

CSCI-2467 Lab 4 – Grocery List

Background

Write and submit the source code for the following program. The program will use a String array of size 6 to store a small grocery list. The program will read in a list of six grocery items from the user and store them in the array. The program will then sort the array of grocery items and print the sorted array.

The program must not permit duplicate items. If the user attempts to enter a duplicate item, the program will warn the user and will not add the item to the array.

This lab is part of a unit about Java loops and arrays. Although the program could be written using Java Collections (you'll learn about them later in the course) the student is expected to use loops and arrays to write this program. Using Java Collections classes and methods (other than the Arrays.sort() method) will result in a grade of zero.

Assignment

Your program should begin with the following code:

```
package edu.csc;

import java.util.Arrays;
import java.util.Scanner;

// Student name, date, and program purpose
public class Main {

    private static Scanner input = new Scanner(System.in);
    public static void main(String[] args) {
        int count = 0; // Number of items currently in the grocery list
```

- 1) Declare and instantiate a String array named `groceryList` with six elements.
- 2) Write a **while loop** to read in the grocery list from the user and add each non-duplicate item to the array. Use the variable `count` to keep track of the number of items added to the array. As you read in each item test the item to see if it is a duplicate item. If it is a duplicate output an error message to the user. If it is not a duplicate, add the item to the array and increment the variable `count`.
- 3) After the while loop has completed, sort the array `groceryList` using the following statement:

```
Arrays.sort(groceryList);
```

- 4) Next, use a **for-each loop** to print the sorted grocery list.

To test whether an item is a duplicate you will create the following method:

```
public static boolean isDuplicate(String item, String[] list, int listcnt) {
```

The `isDuplicate` method has three parameters: a String parameter `item` to check to see if it's a duplicate, a String array parameter `list` to check it against, and an integer parameter `listcnt` which contains the number of items currently

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in `list` (for example the array size might be six, but the array currently may only contain three items, so `listcnt` would be three). Implement this method and have it return `true` if item is found in the list and `false` otherwise. Use a **for loop** in your implementation. You will then call this method from your main method in order to check for duplicate grocery items.

As always use the package name `edu.csc` and include a comment with your name, the date, and the purpose of the program.

Sample Output

```
Enter grocery item: apple
Enter grocery item: peach
Enter grocery item: apple
Sorry, item: apple is a duplicate
Enter grocery item: lettuce
Enter grocery item: lettuce
Sorry, item: lettuce is a duplicate
Enter grocery item: coca cola
Enter grocery item: cheese
Enter grocery item: cookies
```

Your Grocery List

```
apple
cheese
coca cola
cookies
lettuce
peach
```

Process finished with exit code 0