Work on project. Stage 5/6: Keep track of the supplies

Project: Coffee Machine

Medium 38 minutes ?

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Description

But just one action isn’t interesting. Let's improve the program so it can do multiple actions, one after another. The program should repeatedly ask what the user wants to do. If the user types "buy", "fill" or "take", then just do what the program did in the previous step. However, if the user wants to switch off the coffee machine, he should type "exit". Then the program should terminate. Also, when the user types "remaining", the program should output all the resources that the coffee machine has. This means that you shouldn't show the remaining stock levels at the beginning/end of the program.

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Also, do not forget that you can be out of resources for making coffee. If the coffee machine doesn’t have enough resources to make coffee, the program should output a message that says it can't make a cup of coffee and state what is missing.

And the last improvement to the program at this step—if the user types "buy" to buy a cup of coffee and then changes his mind, he should be able to type "back" to return into the main cycle.

Remember, that:

- For the espresso, the coffee machine needs 250 ml of water and 16 g of coffee beans. It costs $4.
- For the latte, the coffee machine needs 350 ml of water, 75 ml of milk, and 20 g of coffee beans. It costs $7.
- And for the cappuccino, the coffee machine needs 200 ml of water, 100 ml of milk, and 12 g of coffee. It costs $6.

Instruction

Write a program that will work endlessly to make coffee for all interested persons until the shutdown signal is given.

Example

Your coffee machine should have the same initial resources as in the example (400 ml of water, 540 ml of milk, 120 g of coffee beans, 9 disposable cups, $550 in cash).
The symbol `>` represents the user input. Note that it's not part of the input.

```
Write action (buy, fill, take, remaining, exit):
> remaining

The coffee machine has:
400 ml of water
540 ml of milk
120 g of coffee beans
9 disposable cups
$550 of money

Write action (buy, fill, take, remaining, exit):
> buy

What do you want to buy? 1 - espresso, 2 - latte, 3 - cappuccino, back - to main menu:
> 2
I have enough resources, making you a coffee!

Write action (buy, fill, take, remaining, exit):
> remaining

The coffee machine has:
50 ml of water
465 ml of milk
100 g of coffee beans
8 disposable cups
$557 of money

Write action (buy, fill, take, remaining, exit):
> buy

What do you want to buy? 1 - espresso, 2 - latte, 3 - cappuccino, back - to main menu:
> 2
Sorry, not enough water!

Write action (buy, fill, take, remaining, exit):
> fill

Write how many ml of water you want to add:
> 1000
Write how many ml of milk you want to add:
> 0
Write how many grams of coffee beans you want to add:
> 0
Write how many disposable cups of coffee you want to add:
> 0

Write action (buy, fill, take, remaining, exit):
> remaining

The coffee machine has:
1050 ml of water
465 ml of milk
100 g of coffee beans
8 disposable cups
$557 of money

Write action (buy, fill, take, remaining, exit):
> buy

What do you want to buy? 1 - espresso, 2 - latte, 3 - cappuccino, back - to main menu:
> 2
I have enough resources, making you a coffee!

Write action (buy, fill, take, remaining, exit):
> remaining

The coffee machine has:
700 ml of water
390 ml of milk
80 g of coffee beans
7 disposable cups
$564 of money

Write action (buy, fill, take, remaining, exit):
> take

I gave you $564
```

```
Write action (buy, fill, take, remaining, exit):
> remaining

The coffee machine has:
700 ml of water
390 ml of milk
80 g of coffee beans
7 disposable cups
$0 of money

Write action (buy, fill, take, remaining, exit):
> exit
```

Report a typo

See hint

Write a program

Code Editor IDE

Java

```java
package machine;
import java.util.Scanner;

public class CoffeeMachine{
    public static int water;
    public static int milk;
    public static int bean;
    public static int dcup;
    public static int money;

    public static void initialize(){
        water = 400;
        milk = 540;
        bean = 120;
        dcup = 9;
        money = 550;
    }

    public static void main(String[] args) {
        initialize();
        action();
    }

    public static void action(){
        Scanner sc = new Scanner(System.in);
        while(true){
            System.out.println("\nWrite action (buy, fill, take, remaining, exit): ");
            String str = sc.nextLine();
            if(str.equals("exit")){
                return;
            }
            else if(str.equals("take")){
                take();
            }
            else if(str.equals("fill")){
                fill();
            }

            else if(str.equals("buy")){
                buy();
            }
            else if(str.equals("remaining")){
                machineState();
            }
        }
    }

    public static void buy(){
        Scanner sc = new Scanner(System.in);
        System.out.println("\nWhat do you want to buy? 1 - espresso, 2 - latte, 3 - cappuccino, back - to main menu:");
        if(!(sc.hasNextInt())){
            String st = sc.nextLine();
            return;
        }
        int choice = sc.nextInt();
        if(choice == 1){
            if(isEnough(250, 0, 16)){
                System.out.println("I have enough resources, making you a coffee!\n");
                water -= 250;
                bean -= 16;
                money += 4;
                dcup--;
            }
        }
        else if(choice == 2){
            if(isEnough(250, 0, 16)){
                System.out.println("I have enough resources, making you a coffee!\n");
                water -= 350;
                milk -= 75;
                bean -= 20;
                money += 7;
                dcup--;
            }
        }
        else if(choice == 3){
            if(isEnough(250, 0, 16)){
                System.out.println("I have enough resources, making you a coffee!\n");
                water -= 200;
                milk -= 100;
                bean -= 12;
                money += 6;
                dcup--;
            }
        }
    }

    public static boolean isEnough(int wate, int mil, int bea){
        boolean a = true;
        if(water < wate){
            a = false;
            System.out.println("Sorry, not enough water!");
        }
        if(milk < mil){
            a = false;
            System.out.println("Sorry, not enough milk!");
        }
        if(bean < bea){
            a = false;
            System.out.println("Sorry, not enough coffee beans!");
        }
        if(dcup < 1){
            System.out.println("Sorry, not enough disposable cups");
            a = false;
        }
        return(a);
    }

    public static void fill(){
        Scanner sc = new Scanner(System.in);
        System.out.println("\nWrite how many ml of water you want to add:");
        water += sc.nextInt();
        System.out.println("Write how many ml of milk you want to add:");
        milk += sc.nextInt();
        System.out.println("Write how many grams of coffee beans you want to add:");
        bean += sc.nextInt();
        System.out.println("Write how many disposable cups of coffee you want to add:");
        dcup += sc.nextInt();
    }

    public static void take(){
        System.out.println("\nI gave you $" + (money));
        money = 0;
    }

    public static void machineState(){
        System.out.println("\nThe coffee machine has:");
        System.out.println((water)+ " ml of water");
        System.out.println((milk) + " ml of milk");
        System.out.println((bean) + " g of coffee beans");
        System.out.println((dcup) + " disposable cups");
        System.out.println("$" +(money)+ " of money");
    }

    public static void printOrder(int cup, int order){
        if(cup == order){
            System.out.println("Yes, I can make that amount of coffee");
        }
        else if(cup < order){
            System.out.println("No, I can make only " + (cup) + "cup(s) of coffee");
        }
        else{
            System.out.print("Yes, I can make that amount of coffee (and even " + (cup - order) + "more than that)");
        }
    }

    public static int getCups(int water, int milk, int coffee){
        int cup = 0;
        while(!(water < 1 && milk < 1 && coffee < 1)){
            water -= 200;
            milk -= 50;
            coffee -= 15;
            if(water >= 0 && milk >= 0 && coffee >= 0){
                cup++;
            }
        }
        return(cup);
    }
}
```

✓ Correct.

Install an IDE to get access to powerful debugging tools which let you examine your solution step by step.

553 users liked this problem. 38 didn't like it. **What about you?**

😍 🙂 😐 🙁 😡

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