UTS

⊙ Subject	Data Structure and Algorithm
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⊙ Type	Assignment
⊙ Semester	Semester 2
🗓 Time	@April 13, 2023
📎 Files & Media	

code

```java
package uts;

public class ItemData
{
    int itemCode, stock;
    String name, category;
    ItemData(int itemCode, int stock, String name, String category)
    {
        this.itemCode = itemCode;
        this.stock = stock;
        this.name = name;
        this.category = category;
    }

    void print()
    {
        System.out.println(itemCode + "\t\t" + category + "\t\t" + name + "\t\t" + stock);
    }
}
```

```java
package uts;

import java.util.Scanner;

public class ItemMain
{
    public static void main(String[] args)
```

```java
    {
        Scanner sc = new Scanner(System.in);
        System.out.println("========");
        System.out.println("Stock Management Program");
        System.out.println("========");
        ItemMenu menuProgram = new ItemMenu();
        int menu;
        do {
            System.out.println("Stock menu");
            System.out.println("1. Add Item");
            System.out.println("2. Display Item(s)");
            System.out.println("3. Sort Item based on stock (ascending)");
            System.out.println("4. Display Item that has no stock");
            System.out.println("5. Search Item");
            System.out.println("6. Add Stock");
            System.out.println("7. Decrease Stock");
            System.out.print("Choose Menu: ");
            menu = sc.nextInt();
            switch (menu) {
                case 1:
                    menuProgram.addItem();
                    break;
                case 2:
                    menuProgram.displayItem();
                    break;
                case 3:
                    menuProgram.sortItem();
                    break;
                case 4:
                    menuProgram.ItemNoStock();
                    break;
                case 5:
                    menuProgram.search();
                    break;
                case 6:
                    break;
                case 7:
                    break;
                default:
                    System.out.println("Please select menu correctly!");
                    break;
            }
        }
        while (menu != 0);
    }
}
```

```java
package uts;

import java.util.Scanner;
```

```java
public class ItemMenu
{
    Scanner sc = new Scanner(System.in);
    Scanner sn = new Scanner(System.in);
    ItemProgram data = new ItemProgram();

    void addItem()
    {
        System.out.println("========");
        System.out.println("Add Item");
        System.out.println("========");
        System.out.print("ItemCode = ");
        int code = sn.nextInt();
        System.out.print("Name = ");
        String name = sc.nextLine();
        System.out.print("Category = ");
        String category = sc.nextLine();
        System.out.print("Initial Stock = ");
        int stock = sn.nextInt();

        ItemData t = new ItemData(code, stock, name, category);
        data.add(t);
        System.out.println("Item added!");
        System.out.println("========");
    }

    void displayItem()
    {
        System.out.println("========");
        System.out.println("Display Item(s)");
        System.out.println("========");
        data.displayAll();
        System.out.println("========");
    }

    void sortItem()
    {
        System.out.println("========");
        System.out.println("Sort Item based on stock (ascending)");
        System.out.println("========");
        data.bubbleSort();
        data.displayAll();

        System.out.println("Data is sorted!");
        System.out.println("========");
    }

    void ItemNoStock()
    {
        System.out.println("========");
        System.out.println("Display Item that has no stock");
        System.out.println("========");
        data.displayNoStock();
        System.out.println("========");
```

```java
    }

    void search()
    {
        System.out.println("========");
        System.out.println("Search Item");
        System.out.println("========");
        System.out.print("Name = ");
        String search = sc.nextLine();
        int pos = data.findNameSequential(search);
        System.out.println("========");
        System.out.println("Data found!");
        System.out.println("========");
        data.showData(pos);
        System.out.println("========");
    }
}
```

```java
package uts;

public class ItemProgram
{
    ItemData[] item = new ItemData[9];
    int index;

    void add(ItemData t)
    {
        if (index < item.length)
        {
            item[index] = t;
            index++;
        }
        else
        {
            System.out.println("The item list is full-filled");
        }
    }

    void displayAll()
    {
        System.out.println("itemCode\t\tname\t\tcategory\t\tinitial stock");
        for (ItemData t: item)
        {
            if(t != null)
            {
                t.print();
            }
        }
    }

    void bubbleSort()
```

```
    {
        for (int i = 0; i< item.length-1; i++)
        {
            for (int j = 1; j < item.length-i; j++)
            {
                if (item[j].stock < item[j-1].stock)
                {
                    ItemData temp = item[j];
                    item[j] = item[j-1];
                    item[j-1] = temp;
                }
            }
        }
    }

    void displayNoStock()
    {
        System.out.println("food that has 0 stock is/are");
        for(int i = 0; i < item.length; i++)
        {
            if (item[i].stock == 0)
            {

                System.out.println(item[i].name);
            }
            else
            {
                System.out.println("No Food has 0 Stock");
            }
        }
    }

    int findNameSequential(String search)
    {
        for (int i = 0; i< item.length; i++)
        {
            if (item[i].name.equalsIgnoreCase(search)) return i;
        }
        return -1;
    }

    void showData(int pos)
    {
        if (pos != -1)
        {
            System.out.println("Stock \t\t : " + item[pos].stock);
            System.out.println("Name \t\t : " + item[pos].name);
            System.out.println("Category \t : " + item[pos].category);
            System.out.println("itemCode \t : " + item[pos].itemCode);
        }
        else
        {
            System.out.println("Data " + pos + " isn't found");
        }
```

```
        }
    }
```

```
========
Stock Management Program
========
Stock menu
1. Add Item
2. Display Item(s)
3. Sort Item based on stock (ascending)
4. Display Item that has no stock
5. Search Item
6. Add Stock
7. Decrease Stock
Choose Menu: 1
========
Add Item
========
ItemCode = 16030927
Name = Indomilk
Category = drink
Initial Stock = 100
Item added!
========
Stock menu
1. Add Item
2. Display Item(s)
3. Sort Item based on stock (ascending)
4. Display Item that has no stock
5. Search Item
6. Add Stock
7. Decrease Stock
Choose Menu: 1
========
Add Item
========
ItemCode = 16100617
Name = Sprite
Category = drink
Initial Stock = 70
Item added!
========
Stock menu
```

```
========
Stock menu
1. Add Item
2. Display Item(s)
3. Sort Item based on stock (ascending)
4. Display Item that has no stock
5. Search Item
6. Add Stock
7. Decrease Stock
Choose Menu: 2
========
Display Item(s)
========
itemCode        name        category        initial stock
16030927        drink       Indomilk        100
16100617        drink       Sprite      70
16240401        drink       Yakult      500
16270525        food        Indomie     250
16971204        food        Oreo        320
16100727        food        Chocochips      120
16460329        stationary      Ballpoint       75
16320421        stationary      Pencil      110
16180729        stationary      Book        57
========
```

```
========
Stock menu
1. Add Item
2. Display Item(s)
3. Sort Item based on stock (ascending)
4. Display Item that has no stock
5. Search Item
6. Add Stock
7. Decrease Stock
Choose Menu: 3
========
Sort Item based on stock (ascending)
========
itemCode         name        category         initial stock
16180729         stationary     Book          57
16100617         drink        Sprite       70
16460329         stationary     Ballpoint        75
16030927         drink        Indomilk       100
16320421         stationary      Pencil        110
16100727         food         Chocochips      120
16270525         food         Indomie      250
16971204         food         Oreo         320
16240401         drink        Yakult       500
Data is sorted!
========
```

```
========
Stock menu
1. Add Item
2. Display Item(s)
3. Sort Item based on stock (ascending)
4. Display Item that has no stock
5. Search Item
6. Add Stock
7. Decrease Stock
Choose Menu: 4
========
Display Item that has no stock
========
food that has 0 stock is/are
food that has 0 stock is/are
food that has 0 stock is/are
food that has 0 stock is/are
food that has 0 stock is/are
food that has 0 stock is/are
food that has 0 stock is/are
food that has 0 stock is/are
food that has 0 stock is/are
========
```

```
========
Stock menu
1. Add Item
2. Display Item(s)
3. Sort Item based on stock (ascending)
4. Display Item that has no stock
5. Search Item
6. Add Stock
7. Decrease Stock
Choose Menu: 5
========
Search Item
========
Name = Indomie
========
Data found!
========
Stock        : 250
Name         : Indomie
Category     : food
itemCode     : 16270525
========
```