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class Item {
    private String name;
    private double unitPrice;
    private int quantity;

    public Item(String name, double unitPrice, int quantity) {
        this.name = name;
        this.unitPrice = unitPrice;
        this.quantity = quantity;
    }

    public String getName() { return name; }
    public double getUnitPrice() { return unitPrice; }
    public int getQuantity() { return quantity; }

    public double getTotalPrice() {
        return unitPrice * quantity;
    }

    public void setQuantity(int quantity) {
        this.quantity = quantity;
    }
}
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import java.util.ArrayList;
import java.util.List;
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class User {
    private String name;
    private String contactNumber;
    private Cart cart;

    public User(String name, String contactNumber) {
        this.name = name;
        this.contactNumber = contactNumber;
        this.cart = new Cart();
    }

    public Cart getCart() {
        return cart;
    }
}

class Cart {
    private List<Item> items;

    public Cart() {
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        this.items = new ArrayList<>();
    }

    public void addItem(Item item) {
        for (Item existingItem : items) {
            if (existingItem.getName().equals(item.getName())) {
                existingItem.setQuantity(existingItem.getQuantity() + item.getQuantity());
                return;
            }
        }
        items.add(item);
    }

    public void removeItem(String itemName) {
        items.removeIf(item -> item.getName().equals(itemName));
    }

    public double getTotalBill() {
        double total = 0;
        for (Item item : items) {
            total += item.getTotalPrice();
        }
        return total;
    }

    public void displayCart() {
        System.out.println("Items in Cart:");
        for (Item item : items) {
            System.out.println(item.getName() + " - " + item.getQuantity() + " units - $" +
item.getTotalPrice());
        }
        System.out.println("Total Bill: $" + getTotalBill());
    }
}

class Payment {
    public void payByCash(double totalBill, double cashPaid) {
        if (cashPaid >= totalBill) {
            double change = cashPaid - totalBill;
            System.out.println("Payment successful! Change returned: $" + change);
        } else {
            System.out.println("Insufficient cash provided. Please provide more.");
        }
    }

    public void payByCreditCard(double totalBill, String cardNumber) {

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        if (isValidCard(cardNumber)) {
            System.out.println("Payment successful! Paid $" + totalBill + " by credit card.");
        } else {
            System.out.println("Invalid card number. Payment failed.");
        }
    }
}

private boolean isValidCard(String cardNumber) {
    return cardNumber.length() == 10;
}
}

import java.util.Scanner;

public class GroceryShopTest {
    public static void main(String[] args) {
        User user = new User("Alice", "123-456-7890");
        Cart cart = user.getCart();
        Payment payment = new Payment();
        Scanner scanner = new Scanner(System.in);

        // Adding items to the cart
        cart.addItem(new Item("Apple", 0.5, 5));
        cart.addItem(new Item("Banana", 0.2, 10));
        cart.displayCart();

        // Removing an item from the cart
        System.out.print("Enter the name of the item to remove: ");
        String itemName = scanner.nextLine();
        cart.removeItem(itemName);
        cart.displayCart();

        // Paying the bill
        System.out.println("Choose payment method: 1 for Cash, 2 for Credit Card");
        int choice = scanner.nextInt();

        if (choice == 1) {
            System.out.print("Enter cash amount: ");
            double cash = scanner.nextDouble();
            payment.payByCash(cart.getTotalBill(), cash);
        } else if (choice == 2) {
            System.out.print("Enter credit card number: ");
            scanner.nextLine(); // Consume the newline
            String cardNumber = scanner.nextLine();
            payment.payByCreditCard(cart.getTotalBill(), cardNumber);
        } else {

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        System.out.println("Invalid payment option.");  
    }  
  
    scanner.close();  
}  
}
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