**Basic programs using data types, operators and control statement**

1. Write a Java program to check whether a string is palindrome or not.

**SOURCE CODE**

**OUTPUT**

1. Write a Java program to multiply two matrices

**SOURCE CODE**

**OUTPUT**

1. Write a Java program to find the transpose of a matrix.

**SOURCE CODE**

import java.io.\*;

import java.util.\*;

public class p3transpose

{

    public static void main(String args[])

    {

        int a[][],m,n,i,j;

        Scanner s=new Scanner(System.in);

        try{

            System.out.println("Enter the order of the matrix : ");

            m=s.nextInt();

            n=s.nextInt();

            a=new int[m][n];

            System.out.println("Enter "+(m\*n)+" matrix elements");

            for(i=0;i<m;i++)

             {

                for(j=0;j<n;j++)

                  a[i][j]=s.nextInt();

             }

             System.out.println("Matrix elements are : ");

             for(i=0;i<m;i++)

             {

                for(j=0;j<n;j++)

                  System.out.print(a[i][j]+"  ");

                System.out.println(" ");

             }

             System.out.println("Transpose of Matrix : ");

             for(i=0;i<n;i++)

             {

                for(j=0;j<m;j++)

                  System.out.print(a[j][i]+"  ");

                System.out.println(" ");

             }

        }

        catch(Exception e)

        {

            System.out.println(e);

        }

    }

}

**OUTPUT**

1. Write a Java program to find the second smallest element in an array.

**SOURCE CODE**

import java.io.\*;

import java.util.\*;

public class p4small

{

    public static void main(String args[])

    {

        int a[],n,i,j,temp;

        Scanner s=new Scanner(System.in);

        try{

            System.out.println("Enter the size of array: ");

            n=s.nextInt();

            a=new int[n];

            System.out.println("Enter "+n+" array elements");

            for(i=0;i<n;i++)

             {

                  a[i]=s.nextInt();

             }

             System.out.println("Array elements are : ");

             for(i=0;i<n;i++)

                  System.out.print(a[i]+"  ");

             //sorting the array elements

             for(i=0;i<n;i++)

             {

                for(j=0;j<n-1;j++)

                {

                    if(a[j]>a[j+1])

                    {

                        temp=a[j];

                        a[j]=a[j+1];

                        a[j+1]=temp;

                    }

                }

             }

             System.out.println("\nSecond smallest element : "+a[1]);

        }

        catch(Exception e)

        {

            System.out.println(e);

        }

    }

}

**OUTPUT**

1. Write a Java progWrite a Java program to calculate the area of different shapes namely circle, rectangle, trapezoid and triangle. (Use the concepts of JAVA like *this* keyword, constructor overloading and method overloading)

**SOURCE CODE**

**OUTPUT**

**Object Oriented Concepts**

1. Define a class and Use appropriate member functions *int s*ram to check whether a number is prime or not.
2. Write a java program to demonstrate Bitwise logical operators, left shift and right shift operators.
3. Write a java program to find the roots of a quadratic equation.
4. *SameArea(Rectangle* to calculate the perimeter and area of the rectangle. Define another member functio*le)* that has one parameter of type Rectangle. *sameArea* returns 1 if the two Rectangles have the same area, and returns 0 if they don't. Use appropriate constructors to initialize the member variables(Use both default and parameterized constructor) Write a main function to create two rectangle objects and display its area and perimeter. Check whether the two Rectangles have the same area and print a message indicating the result. (Use the concept of *this* pointer too)

