PDS Lab Section 16

Set B Max Marks=24

(Lab Test 2) –November 10, 2023
Time: 9AM to 11:30AM

The top two lines of your programs must contain the following information:

//Roll No.: <Type in your roll no.>
//Name: <Type in your name>

You have to give names to your C files as specified below and upload them in Moodle well before time. Please read the instructions given below.

Document your programs meaningfully using appropriately named variables and sufficient amount of comments. There will be marks for documentation and proper code indentation.

1. Define a global integer array named **arr** of size **50**.
   a. In the main function, fill the array **arr** with random numbers in the range of **[20,100]** and display the values stored in the array nicely formatted. Display the following menu: **[3]**
      1: **maxMin**
      2: **duplicate**
      3: **highestFreq**
      4: **largestIncreasing**
      5: **largestDecreasing**
      6: **removeDuplicate**
      in an infinite loop, first ask the user to enter an integer to the indicate the user choice. Based on the user choice, call the corresponding function. Exit when the user enters other than [1,6].
   b. **maxMin:** This function should display the contents of the array **arr** nicely formatted and then display the minimum and the maximum of the values stored in the array. **[3]**
   c. **duplicate:** This function should display the contents of the array **arr** nicely formatted and then display all the numbers that occur more than once in the array. **[3]**
   d. **highestFreq:** This function should display the contents of the array **arr** nicely formatted and then should display the number that occurs with highest frequency also display the number of occurrence. **[3]**
   e. **largestIncreasing:** This function should display the contents of the array **arr** nicely formatted and then should display the largest increasing sequence of numbers occurring in the array. **[4]**
   f. **largestDecreasing:** This function should display the contents of the array **arr** nicely formatted and then should display the largest sequence of decreasing numbers occurring in the array. **[4]**
   g. **removeDuplicate:** This function should display the contents of the array **arr** nicely formatted and then should remove the duplicate entries and display the array. **[4]**

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