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Course code: CSA-0993

1. matrix Addition:

```
import Java.Util.Scanner;
public class matrix
{
    public static void main (String Args[])
    {
        Scanner input = new Scanner (System.in);
        int mat1[][] = { {1,2} , {5,3} };
        int mat2[][] = { {2,3} , {4,3} };
        int mat_sum [][] = new int [2][2];
        int len = mat1.length;
        for (int i=0; i< len; i++)
        {
            for (int j=0; j<len; j++)
            {
                mat_sum[i][j] = mat1[i][j] + mat2[i][j];
                System.out.print (mat_sum[i][j]+"\t"
            }
            System.out.println();

        }.
```

2. Write a program to sort a list of names in Ascending or descending choice get from user?

```
import Java.Util.Scanner;
public class alphabet {
```

```
public static void main (String args[])
{
    Scanner input = new Scanner (System.in);
    String arr[] = {"Banana", "Apple", "Carrot", "Radish"
                    "Jack"};

    int len = arr.length;
    char order = input.next().charAt(0);
    if (order == 'A'){
        for (int i=0; i<len; i++) {
            for(int j= i+1; j< arr.length; j++){
                if (arr[i].CompareTo(arr[j]) > 0){
                    String temp = arr[i];
                    arr[i] = arr[j];
                    arr[j] = temp;
                }
            }
        }
        System.out.println (Arrays.toString (arr));

    }
else if (order == 'D'){
    for (int i=0; i<len; i++){
        for (int j=i+1; j< arr.length; j++){
            if (arr[i].CompareTo (arr[j] <0){
                String temp = arr[i];
                arr[j] = temp;
            }
        }
    }
    System.out.println(Arrays.toString (arr));
}
```

3. write a program for matrix multiplication

```
import Java.util.Scanner;
Public class matrix {

public static Void main(String args[])
{
    Scanner input = new Scanner (System.in);
    int r = input.nextInt();
    int c = input.nextInt();
    int mat1[][] = new int[r][c];
    int mat2[][] = new int[r][c];
    for (int i=0; i<r; i++)
    {
        for (int j=0; j<c; j++)
        {
            mat1[i][j] = input.nextInt();
        }
    }
    for (int i=0; i<r; i++)
    {
        for (int j=0; j<c; j++).
        {
            mat2[i][j] = input.nextInt();
        }
    }
    int sum[][] = new int[r][c];
    for (int i=0; i<r; i++).
    {
        for (int j=0; j<c; j++)
    {
        sum[i][j]=0;
        for (int k=0; k<c; k++)
```

```
{
    Sum[i][j] = Sum[i][j] + mat1[i][k] * mat2[k][j];
  }
  System.out.print(Sum[i][j] + "\t");
  }
  System.out.println();
}
```

5. Program to print following pattern.

```
1
1 1
1 1 1
1 1
1
```

```
import Java.util.Scanner;
Public class Pattern {
    Public static Void main (String args[]).
    {
        Scanner input = new Scanner (System.in);
        System.out.print ("Enter number to be
                                printed:");
        int x = input.nextInt();
        System.out.print ("max Number of time printed:");
        int n = input.nextInt();
        for (int i=1; i<=n; i++)
        {
            for(int j=1; j<=i ; j++).
            {
                System.out.print(x);
            }
        }
        for (int i=n-1; i>=1; i--)
        {
```

```
{
    for (int j=1; j<=i; j++)
    {
        System.out.print(x);
    }
    System.out.print(*);
```

16. Program to print special character separately and print number of special characters in line?

```
import Java.Util.Scanner;
class character {
    public static void main
    {
        Scanner input = new Scanner (System.in);
        String s = input.nextLine();
        int len = s.length();
        char a[] = new char [len];
        int sp=0;
        for (int i=0; i<len; i++)
        {
            a[i]= s.charAt(i);
            if (a[i] >=65 && a[i] <=90 ||a[i]>=97
                && a[i] <=122 ||a[i]>=48 && a[i]<=57)
            {
            }
            else
            {
                sp++;
```

```
System.out.print(a[i]);
    }
}
System.out.println("\n" + sp);
```

7. Program to print all composite numbers between a and b.

```
import Java.Util.Scanner;
Class Composite
{
    Public Static Void main (String args[])
    {
        Scanner input = new Scanner (System.in);
        int a = input.nextInt();
        int b = input.nextInt();
        for (int i=a+1; i<=b; i++)
        {
            int c=0;
            for (int j=1; j<=b; j++)
            {
                if (i%j==0)
                    c++;
            }
            if (c>2)
                System.out.print(i+" ");
```

8. Program for Inverted Full Pyramid pattern?

```
import Java.util.Scanner;
class Pyramid
{
    Public static void main(String args[])
    {
        Scanner input= new Scanner (System.in);
        int n= input.nextInt();
        for (int i=n; i>=1; i--).
        {
            for (int j=0; j<n-1; j++).
            {
                System.out.print(" ");
            }
            for (int k=1; k<=i; k++).
            {
                System.out.print(" *");
            }
            System.out.println();
        }.
```

9. Find mean, median, mode of array numbers?

```
Ans.
Scanner input =new Scanner(System.in);
int a[]={16,18,27,16,23,21,19};
int len=a.length;
int sum=0;
for (int i=0; i<len; i++)
{.
```

```
{
    sum= sum+a[i];
  }
int mean= sum/len;
System.out.println("mean: "+mean);
for (int i=0; i< len; i++).
{
    for (int j=i+1; j<len; j++).
    {
        if (a[i]>a[j])
        {
            int temp=a[i];
            a[i]= a[j];
            a[j]= temp;
        }
    }
  }
for (int i=0; i<len; i++).
{
    if (len%2==0).
    {
      int mid =len/2;
      System.out.print("median:" +a[mid-1]);
      break;
    }
    else
    {
        int mid= (len+1)/2;
```

```
System. out. print (mid);
System. out. Println ("median: " + a[mid-1]);
 break;
}.
}
for (int i=0; i<len; i++).
{
    for (int j=i+1; j<len; j++)
    {
        if (a[i]==a[j]).
        {
            System. out. println ("mode": +a[i])
            break;
        }.
    }
}.
```

Q. Find the Factoral of n?

```
import Java. Util. Scanner;
class Fact
{
    Scanner input = new Scanner (System.in);
    int n = input. nextInt();
    int fact = 1;
    for (int i=1; i<=n; i++).
    {
        fact = fact * i;
    }
    System.out. Print (fact);
```