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SUBJECT: JAVA

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## Assignment -2

1. Write a program for matrix Addition?

```
Import java.util.Scanner;
```

```
class Hello world {
```

```
Public static void main (String [] args)
```

```
{
```

```
Scanner input = new
```

```
Scanner (System.in);
```

```
int mat 1 [][] = {{1,2}, {5,3}};
```

```
int mat 2 [][] = {{2,3}, {4,1}};
```

```
int mat-sum [][] = new int [2][2];
```

```
int len = mat 1.length;
```

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

```
{
```

```
for (int j=0; j<len; j++)
```

```
{
```

```
mat-sum[i][j] = mat 1[i][j] + mat 2[i][j];
```

```
system.out.print (mat-sum[i][j] + " ");
```

```
}
```

```
system.out.println ();
```

```
}
```



2. Write a program to print rectangle symbol pattern

class GFG {

static void printRectangle (int n, int w)

{

for (int i = 0; i < h; i++)

{

System.out.println();

for (int j = 0; j < w; j++)

if (i == 0 || i == h - 1 ||

j == 0 || j == w - 1)

System.out.print("@");

else

System.out.print(" ");

}

}

}

public static void main (String args[])

{

int h = 4, w = 5;

Print Rectangle (h, w);

}

}



13. Write a program that would sort a list of names in alphabetical order Ascending or Descending, choice get from the user?

```
import java.util.Scanner;
class name
{
    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[i] = arr[j];
        arr[j] = temp;
    }
}
}
System.out.println(Arrays.toString(arr));
}

```

4. Write Program for matrix multiplication?

```

import java.util.Scanner
Public main
{
    Public 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++)

```



```

{
    mat 2 [T][C] = input.next Int();
}
int sumC [C] = new int [8][C];
for (int i=0; i < 8; i++)
{
    for (int j=0; j < C; j++)
    {
        sumC[i][j] = 0;
        for (int k=0; k < C; k++)
        {
            sumC[i][j] = sumC[i][j] + (mat[i][k] * mat 2[k][j]);
        }
        System.out.print (sumC[i][j] + " ");
    }
    System.out.println ();
}

```

5. Write a program to print the following pattern

```

import java.util.Scanner;
Public main
{
    Public static void main (String [], args)
    Scanner out = new Scanner (System.in);
    int x = input.next Int();
    System.out.print ("Max Number of time Printed");
    int n = input.next Int();
    for (int i=1; i < n; i++)
    {
        for (int j=1; j <= i; j++)
        {
            System.out.print (x);
        }
        System.out.println ();
    }
}

```



```

for (int i = n-1; i >= 1; i++)
{
    for (int j = 1; j <= i; j++)
    {
        System.out.print(x);
    }
    System.out.println();
}

```

6. Write a Program to print the special characters separately and Print number of special characters in the line?

```

import java.util.Scanner;
public class main
{
    public static void main (String[] args)
    {
        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))
            {
                // Special character
            }
            else
            {
                sp++;
            }
            System.out.print(a[i]);
        }
        System.out.println("\n" + sp);
    }
}

```



7. Write a program to print all the composite numbers between a and b?

```
import java.util.Scanner;
public main
{
    public static void main (String[], args)
    Scanner input = new Scanner (System.in);
    int a = input.next Int();
    int b = input.next Int();
    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.println (i);
    }
}
```

8. Write a program to print the inverted full pyramid pattern?

```
import java.util.Scanner;
public main
{
    public static void main (String[], args)
    Scanner input = new Scanner (System.in);
    int n = input.next Int();
    for (int i = n; i >= 1; i--)
    {
        for (int j = 0; j < n - i; j++)
        {
            System.out.print(" ");
        }
        for (int k = 1; k <= i; k++)
        {
            System.out.print("#");
        }
    }
}
```



9. Find the Mean, Median Made of the array of number.

```
import java.util.Scanner;

public class Main
{
    public static void main (String[] args)
    {
        Scanner Input = new Scanner (System.in);
        int a[] = {6, 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.print ln ("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;
        }
    }
}
}

```

10. Find the factorial of n

```

import java.util.Scanner;
public class main
{
    public static void main (String[] args) {
        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);
    }
}

```