

## CSA0985 – PROGRAMMING IN JAVA FOR MOBILE APPLICATIONS

**NAME : O.MURALI KRISHNA MOHAN**

**REG NO : 192125053**

**1. Write a java program to print first n perfect numbers ?**

**Ans :**     *import java.util.Scanner;*

*public class PerfectNumberExample1*

*{*

*public static void main(String args[])*

*{*

*long n, sum=0;*

*Scanner sc=new Scanner(System.in);*

*System.out.print("Enter the number: ");*

*n=sc.nextLong();*

*int i=1;*

*while(i <= n/2)*

*{*

*if(n % i == 0)*

*{*

*Sum = sum + i;*

*}*

*i++;*

*if(sum==n)*

```

{
    System.out.println(n+" is a perfect number.");
}
else
    System.out.println(n+" is not a perfect number.");
}
}

```

2. Write a java program to calculate tax given the following :

Condition a ,if income  $\leq 150000$  then no tax, condition b if taxable income is 150001 to 300000 the charge is 10% , if taxable income is 300001 to 500000 the charge is 15% and if income is above 500001 then tax is 30% ?

Ans :      *import java.util.Scanner;*

```

public class TaxCalculator {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter your income: ");

        double income = scanner.nextDouble();

        double tax = calculateTax(income);

        System.out.println("Your tax amount is: " + tax);

    }

    public static double calculateTax(double income) {

        double taxableIncome = income - 150000;

        double tax = 0.0;

        if (taxableIncome <= 0) {

            tax = 0.0;

        } else if (taxableIncome <= 150000) {

```

```
tax = taxableIncome * 0.10;

} else if (taxableIncome <= 200000) {

tax = 15000 + (taxableIncome - 150000) * 0.15;

} else {

tax = 30000 + (taxableIncome - 200000) * 0.30;

}

return tax;

}

}
```

3. Write a java program to calculate factorial of number using recursive function ?

Ans :        *class FactorialExample2{*

```
static int factorial(int n){

if (n == 0)

return 1;

else

return(n * factorial(n-1));

}

public static void main(String args[]){

int i,fact=1;

int number=4;//It is the number to calculate factorial

fact = factorial(number);

System.out.println("Factorial of "+number+" is: "+fact);

}

}
```

4. Write a java program to print composite numbers between a and b ?

Ans : *import java.util.Scanner;*

```
class finding
{
    int flag,n;
    finding()
    {
        System.out.print("Enter range to find the composite numbers:");
        Scanner in=new Scanner(System.in);
        n=in.nextInt();
        for(int i=2;i<=n;i++)
        {
            flag=0;
            for(int j=2;j<i;j++)
            {
                if(i%j ==0)
                {
                    flag++;
                }
            }
            if(flag!=0)
            {
                System.out.println("one of the composite number is:" + i);
            }
        }
    }
}

class composite
{
    public static void main(String a[])
    {
        finding ob=new finding();
    }
}
```

5. Write a java program to print inverted full pyramid pattern ?

Ans : *public class PITangle*

```
{
    public static void main(String[] args)
    {
        Scanner sc=new Scanner(System.in);
```

```

System.out.println("Enter N : ");
int n=sc.nextInt();
System.out.print("Enter Symbol : ");

char c = sc.next().charAt(0);

for(int i=n;i>0 ;i--)
{
    for(int j=0;j<n-i;j++)

        {
            System.out.print(" ");
        }
    for(int j=0;j<(i*2)-1;j++)

        {
            System.out.print(c);
        }
    System.out.println();
}
}
}

```

6. Write a java program to print right triangle using any symbol ?

**Ans :**

```

import java.io.*;
public class GeeksForGeeks {
public static void StarRightTriangle(int n)
{
int a, b;
for (a = 0; a < n; a++) {
for (b = 0; b <= a; b++) {
System.out.print("* ");
}
System.out.println();
}
}
public static void main(String args[])
{
int k = 5;
StarRightTriangle(k);
}
}

```

7. Write a java program to find square cube of given decimal using class and object ?

**Ans :**     `import java.util.Scanner;`  
  
`import java.lang.*;`  
  
`public class threenum {`  
  
`public static void main(String args[]) {`  
  
`int num, a, b, c;`  
  
`Scanner sc = new Scanner(System.in);`  
  
`System.out.print("Enter The Number :\n\n");`  
  
`num = sc.nextInt();`  
  
`a = num;`  
  
`b = num * num;`  
  
`c = num * num * num;`  
  
`System.out.println("\nOutput Is = " + a + " , " + b + " , " + c + "\n\n");`  
  
`}`  
  
`}`

8. Write a java program to print matrix multiplication ?

**Ans :**     `public class MatrixMultiplicationExample{`  
  
`public static void main(String args[]){`  
  
`int a[][]={{1,1,1},{2,2,2},{3,3,3}};`  
  
`int b[][]={{1,1,1},{2,2,2},{3,3,3}};`  
  
`int c[][]=new int[3][3];`  
  
`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();  
}  
}}
```