Arrays Solutions

Table of Contents

LEVEL 1: Easy

1. Create an array

   Take size of array as input from user, create integer array by taking inputs from user and then print the array using for each loop.

```java
import java.util.Scanner;

public class CreateArray {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        int n = scanner.nextInt();

        int[] arr = new int[n];
        for(int i=0;i<n;i++){
            arr[i] = scanner.nextInt();
        }

        for(int ele: arr){
            System.out.println(ele);
        }
    }
}
```

2. Sum of all values

   Print the sum of all values in an integer array.

```java
import java.util.Scanner;

public class SumOfValues {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        int n = scanner.nextInt();
        int sumOfValues=0;

        int[] arr = new int[n];
        for(int i=0;i<n;i++){
            arr[i] = scanner.nextInt();
            sumOfValues+=arr[i];
        }

        System.out.println(sumOfValues);
    }
}
```

3. Double the values

   Take an integer array as input from user and double all the values and print the new array

```
public class DoubleTheValues {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        int n = scanner.nextInt();

        int[] arr = new int[n];
        int[] doubledArr = new int[n];

        for(int i=0;i<n;i++){
            arr[i] = scanner.nextInt();
        }

        for(int i=0; i<n; i++){
            doubledArr[i] = 2*arr[i];
            System.out.println(doubledArr[i]);
        }
    }
}
```

4. Maximum number

   Write a program to find the largest element in a given array.

```
public class MaxNumber {
    public static void main(String[] args) {
        int[] arr = {12,43,75,22,93,45,68,4};
        int maxValue = Integer.MIN_VALUE;
        int maxIndex=-1;
        for(int i=0; i<arr.length; i++){
            if(arr[i]>=maxValue){
                maxValue = arr[i];
                maxIndex = i;
            }
        }
        System.out.println("Max value : " + maxValue + " max value index is : "
+ maxIndex);
    }
}
```

5. Minimum non-negative number

   Write a program to find the smallest non negative element in a given array. If all elements are negative print 0.

```
public class MinValue {
    public static void main(String[] args) {
        int[] arr = {12,43,75,2,93,45,68,4};
        int minValue = Integer.MAX_VALUE;
        int minIndex=-1;
        for(int i=0; i<arr.length; i++){
            if(arr[i]>0 && arr[i]<minValue){
                minValue = arr[i];
                minIndex = i;
            }
        }
        if(minIndex==-1){
            System.out.println(0);
        }else{
        System.out.println("Min value : " + minValue + " min value index is : "
+ minIndex);
        }
    }
}
```

6. Check if number exists in an array.

   Given an integer array, input value x from user and check if x exists in array or not. Print Boolean true or false as result.

```
import java.util.Scanner;

public class CheckNumberExists {
    public static void main(String[] args) {
        Scanner scan = new Scanner(System.in);
        int[] arr = {12,43,75,22,93,45,68,4};
        int x = scan.nextInt();
        boolean exists = false;

        for(int ele: arr){
            if(ele==x){
                exists=true;
                break;
            }
        }
        System.out.println(exists);
    }
}
```

7. Count even and odd numbers

   Write a program to calculate number of odd and even numbers in integer array.

```
public class EvenAndOdd {
    public static void main(String[] args) {
        int[] arr = {12,43,75,22,93,45,68,47,79};
        int countOfEven = 0;
        int countOfOdd = 0;

        for(int ele: arr){
            if(ele%2==0){
                countOfEven++;
            }
            else{
                countOfOdd++;
            }
        }

        System.out.println("Even numbers count: " + countOfEven + ", Odd
numbers count: " + countOfOdd);
    }
}
```

8. Copy elements of one array to other.

   Create one array of size 5 and create a new array and copy elements from existing array to this new array.

```
public class CopyAnArray {
    public static void main(String[] args) {
        int[] arr = {12, 43, 75, 22, 93};
        int[] newArr = new int[5];

        for (int i = 0; i < 5; i++) {
            newArr[i] = arr[i];
        }
    }
}
```

9. Rotate an array to right

   Rotate an array by one position to the right.

```
public class RotateAnArray {
    public static void main(String[] args) {
        int[] arr = {1,2,3,4,5};
        int len = arr.length;

        int[] rotatedArr = new int[len];
        rotatedArr[0] = arr[len-1];

        for(int i=1;i<len;i++){
            rotatedArr[i] = arr[i-1];
        }
    }
}
```

10. Check if array is sorted

Write a program to check if a given array is sorted in ascending order.

```
public class CheckIfSorted {
    public static void main(String[] args) {
        int[] arr = {32,54,75,43,55,90};
        boolean isSorted = true;

        for(int i=1;i<arr.length;i++){
            if(arr[i]<arr[i-1]){
                isSorted=false;
                break;
            }
        }
        System.out.println(isSorted);
    }
}
```

11. Reverse the array

Write a program to reverse a given array.

```
public class ReverseTheArray {
    public static void main(String[] args) {
        int[] arr = {32,54,75,43,55,90};
        int len = arr.length;

        for(int i=0;i<len/2;i++){
            int temp = arr[i];
            arr[i] = arr[len-1-i];
            arr[len-1-i] = temp;
        }

        for(int ele:arr){
            System.out.println(ele);
        }
    }
}
```