Assessment-1

Name: Sanjoi Sethi
Reg. No.: 18BCE2261
Course Name: Java Programming
Course Code: CSE1007
Slot: L9+L10

10-8-2021:

1) Print the hello world message.

1) **Program:**

```
import java.util.*;
class Hello1
{
    public static void main(String args[])
    {
        System.out.println("Sanjoi Sethi || 18BCE2261");
        System.out.println("Hello World");
    }
}
```

Output:

```
C:\Users\SanJoi\Java Programming Lab\1) 10-8-2021>javac Hello1.java

C:\Users\SanJoi\Java Programming Lab\1) 10-8-2021>java Hello1
Name: Sanjoi Sethi      Reg. No.: 18BCE2261
Hello World
```

2) Read the radius and print the area of a circle.

2) **Program:**

```
import java.util.*;
import java.math.*;
class Circle2
{
    public static void main(String args[])
    {
        System.out.println("Name: Sanjoi Sethi  Reg. No.: 18BCE2261");
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter the radius of the circle: ");
        double r=sc.nextFloat();
        double area=(Math.PI)*Math.pow(r,2);
        System.out.println("The area of the circle is: "+area);
    }
}
```

Output:

```
C:\Users\SanJoi\Java Programming Lab\1) 10-8-2021>javac Circle2.java

C:\Users\SanJoi\Java Programming Lab\1) 10-8-2021>java Circle2
Name: Sanjoi Sethi      Reg. No.: 18BCE2261
Enter the radius of the circle:
10
The area of the circle is: 314.1592653589793
```

3) Read the number and check whether it is divisible by 3 and 5.

3) **Program:**

```java
import java.util.*;
import java.math.*;
class Divisible3
{
    public static void main(String args[])
    {
        System.out.println("Name: Sanjoi Sethi  Reg. No.: 18BCE2261");
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter a number: ");
        int n=sc.nextInt();
        if(n%3==0 && n%5==0)
            System.out.println("The no. is divisible by 3 and 5");
        else
            System.out.println("The no. is not divisible by 3 and 5");
    }
}
```

Output:

```
C:\Users\SanJoi\Java Programming Lab\1) 10-8-2021>javac Divisible3.java

C:\Users\SanJoi\Java Programming Lab\1) 10-8-2021>java Divisible3
Name: Sanjoi Sethi      Reg. No.: 18BCE2261
Enter a number:
60
The no. is divisible by 3 and 5
```

4) Display Subject Name based on room number. If the user enters 604 then display Java Programming, If the user enters 605 then display Python programming for any other input display Invalid input to the user.

4) **Program:**

```java
import java.util.*;
import java.math.*;
class RoomNumber4
{
    public static void main(String args[])
    {
        System.out.println("Name: Sanjoi Sethi  Reg. No.: 18BCE2261");
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter a room number: ");
        int n=sc.nextInt();
        if(n==604)
            System.out.println("Java Programming");
        else if(n==605)
```

```
            System.out.println("Python Programming");
        else
            System.out.println("Invalid Input");
    }
}
```

Output:

```
C:\Users\SanJoi\Java Programming Lab\1) 10-8-2021>javac RoomNumber4.java

C:\Users\SanJoi\Java Programming Lab\1) 10-8-2021>java RoomNumber4
Name: Sanjoi Sethi      Reg. No.: 18BCE2261
Enter a room number:
605
Python Programming
```

5) Print the sum of first n numbers. If n is 3 then print the sum of 1+2+3 to the user. Get n from the user.

5) **Program:**

```
import java.util.*;
import java.math.*;
class SumNumbers5
{
    public static void main(String args[])
    {
        System.out.println("Name: Sanjoi Sethi  Reg. No.: 18BCE2261");
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter number: ");
        int n=sc.nextInt();
        int sum=0;
        for(int i=1;i<=n;++i)
        {
            sum=sum+i;
        }
        System.out.println("The sum is: "+sum);
    }
}
```

Output:

```
C:\Users\SanJoi\Java Programming Lab\1) 10-8-2021>javac SumNumbers5.java

C:\Users\SanJoi\Java Programming Lab\1) 10-8-2021>java SumNumbers5
Name: Sanjoi Sethi      Reg. No.: 18BCE2261
Enter number: 10
The sum is: 55
```

6) Print the sum of the series $1^2+2^2+3^2$ up to n terms.

6) **Program:**

```
import java.util.*;
import java.math.*;
class SumSquareNumbers6
{
    public static void main(String args[])
    {
        System.out.println("Name: Sanjoi Sethi  Reg. No.: 18BCE2261");
        Scanner sc=new Scanner(System.in);
```

```
        System.out.print("Enter number: ");
        int n=sc.nextInt();
        int sum=0;
        for(int i=1;i<=n;++i)
        {
            sum=sum+((int)Math.pow(i,2));
        }
        System.out.println("The sum is: "+sum);
    }
}
```

Output:

```
C:\Users\SanJoi\Java Programming Lab\1) 10-8-2021>javac SumSquareNumbers6.java

C:\Users\SanJoi\Java Programming Lab\1) 10-8-2021>java SumSquareNumbers6
Name: Sanjoi Sethi      Reg. No.: 18BCE2261
Enter number: 10
The sum is: 385
```

7) Print the multiplication table by getting the n from the user.

7) **Program:**

```
import java.util.*;
import java.math.*;
class MultiplicationTable7
{
    public static void main(String args[])
    {
        System.out.println("Name: Sanjoi Sethi  Reg. No.: 18BCE2261");
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter a number: ");
        int n=sc.nextInt();
        int mul=0;
        for(int i=1;i<=10;++i)
        {
            mul=n*i;
            System.out.println(n+" * "+i+" = "+mul);
        }
    }
}
```

Output:

```
C:\Users\SanJoi\Java Programming Lab\1) 10-8-2021>javac MultiplicationTable7.java

C:\Users\SanJoi\Java Programming Lab\1) 10-8-2021>java MultiplicationTable7
Name: Sanjoi Sethi      Reg. No.: 18BCE2261
Enter a number: 7
7 * 1 = 7
7 * 2 = 14
7 * 3 = 21
7 * 4 = 28
7 * 5 = 35
7 * 6 = 42
7 * 7 = 49
7 * 8 = 56
7 * 9 = 63
7 * 10 = 70
```

8) Provide the option of adding two numbers to the user until the user wants to exit.

8) **Program:**

```
import java.util.*;
import java.math.*;
class AddTwo8
{
    public static void main(String args[])
    {
        System.out.println("Name: Sanjoi Sethi  Reg. No.: 18BCE2261");
        Scanner sc=new Scanner(System.in);
        int flag=1;
        while(flag!=0)
        {
            System.out.print("Enter 1 to add two numbers, 2 to exit: ");
            int n=sc.nextInt();
            switch(n)
            {
                case 1: System.out.print("Enter first number: ");
                    int a=sc.nextInt();
                    System.out.print("Enter second number: ");
                    int b=sc.nextInt();
                    int sum=a+b;
                    System.out.println("The sum is: "+sum);
                    break;
                case 2: System.out.print("Exitted");
                    flag=0;
                    break;
                default:flag=0;
                    break;
            }
        }
    }
}
```

Output:

```
C:\Users\SanJoi\Java Programming Lab\1) 10-8-2021>java AddTwo8
Name: Sanjoi Sethi      Reg. No.: 18BCE2261
Enter 1 to add two numbers, 2 to exit: 1
Enter first number: 10
Enter second number: 20
The sum is: 30
Enter 1 to add two numbers, 2 to exit: 2
Exitted
```

9) Print this pattern for n lines:

(a)

```
*
**
***
****
*****
```

Program:

```
import java.util.*;
import java.math.*;
class Pattern9A
{
    public static void main(String args[])
    {
        System.out.println("Name: Sanjoi Sethi  Reg. No.: 18BCE2261");
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter a number: ");
        int n=sc.nextInt();
        for(int i=1;i<=n;++i)
        {
            for(int j=1;j<=i;++j)
            {
                System.out.print("*");
            }
        System.out.println();
        }
    }
}
```

Output:

```
C:\Users\SanJoi\Java Programming Lab\1) 10-8-2021>javac Pattern9A.java

C:\Users\SanJoi\Java Programming Lab\1) 10-8-2021>java Pattern9A
Name: Sanjoi Sethi      Reg. No.: 18BCE2261
Enter a number: 5
*
**
***
****
*****
```

(b)

1234
123
12
1

Program:

```
import java.util.*;
import java.math.*;
class Pattern9B
{
    public static void main(String args[])
    {
        System.out.println("Name: Sanjoi Sethi  Reg. No.: 18BCE2261");
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter a number: ");
        int n=sc.nextInt();
        for(int i=n;i>=1;--i)
        {
            for(int j=1;j<=i;++j)
            {
                System.out.print(j);
```

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

Output:

```
C:\Users\SanJoi\Java Programming Lab\1) 10-8-2021>javac Pattern9B.java

C:\Users\SanJoi\Java Programming Lab\1) 10-8-2021>java Pattern9B
Name: Sanjoi Sethi      Reg. No.: 18BCE2261
Enter a number: 5
12345
1234
123
12
1
```

(b)

1
12
123
1234
1234
123
12
1

Program:

```
import java.util.*;
import java.math.*;
class Pattern9C
{
    public static void main(String args[])
    {
        System.out.println("Name: Sanjoi Sethi  Reg. No.: 18BCE2261");
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter a number: ");
        int n=sc.nextInt();
        for(int i=1;i<=n;++i)
        {
            for(int j=1;j<=i;++j)
            {
                System.out.print(j);
            }
            System.out.println();
        }
        for(int i=n;i>=1;--i)
        {
            for(int j=1;j<=i;++j)
            {
                System.out.print(j);
            }
            System.out.println();
```

```
        }
    }
}
```

Output:

```
C:\Users\SanJoi\Java Programming Lab\1) 10-8-2021>javac Pattern9C.java

C:\Users\SanJoi\Java Programming Lab\1) 10-8-2021>java Pattern9C
Name: Sanjoi Sethi      Reg. No.: 18BCE2261
Enter a number: 5
1
12
123
1234
12345
12345
1234
123
12
1
```

17-8-2021:

1) Sort an array of element using bubble sort

1) **Program:**

```
import java.util.*;
class BubbleSort1
{
    public static void main(String args[])
    {
        System.out.println("Name: Sanjoi Sethi  Reg. No.: 18BCE2261");
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter the size of the array: ");
        int n=sc.nextInt();
        int arr[]=new int[n];

        //Inputting the elements of the array
        for(int i=0;i<n;++i)
        {
            System.out.println("Enter the value for the "+i+"th element:");
            arr[i]=sc.nextInt();
        }

        //Bubble Sort Algorithm
        for(int i=0;i<n-1;++i)
        {
            for(int j=0;j<n-i-1;++j)
            {
                if(arr[j]>arr[j+1])
                {
                    int t=arr[j];
                    arr[j]=arr[j+1];
                    arr[j+1]=t;
                }
```

```
            }
        }

        //Printing the sorted elements
        System.out.println("The sorted elements are as follows:");
        for(int i=0;i<n;++i)
        {
            System.out.print(arr[i]+" ");
        }
    }
}
```

Output:

```
C:\Users\SanJoi\Java Programming Lab\2) 17-8-2021>javac BubbleSort1.java

C:\Users\SanJoi\Java Programming Lab\2) 17-8-2021>java BubbleSort1
Name: Sanjoi Sethi      Reg. No.: 18BCE2261
Enter the size of the array:
10
Enter the value for the 0th element:
50
Enter the value for the 1th element:
30
Enter the value for the 2th element:
90
Enter the value for the 3th element:
20
Enter the value for the 4th element:
70
Enter the value for the 5th element:
60
Enter the value for the 6th element:
40
Enter the value for the 7th element:
80
Enter the value for the 8th element:
100
Enter the value for the 9th element:
10
The sorted elements are as follows:
10 20 30 40 50 60 70 80 90 100
```

2) Remove duplicate elements from a sorted array.

2) **Program:**

```
import java.util.*;
class Duplicate2
{
    public static void main(String args[])
    {
        System.out.println("Name: Sanjoi Sethi  Reg. No.: 18BCE2261");
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter the size of the array: ");
        int n=sc.nextInt();
        int arr[]=new int[n];
```

```
        //Inputting the elements of the array
        for(int i=0;i<n;++i)
        {
            System.out.println("Enter the value for the "+i+"th element:");
            arr[i]=sc.nextInt();
        }

        int j=0;
        for(int i=0;i<n-1;++i)
        {
            if(arr[i]!=arr[i+1])
            {
                arr[j++]=arr[i];
            }
        }
        arr[j++]=arr[n-1];

        //Printing the non-duplicate elements
        System.out.println("The non-duplicate elements are as follows:");
        for(int i=0;i<j;++i)
        {
            System.out.print(arr[i]+" ");
        }
    }
}
```

Output:

```
C:\Users\SanJoi\Java Programming Lab\2) 17-8-2021>javac Duplicate2.java

C:\Users\SanJoi\Java Programming Lab\2) 17-8-2021>java Duplicate2
Name: Sanjoi Sethi      Reg. No.: 18BCE2261
Enter the size of the array:
10
Enter the value for the 0th element:
10
Enter the value for the 1th element:
10
Enter the value for the 2th element:
20
Enter the value for the 3th element:
20
Enter the value for the 4th element:
30
Enter the value for the 5th element:
30
Enter the value for the 6th element:
30
Enter the value for the 7th element:
40
Enter the value for the 8th element:
40
Enter the value for the 9th element:
50
The non-duplicate elements are as follows:
10 20 30 40 50
```

3) Reverse the contents inside an array.

3) **Program:**

```
import java.util.*;
class Reverse3
{
    public static void main(String args[])
    {
        System.out.println("Name: Sanjoi Sethi  Reg. No.: 18BCE2261");
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter the size of the array: ");
        int n=sc.nextInt();
        int arr[]=new int[n];

        //Inputting the elements of the array
        for(int i=0;i<n;++i)
        {
            System.out.println("Enter the value for the "+i+"th element:");
            arr[i]=sc.nextInt();
        }

        //Reversing the elements
        for(int i=0;i<(n/2);++i)
        {
            int t=arr[i];
            arr[i]=arr[n-i-1];
            arr[n-i-1]=t;
        }

        //Printing the reversed elements
        System.out.println("The reversed elements are as follows:");
        for(int i=0;i<n;++i)
        {
            System.out.print(arr[i]+" ");
        }
    }
}
```

Output:

```
C:\Users\SanJoi\Java Programming Lab\2) 17-8-2021>javac Reverse3.java

C:\Users\SanJoi\Java Programming Lab\2) 17-8-2021>java Reverse3
Name: Sanjoi Sethi      Reg. No.: 18BCE2261
Enter the size of the array:
5
Enter the value for the 0th element:
40
Enter the value for the 1th element:
20
Enter the value for the 2th element:
80
Enter the value for the 3th element:
100
Enter the value for the 4th element:
70
The reversed elements are as follows:
70 100 80 20 40
```

4) Search for an element inside the array using linear search.

4) **Program:**

```
import java.util.*;
class LinearSearch4
{
    public static void main(String args[])
    {
        System.out.println("Name: Sanjoi Sethi  Reg. No.: 18BCE2261");
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter the size of the array: ");
        int n=sc.nextInt();
        int arr[]=new int[n];

        //Inputting the elements of the array
        for(int i=0;i<n;++i)
        {
            System.out.println("Enter the value for the "+i+"th element:");
            arr[i]=sc.nextInt();
        }

        //Inputting the elements to be found
        System.out.println("Enter the no. to be found:");
        int x=sc.nextInt();

        //Reversing the elements
        for(int i=0;i<n;++i)
        {
            if(arr[i]==x)
            {
                System.out.println("The no. is found at position: "+(i+1));
                break;
            }
        }
    }
}
```

Output:

```
C:\Users\SanJoi\Java Programming Lab\2) 17-8-2021>javac LinearSearch4.java

C:\Users\SanJoi\Java Programming Lab\2) 17-8-2021>java LinearSearch4
Name: Sanjoi Sethi      Reg. No.: 18BCE2261
Enter the size of the array:
10
Enter the value for the 0th element:
60
Enter the value for the 1th element:
30
Enter the value for the 2th element:
70
Enter the value for the 3th element:
10
Enter the value for the 4th element:
20
Enter the value for the 5th element:
90
Enter the value for the 6th element:
100
Enter the value for the 7th element:
40
Enter the value for the 8th element:
50
Enter the value for the 9th element:
80
Enter the no. to be found:
50
The no. is found at position: 9
```

24-8-2021:

1) Write a Java program to sort an array of positive integers of a given array, in the sorted array the value of the first element should be maximum, second value should be minimum value, third should be second maximum, fourth second be second minimum and so on.

1) **Program:**

```java
import java.util.*;
 class Maxmin1
 {
     public static void main(String args[])
     {
         Scanner sc=new Scanner(System.in);
         System.out.println("Sanjoi Sethi || 18BCE2261");
         System.out.println("Enter the size of the array:");
         int n=sc.nextInt();
         int a[]=new int[n];

         //Inputting the elements of the array
         for(int i=0;i<n;++i)
         {
```

```
            System.out.println("Enter a positive integer:");
            a[i]=sc.nextInt();

        }

        //Bubble Sort Algorithm to sort the elements in ascending order
        for(int i=0;i<n-1;++i)
        {
            for(int j=0;j<n-i-1;++j)
            {
                if(a[j]>a[j+1])
                {
                   int t=a[j];
                   a[j]=a[j+1];
                   a[j+1]=t;
                }
            }
        }

        //Mix sorting
        int t[]=new int[n];
        int min=0,max=n;
        boolean flag=true;
        for(int i=0;i<n;++i)
        {
             if(flag==true)
                 t[i]=a[--max];
             else
                 t[i]=a[min++];
             flag=!flag;
        }

        //Printing the sorted elements
        System.out.println("The sorted elements are as follows:");
        for(int i=0;i<n;++i)
        {
            System.out.print(t[i]+" ");
        }
    }
}
```

Output:

```
C:\Users\SanJoi\Java Programming Lab\3) 24-8-2021>javac Maxmin1.java

C:\Users\SanJoi\Java Programming Lab\3) 24-8-2021>java Maxmin1
Name: Sanjoi Sethi      Reg. No.: 18BCE2261
Enter the size of the array:
10
Enter a positive integer:
30
Enter a positive integer:
90
Enter a positive integer:
10
Enter a positive integer:
80
Enter a positive integer:
20
Enter a positive integer:
40
Enter a positive integer:
60
Enter a positive integer:
100
Enter a positive integer:
50
Enter a positive integer:
70
The sorted elements are as follows:
100 10 90 20 80 30 70 40 60 50
```

2) Write a Java program to separate even and odd numbers of a given array of integers. Put all even numbers first, and then odd numbers.

2) **Program:**

```
import java.util.*;
 class Evenodd2
 {
     public static void main(String args[])
     {
         Scanner sc=new Scanner(System.in);
         System.out.println("Name: Sanjoi Sethi  Reg. No.: 18BCE2261");
         System.out.println("Enter the size of the array:");
         int n=sc.nextInt();
         int a[]=new int[n];

         //Inputting the elements of the array
         for(int i=0;i<n;++i)
         {
             System.out.println("Enter a number:");
             a[i]=sc.nextInt();

         }

         //Segregating even and odd integers
```

```
        int left=0,right=n-1;
        while(left<right)
        {
            while(a[left]%2==0 && left<right)
                left++;
            while(a[right]%2==1 && left<right)
                right--;
            if(left<right)
            {
                int t=a[left];
                a[left]=a[right];
                a[right]=t;
                left++;
                right--;
            }
        }

        //Printing the sorted elements
        System.out.println("The array after even odd segregation:");
        for(int i=0;i<n;++i)
        {
            System.out.print(a[i]+" ");
        }
    }
}
```

Output:

```
C:\Users\SanJoi\Java Programming Lab\3) 24-8-2021>javac Evenodd2.java

C:\Users\SanJoi\Java Programming Lab\3) 24-8-2021>java Evenodd2
Name: Sanjoi Sethi  Reg. No.: 18BCE2261
Enter the size of the array:
10
Enter a number:
1
Enter a number:
2
Enter a number:
3
Enter a number:
4
Enter a number:
5
Enter a number:
6
Enter a number:
7
Enter a number:
8
Enter a number:
9
Enter a number:
10
The array after even odd segregation:
10 2 8 4 6 5 7 3 9 1
```

3) Write a Java program to remove the duplicate elements of a given array and return the new length of the array.

3) **Program:**

```java
import java.util.*;
 class Duplicate3
 {
     public static void main(String args[])
     {
         Scanner sc=new Scanner(System.in);
         System.out.println("Name: Sanjoi Sethi  Reg. No.: 18BCE2261");
         System.out.println("Enter the size of the array:");
         int n=sc.nextInt();
         int a[]=new int[n];

         //Inputting the elements of the array
         for(int i=0;i<n;++i)
         {
             System.out.println("Enter a positive integer:");
             a[i]=sc.nextInt();

         }

         //Removing duplicate elements
```

```
        int j=0;
        for(int i=0;i<n-1;++i)
        {
            if(a[i]!=a[i+1])
            {
                a[j++]=a[i];
            }
        }
       a[j++]=a[n-1];
       System.out.println("The new length of the array is: "+j);
    }
}
```

Output:

```
C:\Users\SanJoi\Java Programming Lab\3) 24-8-2021>javac Duplicate3.java

C:\Users\SanJoi\Java Programming Lab\3) 24-8-2021>java Duplicate3
Name: Sanjoi Sethi  Reg. No.: 18BCE2261
Enter the size of the array:
10
Enter a positive integer:
10
Enter a positive integer:
10
Enter a positive integer:
10
Enter a positive integer:
20
Enter a positive integer:
20
Enter a positive integer:
30
Enter a positive integer:
30
Enter a positive integer:
40
Enter a positive integer:
40
Enter a positive integer:
40
The new length of the array is: 4
```

4) Write a Java program to find the sum of the two elements of a given array which is equal to a given integer.

4) **Program:**

```
import java.util.*;
 class Sum4
 {
    public static void main(String args[])
    {
        Scanner sc=new Scanner(System.in);
        System.out.println("Name: Sanjoi Sethi  Reg. No.: 18BCE2261");
        System.out.println("Enter the size of the array:");
        int n=sc.nextInt();
```

```
        int a[]=new int[n];
        System.out.println("Enter the number:");
        int x=sc.nextInt();

        //Inputting the elements of the array
        for(int i=0;i<n;++i)
        {
            System.out.println("Enter a positive integer:");
            a[i]=sc.nextInt();

        }

        //Finding and printing the pairs
        System.out.println("The pairs are:");
        for(int i=0;i<n-1;++i)
        {
            for(int j=i+1;j<n;++j)
            {
                if((a[i]+a[j])==x)
                {
                    System.out.println("("+a[i]+","+a[j]+")");
                }
            }
        }
    }
}
```

Output:

```
C:\Users\SanJoi\Java Programming Lab\3) 24-8-2021>javac Sum4.java

C:\Users\SanJoi\Java Programming Lab\3) 24-8-2021>java Sum4
Name: Sanjoi Sethi  Reg. No.: 18BCE2261
Enter the size of the array:
10
Enter the number:
10
Enter a positive integer:
1
Enter a positive integer:
2
Enter a positive integer:
3
Enter a positive integer:
4
Enter a positive integer:
5
Enter a positive integer:
6
Enter a positive integer:
7
Enter a positive integer:
8
Enter a positive integer:
9
Enter a positive integer:
0
The pairs are:
(1,9)
(2,8)
(3,7)
(4,6)
```

5) Display the sum of rows in a matrix.

5) **Program:**

```
import java.util.*;
 class SumOfRows5
 {
     public static void main(String args[])
     {
         Scanner sc=new Scanner(System.in);
         System.out.println("Name: Sanjoi Sethi  Reg. No.: 18BCE2261");
         System.out.println("Enter the number of rows:");
         int m=sc.nextInt();
         System.out.println("Enter the number of columns:");
         int n=sc.nextInt();
         int a[][]=new int[m][n];
```

```
        //Inputting the elements of the array
        for(int i=0;i<m;++i)
        {
            for(int j=0;j<n;++j)
            {
                System.out.println("Enter a number:");
               a[i][j]=sc.nextInt();
            }
        }

        //Displaying the sum of rows
        for(int i=0;i<m;++i)
        {
            int sum=0;
            for(int j=0;j<n;++j)
            {
                sum=sum+a[i][j];
            }
            System.out.println("Sum of row "+(i+1)+" is: "+sum);
        }
    }
}
```

Output:

```
C:\Users\SanJoi\Java Programming Lab\3) 24-8-2021>javac SumOfRows5.java

C:\Users\SanJoi\Java Programming Lab\3) 24-8-2021>java SumOfRows5
Name: Sanjoi Sethi  Reg. No.: 18BCE2261
Enter the number of rows:
3
Enter the number of columns:
4
Enter a number:
1
Enter a number:
2
Enter a number:
3
Enter a number:
4
Enter a number:
5
Enter a number:
6
Enter a number:
7
Enter a number:
8
Enter a number:
9
Enter a number:
10
Enter a number:
11
Enter a number:
12
Sum of row 1 is: 10
Sum of row 2 is: 26
Sum of row 3 is: 42
```

6) Display the transpose of a matrix.

6) **Program:**

```
import java.util.*;
 class Transpose6
 {
     public static void main(String args[])
     {
         Scanner sc=new Scanner(System.in);
         System.out.println("Name: Sanjoi Sethi  Reg. No.: 18BCE2261");
         System.out.println("Enter a value for the number of rows and
columns:");
         int n=sc.nextInt();
         int a[][]=new int[n][n];

         //Inputting the elements of the array
         for(int i=0;i<n;++i)
```

```
        {
            for(int j=0;j<n;++j)
            {
                System.out.println("Enter a number:");
               a[i][j]=sc.nextInt();
            }
        }

        //Displaying the original matrix
        for(int i=0;i<n;++i)
        {
            for(int j=0;j<n;++j)
            {
                System.out.print(a[i][j]+"\t");
            }
            System.out.println();
        }
        System.out.println();

        //Transpose of the matrix
        for(int i=0;i<n;++i)
        {
            for(int j=0;j<n/2+i;++j)
            {
                int t=a[i][j];
                a[i][j]=a[j][i];
                a[j][i]=t;
            }
        }

        //Printing the transpose matrix
        for(int i=0;i<n;++i)
        {
            for(int j=0;j<n;++j)
            {
                System.out.print(a[i][j]+"\t");
            }
            System.out.println();
        }
    }
}
```

Output:

```
C:\Users\SanJoi\Java Programming Lab\3) 24-8-2021>javac Transpose6.java

C:\Users\SanJoi\Java Programming Lab\3) 24-8-2021>java Transpose6
Name: Sanjoi Sethi  Reg. No.: 18BCE2261
Enter a value for the number of rows and columns:
3
Enter a number:
1
Enter a number:
2
Enter a number:
3
Enter a number:
4
Enter a number:
5
Enter a number:
6
Enter a number:
7
Enter a number:
8
Enter a number:
9
1       2       3
4       5       6
7       8       9

1       4       7
2       5       8
3       6       9
```