COMP 2247 - 01   Fall 2022   Assignment 3   Total 20 point

It is required to use **Aggregation** for this assignment.

Contractor Billing Program

Design and write a set of classes that can work together to simulate a contractor's billing system.

1. Class **MyDate**
   o It has data members to store month, day, and year.

2. Class **Person**
   o It has data members to store a person's first name and last name.

3. Class **Contractor**
   o It has data members:
      • To store the contractor's first name and last name (object of the class Person - <u>aggregation</u>).
      • To store the contractor's specialty.

4. Class **Job**
   o It has data members:
      • To store the job's ID.
      • To store the customer's first name and last name (object of the class Person – <u>aggregation</u>).
      • To store contractor's information (object of the class Contractor – <u>aggregation</u>).
      • To store the date of customer called for service (object of the class Date – <u>aggregation</u>).
      • To store the date when the customer's job was started (object of the class Date – <u>aggregation</u>).
      • To store the date when the customer's job was completed (object of the class Date – <u>aggregation</u>).

   o It has a method that can calculate and return the how many days the customer's job was spent.
      • The job could stretch between two different months or years, for example: from 8/29/2022 to 9/2/2022.
        (Extra credit: 2 points)

5. Class **Bill**
   o It has data members:
      ▪ To store the job's ID.
      ▪ To store the material fee.
      ▪ To store the contractor's fee.
      ▪ To store the discount rate.

   o It has a method that can calculate and return the total charges before tax.

   *** Every class should have appropriate constructors, setters, getters, and toString method.

6. Write a client program to simulate the billing system.
   o The date input should be in xx/xx/xxxx format. The day, month, and year should be retrieved accordingly.

Sample Run:

```
Contractor Billing System Program

Enter job's ID: 100039
Enter customer's first name: Tom
Enter customer's last name: Jones

Enter contractor's first name: Joe
Enter contractor's last name: Smith
Enter contractor's specialty: Plumbing

Enter the date (xx/xx/xxxx) the customer called: 06/22/2022
Enter the job's starting date (xx/xx/xxxx): 06/26/2022
Enter the job's completion date (xx/xx/xxxx): 06/28/2022

Enter the material fee: 598.50
Enter the contractor's fee: 1200
Enter the discount amount: 100

**************************************
Customer Job Information:
**************************************
ID: 100039
Customer Info: Tom Jones
Contractor Info: Joe Smith, Plumbing
Calling for Service Date: 6/22/2022
Starting Date: 6/26/2022
Completion Date: 6/28/2022
Days to Complete the Job: 2
**************************************

**************************************
Contractor Bill Information:
**************************************
Job ID: 100039
Material Fee: $598.5
Contractor Fee: $1200.0
Discount: $100.0
Total Charge Before Tax: $1698.50
**************************************
```

Due: ~~Wednesday, 9/14/22~~   Monday, 9/19/22

- To receive full credit, the assignment must be submitted by the due date.
- Late submissions will incur a penalty of 5% per day.

Each program should have a file header section. /* * Author: Your name * Date: Date of completion * Assignment: Assignment # NameOfSourceCode.java * Description: The program description */	Up to 5% deduction
Each program should be written with the appropriate form and style. Use indentation, blank line, and comments to make the source code easy to read.	Up to 5% deduction
Use Java naming convention and meaningful names to name the classes, methods, variables, constants, and other identifiers in the programs.	Up to 5% deduction
Format the output appropriately	Up to 5% deduction