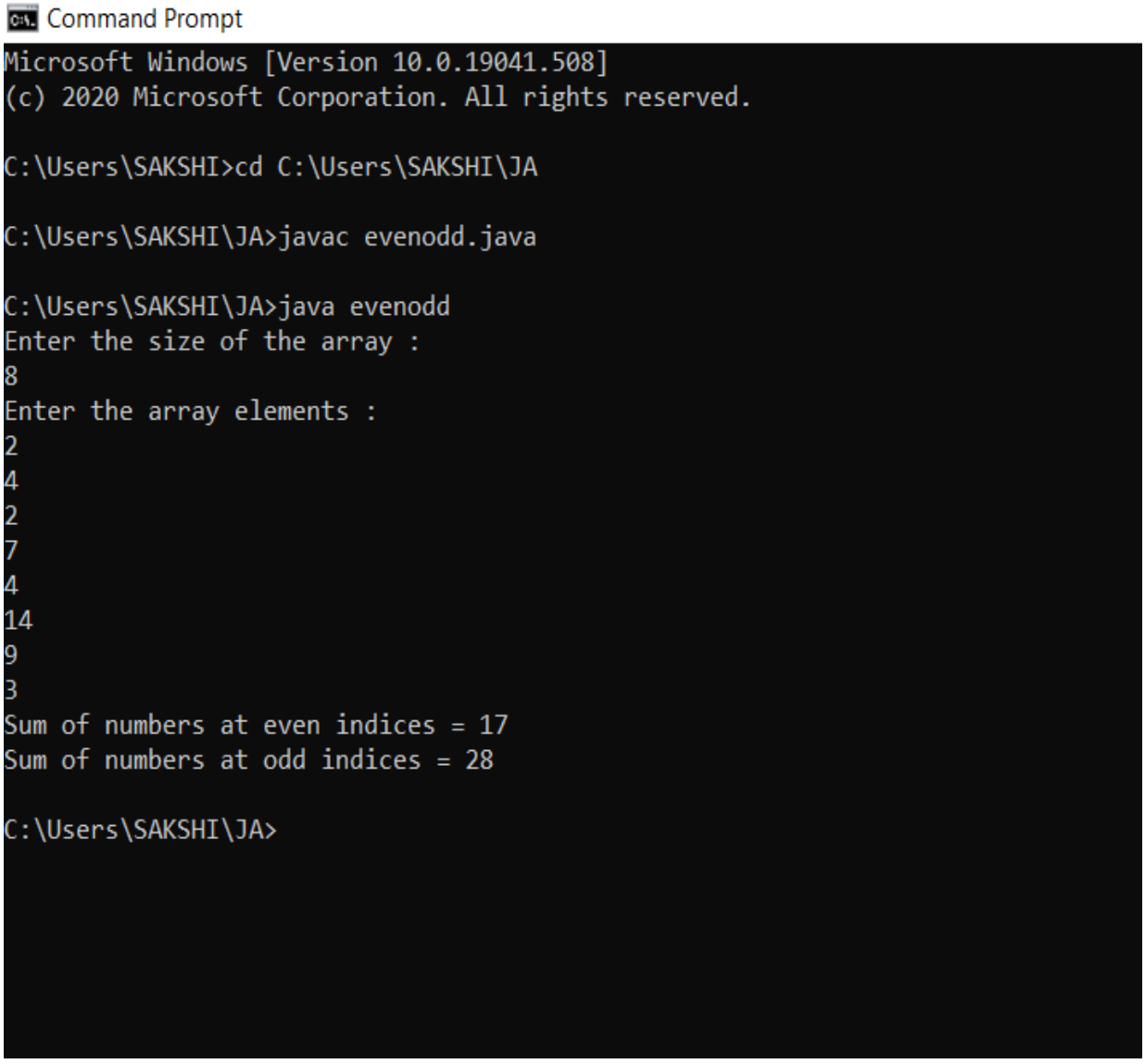
LAB 1 EXTRA PROGRAMS:

Write Java programs to

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

```
            odd += array[i];
        }
        System.out.println("Sum of numbers at even indices = " + even);
        System.out.println("Sum of numbers at odd indices = " + odd);
    }
}
```



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

```
import java.util.Scanner;
class zeros
{
    public static void main(String args[])
    {
        int array[];
        int positive=0, negative=0, zero=0;
        int i, n;
        Scanner in = new Scanner(System.in);
        System.out.println("Enter the size of the array :");
        n = in.nextInt();
        System.out.println("Enter the array elements : ");
        array = new int[n];
        for(i = 0; i < n; i++)
        {
            array[i] = in.nextInt();
        }
        for(i = 0; i < n; i++)
        {
            if(array[i] > 0)
            {
                positive++;
            }
            else if(array[i] == 0)
            {
                zero++;
            }
```

```
        else
        {
            negative++;
        }
      }
      System.out.println("Number of Positive Numbers = " + positive );
      System.out.println("Number of Negative Numbers = " + negative);
      System.out.println("Number of Zeros = " + zero);
   }
}
```

Command Prompt

```
Microsoft Windows [Version 10.0.19041.508]
(c) 2020 Microsoft Corporation. All rights reserved.

C:\Users\SAKSHI>cd C:\Users\SAKSHI\JA

C:\Users\SAKSHI\JA>javac zeros.java

C:\Users\SAKSHI\JA>java zeros
Enter the size of the array :
10
Enter the array elements :
2
3
0
-6
0
3
-8
0
-18
38
Number of Positive Numbers = 4
Number of Negative Numbers = 3
Number of Zeros = 3

C:\Users\SAKSHI\JA>
```

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.Scanner;
class Bill
{
  public static void main(String args[])
  {
        int i, x;
      double rate[] = new double[10];
      int quantity[] = new int[10];
        double total_amt=0, final_amt;
      Scanner in = new Scanner(System.in);
        System.out.println("Enter the number of items : ");
      x = in.nextInt();
      for(i=0;i<x;i++)
        {
            System.out.println("For ITEM " + (i+1) + " : ");
                System.out.println("Enter the rate : ");
                rate[i] = in.nextDouble();
                System.out.println("Enter the quantity :");
                quantity[i] = in.nextInt();
        }
```

```
        for(i=0;i<x;i++)
                total_amt = total_amt + (rate[i] * quantity[i]);
        System.out.format("Total bill amount = %.2f ", total_amt);
      System.out.println();
        if(total_amt >= 10000)
                final_amt = total_amt - (0.05*total_amt);
        else if(total_amt >= 7500 && total_amt < 10000)
                final_amt = total_amt - (0.03*total_amt);
        else if(total_amt >= 5000)
                final_amt = total_amt - (0.02*total_amt);
        else
                final_amt = total_amt;
        System.out.format("Final bill amount after giving the discounts = %.2f ",
final_amt);
  }
}
```

Command Prompt

```
Microsoft Windows [Version 10.0.19041.508]
(c) 2020 Microsoft Corporation. All rights reserved.

C:\Users\SAKSHI>cd C:\Users\SAKSHI\JAVA PROGRAMS

C:\Users\SAKSHI\JAVA PROGRAMS>javac Bill.java

C:\Users\SAKSHI\JAVA PROGRAMS>java Bill
Enter the number of items :
4
For ITEM 1 :
Enter the rate :
2500
Enter the quantity :
1
For ITEM 2 :
Enter the rate :
986.5
Enter the quantity :
3
For ITEM 3 :
Enter the rate :
3890
Enter the quantity :
1
For ITEM 4 :
Enter the rate :
599.8
Enter the quantity :
2
Total bill amount = 10549.10
Final bill amount after giving the discounts = 10021.65
C:\Users\SAKSHI\JAVA PROGRAMS>
```

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.Scanner;
class two_arrays
{
    public static void main(String args[])
    {
        int A[], B[], C[];
        int i, j=0, k=0, n;
        int sum=0, countC=0, countB=0, max=0, min=0;
        float avg;
        Scanner in = new Scanner(System.in);
        System.out.println("Enter the size of the array :");
        n = in.nextInt();
        A = new int[n];
        B = new int[n];
        C = new int[n];
        System.out.println("Enter the array elements : ");
        for(i = 0; i < n; i++)
        {
            A[i] = in.nextInt();
        }
        for(i = 0; i < n; i++)
        {
            if (A[i] % 2 == 0)
            {
                C[j] = A[i];
                sum += C[j];
```

```
        countC++;
        if(C[j] > max)
            max = C[j];
        if(C[j] < min)
            min = C[j];
        j++;
    }
    else
    {
        B[k] = A[i];
        countB++;
        k++;
    }
}
avg = (float) sum/countC;
System.out.println("The elements in Array C are : ");
for(j = 0; j < countC; j++)
{
    System.out.println(C[j]);
}
System.out.println("The elements in Array B are : ");
for(k = 0; k < countB; k++)
{
    System.out.println(B[k]);
}
System.out.println("In Array C : ");
System.out.println("Sum = " + sum);
System.out.format("Average = %.2f ", avg);
```

```
        System.out.println();
        System.out.println("Maximum value = " + max);
        System.out.println("Minimum value = " + min);
    }
}
```

Command Prompt

```
Microsoft Windows [Version 10.0.19041.508]
(c) 2020 Microsoft Corporation. All rights reserved.

C:\Users\SAKSHI>cd C:\Users\SAKSHI\JA

C:\Users\SAKSHI\JA>javac two_arrays.java

C:\Users\SAKSHI\JA>java two_arrays
Enter the size of the array :
10
Enter the array elements :
3
48
13
69
0
22
83
55
20
32
The elements in Array C are :
48
0
22
20
32
The elements in Array B are :
3
13
69
83
55
In Array C :
Sum = 122
Average = 24.40
Maximum value = 48
Minimum value = 0

C:\Users\SAKSHI\JA>
```