Java Lab Assessment 3

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1.Program to multiply two matrices

```
//Matrix multiplication
public class Matrix
{
   public static void main(String[] args)
   {
       int a[][]={{6,9,3},{3,9,6},{4,5,6}};
       int b[][]={{1,0,1},{7,0,1},{9,3,7}};
       int c[][]=new int[3][3];

       //printing the first matrix
       System.out.println("Matrix 1:");
       for(int i=0;i<3;i++)
       {
           for (int j=0;j<3;j++)
           {
               System.out.print(a[i][j]+" ");
           }
           System.out.println();
       }
       System.out.println("\n");

       //printing the second matrix
       System.out.println("Matrix 2:");
       for(int i=0;i<3;i++)
       {
           for (int j=0;j<3;j++)
           {
               System.out.print(b[i][j]+" ");
           }
           System.out.println();
       }

       System.out.println("\n");


       //matrix multiplication
       System.out.println("Multiplied matrix:");
```

```
        for(int i=0;i<3;i++)
        {
            for (int j=0;j<3;j++)
            {
                c[i][j]=0;
                for(int k=0;k<3;k++)
                {
                    c[i][j]=a[i][k]*b[k][j];
                }
                System.out.print(c[i][j]+" ");
            }
            System.out.println();
        }
    }
}
```

Output:

Matrix 1:
6 9 3
3 9 6
4 5 6

Matrix 2:
1 0 1
7 0 1
9 3 7

Multiplied matrix:
27 9 21
54 18 42
54 18 42

2.Program to find Maximum and minimum value in an array of size "M", passed as argument.

```
//Program to find Maximum and minimum value in an array of size "M", passed as
argument.

import java.util.*;
class max
```

```
{
   max(int[] a)
   {
       int l=a.length;
       int ma=a[0];
       for(int i=0;i<l;i++)
       {
           if(ma<a[i])
           {
               ma=a[i];
           }
       }
       System.out.println("The maximum element in the array is: "+ma);
   }
}

class min
{
   min(int[] a)
   {
       int l=a.length;
       int mi=a[0];
       for(int i=0;i<l;i++)
       {
           if(mi>a[i])
           {
               mi=a[i];
           }
       }
       System.out.println("The minimum element in the array is: "+mi);
   }
}

public class maxmin {
   public static void main(String[] args)
   {
       Scanner sc= new Scanner(System.in);
       System.out.println("Enter the size of the array");
       int n=sc.nextInt();
       int[] arr= new int[n];

       System.out.println("Enter elements in the array");
```

```
        for(int i=0;i<n;i++)
        {
            int elements=sc.nextInt();
            arr[i]=elements;
        }
        max a= new max(arr);
        min b = new min(arr);
        sc.close();
    }

}
```

Output:
Enter the size of the array
5
Enter elements in the array
8
56
-64
83
94
The maximum element in the array is: 94
The minimum element in the array is: -64

3.Program to read and print an array of size N rows with variable column size. (Hint: Irregular array).

```
import java.util.Scanner;

public class irregulararray {
    public static void main(String[] args)
    {
        Scanner sc= new Scanner(System.in);
        System.out.println("Enter number of rows:");
        int n=sc.nextInt();

        int [][]array= new int[n][];

        for(int i=0;i<n;i++)
```

```
        {
            System.out.println("Enter the number of columns:  ");
            int col=sc.nextInt();

            array[i]= new int [col];

            System.out.println("Enter row elements: ");
            for(int j=0;j<col;j++)
            {
                array[i][j]=sc.nextInt();
            }
        }
        System.out.println("Your array: ");
        for(int i=0;i<n;i++)
        {
            for(int j=0;j<array[i].length;j++)
            {
                System.out.print(array[i][j]+" ");
            }
            System.out.println();
        }
        sc.close();
    }
}
```

Output:

Enter number of rows:
3
Enter the number of columns:
2
Enter row elements:
1
4
Enter the number of columns:
4
Enter row elements:
1
3
2
4

Enter the number of columns:
3
Enter row elements:
6
3
2
Your array:
1 4
1 3 2 4
6 3 2

4.Program that copies contents of one array to another using length member.

```
//Program that copies contents of one array to another using length member.
import java.util.*;
public class copy {
   public static void main(String[] args)
   {
       int[] arr1={5,6,7,9,8,4,3};
       int[] arr2= new int[arr1.length];
       for(int i=0;i<arr1.length;i++)
       {
           arr2[i]=arr1[i];
       }
       System.out.println("Source Array: " + Arrays.toString(arr1));
       System.out.println("Destination Array: " + Arrays.toString(arr2));
   }

}
```

Output:
Source Array: [5, 6, 7, 9, 8, 4, 3]
Destination Array: [5, 6, 7, 9, 8, 4, 3]