Coffee Beans Management System

Master Class in Java

Description:

Create Coffee BeansManagement System (CBMS) in Java. CBMS is widely used software. It can be any complexity. Our example is basic one, which have the following features:

1. storage for the coffee beans
2. ability to add new type of coffee beans in the library
3. ability remove the book from the library
4. ability to print the information about coffee beans on the console

CSMS structure:

We will need the following classes for the software:

1. Coffee – Coffee type itself.
2. CBMS – Coffee beans management system.
3. CoffeeShopTester – the tester class. This class will be used to test our management system.

Class Coffee

The class Coffee should have several fields, including name and weight. This class can be implemented in the
following way:

```
public class Coffee {
    private String name;
    private Integer weight;

    public String getName() {
        return name;
    }

    public Integer getWeight() {
        return weight;
    }

    public void setName(String name) {
        this.name = name;
    }

    public void setWeight(Integer weight) {
        this.weight = weight;
    }
}
```

Class CBMS

The coffee beans management system should have an inner structure for storing coffee. The management system should have methods for adding the new coffee types and removing the old ones. It should have the ability to print the entire library content when needed. It also should have the ability to change weight of the specific coffee type stored. The class can be implemented in the following way:

```
public class CBMS {
    private List<Coffee> storage = new ArrayList<Coffee>();

    // adds the coffee to the storage
    public void addCoffee(Coffee coffee) {
        storage.add(coffee);
    }

    //adds weight to the exisiting coffee
    public void setWeight(String name, Integer weight) {
        for (int i = 0; i < storage.size(); i++) {
            Coffee c = storage.get(i);
            if (c.getName().equals(name)) {
                c.setWeight(weight);
                break;
            }
        }
    }
    // removes the coffee type from the storage
    public boolean removeCoffee(Coffee coffee) {
        boolean removed = false;
        for (int i = 0; i < storage.size(); i++) {
            Coffee c = storage.get(i);
            if (c.getName().equals(coffee.getName()) &&
c.getWeight().equals(coffee.getWeight())) {
                storage.remove(i);
                removed = true;
                break;
            }
        }
        return removed;
    }

    public void printStorage() {
        if (storage.isEmpty()) {
            System.out.println("The storage is empty");
        } else {
            for (Coffee c : storage) {
                System.out.printf("Coffee type: %s\nAmount(kg): %d\n",
c.getName(), c.getWeight());
            }
        }

    }
}
```

Class CoffeeShopTester

Now let's test our management system. First, create some coffee types. Then create CBMS and add those books to the coffee storage using the CBMS. Then try to remove some of the coffee types. Then try to change the weight of the stored coffee types.

```
public class storageTester {
   public static void main(String[] args) {
       Coffee c1 = new Coffee();
       c1.setName("Arabica");
       c1.setWeight(1453);

       Coffee c2 = new Coffee();
       c2.setName("Robusta");
       c2.setWeight(1991);

       Coffee c3 = new Coffee();
       c3.setName("Brazil");
       c3.setWeight(2000);

       CBMS cbms = new CBMS();
       cbms.addCoffee(c1);
       cbms.addCoffee(c2);
       cbms.addCoffee(c3);

       cbms.removeCoffee(c2);

       cbms.setWeight("Arabica", 2001);

       cbms.printStorage();
   }
}
```