WEEK 9

Mid Term

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Class
1I

Major
Information Technology

Study Program
D4 Informatics Engineering

Item
itemCode: int
name: String
category: String
stock: int
Item(itemCode: int, name: String, category: String, stock: int)
toString(): String

StockManagement
listItem: item[]
idx: int
addItem(item: Item): void
displayAllItems(): void
sortItemsByStock(): void
displayFoodItemsWithNoStock(): void
searchItemByName(keyword: String): void
addStock(itemCode: int, quantity: int): void
decreaseStock(itemCode: int, quantity: int): void

Item Class

```java
Practice > Week9 > J Item.java > ...
1    package Week9;
2
3    public class Item {
4        int itemCode;
5        String name;
6        String category;
7        int stock;
8
9        // Constructor
10       public Item(int itemCode, String name, String category, int stock) {
11           this.itemCode = itemCode;
12           this.name = name;
13           this.category = category;
14           this.stock = stock;
15       }
16
17       public String toString() {
18           return "Item Code: " + itemCode + ", Name: " + name + ", Category: " + category + ", Stock: " + stock;
19       }
20   }
21
```

StockManagement Class

```java
package Week9;

public class StockManagement {
    Item[] listItem;
    int idx;

    public StockManagement() {
        listItem = new Item[100];
        idx = 0;
    }

    // Method to add an item
    public void addItem(Item item) {
        listItem[idx++] = item;
    }

    // Method to display all items
    public void displayAllItems() {
        for (int i = 0; i < idx; i++) {
            System.out.println(listItem[i]);
        }
    }

    // Method to sort items by stock
    public void sortItemsByStock() {
        for (int i = 0; i < idx - 1; i++) {
            for (int j = 0; j < idx - i - 1; j++) {
                if (listItem[j].stock > listItem[j + 1].stock) {
                    Item temp = listItem[j];
                    listItem[j] = listItem[j + 1];
                    listItem[j + 1] = temp;
                }
            }
        }
    }

    // Method to display food items with no stock
    public void displayFoodItemsWithNoStock() {
        for (int i = 0; i < idx; i++) {
            if (listItem[i].category.equalsIgnoreCase(anotherString:"food") && listItem[i].stock == 0) {
                System.out.println(listItem[i]);
            }
        }
    }

    // Method to search for an item by name
    public void searchItemByName(String keyword) {
        for (int i = 0; i < idx; i++) {
            if (listItem[i].name.equalsIgnoreCase(keyword)) {
                System.out.println(listItem[i]);
            }
        }
    }

    // Method to add stock for a certain item
    public void addStock(int itemCode, int quantity) {
        for (int i = 0; i < idx; i++) {
            if (listItem[i].itemCode == itemCode) {
                listItem[i].stock += quantity;
                break;
            }
        }
    }

    // Method to decrease stock for a certain item
    public void decreaseStock(int itemCode, int quantity) {
        for (int i = 0; i < idx; i++) {
            if (listItem[i].itemCode == itemCode) {
                listItem[i].stock = Math.max(a:0, listItem[i].stock - quantity);
                break;
            }
        }
    }
}
```

StockManagementMain Class

```java
package Week9;

import java.util.Scanner;

public class StockManagementMain {
    Run | Debug
    public static void main(String[] args) {
        StockManagement stockManagement = new StockManagement();
        Scanner scanner = new Scanner(System.in);

        // Adding initial items
        stockManagement.addItem(new Item(itemCode:16030927, name:"Indomilk", category:"drink", stock:100));
        stockManagement.addItem(new Item(itemCode:16100617, name:"Sprite", category:"drink", stock:70));
        stockManagement.addItem(new Item(itemCode:16240401, name:"Yakult", category:"drink", stock:500));
        stockManagement.addItem(new Item(itemCode:16270525, name:"Indomie", category:"food", stock:250));
        stockManagement.addItem(new Item(itemCode:16971204, name:"Oreo", category:"food", stock:320));
        stockManagement.addItem(new Item(itemCode:16100727, name:"Chocochips", category:"food", stock:120));
        stockManagement.addItem(new Item(itemCode:16460329, name:"Ballpoint", category:"stationary", stock:75));
        stockManagement.addItem(new Item(itemCode:16320421, name:"Pencil", category:"stationary", stock:110));
        stockManagement.addItem(new Item(itemCode:16180729, name:"Book", category:"stationary", stock:57));

        // Menu loop
        boolean exit = false;
        while (!exit) {
            System.out.println(x:"\nStock Management System Menu:");
            System.out.println(x:"1. Add Item");
            System.out.println(x:"2. Display All Items");
            System.out.println(x:"3. Sort Items by Stock");
            System.out.println(x:"4. Display Food Items with No Stock");
            System.out.println(x:"5. Search Item by Name");
            System.out.println(x:"6. Add Stock for Item");
            System.out.println(x:"7. Decrease Stock for Item");
            System.out.println(x:"8. Exit");

            System.out.print(s:"Enter your choice: ");
            int choice = scanner.nextInt();
            scanner.nextLine();

            switch (choice) {
                case 1:
                    System.out.println(x:"Enter item details:");
                    System.out.print(s:"Item Code: ");
                    int itemCode = scanner.nextInt();
                    scanner.nextLine();
                    System.out.print(s:"Name: ");
                    String name = scanner.nextLine();
                    System.out.print(s:"Category: ");
                    String category = scanner.nextLine();
                    System.out.print(s:"Stock: ");
                    int stock = scanner.nextInt();
                    scanner.nextLine();

                    stockManagement.addItem(new Item(itemCode, name, category, stock));
                    System.out.println(x:"Item added successfully!");
                    break;
                case 2:
                    System.out.println(x:"Displaying all items:");
                    stockManagement.displayAllItems();
                    break;
                case 3:
                    System.out.println(x:"Sorting items by stock:");
                    stockManagement.sortItemsByStock();
                    stockManagement.displayAllItems();
                    break;
                case 4:
                    System.out.println(x:"Displaying food items with no stock:");
                    stockManagement.displayFoodItemsWithNoStock();
                    break;
                case 5:
                    System.out.print(s:"Enter item name: ");
                    String keyword = scanner.nextLine();
                    System.out.println("Searching for items with name '" + keyword + "':");
                    stockManagement.searchItemByName(keyword);
                    break;
                case 6:
                    System.out.print(s:"Enter item code to add stock: ");
                    int codeToAddStock = scanner.nextInt();
                    System.out.print(s:"Enter quantity to add: ");
                    int quantityToAdd = scanner.nextInt();
                    stockManagement.addStock(codeToAddStock, quantityToAdd);
                    System.out.println(x:"Stock added successfully!");
                    break;
```

```java
            case 7:
                System.out.print(s:"Enter item code to decrease stock: ");
                int codeToDecreaseStock = scanner.nextInt();
                System.out.print(s:"Enter quantity to decrease: ");
                int quantityToDecrease = scanner.nextInt();
                stockManagement.decreaseStock(codeToDecreaseStock, quantityToDecrease);
                System.out.println(x:"Stock decreased successfully!");
                break;
            case 8:
                exit = true;
                System.out.println(x:"Exiting program.");
                break;
            default:
                System.out.println(x:"Invalid choice. Please enter a number between 1 and 8.");
        }
    }

    scanner.close();
    }
}
```

Output

```
Stock Management System Menu:
1. Add Item
2. Display All Items
3. Sort Items by Stock
4. Display Food Items with No Stock
5. Search Item by Name
6. Add Stock for Item
7. Decrease Stock for Item
8. Exit
Enter your choice: 2
Displaying all items:
Item Code: 16030927, Name: Indomilk, Category: drink, Stock: 100
Item Code: 16100617, Name: Sprite, Category: drink, Stock: 70
Item Code: 16240401, Name: Yakult, Category: drink, Stock: 500
Item Code: 16270525, Name: Indomie, Category: food, Stock: 250
Item Code: 16971204, Name: Oreo, Category: food, Stock: 320
Item Code: 16100727, Name: Chocochips, Category: food, Stock: 120
Item Code: 16460329, Name: Ballpoint, Category: stationary, Stock: 75
Item Code: 16320421, Name: Pencil, Category: stationary, Stock: 110
Item Code: 16180729, Name: Book, Category: stationary, Stock: 57

Stock Management System Menu:
1. Add Item
2. Display All Items
3. Sort Items by Stock
4. Display Food Items with No Stock
5. Search Item by Name
6. Add Stock for Item
7. Decrease Stock for Item
8. Exit
Enter your choice: 1
Enter item details:
Item Code: 16879086
Name: Macaroni
Category: food
Stock: 0
Item added successfully!

Stock Management System Menu:
1. Add Item
2. Display All Items
3. Sort Items by Stock
4. Display Food Items with No Stock
5. Search Item by Name
6. Add Stock for Item
7. Decrease Stock for Item
8. Exit
```

```
Enter your choice: 3
Sorting items by stock:
Item Code: 16879086, Name: Macaroni, Category: food, Stock: 0
Item Code: 16180729, Name: Book, Category: stationary, Stock: 57
Item Code: 16100617, Name: Sprite, Category: drink, Stock: 70
Item Code: 16460329, Name: Ballpoint, Category: stationary, Stock: 75
Item Code: 16030927, Name: Indomilk, Category: drink, Stock: 100
Item Code: 16320421, Name: Pencil, Category: stationary, Stock: 110
Item Code: 16100727, Name: Chocochips, Category: food, Stock: 120
Item Code: 16270525, Name: Indomie, Category: food, Stock: 250
Item Code: 16971204, Name: Oreo, Category: food, Stock: 320
Item Code: 16240401, Name: Yakult, Category: drink, Stock: 500

Stock Management System Menu:
1. Add Item
2. Display All Items
3. Sort Items by Stock
4. Display Food Items with No Stock
5. Search Item by Name
6. Add Stock for Item
7. Decrease Stock for Item
8. Exit
Enter your choice: 4
Displaying food items with no stock:
Item Code: 16879086, Name: Macaroni, Category: food, Stock: 0

Stock Management System Menu:
1. Add Item
2. Display All Items
3. Sort Items by Stock
4. Display Food Items with No Stock
5. Search Item by Name
6. Add Stock for Item
7. Decrease Stock for Item
8. Exit
Enter your choice: 5
Enter item name: pencil
Searching for items with name 'pencil':
Item Code: 16320421, Name: Pencil, Category: stationary, Stock: 110

Stock Management System Menu:
1. Add Item
2. Display All Items
3. Sort Items by Stock
4. Display Food Items with No Stock
5. Search Item by Name
6. Add Stock for Item
7. Decrease Stock for Item
8. Exit
Enter your choice: 6
Enter item code to add stock: 16460329
Enter quantity to add: 30
Stock added successfully!
```

```
1. Add Item
2. Display All Items
3. Sort Items by Stock
4. Display Food Items with No Stock
5. Search Item by Name
6. Add Stock for Item
7. Decrease Stock for Item
8. Exit
Enter your choice: 2
Displaying all items:
Item Code: 16879086, Name: Macaroni, Category: food, Stock: 0
Item Code: 16180729, Name: Book, Category: stationary, Stock: 57
Item Code: 16100617, Name: Sprite, Category: drink, Stock: 70
Item Code: 16460329, Name: Ballpoint, Category: stationary, Stock: 105
Item Code: 16030927, Name: Indomilk, Category: drink, Stock: 100
Item Code: 16320421, Name: Pencil, Category: stationary, Stock: 110
Item Code: 16100727, Name: Chocochips, Category: food, Stock: 120
Item Code: 16270525, Name: Indomie, Category: food, Stock: 250
Item Code: 16971204, Name: Oreo, Category: food, Stock: 320
Item Code: 16240401, Name: Yakult, Category: drink, Stock: 500

Stock Management System Menu:
1. Add Item
2. Display All Items
3. Sort Items by Stock
4. Display Food Items with No Stock
5. Search Item by Name
6. Add Stock for Item
7. Decrease Stock for Item
8. Exit
Enter your choice: 7
Enter item code to decrease stock: 16240401
Enter quantity to decrease: 150
Stock decreased successfully!

Stock Management System Menu:
1. Add Item
2. Display All Items
3. Sort Items by Stock
4. Display Food Items with No Stock
5. Search Item by Name
6. Add Stock for Item
7. Decrease Stock for Item
8. Exit
Enter your choice: 2
Displaying all items:
Item Code: 16879086, Name: Macaroni, Category: food, Stock: 0
Item Code: 16180729, Name: Book, Category: stationary, Stock: 57
Item Code: 16100617, Name: Sprite, Category: drink, Stock: 70
Item Code: 16460329, Name: Ballpoint, Category: stationary, Stock: 105
Item Code: 16030927, Name: Indomilk, Category: drink, Stock: 100
Item Code: 16320421, Name: Pencil, Category: stationary, Stock: 110
Item Code: 16100727, Name: Chocochips, Category: food, Stock: 120
Item Code: 16270525, Name: Indomie, Category: food, Stock: 250
Item Code: 16971204, Name: Oreo, Category: food, Stock: 320
Item Code: 16240401, Name: Yakult, Category: drink, Stock: 350
```

```
Stock Management System Menu:
1. Add Item
2. Display All Items
3. Sort Items by Stock
4. Display Food Items with No Stock
5. Search Item by Name
6. Add Stock for Item
7. Decrease Stock for Item
8. Exit
Enter your choice: 8
Exiting program.
```