

FINAL TERM SYLLABUS:

1. Chapter 5: Introduction to Java (Full chapter)

- ✓ **Counters , Accumulators**
- ✓ **Selection Statements**
- ✓ **if**
- ✓ **if-else**
- ✓ **if-else-if ladder (excluded)**
- ✓ **switch (excluded)**
- ✓ **Logical Operators (&& , || , !)**
- ✓ **Increment and Decrement Operators (++ , --)**
- ✓ **Prefix and Postfix with evaluation sums**
- ✓ **Looping Statements**
- ✓ **For Loop included**
- ✓ **While loop (excluded)**
- ✓ **Do-while (excluded)**

1st Term JAVA syllabus to be included

1. **Write a program in java to input an integer, test and print if the number is POSITIVE, NEGATIVE OR ZERO.**

```
import java .io.*;
class number
{
    public static void main(String args[])
    {
        DataInputStream in= new DataInputStream(System.in);
        int n;
        try
        {
            System.out.print("Enter Any Number : ");
            n=Integer.parseInt(in.readLine());

            if(n>0)
                System.out.println("POSITIVE NUMBER");

            if(n<0)
                System.out.println("NEGATIVE NUMBER");
            if(n==0)
                System.out.println("ZERO");
        }
        catch(Exception e)
        {};
    }
}
```

2. **Write a program to input cost price and selling price. Find and display profit and profit percent or loss or loss percent. If CP equal to SP display NO PROFIT – NO LOSS.**

```
import java .io.*;

class profit
{
    public static void main(String args[])
    {
        DataInputStream in= new DataInputStream(System.in);

        int cp,sp,p=0,l=0;
        double pp=0.0d,lp=0.0d;
        try
        {
            System.out.print("Enter cost Price : ");
            cp=Integer.parseInt(in.readLine());

            System.out.print("Enter Selling Price : ");
            sp=Integer.parseInt(in.readLine());
```

```

        if(sp>cp)
        {
            p=sp-cp;
            pp=(p*100.0d)/cp;

            System.out.println("Profit = "+p);
            System.out.println("Profit % = "+pp);
        }

        if(cp>sp)
        {
            l=cp-sp;
            lp=(l*100.0d)/cp;

            System.out.println("Loss = "+l);
            System.out.println("Loss % = "+lp);
        }

        if(cp==sp)
            System.out.println("NO PROFIT - NO LOSS");
    }
    catch(Exception e)
    {};
}
}

```

3. **Write a program in java to input an integer, test and print if the number is EVEN or ODD.**

```

import java .io.*;
class even
{
    public static void main(String args[])
    {
        DataInputStream in= new DataInputStream(System.in);
        int n;
        try
        {
            System.out.print("Enter Any Number : ");
            n=Integer.parseInt(in.readLine());

            if(n%2==0)
                System.out.println("EVEN");
            else
                System.out.println("ODD");
        }
        catch(Exception e)
        {};
    }
}

```

4. **Write a program in java to input two integer numbers. If the first number is greater than the 2nd number, then print the greater number and it's double otherwise print the smaller number and its square root.**

```
import java .io.*;

class greater
{
    public static void main(String args[])
    {
        DataInputStream in= new DataInputStream(System.in);

        int a,b;

        try
        {
            System.out.print("Enter First Number : ");
            a=Integer.parseInt(in.readLine());
            System.out.print("Enter Second Number : ");
            b=Integer.parseInt(in.readLine());

            if(a>b)
            {
                System.out.println("Greater Number is : "+a);
                System.out.println("Double of the Greater No.
                is : "+(a*2));
            }
            else
            {
                System.out.println("Smaller Number is : "+a);
                System.out.println("Square Root of Smaller Number
                is : "+Math.sqrt(a));
            }
        }
        catch(Exception e)
        {};
    }
}
```

5. **Write a program in java to input an integer, test and print whether it is perfect square or not. Print appropriate message.**

```
import java .io.*;

class perfect_sq
{
    public static void main(String args[])
    {
        DataInputStream in= new DataInputStream(System.in);
```

```

int n,sq=0;
try
{
    System.out.print("Enter Any Number : ");
    n=Integer.parseInt(in.readLine());

    sq = (int)Math.sqrt(n);
    if((sq*sq)==n)
        System.out.println("PERFECT SQUARE");
    else
        System.out.println("NOT A PERFECT SQUARE");
}
catch(Exception e)
{};
}
}

```

- 6. Write a program to input two angles. Find and display it forms a Complementary Angle or not.**

```

import java .io.*;
class cangle
{
    public static void main(String args[])
    {
        DataInputStream in= new DataInputStream(System.in);

        int a,b,s=0;

        try
        {
            System.out.print("Enter First Angle : ");
            a=Integer.parseInt(in.readLine());

            System.out.print("Enter Second Angle : ");
            b=Integer.parseInt(in.readLine());

            s=a+b;

            System.out.println("Sum of Angles = "+s);

            if(s==90)
                System.out.println("It is a Complementary Angle");
            else
                System.out.println("It is NOT a Complementary Angle");
        }
        catch(Exception e)
        {};
    }
}

```

Note : In the same way programs on Supplementary , Triangle and Quadrilateral can be done.

7. **A whole-seller gives incentives in the form of discounts on the net bill. Write a program to input the net bill and calculate the discount as follows:**

<u>Net Bill in Rupees</u>	<u>Discount %</u>
<5000	5
>=5000 and <10000	10
>=10000	15

Display Discount %, Discount Amount and Amount Payable.

```
import java .io.*;

class prog6
{
    public static void main(String args[])
    {
        DataInputStream in= new DataInputStream(System.in);

        int nb,dp=0;
        double dis=0.0d,amt=0.0d;

        try
        {
            System.out.print("Enter Net Bill : ");
            nb=Integer.parseInt(in.readLine());

            if(nb<5000)
                dp=5;

            if(nb>=5000 && nb<10000)
                dp=10;

            if(nb>=10000)
                dp=15;

            dis = (dp/100.0d)*nb;
            amt = nb - dis;

            System.out.println("Discount % = "+dp);
            System.out.println("Discount Amount = "+dis);
            System.out.println("Amount Payable after Discount = "+amt);
        }
        catch(Exception e)
        {};
    }
}
```

8. Write a program that will allow the teacher to input the marks obtained in Physics, Chemistry and Biology. Find and display average marks and grade. Grade is as follows:

<u>AVERAGE</u>	<u>GRADE</u>
0 to 50	D
51 to 70	C
71 to 90	B
91 to 100	A

```
import java .io.*;
class card
{
    public static void main(String args[])
    {
        DataInputStream in= new DataInputStream(System.in);

        int phy,chem,bio;
        double avg=0.0d;
        char gr= ' ';
        try
        {
            System.out.print("Enter Physics Marks : ");
            phy=Integer.parseInt(in.readLine());
            System.out.print("Enter Chemistry Marks : ");
            chem=Integer.parseInt(in.readLine());
            System.out.print("Enter Biology Marks : ");
            bio=Integer.parseInt(in.readLine());

            avg=(phy+chem+bio)/3.0d;

            if(avg>=0 &&avg<=50)
                gr='D';

            if(avg>=51 && avg<=70)
                gr='C';

            if(avg>=71 && avg<=90)
                gr='B';

            if(avg>=91 && avg<=100)
                gr='A';

            System.out.println("Average : "+avg);
            System.out.println("Grade : "+gr);
        }
        catch(Exception e)
        {};
    }
}
```

9. **A salesman is paid commission on the following basis:**

<u>Sales Amount in Rupees</u>	<u>Commission %</u>
Up to 10,000	2
10,001 to 20,000	4
20,001 to 50,000	8
More than 50,000	15

Write a program to input sales amount. Calculate and display the commission% and commission amount paid to the sales person.

```
import java .io.*;

class commission
{
    public static void main(String args[])
    {
        DataInputStream in= new DataInputStream(System.in);

        int sa,cp=0;
        double cpaid=0.0d;

        try
        {
            System.out.print("Enter Total Sales : ");
            sa=Integer.parseInt(in.readLine());

            if(sa<=10000)
                cp=2;

            if(sa>=10001 && sa<=20000)
                cp=4;

            if(sa>=20001 && sa<=50000)
                cp=8;

            if(sa>50000)
                cp=15;

            cpaid = (cp/100.0d)*sa;

            System.out.println("Commission % = "+cp);
            System.out.println("Commission Payable = "+cpaid);
        }
        catch(Exception e)
        {};
    }
}
```


10. Write a program to enter basic pay and compute dearness allowance (DA) and house rent allowance (HRA) as following:

<u>Basic Pay in Rupees</u>	<u>DA%</u>	<u>HRA%</u>
Up to 30,000	58.5	12.0
30,001 to 50,000	65.0	16.5
More than 50,000	73.0	24.8

Calculate da, hra and gp. $gp = bp + da + hra$. Display Gross Pay.

```
import java .io.*;
class payslip
{
    public static void main(String args[])
    {
        DataInputStream in= new DataInputStream(System.in);

        int bp;
        double dp, hp, da, hra, gp;
        dp=hp=da=hra=gp=0.0d;

        try
        {
            System.out.print("Enter Basic Pay : ");
            bp=Integer.parseInt(in.readLine());

            if(bp<=30000)
            {
                dp=58.5d;
                hp=12.0d;
            }
            if(bp>=30001 && bp<=50000)
            {
                dp=65.0d;
                hp=16.5d;
            }
            if(bp>50000)
            {
                dp=73.0d;
                hp=24.8d;
            }
            da = (dp/100.0d)*bp;
            hra = (hp/100.0d)*bp;
            gp = bp+da+hra;

            System.out.println("Gross Pay = "+gp);
        }
        catch(Exception e)
        {};
    }
}
```

11. **Write a program that will allow the user to input any character from the keyboard. Find and display if it is Upper Case Alphabet, Lower Case Alphabet or Digit.**

```
import java .io.*;

class alphabet
{
    public static void main(String args[])
    {
        DataInputStream in= new DataInputStream(System.in);

        char ch;
        String x;

        try
        {
            System.out.print("Enter Any Character : ");
            ch=(char)System.in.read();
            x=in.readLine();

            if(ch>='A' && ch<='Z')
                System.out.println("It is Upper Case Alphabet");

            if(ch>='a' && ch<='z')
                System.out.println("It is Lower Case Alphabet");

            if(ch>='0' && ch<='9')
                System.out.println("It is Digit");
        }
        catch(Exception e)
        {};
    }
}
```

12. **Write a program to input three numbers. Find and display the maximum number.**

```
import java .io.*;

class prog14
{
    public static void main(String args[])
    {
        DataInputStream in= new DataInputStream(System.in);

        int a,b,c,max=0;
```

```

        try
        {
            System.out.println("Enter 3 Numbers : ");
            a=Integer.parseInt(in.readLine());
            b=Integer.parseInt(in.readLine());
            c=Integer.parseInt(in.readLine());

            if(a>b && a>c)
                max=a;

            if(b>a && b>c)
                max=b;

            if(c>a && c>b)
                max=c;

            System.out.println("Maximun Number is "+max);
        }
        catch(Exception e)
        {};
    }
}

```

Note : In the same way programs on Minimum Number can be done.

13. Write a program to enter units consumed. Find and display total bill as per the following:

<u>Units Consumed</u>	<u>Rate per Unit</u>
First 200 Units	4.50
Next 200 Units	5.50
More than 400 Units	6.50

Apart from this every consumer pays a meter rent of Rs. 35

```

import java .io.*;

class electricity
{
    public static void main(String args[])
    {
        DataInputStream in= new DataInputStream(System.in);

        int u,mr=35;
        double bill=0.0d;
    }
}

```

```

try
{
    System.out.print("Enter Units Consumed : ");
    u=Integer.parseInt(in.readLine());

    if(u<=200)
        bill = u * 4.5d;

    if(u>200 && u<=400)
        bill = 200*4.5 + ((u-200) * 5.5d);

    if(u>400)
        bill = 200 * 4.5d + 200 * 5.5d + ((u-400) * 6.5d);

    bill = bill + mr;

    System.out.println("Bill with Meter Rent = "+bill);
}
catch(Exception e)
{};
}
}

```

- 14. Write a program that will allow the user to input marks of three terms. Find and display if the student has passed or failed. A student is given "PASS" if he scores 50 or above in the average of the three exams or if he scores 63 or above in the average of the second and third exams.**

```

import java .io.*;
class grade
{
    public static void main(String args[])
    {
        DataInputStream in= new DataInputStream(System.in);

        int m1,m2,m3;
        double avg1=0.0d, avg2=0.0d;

        try
        {
            System.out.print("Enter Marks of First Term : ");
            m1=Integer.parseInt(in.readLine());
            System.out.print("Enter Marks of Second Term : ");
            m2=Integer.parseInt(in.readLine());
            System.out.print("Enter Marks of Third Term : ");
            m3=Integer.parseInt(in.readLine());

            avg1=(m1+m2+m3)/3.0d;
            avg2=(m2+m3)/2.0d;

```

```

        System.out.println("Average of three terms = "+avg1);
        System.out.println("Average of Second and third
        terms = "+avg2);

        if(avg1>=50 || avg2>=63)
            System.out.println("Pass");
        else
            System.out.println("Fail");
    }
    catch(Exception e)
    {};
}
}

```

- 15. Write a program in java to input an angle. Find and display if it is :-**
- | | | |
|-------------------------|---|----------------------------|
| i) Acute Angle | ii) Obtuse Angle | iii) Straight Angle |
| iv) Reflex Angle | v) Invalid Angle (>360 or <=0) | |

```

import java .io.*;
class angle
{
    public static void main(String args[])
    {
        DataInputStream in= new DataInputStream(System.in);

        int a;
        try
        {
            System.out.print("Enter Any Angle : ");
            a=Integer.parseInt(in.readLine());

            if(a>0 && a<90)
                System.out.println("It is an Acute Angle");

            if(a>90 && a<180)
                System.out.println("It is an Obtuse Angle");

            if(a==180)
                System.out.println("It is an Straight Angle");

            if(a>180 && a<360)
                System.out.println("It is an Reflex Angle");

            if(a<=0 || a>360)
                System.out.println("It is an Invalid Angle");
        }
        catch(Exception e)
        {};
    }
}

```

- 16. Write a program to print the following series:
-100, -90 , - 80 , 0 , 10 , 20 , 30 , , 100**

```
class series1
{
    public static void main(String args[])
    {
        int i;

        for(i= -100; i<=100; i=i+10)
        {
            System.out.print(i+"\t");
        }
    }
}
```

- 17. Write a program to print the following series:
10 , 20 , 30 , 40 ,..... n terms.**

```
import java .io.*;

class series
{
    public static void main(String args[])
    {
        DataInputStream in= new DataInputStream(System.in);

        int n,i;

        try
        {
            System.out.print("Enter number of terms : ");
            n=Integer.parseInt(in.readLine());

            for(i=1;i<=n;i++)
            {
                System.out.print((i*10)+"\t");
            }
        }
        catch(Exception e)
        {};
    }
}
```

Note : In the same way programs on other series can be done.

- a) 1, 2, 3, 4, n terms (Natural Numbers)
- b) 1, 3, 5, 7, n terms (Odd Numbers)
- c) 2, 4, 6, 8, n terms (Even Numbers)
- d) 1, 4, 9, 16, n terms (Square of Natural Numbers)
- e) 1, 8, 27, 64, n terms (Cubes of Natural Numbers)
- f) 0, 3, 8, 15, n terms (Square of Natural Numbers minus 1)
- g) 2, 5, 10, 17, n terms (Square of Natural Numbers plus 1)
- h) 0, 7, 26, 63, n terms (Cubes of Natural Numbers minus 1)
- i) 2, 9, 28, 65, n terms (Cubes of Natural Numbers plus 1)
- j) 1, 2, 4, 8, 16 n terms (Powers of 2)

18. Write a program in java to input any number and print the multiplication table of that number up to 20 in the given format. If the input is 7, than output will be

```
7 x 1 = 7
7 x 2 = 14
:
:
:
7 x 20 = 140
```

```
import java .io.*;

class table
{
    public static void main(String args[])
    {
        DataInputStream in= new DataInputStream(System.in);

        int n,i;

        try
        {
            System.out.print("Enter no. whose table you want to print : ");
            n=Integer.parseInt(in.readLine());

            for(i=1;i<=20;i++)
            {
                System.out.println(n + " x " + i + " = " +(n*i));
            }
        }
        catch(Exception e)
        {};
    }
}
```

19. Write a program to input 20 numbers. Count and display how many of the inputs are positive, negative and zero. Also display how many numbers have 7 in units place.

```
import java .io.*;
class count
{
    public static void main(String args[])
    {
        DataInputStream in= new DataInputStream(System.in);

        int n,i,pos,neg,ze,sev;
        pos=neg=ze=sev=0;

        try
        {
            for(i=1;i<=20;i++)
            {
                System.out.print("Enter any number : ");
                n=Integer.parseInt(in.readLine());

                if(n>0)
                    pos++;

                if(n<0)
                    neg++;

                if(n==0)
                    ze++;

                if(n%10==7)
                    sev++;
            }

            System.out.println("Number of Positive Numbers = "+pos);
            System.out.println("Number of Negative Numbers = "+neg);
            System.out.println("Number of Zeros = "+ze);
            System.out.println("Number of nos. Ending with 7 = "+sev);
        }
        catch(Exception e)
        {};
    }
}
```


- 20. Write a program to generate and print the first n even numbers greater than 53.**

```
import java .io.*;

class even53
{
    public static void main(String args[])
    {
        DataInputStream in= new DataInputStream(System.in);

        int x=0,n=53,i;

        try
        {
            System.out.print("How many even numbers to print : ");
            x=Integer.parseInt(in.readLine());

            for(i=1;i<=x;)
            {
                if(n%2==0)
                {
                    System.out.print(n+"\t");
                    i++;
                }
                n++;
            }
        }
        catch(Exception e)
        {};
    }
}
```

- 21. Write a program to input n numbers. Find and display sum of even and odd numbers.**

```
import java .io.*;

class odd_number
{
    public static void main(String args[])
    {
        DataInputStream in= new DataInputStream(System.in);

        int n,i,x,ev=0,od=0;
```

```

try
{
    System.out.print("How many numbers to input : ");
    n=Integer.parseInt(in.readLine());

    for(i=1;i<=n;i++)
    {
        System.out.print("Enter any number : ");
        x=Integer.parseInt(in.readLine());

        if(x%2==0)
            ev=ev+x;
        else
            od=od+x;
    }
    System.out.println("Sum of Even Numbers = "+ev);
    System.out.println("Sum of Odd Numbers = "+od);
}
catch(Exception e)
{};
}
}

```

Note : In the same way programs on other sum of series can be done.

- a) 1 + 2 + 3 + 4 + n terms (Natural Numbers)
- b) 1 + 3 + 5 + 7 + n terms (Odd Numbers)
- c) 2 + 4 + 6 + 8 + n terms (Even Numbers)
- d) 1 + 4 + 9 + 16 + n terms (Square of Natural Numbers)
- e) 1 + 8 + 27 + 64 + n terms (Cubes of Natural Numbers)
- f) 0 + 3 + 8 + 15 + n terms (Square of Natural Numbers minus 1)
- g) 2 + 5 + 10 + 17 + n terms (Square of Natural Numbers plus 1)
- h) 0 + 7 + 26 + 63 + n terms (Cubes of Natural Numbers minus 1)
- i) 2 + 9 + 28 + 65 + n terms (Cubes of Natural Numbers plus 1)
- j) 1 + 2 + 4 + 8 + 16 + n terms (Powers of 2)

22. Write a program to generate and print the first n terms of the Fibonacci series. The first few terms of the series are : 0 , 1 , 1 , 2 , 3 , 5 , 8 , 13 , , n terms.

```

import java .io.*;
class fibonacci
{
    public static void main(String args[])
    {
        DataInputStream in= new DataInputStream(System.in);

        int a,b,c,n,i;
        a=0;
        b=1;
    }
}

```

```

try
{
    System.out.print("Enter number of terms : ");
    n=Integer.parseInt(in.readLine());

    System.out.print(a+"\t"+b+"\t");

    for(i=3;i<=n;i++)
    {
        c = a + b;
        System.out.print(c+"\t");
        a=b;
        b=c;
    }
}
catch(Exception e)
{};
}
}

```

23. **Blue Lite Company wishes to generate salary slip for 5 employees. Write a program to enter basic pay and compute dearness allowance (DA) and house rent allowance (HRA) as following :**

<u>Basic Pay in Rupees</u>	<u>DA%</u>	<u>HRA%</u>
Up to 30,000	58.5	12.0
30,001 to 50,000	65.0	16.5
More than 50,000	73.0	24.8

Calculate da, hra and gross pay. $gp = bp + da + hra$ Display Gross Pay of each employee

```

import java .io.*;

class loop
{
    public static void main(String args[])
    {
        DataInputStream in= new DataInputStream(System.in);

        int bp,i;
        double dp,hp,da,hra,gp;
        dp=hp=da=hra=gp=0.0d;
    }
}

```

```

try
{
    for(i=1;i<=5;i++)
    {
        System.out.print("\nEnter Basic Pay : ");
        bp=Integer.parseInt(in.readLine());

        if(bp<=30000)
        {
            dp=58.5d;
            hp=12.0d;
        }

        if(bp>=30001 && bp<=50000)
        {
            dp=65.0d;
            hp=16.5d;
        }

        if(bp>=50000)
        {
            dp=73.0d;
            hp=24.8d;
        }

        da = (dp/100.0d)*bp;
        hra = (hp/100.0d)*bp;
        gp = bp+da+hra;

        System.out.println("Grass Pay = "+gp);
    }
}
catch(Exception e)
{};
}
}

```

- 24. Write a program to display the sum of the following series :**
 $s = 1/a^1 + 2/a^2 + 3/a^3 + \dots + n/a^n$

```

import java .io.*;
class sum_series1
{
    public static void main(String args[])
    {
        DataInputStream in= new DataInputStream(System.in);

        int n,i,a;
        double s=0.0d;
    }
}

```

```

        try
        {
            System.out.print("Enter value of N : ");
            n=Integer.parseInt(in.readLine());
            System.out.print("Enter value of A : ");
            a=Integer.parseInt(in.readLine());

            for(i=1;i<=n;i++)
            {
                s = s + (i/Math.pow(a,i));
            }
            System.out.println("Sum of Series = "+s);
        }
        catch(Exception e)
        {};
    }
}

```

- 25. Write a program to display the sum of the following series :**
 $s = 1/a^2 + 3/a^4 + 5/a^6 + \dots + n$ terms

```

import java .io.*;

class sum_series2
{
    public static void main(String args[])
    {
        DataInputStream in= new DataInputStream(System.in);

        int n,i,a,x=1;
        double s=0.0d;

        try
        {
            System.out.print("Enter value of N : ");
            n=Integer.parseInt(in.readLine());
            System.out.print("Enter value of A : ");
            a=Integer.parseInt(in.readLine());

            for(i=1;i<=n;i++)
            {
                s = s + (x/Math.pow(a,(x+1)));
                x=x+2;
            }
            System.out.println("Sum of Series = "+s);
        }
        catch(Exception e)
        {};
    }
}

```

- 26. Write a program to input 10 numbers. Count and display how many are multiples of 5. Also display the sum and average of the numbers.**

```
import java .io.*;
class average
{
    public static void main(String args[])
    {
        DataInputStream in= new DataInputStream(System.in);

        int n,i,sum=0,f=0;
        double avg=0.0d;

        try
        {
            for(i=1;i<=10;i++)
            {
                System.out.print("Enter any number : ");
                n=Integer.parseInt(in.readLine());

                sum = sum + n;

                if(n % 5 ==0)
                    f++;
            }
            avg=sum/10.0d;

            System.out.println("Sum of numbers = "+sum);
            System.out.println("Average of numbers = "+avg);
            System.out.println("Number of numbers divisible by 5 = "+f);
        }
        catch(Exception e)
        {};
    }
}
```

- 27. Write a program to input any number and print its factorial of the number.
Factorial of 5 = 1 x 2 x 3 x 4 x 5 = 120**

```
import java .io.*;
class factorial
{
    public static void main(String args[])
    {
        DataInputStream in= new DataInputStream(System.in);

        int n,i,f=1;
```

```

    try
    {
        System.out.print("Enter any number : ");
        n=Integer.parseInt(in.readLine());
        for(i=1;i<=n;i++)
        {
            f=f*i;
        }
        System.out.println("Factorial of the number : "+n +" is = "+f);
    }
    catch(Exception e)
    {};
}
}

```

- 28. Write a program to input any number. Find and print if it is prime number or not. A prime number is number which has two factors only. Example 7, 11, 13, etc.**

```

import java .io.*;

class prime
{
    public static void main(String args[])
    {
        DataInputStream in= new DataInputStream(System.in);
        int n,i,f=0;
        try
        {
            System.out.print("Enter any number : ");
            n=Integer.parseInt(in.readLine());

            for(i=1;i<=n;i++)
            {
                if(n%i==0)
                    f++;
            }

            if(f==2)
                System.out.println("It is a Prime Number");
            else
                System.out.println("It is NOT a Prime Number");
        }
        catch(Exception e)
        {};
    }
}

```

29. **Write a program to input any number and print the factors of the number.**
Example : Factors of 15 are 1,3,5, and 15.

```
import java .io.*;

class factors
{
    public static void main(String args[])
    {
        DataInputStream in= new DataInputStream(System.in);

        int n,i;

        try
        {
            System.out.print("Enter any number : ");
            n=Integer.parseInt(in.readLine());

            System.out.println("Factors of the number are :-");

            for(i=1;i<=n;i++)
            {
                if(n%i==0)
                    System.out.print(i+"\t");
            }
        }
        catch(Exception e)
        {};
    }
}
```

30. **Write a program to input any number. Find and print if it is perfect number or not. A Perfect Number is one whose sum of the factors of the number excluding the number is = to the number itself. Example 6 is perfect number. Factors of 6 are 1,2 and 3. Sum of 1+2+3=6. Since 6 = 6. It is a perfect number.**

```
import java .io.*;

class perfect_number
{
    public static void main(String args[])
    {
        DataInputStream in= new DataInputStream(System.in);

        int n,i,s=0;
```



```
try
{
    System.out.print("Enter any number : ");
    n=Integer.parseInt(in.readLine());

    for(i=1;i<=n/2;i++)
    {
        if(n%i==0)
            s = s + i;
    }

    if(n==s)
        System.out.println("It is a Perfect Number");
    else
        System.out.println("It is NOT a Perfect Number");
}
catch(Exception e)
{};
}
```

*** * * * ***