Aaron Teague

97
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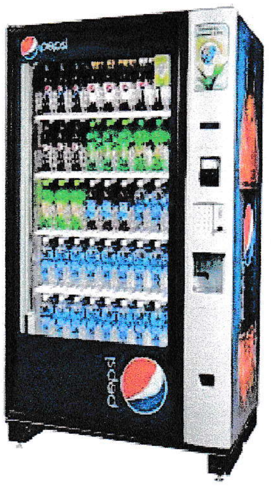
Vending Machine Simulator



I pledge that this work is entirely mine, and mine alone (except for any code provided by my instructor).

Aaron Teague

I spent 5 hours on this project on February 4 reading the book, designing a solution, writing code, fixing errors and putting together the printed document.

I liked your code. Good documentation!

```

/**
 * This program simulates a vending machine that sales pepsi.
 *
 * Author: Aaron Teague
 *
 */

/** import statements for different formats */
import java.text.DecimalFormat;
import java.text.NumberFormat;

public class VendingMachine
{
    /** The amount of money entered in the machine */
    private int creditbalance;
    /** The amount of product in stock */
    private int inventory;
    /** The total amount of sales */
    private int totalsales;
    /** The price of one pepsi in pennies */
    private final int price = 125;
```

CAPS

-1

```

    /** The default constructor. */
    public VendingMachine ()
    {
        creditbalance = 0;
        totalsales = 0;
        inventory = 10;
    }

    /** This constructor will allow the user to enter the amount of units in stock. */
    public VendingMachine (int units)
    {
        creditbalance = 0;
        totalsales = 0;
        inventory = units;
    }

    /** Returns the price of a pepsi. */
    public int getPrice ( )
    {
        return price;
    }

    /** Returns the amount of inventory. */
    public int getInventory ( )
    {
```

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            return inventory;
        }

        /** Returns the amount of change inserted. */
        public int getCredit ( )
        {
            return creditbalance;
        }

        /** Returns the total amount of sales. */
        public int getTotalSales ( )
        {
            return totalsales;
        }

        /** Displays a greeting or warning if the machine is out of stock. */
        public void displayGreeting ( )
        {
            //checks if inventory is not 0
            if(inventory != 0)
            {
                System.out.println("Ice cold pop!");
                System.out.println("Price: " + formatDollars(price));
            }
            else
            {
                //prints if the machine is out of stock
                System.out.println("Machine is out of stock.");
            }
        }

        /** Adds the amount of units passed in to the inventory. */
        public void restock (int units)
        {
            //checks to see if units is great than 0
            if(units > 0)
            {
                inventory = inventory + units;
            }
        }

        /** Cancels the sale. */
        public void cancelSale ( )
        {
            //Sets the credit balance to 0
            creditbalance = 0;
            //Displays the greeting
            displayGreeting ( );
        }
```

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    /** Adds the amount passed in to the creditbalance. */
    public void insertMoney (int amount)
    {

        //Checks to see if inventory is 0
        if(inventory == 0)
        {
            //Displays greeting
            displayGreeting ( );
            //Cancels the order
            cancelSale();
        }
        else
        {
            //Makes sure the money is inserted in correct amounts
            if(amount == 5 || amount == 10 ||  amount == 25 || amount == 100)
            {
               creditbalance = creditbalance + amount;
               System.out.println("Your current balance: " + formatDollars(creditbalance) + "\t" + "Price: " + formatDollars(price));
            }
            else
            {
                //Displays if the the user entered in a wrong amount
                System.out.println("Incorrect amount: " + amount + "  *** You need to enter: 5,10,25 or 100 ***");
            }
        }
        //Checks if the creditbalance is larder than or equal to 125
        if( creditbalance >= 125)
        {
            //Displays if creditbalance is larder than or equal to 125
            System.out.println("Please make a selection...");
        }

    }

    /** Allows the user to make a selection based on the amount in credit balance. */
    public void makeSelection ( )
    {
        //Checks to make sure there is inventory
        if( inventory == 0)
        {
            displayGreeting ( );
        }

        //Checks to see if creditbalance is equal to 125
        if(creditbalance == 125)
        {
            System.out.println("Dispensing a Pepsi");
            //Removes 1 unit from inventory
            inventory = inventory - 1;
            //Adds 125 cents to totalsale
            totalsales = totalsales + 125;
            //Subtracts 125 from creditbalance
            creditbalance = creditbalance - 125;
        }

        //Check if creditbalance is great than or equal to 125.
        if( creditbalance >= 125)
        {
            System.out.println("Dispensing a Pepsi");
            //Removes 1 unit from the inventory
            inventory = inventory - 1;
            //Adds 125 cents to totalsales
            totalsales = totalsales + 125;
            //Subtracts 125 cents from the creditbalance
            creditbalance = creditbalance - 125;
            //Displays how much change is returned in dollars
            System.out.println("Your change is: " + formatDollars(creditb
alance));
            //Changes creditbalance to 0
            creditbalance = 0;

        }

        //Checks if creditbalance is less than 125
        if( creditbalance < 125 )
        {
            //Displays the current balance in dollars
            System.out.println("Your current balance: " + formatDollars(c
reditbalance));
            //Displays the price of a pepsi in dollars
            System.out.println("Price: " + formatDollars(price));
        }
    }

    /** Formats into dollars. */
    public String formatDollars (int amount)
    {
        //Assigns x to amount
        double x = amount;
        //Assigns y to x divided by 100
        double y = x / 100;
        //Declares a Decimal Format
```

- 2

↑ You were instructed not to use any JAVA class to format.

```
        DecimalFormat fmt = new DecimalFormat("$0.00");
        //Returns y in the decimal format
        return fmt.format(y);
    }

    /** Displays total sales in dollars. */
    public void displayStatus ( )
    {
        double x = totalsales;
        NumberFormat fmt1 = NumberFormat.getCurrencyInstance();
        System.out.println("Total Sales: " + fmt1.format(x/100));
    }


    /** Simulates sales: inserting 100 and 25, and making a selection */
    public void simulateSales (int sales)
    {
        //Adds sales to inventory
        restock(sales);
        //loops while sales is positive
        while(sales > 0)
        {
            insertMoney(100);
            insertMoney(25);
            makeSelection();
            sales--;

        }
        displayStatus();
    }

}
```

```java

/**
 * Write a description of class driverVendingMachine here.
 *
 * @author (your name)
 * @version (a version number or a date)
 */
public class driverVendingMachine
{
    public static void main(String [] args)
    {

        VendingMachine a = new VendingMachine();
        a.displayGreeting();
        a.insertMoney(100);
        a.insertMoney(2);
        a.makeSelection();
        a.restock(5);
        System.out.println("There are currently " + a.getInventory() + " in stock.");
        a.displayStatus();
        a.insertMoney(100);
        a.insertMoney(25);
        a.insertMoney(1);
        a.cancelSale();
        a.simulateSales(4);

        VendingMachine b = new VendingMachine(50);
        b.displayGreeting();
        b.insertMoney(300);
        b.insertMoney(100);
        b.insertMoney(25);
        b.insertMoney(10);
        b.insertMoney(100);
        b.insertMoney(5);
        b.insertMoney(100);
        b.makeSelection();
        b.displayStatus();
        System.out.println("The total number of sales: " + b.getTotalSales());
        System.out.println("The price: " + b.getPrice());
        b.insertMoney(100);
        b.cancelSale();
        b.simulateSales(2);


    }
}

```

```
Dispensing a Pepsi
Your current balance: $0.00
Price: $1.25
Your current balance: $1.00   Price: $1.25
Your current balance: $1.25   Price: $1.25
Please make a selection...
Dispensing a Pepsi
Your current balance: $0.00
Price: $1.25
Total Sales: $5.00
Ice cold pop!
Price: $1.25
Incorrect amount: 300 *** You need to enter: 5,10,25 or 100 ***
Your current balance: $1.00   Price: $1.25
Your current balance: $1.25   Price: $1.25
Please make a selection...
Your current balance: $1.35   Price: $1.25
Please make a selection...
Your current balance: $2.35   Price: $1.25
Please make a selection...
Your current balance: $2.40   Price: $1.25
Please make a selection...
Your current balance: $3.40   Price: $1.25
Please make a selection...
Dispensing a Pepsi
Your change is: $2.15
Your current balance: $0.00
Price: $1.25
Total Sales: $1.25
The total number of sales: 125
The price: 125
Your current balance: $1.00   Price: $1.25
Ice cold pop!
Price: $1.25
Your current balance: $1.00   Price: $1.25
Your current balance: $1.25   Price: $1.25
Please make a selection...
Dispensing a Pepsi
Your current balance: $0.00
Price: $1.25
Your current balance: $1.00   Price: $1.25
Your current balance: $1.25   Price: $1.25
Please make a selection...
Dispensing a Pepsi
Your current balance: $0.00
Price: $1.25
Total Sales: $3.75
```