ASSIGNMENT-2(ARRAY)

20BCSE50_KUMAR JIJNASU_C1_08

1..

```
import java.util.*;
class Linearsearch
{
    public static void main(String[] args) {
        System.out.print("Enter the length of array: ");
        Scanner sc = new Scanner(System.in);
        int l = sc.nextInt(),arr[] = new int[l],i=0;
        System.out.print("Enter an array: ");
        for(i=0;i<l;i++)
            arr[i] = sc.nextInt();
        System.out.print("Enter the element: ");
        int x = sc.nextInt();
        for(i=0;i<l;i++)
            if(arr[i]==x)
                break;
        if(i<l)
            System.out.println("Element found at index : "+i);
        else
            System.out.println("Element not found...");
        sc.close();
    }
}
```

output

```
PS C:\Users\MY\Downloads\java\Assignment-2> java .\CountUniqueDuplicate.java
Enter the size of the array : 8
Enter the array : 3 2 5 6 3 4 5 9
So, #UNIQUE = 4 and #DUPLICATE = 4
PS C:\Users\MY\Downloads\java\Assignment-2>
```

2..

```
import java.util.*;

class Sort {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter the size of the array : ");
```

```
        int l = sc.nextInt();
        int arr[]=new int[l];
        System.out.print("Enter the array : ");
        for(int i=0;i<l;i++)
            arr[i] = sc.nextInt();
        for(int i=0;i<l;i++)
            for(int j=0;j<arr.length - i - 1;j++)
                if(arr[j]>arr[j+1])
                    swap(arr,j,j+1);

        System.out.print("After sorting the array is: ");
        for(int i=0;i<l;i++)
            System.out.print(arr[i]+", ");
        System.out.println();
        sc.close();
    }

    public static void swap(int a[],int i,int j)
    {
        int t = a[i];
        a[i] = a[j];
        a[j] = t;
    }
}
```

output

```
PS C:\Users\MY\Downloads\java\Assignment-2> java Sort.java
Enter the size of the array : 6
Enter the array : 5 4 7 2 9 4
After sorting the array is: 2, 4, 4, 5, 7, 9,
PS C:\Users\MY\Downloads\java\Assignment-2>
```

3..

```
import java.util.*;
class OddEven {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter the size of the array : ");
        int l = sc.nextInt();
        int arr[]=new int[l],odd = 0, even = 0;
        System.out.print("Enter the array : ");
```

```
        for(int i=0;i<l;i++)
        {
            arr[i] = sc.nextInt();
            if(arr[i]%2==0)
                even += 1;
            else
                odd += 1;
        }
        System.out.println("No. of odd elements: "+odd);
        System.out.println("No. of even elements: "+even);
        sc.close();
    }
}
```

output

```
PS C:\Users\MY\Downloads\java\Assignment-2> java .\OddEven.java
Enter the size of the array : 7
Enter the array : 2 3 8 6 5 32 1
No. of odd elements: 3
No. of even elements: 4
PS C:\Users\MY\Downloads\java\Assignment-2>
```

4..

```
import java.util.*;
class MeanArray {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter the size of the array : ");
        int l = sc.nextInt();
        int arr[]=new int[l],mean = 0;
        System.out.print("Enter the array : ");
        for(int i=0;i<l;i++)
        {
            arr[i] = sc.nextInt();
            mean += arr[i];
        }
        System.out.println("Mean of the elements is : "+((float)mean/arr.length));
        sc.close();
    }
}
```

output

```
PS C:\Users\MY\Downloads\java\Assignment-2> java .\MeanArray.java
Enter the size of the array : 5
Enter the array : 3 37 2 8 98
Mean of the elements is : 29.6
PS C:\Users\MY\Downloads\java\Assignment-2>
```

5..

```java
import java.util.Map;
import java.util.HashMap;
import java.util.Scanner;
// import java.util.*;

class CountUniqueDuplicate {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter the size of the array : ");
        int l = sc.nextInt();
        int arr[]=new int[l], unique = 0, duplicate = 0;
        Map<Integer, Integer> dict = new HashMap<>();
        System.out.print("Enter the array : ");
        for(int i=0;i<l;i++)
        {
            arr[i] = sc.nextInt();
            if(dict.get(arr[i])==null)
                dict.put(arr[i],1);
            else
                dict.put(arr[i],dict.get(arr[i])+1);
                // dict
            // System.out.print(arr[i]+" : "+dict.get(arr[i])+", "+ dict.En);
        }

        for(Map.Entry<Integer,Integer> item : dict.entrySet())
            if(item.getValue()==1)
                unique += 1;
            else
                duplicate += item.getValue();
        System.out.println("So, #UNIQUE = "+unique+" and #DUPLICATE = "+duplicate);
    }
}
```

output

```
PS C:\Users\MY\Downloads\java\Assignment-2> java .\CountUniqueDup
Enter the size of the array : 8
Enter the array : 3 2 5 6 3 4 5 9
So, #UNIQUE = 4 and #DUPLICATE = 4
```

6..

```java
import java.util.*;
class MeanMaxMid
{
    public static void main(String args[])
    {
        Scanner sc= new Scanner(System.in);
        System.out.print("Enter the size of array : ");
        int n = sc.nextInt();
        int x[]=new int[n], sum=0,max=0;
        System.out.print("Enter the elements of array : ");
        for(int i=0;i<x.length;i++)
                x[i]=sc.nextInt();
        max = x[0];
        for(int i=0; i<x.length; i++ )
        {
            sum+=x[i];
            if(max<x[i])
                max=x[i];
        }
        int mid=x[x.length/2];
        float mean=sum/x.length;
        System.out.println("So, MEAN = "+mean+", MAXIMUM = "+max+", MIDDLE = "+mid);
        sc.close();
    }
}
```

output

```
PS C:\Users\MY\Downloads\java\Assignment-2> java .\MeanMaxMid.java
Enter the size of array : 8
Enter the elements of array : 8 5 3 0 2 7 3 8
So, MEAN = 4.0, MAXIMUM = 8, MIDDLE = 2
PS C:\Users\MY\Downloads\java\Assignment-2>
```

7..

```java
import java.util.*;
class SmallerGreater
{
    public static void main(String args[])
    {
        Scanner sc= new Scanner(System.in);
        System.out.print("Enter the size of array : ");
        int n = sc.nextInt();
        int x[]=new int[n];

        System.out.print("Enter the elements of array : ");
        for(int i=0;i<x.length;i++)
                x[i]=sc.nextInt();

        for(int i=0;i<x.length;i++)
            for(int j=0;j<x.length - i - 1;j++)
                if(x[j]>x[j+1])
                    swap(x,j,j+1);

        System.out.print("The sorted array is : ");
        for(int i=0;i<x.length;i++)
            System.out.print(x[i]+", ");
        int mid=x.length/2;
        System.out.println("\nThe middle element is : "+x[mid]);
        System.out.print("The elements smaller than " +x[mid] +" are :  ");
        for(int i=0;i<x.length/2;i++)
            if(x[i]<x[mid])
                System.out.print(x[i]+", ");

        System.out.print("\nThe elements greater than " +x[mid] +" are :  ");
        for(int i=x.length/2;i<x.length;i++)
            if(x[i]>x[mid])
                System.out.print(x[i]+", ");
        System.out.println();
        sc.close();
    }

    public static void swap(int a[],int i,int j)
    {
        int t = a[i];
        a[i] = a[j];
        a[j] = t;
    }
```

}
output

```
PS C:\Users\MY\Downloads\java\Assignment-2> java .\SmallerGreater.java
Enter the size of array : 7
Enter the elements of array : 9 6 43 0 76 7 3
The sorted array is : 0, 3, 6, 7, 9, 43, 76,
The middle element is : 7
The elements smaller than 7 are :  0, 3, 6,
The elements greater than 7 are :  9, 43, 76,
PS C:\Users\MY\Downloads\java\Assignment-2>
```