ITEC 4261 JAVA Programming

2024 Spring

Assignment #6

(Due date: Apr. 12, 23:59pm EST)

Important Notes:

1. Write a program of each question and **submit all source code files (.java files) of each question.** If you do not submit the source code files (.java files), you will have 0 points.
2. **Submit screen captures of each program outputs** using Microsoft Word document. Name the assignment as *Lastname.Firstname_Assgnment1* (e.g. Joobum.Kim_Assignment1.docx)

Problems:

1. Solve the following question below. (50 points)

Design a class named `Person` with fields for holding a person's name, address, and telephone number. Write one or more constructors and the appropriate mutator and accessor methods for the class's fields.

Next, design a class named `Customer`, which extends the `Person` class. The `Customer` class should have a field for a customer number and a `boolean` field indicating whether the customer wishes to be on a mailing list. Write one or more constructors and the appropriate mutator and accessor methods for the class's fields. Demonstrate an object of the `Customer` class in a simple program.

2. Solve the following question below. (50 points)

A retail store has a preferred customer plan where customers can earn discounts on all their purchases. The amount of a customer's discount is determined by the amount of the customer's cumulative purchases in the store as follows:

- When a preferred customer spends $500, he or she gets a 5 percent discount on all future purchases.
- When a preferred customer spends $1,000, he or she gets a 6 percent discount on all future purchases.
- When a preferred customer spends $1,500, he or she gets a 7 percent discount on all future purchases.
- When a preferred customer spends $2,000 or more, he or she gets a 10 percent discount on all future purchases.

Design a class named `PreferredCustomer`, which extends the `Customer` class you created above question _____. The `PreferredCustomer` class should have fields for the amount of the customer's purchases and the customer's discount level. Write one or more constructors and the appropriate mutator and accessor methods for the class's fields. Demonstrate the class in a simple program.