CIS 2348 – _Information Systems Application Development

Assignment 3

Define the following:

1. A Superclass called Item with itemCode and Name as private variables.
   The Item class should define
   1) A constructor method to assign values to both itemCode and Name.
   2) A display method to display itemCode and Name.
2. Define an Interface called Discount, which should have the following method declaration.
   public double computeDiscount();
3. Define another Interface called Tax, which should have the following method declaration.
   public double computeTax();

4. A sub class called Grocery with the following private variables:
   double price;
   double units;
   double discount;
   The Grocery class should define the following methods:
   1) A constructor to assign values to price, units, discount and it has to call super class constructor to pass values to Super class constructor.
   2) computeDiscount(), which is declared in the Interface Discount
   3) computeTax(), which is declared in Tax interface
   4) double computeTotalPrice() to compute the final price for the item
   5) A method displayGrocery() to display itemCode, name, unit price, units, savings, subtotal, tax amount, and final price for the item.

   Note: Here the discount and Tax are to be taken in percentage. The discount is optional, meaning you can buy an item without any discount at sometimes and with discount at other times. So, you pass 0 when there is no discount and you pass different percentages say 10 %, 20%, etc. at other times.
5. Another Sub class with the name Clothing with the following private variables:
   private String brand;
   private double price;
   private double units;
   private double discount;
   final double taxp=8.5;
   The Clothing class should define the following methods.
   1) A constructor to assign values to brand, unit price, units, discount and it has to call super class constructor to pass values to Super class constructor.
   2) computeDiscount(), which is declared in the Interface Discount
   3) computeTax(), which is declared in Tax interface
   4) double computeTotalPrice() to compute the final price for the item
   5) displayClothing()method to print:

itemCode, name, brand, unit price, units, subtotal, savings, tax amount, and final price for the item.

Note: Here the discount and Tax are to be taken in percentage. The discount is optional, meaning you can buy an item without any discount at sometimes and with discount at other times. So, you pass 0 when there is no discount and you pass different percentages say 10 %, 20%, etc. at other times. All Clothing Items are 8.5% taxable.

6. A demoDepartmentBilling class with the main method. In the main method, you should do the following
    a. Create two objects for Grocery class:
       ItemCode-11, name -Bread, units -2, price-$1.50, Discount-0, Tax-0
       ItemCode-12, name- Apple, units – 6, price-$0.75, Discount-1%, Tax-0

    b. Create two objects for clothing class:
       ItemCode-21, name- Jeans, units-1, price-$35, brand-Levis,discount-0%
       ItemCode-22, name- Dress Shirt, units-2, price-$25, brand-Izod, discount-10 %
    c. find the total bill amount for all four items together and

Call displayGrocery() and displayClothing to print the details of the four objects and finally print the total bill amount.