

LAB211 Assignment

Type:
Code:
LOC:
Slot(s):

Short Assignment
J1.S.H201
80
2

Title

Bill

Background

N/A

Program Specifications

Suppose a class `GroceryBill` keeps track of a list of items being purchased at a market:

Method/Constructor	Description
<code>public GroceryBill(Employee clerk)</code>	constructs a <code>GroceryBill</code> object for the given <code>clerk</code>
<code>public void add(Item i)</code>	adds <code>i</code> to this bill's total
<code>public double getTotal()</code>	returns the cost of these items
<code>public void printReceipt()</code>	prints a list of items

`GroceryBill` objects interact with `Item` objects. An `Item` has the following public methods:

Method/Constructor	Description
<code>public double getPrice()</code>	returns the price for this item
<code>public double getDiscount()</code>	returns the discount for this item

For example, a candy bar item might cost 1.35 with a discount of 0.25 for preferred customers, meaning that preferred customers get it for 1.10. (Some items will have no discount, 0.0.) Currently the above classes do not consider discounts. Every item in a bill is charged full price, and item discounts are ignored.

Define a class `DiscountBill` that extends `GroceryBill` to compute discounts for preferred customers. The constructor for `DiscountBill` accepts a parameter for whether the customer should get the discount.

Your class should adjust the amount reported by `getTotal` for preferred customers. For example, if the total would have been \$80 but a preferred customer is getting \$20 in discounts, then `getTotal` should report the total as \$60 for that customer. You should also keep track of how many items a customer is getting a non-zero discount for and the overall discount, both

as a total amount and as a percentage of the original bill. Include the extra methods below that allow a client to ask about the discount:

Method/Constructor	Description
<code>public DiscountBill(Employee <i>clerk</i>, boolean <i>preferred</i>)</code>	constructs discount bill for given <i>clerk</i>
<code>public int getDiscountCount()</code>	returns the number of items that were discounted, if any
<code>public double getDiscountAmount()</code>	returns the total discount for this list of items, if any
<code>public double getDiscountPercent()</code>	returns the percent of the total discount as a percent of what the total would have been otherwise

If the customer is not a preferred customer the `DiscountBill` behaves at all times as if there is a total discount of 0.0 and no items have been discounted.