Answer on Question #59471, Programming & Computer Science, Java, JSP, JSF

Condition

You must also override toString() method and return a user-friendly receipt of all the items in the basket in this cashier. Once you run the TestSystem.java file that is already supplied, you must see something similar to the following:

Number of items is: 4
Total cost is: 157.69
Total tax is: 3.94
Eat Healthy Fruit Shop
---
12 @ 45.00 /dz
Gala Apples 45.00
2.30 kg @ 4.30 /kg
African bananas 9.89
23 @ 3.20 /pc
Qatari Lemons 73.60
1 @ 19.20 /cp
+ 10.00 Labor
Lemon mix juice 29.20
Tax: 3.94
Total cost: 161.63
Eat Healthy Fruit Shop

23.00 kg @ 33.20 /kg
Thailand Bananas 763.60
4 @ 19.20 /cp
+ 10.00 Labor
Juice Mix 86.80
Tax: 21.26
Total cost: 871.66

Code

TestSystem.java

```
package qa.edu.qu.cmps251.hw3;

import qa.edu.qu.cmps251.hw3.model.*;

import java.util.ArrayList;

public class TestSystem {
   public static void main(String[] args) {
        ArrayList<Fruit> fruits = new ArrayList<Fruit>();

        Apple apple = new Apple(3);
        Banana banana = new Banana(3, 12.5);
        Lemon lemon = new Lemon(6, 1.5);
        OrangeLime orangeLime = new OrangeLime(1, 19.20, 5);

        Cashier cashier = new Cashier("Eat Healthy Fruit Shop", fruits);
```

```
        cashier.addItem(apple);
        cashier.addItem(banana);
        cashier.addItem(lemon);
        cashier.addItem(orangeLime);
        System.out.println(cashier);
    }
}
```

Fruit.java

```
package qa.edu.qu.cmps251.hw3.model;

public abstract class Fruit {
    public abstract double getCost();
    public abstract double getAmount();
    public abstract double getPrice();
}
```

Consts.java

```
package qa.edu.qu.cmps251.hw3;

public class Consts {
    public static final double APPLE_PRICE = 24.0; // per dozen
    public static final int LEMONS_IN_A_JUICE = 6;
    public static final int TAX_RATE = 20;
}
```

Cashier.java

```
package qa.edu.qu.cmps251.hw3;

import qa.edu.qu.cmps251.hw3.model.Fruit;
import qa.edu.qu.cmps251.hw3.model.OrangeLime;

import java.util.ArrayList;

public class Cashier {
    private String shopName;
    private ArrayList<Fruit> fruits;

    public Cashier(String shop, ArrayList<Fruit> fruits) {
        this.shopName = shop;
        this.fruits = fruits;
    }

    public double getTotalCost() {
        double cost = 0;
        for (Fruit fruit : fruits) {
            cost = cost + fruit.getCost();
        }
        return Math.floor(cost * 100) / 100.0;
    }
```

```
    public double getTotalTax() {
        return Math.floor((getTotalCost() * Consts.TAX_RATE / 100) * 100) /
100.0;
    }

    public void addItem(Fruit fruit) {
        fruits.add(fruit);
    }

    public int getNumberOfItems() {
        return fruits.size();
    }

    public void clear() {
        fruits.clear();
    }

    @Override
    public String toString() {
        return shopName + "\n" +
                "Number of items is: " + getNumberOfItems() + "\n" +
                "Total cost is: " + getTotalCost() + "$" + "\n" +
                "Total tax is: " + getTotalTax() + "$" + "\n" +
                "----------------------" + "\n" +
                fruits.get(0).getAmount() + " @ " + fruits.get(0).getPrice()
+ "/dz" + "\n" +
                "Gala apples " + fruits.get(0).getCost() + "$" + "\n" +

                fruits.get(1).getAmount() + " kg" + " @ " +
fruits.get(1).getPrice() + "/kg" + "\n" +
                "African bananas " + fruits.get(1).getCost() + "$" + "\n" +

                fruits.get(2).getAmount() + " @ " + fruits.get(2).getPrice()
+ "/pc" + "\n" +
                "Qatari Lemons " + fruits.get(2).getCost() + "$" + "\n" +

                fruits.get(3).getAmount() + " @ " + fruits.get(3).getPrice()
+ "/cp" + "\n" +
                "+ " + ((OrangeLime)fruits.get(3)).getLaborCost() + " Labor"
+  "\n" +
                "Orange lime mix juice: " + fruits.get(3).getCost() + "$";
    }
}
```

Apple.java

```
package qa.edu.qu.cmps251.hw3.model;

import qa.edu.qu.cmps251.hw3.Consts;

public class Apple extends Fruit {
   private double applesNumber;

   public Apple(int number) {
       this.applesNumber = number;
   }

   @Override
   public double getCost() {
       return Math.floor(((Consts.APPLE_PRICE / 12.0) * applesNumber) *
100) / 100.0;
   }

   public double getAmount() {
       return applesNumber;
   }

   public double getPrice() {
       return Consts.APPLE_PRICE;
   }
}
```

Banana.java

```
package qa.edu.qu.cmps251.hw3.model;
public class Banana extends Fruit {
   private double bananasWeight;
   private double bananaPrice;

   public Banana(double weight, double price) {
       this.bananasWeight = weight;
       this.bananaPrice = price;
   }

   @Override
   public double getCost() {
       return Math.floor((bananasWeight * bananaPrice) * 100) / 100.0;
   }

   public double getAmount() {
       return bananasWeight;
   }

   public double getPrice() {
       return bananaPrice;
   }
}
```

Lemon.java

```
package qa.edu.qu.cmps251.hw3.model;

public class Lemon extends Fruit {
    private int lemonsNumber;
    private double lemonPrice;

    public Lemon(int number, double price) {
        this.lemonsNumber = number;
        this.lemonPrice = price;
    }

    @Override
    public double getCost() {
        return Math.floor((lemonPrice * lemonsNumber) * 100) / 100.0;
    }

    public double getAmount() {
        return lemonsNumber;
    }

    public double getPrice() {
        return lemonPrice;
    }
}
```

OrangeLime.java

```
package qa.edu.qu.cmps251.hw3.model;

import qa.edu.qu.cmps251.hw3.Consts;

public class OrangeLime extends Lemon {
    private int numberOfJuices;
    private double pricePerLemon;
    private double laborCost;

    public OrangeLime(int number, double price, double labor) {
        super(number, price);
        this.numberOfJuices = number;
        this.pricePerLemon = price;
        this.laborCost = labor;
    }

    @Override
    public double getCost() {
        return Math.floor((numberOfJuices * Consts.LEMONS_IN_A_JUICE *
pricePerLemon) * 100) / 100.0;
    }

    public double getAmount() {
        return numberOfJuices;
```

```
    }

    public double getLaborCost() {
        return laborCost;
    }

    public double getPrice() {
        return Math.floor((Consts.LEMONS_IN_A_JUICE * pricePerLemon) * 100)
/ 100.0;
    }
}
```

Output

Eat Healthy Fruit Shop
Number of items is: 4
Total cost is: 167.69$
Total tax is: 33.53$

3.0 @ 24.0/dz
Gala apples 6.0$
3.0 kg @ 12.5/kg
African bananas 37.5$
6.0 @ 1.5/pc
Qatari Lemons 9.0$
1.0 @ 115.19/cp
+ 5.0 Labor
Orange lime mix juice: 115.19$