Assignment 2: COSC 61 (Fall 2007)
Due Date: 10/01/2007

A Person.java is provided for your convenience. Design a class named Customer, which extends the Person class. The Customer class should have a field for a customer number, a boolean field indicating whether a customer wishes to be on a mailing list, and a BankAccount object. Each customer class has a BankAccount object. You can reuse the BankAccount class from your textbook. Write one or more constructors and appropriate mutator and accessor methods for Customer class.

A retail store has a preferred customer plan where customers 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 the purchase
- When a preferred customer spends $1000, he or she gets a 6 percent discount on the purchase
- When a preferred customer spends $1500, he or she gets a 7 percent discount on the purchase
- When a preferred customer spends $2000 or more, he or she gets a 10 percent discount on the purchases

Design a class named PreferredCustomer, which extends the Customer class. 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 fields. Also, when a customer makes a purchase, the customer’s account balance is deducted with the amount of purchase made after applying the discount. The Person.java does not have toString() method. Implement toString() methods for all the classes you write in this assignment.

Your program should work with the following Tester Program

```java
public class PreferredCustomerDemo
{
    public static void main(String[] args)
    {

        BankAccount ba = new BankAccount(2000);

        // Create a PreferredCustomer object for Julie James.
        // She has $1750.00 in purchases. That entitles her
        // to a 7% discount on future purchases.
        PreferredCustomer myCustomer =
            new PreferredCustomer("Julie James", "123 Main Street",
                                    "555-1212", "147-A049",
                                    true, 1750.00, ba);

        System.out.println("Details of Preferred Customer: " +
            myCustomer);
    }
}
```
An example output for the above program will be as follows:

Output

| Details of Preferred Customer: PreferredCustomer[Name = Julie James, Address = 123 Main Street, Customer Number = 147-A049, Purchases = 1750.0, Discount Level = 0.07, Account Balance = 372.5] |

Note: Your program needs to follow Javadoc and java coding style conventions.

The grading criteria for all the work done in this class (including labs) will be as follows:

<table>
<thead>
<tr>
<th>Grading Criterion</th>
<th>Points Percentage</th>
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<tbody>
<tr>
<td>Does not compile</td>
<td>0</td>
</tr>
<tr>
<td>Compiles</td>
<td>10</td>
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<tr>
<td>Input, output, and computation is valid</td>
<td>50</td>
</tr>
<tr>
<td>Test cases</td>
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<tr>
<td>Coding style</td>
<td>10</td>
</tr>
<tr>
<td>Documentation</td>
<td>10</td>
</tr>
</tbody>
</table>

**Submission**: Send an email with subject line as “COSC 61 – Assignment 2” to the instructor with the source code as an attachment, and also hand in the hard copy of the assignment at the beginning of the class on the due date.