

Arrays and ArrayLists Lab

1. Working with your pair programming partner, create a class called `CustomerListerArray` with a `main` method that declares and instantiates an array of `String` objects called `customerName`. The array should have room for seven `String` objects.
2. Assign each of the following `Strings` to sequential locations in the array beginning at array index 0. Please note that you have already created this array, so you are simply assigning new values to the array. Do not use an array initializer list to create the `customerName` array.

| | |
|---|--------|
| 0 | Chris |
| 1 | Lois |
| 2 | Meg |
| 3 | Pete |
| 4 | Stewie |
| 5 | |
| 6 | |

- ✓ Write an enhanced for loop to display the array of names so that each name is on a separate line. Discuss with your pair programming partner the following questions:
 - What is displayed for the last two array elements?
 - Why is it that value?
- ✓ Move the existing elements from indexes 3 and 4 so that you can add the `Strings` “Meg” and “Brian” into index 3, and 4, respectively, and the array contains the following elements in this order:

| | |
|---|--------|
| 0 | Chris |
| 1 | Lois |
| 2 | Meg |
| 3 | |
| 4 | |
| 5 | Pete |
| 6 | Stewie |



| | |
|---|--------|
| 0 | Chris |
| 1 | Lois |
| 2 | Meg |
| 3 | Meg |
| 4 | Brian |
| 5 | Pete |
| 6 | Stewie |

- ✓ Write another enhanced for loop to display the array of names.
3. Create a method with this header: `private static void modifyArray(String [] customer)`. Inside the method, write a traditional for loop that checks each element for the `String` “Meg”. If found in the array, remove the string, shift the remaining elements, and display the array of customers.
 4. Go back to the `main` method and call this method. Then write another enhanced for loop to display the array of names from the `main` method that is below the call to the `modifyArray()` method.
 - ✓ Discuss with your pair programming partner, these questions:

- Are both instances of “Meg” removed correctly from the array? Why or why not? Can you explain what you observe in your code?
 - What do you notice about the array in main and the array in the modifyArray() method. Are they the same array? Explain what is happening.
5. Show your code and demo your CustomerListerArray.java for your lab TA to earn points for this part of the lab.
 6. Create a class called CustomerListerArrayList with a main method that declares and instantiates an ArrayList of String objects called customerName. **Add** each of the following Strings to the ArrayList:
 - Chris
 - Lois
 - Meg
 - Peter
 - Stewie
 - ✓ Write an enhanced for loop to display all the String objects.
 - ✓ **Add** “Brian” so that it is the 4th name in the ArrayList. Now **add** “Meg” into the **third** position in the list (there will be two identical strings “Meg” in the list).
 - ✓ Write another enhanced for loop to display all the String objects.
 7. Write a traditional for loop to remove “Meg” and display the revised ArrayList.
 - ✓ Was “Meg” removed completely from the list? Why or why not?
 8. Demo your file CustomerListerArrayList.java for your lab TA to earn points for this part of the lab.
 9. Turn in your discussion questions for this lab to your TA to earn points for your discussion.