E1:Code

```java
import java.util.Scanner;

class matrix
{
    int matrix[][],transmatrix[][];
    int m, n;
    Scanner get = new Scanner(System.in);

    matrix()
    {
        System.out.println("\n <-----Enter the Size-----> ");
        System.out.printf(" Row: "); m = get.nextInt();
        System.out.printf(" Column: ");  n = get.nextInt();
        matrix=new int[m][n];
        transmatrix=new int[n][m];
    }

    void matrixDisplay()
    {
        for(int i=0;i<m;i++)
        {   System.out.println();
            for (int j=0;j<n;j++ )
            {
                System.out.printf(" %d ",matrix[i][j]);
            }
        }
    }

    void getMatrix()
    {
        int count=0;
        for(int i=0;i<m;i++)
        {   System.out.println();
            for (int j=0;j<n;j++ )
            {
                matrix[i][j]=get.nextInt();
                count++;
            }
        }
    }
    void transMatrixDisplay()
    {
        for(int i=0;i<n;i++)
        {   System.out.println();
            for (int j=0;j<m;j++ )
            {
                System.out.printf(" %d ",transmatrix[i][j]);
            }
        }
    }
```

```java
    void transpose()
    {
        for(int i=0;i<m;i++)
        {
            for (int j=0;j<n;j++ )
            {
                transmatrix[j][i]=matrix[i][j];
            }
        }
    }

}
class matrixMain
{
    public static void main(String[] args)
    {
        matrix m=new matrix();
        System.out.println("\n Enter The matrix elements: ");
        m.getMatrix();
        System.out.println(" The Given Matrix Is : ");
        m.matrixDisplay();
        m.transpose();
        System.out.println("\n\n The Transpose of  Matrix Is : ");
        m.transMatrixDisplay();

    }
}
```

E1:Output

```
<-----Enter the Size----->
Row: 3
Column: 4

Enter The matrix elements:

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


The Given Matrix Is :

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

The Transpose of  Matrix Is :

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

E2:Code

```java
import java.util.Scanner;

class circleDemo
{
    double radius,area,perimeter;
    final double pi=3.14;
    Scanner get = new Scanner(System.in);
    circleDemo()
    {
        System.out.printf("\n Enter the radius of Circle : ");
        radius=get.nextDouble();
    }

    void circleArea()
    {
        area=pi*radius*radius;
    }
    void circlePerimeter()
    {
        perimeter=2*pi*radius;
    }
    void circleDisplay()
    {
        System.out.printf("\n Circle Details:  ");
        System.out.printf("\n Area: %.2f ",area);
        System.out.printf("\n Perimeter: %.2f ",perimeter);

    }
    public static void main(String[] args)
    {
        circleDemo c = new circleDemo();
        c.circleArea();
        c.circlePerimeter();
        c.circleDisplay();
    }

}
```

E2:Output

```
Enter the radius of Circle : 5

Circle Details:
Area: 78.50
Perimeter: 31.40
```

E3:Code

```java
import java.util.Scanner;

class actor
{
    String id,name;
    int noOfMovies,noOfYearsExp;
    Scanner get = new Scanner(System.in);

    actor(int n)
    {
        System.out.printf("\n <-----Enter the details of Actor %d-----> ",n);
        System.out.printf("\n ID: "); id=get.nextLine();
        System.out.printf(" Name: "); name=get.nextLine();
        System.out.printf(" No Of Movies: "); noOfMovies=get.nextInt();
        System.out.printf(" No Of Years Exp: "); noOfYearsExp=get.nextInt();
    }

    double averagePerformance()
    {
        return (noOfMovies/(double)noOfYearsExp);
    }

    void displayActor()
    {
        System.out.printf("\n <-----The details of Actor are-----> ");
        System.out.printf("\n ID: %s ", id);
        System.out.printf("\n Name: %s", name);
        System.out.printf("\n No Of Movies: %d",noOfMovies);
        System.out.printf("\n No Of Years Exp: %d",noOfYearsExp);
    }

}

class actorMain
{
    public static void main(String[] args)
    {
        int n,flag;
        double max;
        actor a[];
        Scanner get = new Scanner(System.in);
        System.out.printf("\n Enter the No of Actors : ");
        n=get.nextInt();
        a=new actor[n];
        for(int i=0;i<n;i++)
            a[i]=new actor(i+1);
        max=a[0].averagePerformance();
        flag=0;
        for(int i=1;i<n;i++)
        {
            if(max<a[i].averagePerformance())
            {
                max=a[i].averagePerformance();
                flag=i;
            }
        }
        System.out.printf("\n The Highest average performance Actor is %s ",a[flag].name);
        a[flag].displayActor();
    }
}
```

E3:Output

```
Enter the No of Actors : 3

<-----Enter the details of Actor 1----->
ID: 1
Name: rem
No Of Movies: 3
No Of Years Exp: 4

<-----Enter the details of Actor 2----->
ID: 2
Name: ram
No Of Movies: 4
No Of Years Exp: 3

<-----Enter the details of Actor 3----->
ID: 3
Name: klee
No Of Movies: 5
No Of Years Exp: 5

The Highest average performance Actor is ram
<-----The details of Actor are----->
ID: 2
Name: ram
No Of Movies: 4
No Of Years Exp: 3
```

E4:Code

```java
import java.util.Scanner;

class comd2darray
{
    public static void main(String[] args)
    {
        int m,n,len,l=2;
        int array[][];
        m=Integer.parseInt(args[0]);
        n=Integer.parseInt(args[1]);
        len=args.length;
        array=new int[m][n];

        if((len-2)!=m*n)
        {
            if((len-2)>m*n)
            {
            System.out.printf("\n The Size overflows, check comand line arguments\n No of ele expected =%d \n No of Given elements =%d \n",m*n,len-2);
            System.exit(0);
            }
            if((len-2)<m*n)
            {
            System.out.printf("\n The Size Under Flows, check comand line arguments\n No of ele expected =%d \n No of Given elements =%d \n",m*n,len-2);
            System.exit(0);
            }

        }
        for(int i=0 ;i<m && l<len;i++)
        {
            for(int j=0;j<n && l<len;j++)
            {
                array[i][j]=Integer.parseInt(args[l++]);
            }
        }
        System.out.println(" The Array Entered is ( "+m+" x "+n+" ) :  ");
        for(int i=0 ;i<m ;i++)
        {
            int max=array[i][0];
            for(int j=0;j<n ;j++)
            {
                System.out.printf(" %d ",array[i][j]);

            }
            System.out.println();
        }
        for(int i=0 ;i<m ;i++)
        {
            for(int j=0;j<n;j++)
            {
                for (int k=0;k<n-j-1;k++)
                    {
                        if (array[i][k]>array[i][k+1])
                        {
                            int temp=array[i][k];
                            array[i][k]=array[i][k+1];
                            array[i][k+1]=temp;
                        }
                    }
            }
        }

        System.out.println(" The Sorted Array  is ( "+m+" x "+n+") :  ");
        for(int i=0 ;i<m ;i++)
        {
            int max=array[i][0];
            for(int j=0;j<n ;j++)
            {
                System.out.printf(" %d ",array[i][j]);

            }
            System.out.println();
        }

    }


}
```

E4:Output

```
G:\NoTePadPP\MyJava\OOJ_LAB\Week6>java comd2darray 3 4 1 2 3 4 5 6 7 8 9 10 11 12
 The Array Entered is (3x 4) :
 1  2  3  4
 5  6  7  8
 9  10  11  12
 The Sorted Array  is (3x 4) :
 1  2  3  4
 5  6  7  8
 9  10  11  12

G:\NoTePadPP\MyJava\OOJ_LAB\Week6>javac week6e4.java

G:\NoTePadPP\MyJava\OOJ_LAB\Week6>java comd2darray 3 4 12 3 4 1 6 2 5 6 3 6 7 3
 The Array Entered is ( 3 x 4 ) :
 12  3  4  1
 6  2  5  6
 3  6  7  3
 The Sorted Array  is ( 3 x 4) :
 1  3  4  12
 2  5  6  6
 3  3  6  7

G:\NoTePadPP\MyJava\OOJ_LAB\Week6>java comd2darray 3 4 12 3 4 1 6 2 5 6 3 6

 The Size Under Flows, check comand line arguments
 No of ele expected =12
 No of Given elements =10

G:\NoTePadPP\MyJava\OOJ_LAB\Week6>java comd2darray 3 4 12 3 4 1 6 2 5 6 3 6 7 3 5 6

 The Size overflows, check comand line arguments
 No of ele expected =12
 No of Given elements =14
```