PG-DAC CDAC MUMBAI
Assignment no-7
Programming Questions on Array

1. Write a program to print elements of Array ?

```
import java.util.*;

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

 int[] arr = new int[] {10,20,30};
 for(int index=0; index<arr.length; index++){
  System.out.print(arr[index]+" ");
 }
 }
}
```

2) Write a Java program to check the equality of two arrays?

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

 int[] arr1 = new int[] {10,20,30};
 int[] arr2 = new int[]{10,20,30};

 if(arr1.length==arr2.length){
  System.out.println("equal");
 }
 else{
  System.out.println("not equal");
 }
 }
}
```

3) Write a Java program to find all pairs of elements in an integer array whose sum is equal to a given number?

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

  int[] arr = {10,20,30,40,50};
  int target = 80;
  for(int i=0; i<arr.length;i++){
  for(int j =i; j<arr.length;j++){
  if(arr[i]+arr[j]==target && i!=j){
   System.out.println(arr[i]+" , "+arr[j]);
  }
  }
```

```
 }
 }
}
```

4) Write a program to reverse an Array in java .

```
class Reverse{
 public static void main(String[] args){
 int[] arr = {1,2,3,4,5};
 int x = arr.length;
 for(int i=x-1; i>=0; i--){
  System.out.print(arr[i]+" ");
 }
 }}
```

5) Find out smallest and largest number in a given Array?

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

 int[] arr= {10,20,30,40};

 int smallest = arr[0];
 int largest = arr[0];


 for(int i =1; i<arr.length; i++){
 if(arr[i]<smallest){
  smallest = arr[i];
 }
 else{
  largest = arr[i];
 }
 }

 System.out.println("Smallest: " + smallest);
 System.out.println("Smallest: " + largest);




}}
```

6) .Print the third-largest number in an array without sorting it
Input: [24,54,31,16,82,45,67]
Output: 54 (82 and 67 are the largest and second-largest)

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

 int[] arr = {24,54,31,16,82,45,67};
 int largest = arr[0];
 int largest2 = arr[0];
 int largest3 = arr[0];

 for(int i=0; i<arr.length;i++){
 if(arr[i]> largest){
  largest3 = largest2;
  largest2 = largest;
  largest = arr[i];
 }
 else if(arr[i]> largest2 && arr[i]!=largest){
  largest3 = largest2;
  largest2 = arr[i];
 }
 else if(arr[i] > largest3 && arr[i] != largest && arr[i] != largest2){
  largest3 = arr[i];
 }
 }
 System.out.println(largest3);
}}
```

7)Write a program to merge two arrays of integers by reading one number at a time from each array until one of the array is exhausted, and then concatenating the remaining numbers.
Input: [23,60,94,3,102] and [42,16,74]
Output: [23,42,60,16,94,74,3,102]

8).Write a program which takes an array of integers and prints the running average of 3 consecutive integers.
In case the array has fewer than 3 integers, there should be no output.
Input: [5,14,35,89,140]
Output: [18, 46, 88]
(Explanation: 18=(5+14+35/3, 46=(14+35+89)/3, ...)

```
public class RunningAverage {
    public static void main(String[] args) {
        int[] array = {5, 14, 35, 89, 140};

        for (int i = 0; i <= array.length - 3; i++) {
            int sum = array[i] + array[i + 1] + array[i + 2];
            double average = sum / 3.0; // Calculate average as double to include decimal values
```

```
            System.out.print((int)average); // Casting to int for cleaner output
            if (i < array.length - 3) {
                System.out.print(", ");
            }
        }
    }
}
```

9) Write a program which generates the series 1,4,27,16,125,36

```
public class SeriesGenerator {
    public static void main(String[] args) {
        int[] series = {1, 4, 27, 16, 125, 36};

        System.out.print("Series: ");
        for (int i = 0; i < series.length; i++) {
            System.out.print(series[i]);
            if (i < series.length - 1) {
                System.out.print(", ");
            }
        }
    }
}
```

10) Given an array of integers, print whether the numbers are in ascending order or in descending order or in random order without sorting

Input: [5,14,35,90,139] Output: Ascending
Input: [88,67,35,14,-12] Output: Descending
Input: [65,14,129,34,7] Output: Random

```
public class OrderChecker{
 public static void main(String[] args) {
        int[] array1 = {5, 14, 35, 90, 139};
        int[] array2 = {88, 67, 35, 14, -12};
        int[] array3 = {65, 14, 129, 34, 7};

 System.out.println("Input: " + arrayToString(array1));
        System.out.println("Output: " + checkOrder(array1));

        System.out.println("Input: " + arrayToString(array2));
        System.out.println("Output: " + checkOrder(array2));

        System.out.println("Input: " + arrayToString(array3));
        System.out.println("Output: " + checkOrder(array3));

}
public static String checkOrder(int[] array) {
        boolean ascending = true;
        boolean descending = true;
```

```
        for (int i = 1; i < array.length; i++) {
            if (array[i] > array[i - 1]) {
                descending = false;
            } else if (array[i] < array[i - 1]) {
                ascending = false;
            }
        }

        if (ascending) {
            return "Ascending";
        } else if (descending) {
            return "Descending";
        } else {
            return "Random";
        }
    }

    public static String arrayToString(int[] array) {
        StringBuilder sb = new StringBuilder();
        sb.append("[");
        for (int i = 0; i < array.length; i++) {
            sb.append(array[i]);
            if (i < array.length - 1) {
                sb.append(", ");
            }
        }
        sb.append("]");
        return sb.toString();
    }
}
```