Week-3 OOJ Lab Exercise-1

(Extra programs)

1) **Accept an array of size n from the user. Find the sum of even indices (i.e., 0,2,4....) and sum of odd indices (1,3,5....) and print the same**

```
import java.util.*;
 class Extraprogram1{
   public static void main(String args[])
   {
        Scanner ss=new Scanner(System.in);
      int a[],n,even = 0, odd = 0;
        System.out.println("Enter the number of elements");
        n=ss.nextInt();
        a=new int[n];
      System.out.println("Enter the elements:");
                for(int i=0;i<n;i++)
                {
                        System.out.println("Enter a["+i+"]");
                        a[i]=ss.nextInt();
                }
       for (int i = 0; i < n; i++) {
         if (i % 2 == 0)
            even += a[i];
         else
            odd += a[i];
      }

      System.out.println("Sum of even indices of the array: " + even);
      System.out.println("Sum of odd indices of the array: " + odd);
   }
}
```

```
C:\Users\win10\Documents\Java lab programs>java Extraprogram1
Enter the number of elements
5
Enter the elements:
Enter a[0]
1
Enter a[1]
6
Enter a[2]
7
Enter a[3]
2
Enter a[4]
3
Sum of even indices of the array: 11
Sum of odd indices of the array: 8
```

2) Accept an array of n integers. Find the number of positive numbers, negative numbers and zeros.

```
import java.util.*;
class Extraprogram2 {
	public static void main(String ss[]) {
		int l=0,p=0,z=0;
		int a[];
		Scanner s = new Scanner(System.in);
		System.out.println("Enter the number of elements (n):");
		int n = s.nextInt();
		System.out.println("Enter the elements:");
		a = new int[n];
		for(int i=0;i<n;i++)
		{
			System.out.println("Enter a["+i+"]");
```

```
                a[i]=s.nextInt();
            }
            for(int i=0;i<n;i++)
            {
                if(a[i]<0)
                {
                    l++;
                }
                else if(a[i]>0)
                {
                    p++;
                }
                else
                {
                    z++;
                }
            }
            System.out.println("Number of positive elements: "+p);
            System.out.println("Number of negative elements: "+l);
            System.out.println("Number of zeros: "+z);
        }
}
```

```
C:\Users\win10\Documents\Java lab programs>java Extraprogram2
Enter the number of elements (n):
6
Enter the elements:
Enter a[0]
3
Enter a[1]
-5
Enter a[2]
8
Enter a[3]
9
Enter a[4]
0
Enter a[5]
-3
Number of positive elements: 3
Number of negative elements: 2
Number of zeros: 1
```

3)Consider a super market bill. Accept a double array holding rate per item of say x items and an int array showing the quantity purchased by a customer. Calculate the total bill amount and the final bill amount after giving discounts as per the following slabs.

If the total bill amount >=10000, discount=5%

If the total bill amount >=7500 and <10000, discount=3%

If the total bill amount >=5000, discount=2%

```
import java.util.*;
public class Extraprogram3 {
    public static void main(String[] args){
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the number of items:");
        int n = sc.nextInt();
        double indTot, tot = 0;
        double[] rpi = new double[n];
```

```
        int[] quant = new int[n];
        for(int i = 0; i<n; i++){
            System.out.println("Enter quantity of purchase and rate per item for
item"+(i+1));
            int q = sc.nextInt();
            double r = sc.nextDouble();
            quant[i] = q;
            rpi[i] = r;
        }
        for(int i = 0; i<n; i++){
            indTot = quant[i] * rpi[i] ;
            tot += indTot;
        }
        if (tot >= 10000) {
            System.out.println("Discount = 5%. Total bill = " + tot + " Discounted bill
= " + (tot - tot * 0.05));
        }

        else if (tot >= 7500) {
            System.out.println("Discount = 3%. Total bill = " + tot + " Discounted bill
= " + (tot - tot * 0.03));
        }
         else if (tot >= 5000) {
            System.out.println("Discount = 2%. Total bill = " + tot + " Discounted bill
= " + (tot - tot * 0.02));
        }
        else{
```

```
            System.out.println(" No discount. Total bill = " + tot );
        }


    }
}
```

```
C:\Users\win10\Documents\Java lab programs>java Extraprogram3
Enter the number of items:
3
Enter quantity of purchase and rate per item for item1
5 500
Enter quantity of purchase and rate per item for item2
4 700
Enter quantity of purchase and rate per item for item3
9 300
Discount = 3%. Total bill = 8000.0 Discounted bill = 7760.0
```

```
C:\Users\win10\Documents\Java lab programs>java Extraprogram3
Enter the number of items:
4
Enter quantity of purchase and rate per item for item1
6 1000
Enter quantity of purchase and rate per item for item2
3 300
Enter quantity of purchase and rate per item for item3
8 500
Enter quantity of purchase and rate per item for item4
2 400
Discount = 5%. Total bill = 11700.0 Discounted bill = 11115.0
```

```
C:\Users\win10\Documents\Java lab programs>java Extraprogram3
Enter the number of items:
3
Enter quantity of purchase and rate per item for item1
4 800
Enter quantity of purchase and rate per item for item2
3 700
Enter quantity of purchase and rate per item for item3
1 300
Discount = 2%. Total bill = 5600.0 Discounted bill = 5488.0
```

```
C:\Users\win10\Documents\Java lab programs>java Extraprogram3
Enter the number of items:
3
Enter quantity of purchase and rate per item for item1
3 200
Enter quantity of purchase and rate per item for item2
2 100
Enter quantity of purchase and rate per item for item3
4 50
 No discount. Total bill = 1000.0
```

4) Accept an array A of n elements. Create two new arrays where the first one say B that holds all the odd numbers from array A and the second say C holds the even numbers from array A. Display the sum, average, max and min of array C.

```
import java.util.*;
class Extraprogram4 {
	public static void main(String ss[]) {
		int a[],b[],c[],n1=0,n2=0,sum=0,min,max;
		double avg;
		Scanner s = new Scanner(System.in);
		System.out.println("Enter the number of elements (n):");
		int n = s.nextInt();
		System.out.println("Enter the elements:");
		a = new int[n];
		b = new int[n];
		c = new int[n];
		for(int i=0;i<n;i++)
		{
			System.out.println("Enter a["+i+"]");
			a[i]=s.nextInt();
		}
		for(int i=0;i<n;i++)
		{
			if(a[i]%2 != 0)
			{
				b[n1]=a[i];
```

```
                n1++;
            }
            else if(a[i]%2 == 0)
            {
                c[n2]=a[i];
                n2++;
            }
        }
        max=c[0];
        min=c[0];
        for(int i=0;i<n2;i++)
        {
            sum=sum+c[i];
            if(c[i]>max)
                max=c[i];
            else if(c[i]<min)
                min=c[i];
        }
        avg =(double)sum/n2;
        System.out.println("Sum of even elements:"+ sum);
        System.out.println("Average of even elements:"+ avg);
        System.out.println("Maximum of even elements:"+ max);
        System.out.println("Minimum of even elements:"+ min);
    }
}
```

```
C:\Users\win10\Documents\Java lab programs>java Extraprogram4
Enter the number of elements (n):
6
Enter the elements:
Enter a[0]
1
Enter a[1]
5
Enter a[2]
6
Enter a[3]
8
Enter a[4]
10
Enter a[5]
3
Sum of even elements:24
Average of even elements:8.0
Maximum of even elements:10
Minimum of even elements:6
```