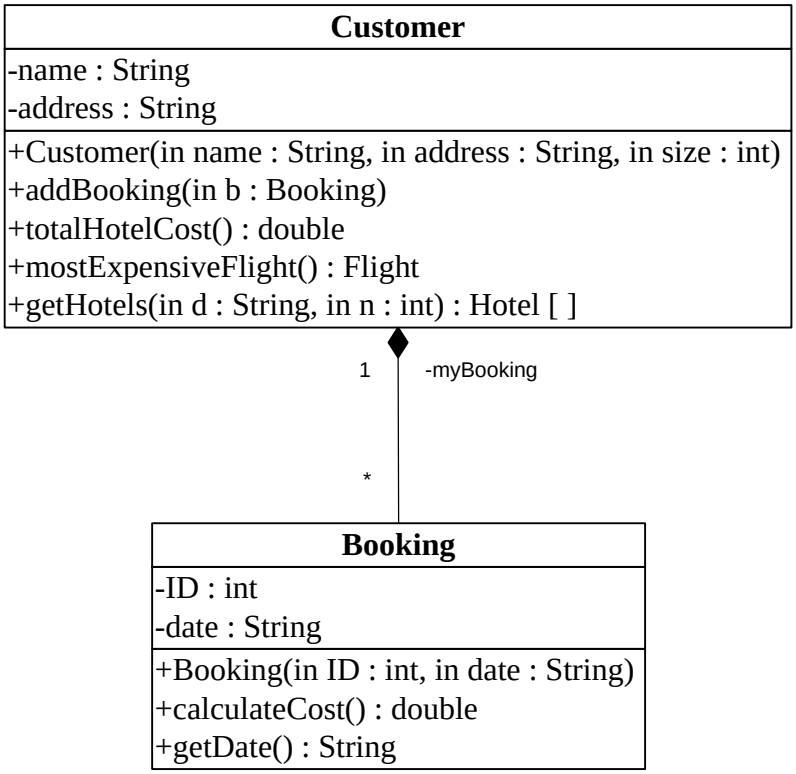
Flight class

- Attributes:
  - ***flightNumber:*** the Flight number.
  - ***from***: the name of the departure Airport.
  - ***to:*** the name of the arrival Airport.
  - ***duration:*** the Flight's duration (in minutes).
- Methods:
  - ***Flight (ID:*** *int****, date:*** *String****, flightNo:*** *String****, from:*** *String****, to:*** *String****, duration:*** *int****)***: constructor.

QUESTION: Translate into Java code the class ***Booking*** and the class ***Hotel***.

Exercise 2:

Let's consider the same class ***Booking*** described in exercise 1.



Customer class***:***

- Attributes:
  - ***name***: the customer name.
  - ***address :*** the address of the customer.
- Methods:
  - ***Customer (name:*** *String****, address:*** *String****, size:*** *int****)***: constructor.
  - ***addBooking (b: Booking***): this method adds the Booking ***b*** to the customer.
  - ***totalHotelCost ()*****:** this method returns the total cost of all Hotel Bookings.
  - ***mostExpensiveFlight ()*****:** this method returns the Flight Booking having the maximum cost.
  - ***getHotels(d:*** *String****, n:*** *int****):*** this method returns an array containing all Hotel Bookings in the date ***d*** and having the number of nights greater or equal to ***n***.

QUESTION: Translate into Java code the class ***Customer.***

Exercise 3:

Let's consider the same classes described in exercise 1 and 2.

Write a class with a main method that performs the following:

- Create the 2 Customers below:
  - Customer 1: name = "KSU", address = "P.O Box 81178- 11543 Riyadh";
  - Customer 2: name = "Badr", address = "Al-Malaz, Riyadh";
- Create the Hotel Booking: 123, "09/03/2016", "Crown Plaza", 5, 3.
- Create the Hotel Booking: 125, "25/2/2016", "Mariott", 5, 4.
- Add the two Hotel bookings to Customer 1.
- Create the Flight Booking: 130, "10/03/2016", "SV 1027", "Riyadh", "Jeddah", 90.
- Create the Flight Booking: 150, "25/03/2016", "SV 352", "Riyadh", "Dammam", 60.
- Add the two Flight Bookings to Customer 2.
- Display the total cost of Hotel bookings of Customer 1.
- Display the cost of the most expensive Flight of Customer 2.