

Section 7 Part 2: Creating an Inventory Project

Project Overview

- Create an inventory program that can be used for a range of different products (CDs, DVDs, software, etc.)
- The program will be built upon throughout Sections 4, 5, 6, and 7 of the course
- Include all parts in a package called inventory

Scenario

- A company that sells exclusively CDs and DVDs wants to customize the inventory software to store additional information for their products
- The software needs to store the length, age rating, and film studio for DVDs, as well as the artist, number of songs, and label for CDs

Task 1: Update Design Tables

- Complete a sample data table for a list of DVD movies
- Update the design tables to include the additional fields for DVDs and CDs

Task 2: Implement Inheritance

- Create a subclass of the Product class called DVD with additional instance fields for movie length, age rating, and film studio
- Create a single constructor that accepts values for every instance field for both the DVD and Product classes
- Create getters and setters for the DVD instance fields
- Follow the same process to create a subclass of Product named CD

Task 3: Override Method

- In the DVD subclass, override the method to calculate the value of the inventory of a DVD with the same name as that method previously created in the Product class
- The DVD subclass method should also add a 5% restocking fee to the value of the inventory of that product

Task 4: Define Output

- Override the toString() method from the Product class so that all information about new subclass objects (DVDs) can be printed to the output console
- Do the same in the CD class

Task 5: Modify ProductTester Class

- Modify the ProductTester class to populate the products array with either CD or DVD objects
- Create a new method addCDToInventory that prompts the user for CD-specific information and creates a CD object
- Update the prompts to ask the user for the information in the correct order
- Follow the same process to create a DVD object

Task 6: Update addInventory Method

- Update the addInventory method to allow the user to select to add a CD or DVD
- Prompt the user for a value to choose between CD or DVD objects

- Handle invalid input and re-prompt the user until a valid input is provided
- Use the appropriate add method to create a CD or DVD object

Task 7: Run and Test Code

- Run and test the code to ensure it works as expected

Task 8: Update addInventory Method (Again)

- Update the addInventory method to stop the adding of stock to a discontinued product line
- Run and test the code again to ensure it works as expected

Task 9: Save Project

- Save the project once it is complete and tested.

// Product.java

```
public class Product {
    private int itemNumber;
    private String name;
    private double price;
    private int quantityInStock;
    private boolean isActive;

    public Product(int itemNumber, String name, double price, int quantityInStock, boolean
isActive) {
        this.itemNumber = itemNumber;
        this.name = name;
        this.price = price;
        this.quantityInStock = quantityInStock;
        this.isActive = isActive;
    }

    public int getItemNumber() {
        return itemNumber;
    }

    public String getName() {
        return name;
    }

    public double getPrice() {
        return price;
    }

    public int getQuantityInStock() {
        return quantityInStock;
    }

    public boolean isActive() {
        return isActive;
    }

    public double calculateStockValue() {
        return price * quantityInStock;
    }
}
```

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