Assignment 3

CSIS 2175

You need to submit all .java files in a single assignment3.zip file through Blackboard by the due date. NO LATE SUBMISSION will be allowed.

1. Write a Java program to remove the duplicate elements of a given sorted integer array and remove the duplicate elements from the array. After removing the duplicate elements, the program should return the array without duplications and the length of the new array. Save the application as **RemoveDup.java**. (5 marks)

Examples:

Input: arr[] = {3, 3, 3, 3, 3}

Output: arr[] = {3}

new size = 1

Input: arr[] = {1, 2, 2, 3, 4, 4, 4, 5, 5}

Output: arr[] = {1, 2, 3, 4, 5}

new length = 5

2. a. Create a class named Salesperson. Data fields for Salesperson include an integer ID number and a double annual sales amount. Methods include a constructor that requires values for both data fields, as well as get and set methods for each of the data fields. Save the file as **Salesperson.java**.

b. Create an application that allows a user to enter values for an array of 3 Salesperson objects. Offer the user the choice of displaying the objects in order by either ID number or sales value. Save the application as **SalespersonSort.java**.

3. Try all the methods in String class as showed in the slides.

4. Write a Java program to print all permutations of a given String. For example, if given String is "GOD" then your program should print all 6 permutations of this string, e.g. "GOD," "OGD," "DOG," "GDO," "ODG," and "DGO." The string can be either given or input by the user.

5. Implement an app allows the user to play a game of Tic-Tac-Toe. The user can click the New Game button at any time to start a new game, i.e., start over and clean all the data. The app displays other messages to the user as the game progresses such as (1) whose turn it is, (2) if a player wins, and (3) if the game ends without winner, i.e., tie. The app uses buttons for the nine Tic-Tac-Toe squares. The winning criteria is who ever placed three same number (1 or 2) in a row, column or diagonal.

  