JAVA PROGRAMMING

1. What is JAVA ?

- JAVA is a High level programming language.which is used to co-related with real world scenario.
- JAVA is used to create Applications which is used to resolve real-world problems.
- JAVA is Syntactical Based Programming language.
- JAVA is one of the Highly Secure Language.
- JAVA supports **OOP's** (Object Oriented Programming Language) concept.

2. Operations In JAVA ?

1. CODING
2. COMPILATION
3. EXECUTION.

1. CODING :

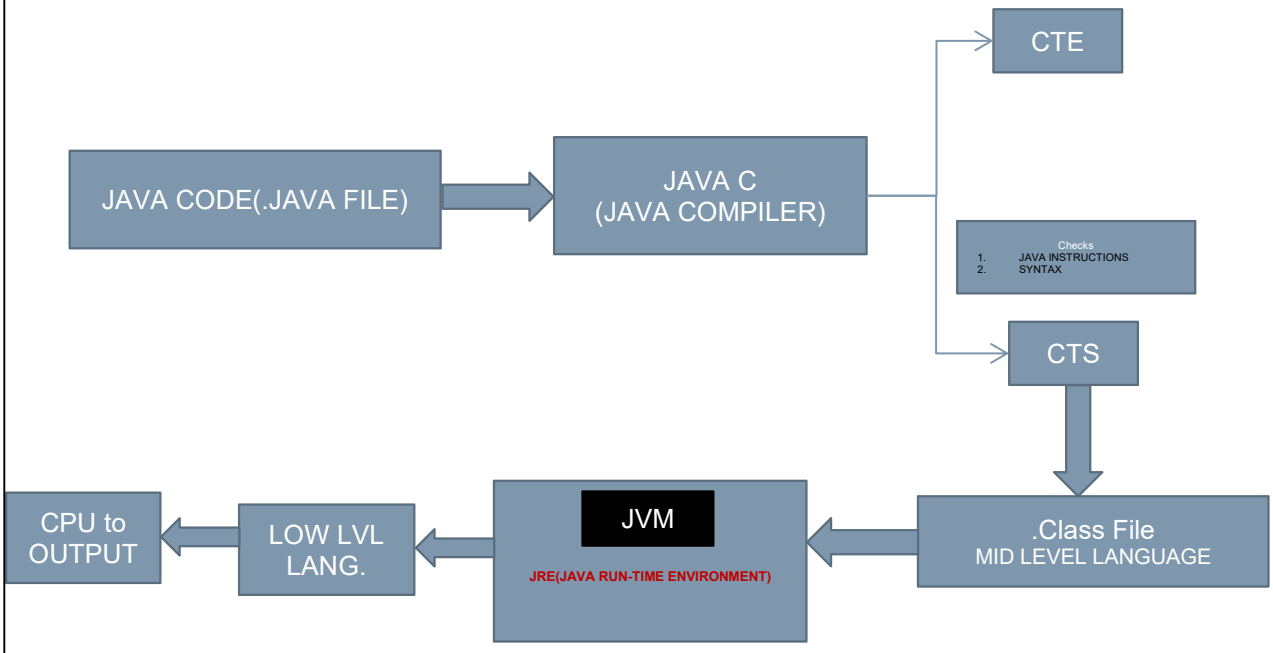
- Writing a set of java instructions in a file is called coding.
- Coding is done by the Developer.

2. COMPLILATION :

- High Level Language (JAVA CODE) is converting into to Mid Level Language (Byte CODE).
- Compiler is responsible for Compilation.

3. EXECUTION :

- In Execution all operations are performed.
- JVM (JAVA VIRTUAL MACHINE) is responsible for execution.



JAVA SYNTAX :

```
class classname
{
:       public static void main(String [] args)
:       {
:       :
:       :       MAIN METHOD (here)
:       :
:       }
}
```

- **classname** should be always start as Capital letter.
- **classname** should not have space.
- **classname** should not have any symbols.

Print Statements :

```
class classname
{
:       public static void main(String [] args)
:       {
:       :
:               System.out.println("Statement to be Print");
:       :
:       }
}
```

Example :

```
class Classname
{
        public static void main(String [] args)
        {

                System.out.println("Statement to be Print");

        }
}
```

OUTPUT : Statement to be Print

DATATYPES :

1.	boolean	=====>	True / False
2.	byte (1byte memory)	=====>	Integer type Values (1,10,20,100…)
3.	short (2byte memory)		
4.	int (4byte memory)		
5.	long (8byte memory)		
6.	float (4byte memory)	=====>	Decimal Type Values (1.2,4.8,3.5….)
7.	double (8byte memory)		
8.	char	=====>	Single character (value always denotes in ‘ ‘)
9.	String always denotes in “ “)	=====>	Combinations of single character (value

VARIABLE :

Variable is memory block which is used to store Data.

Syntax : **Datatype VariableName = Data Value**

Out of nine data types five are most imp there are

1. boolean
2. int
3. double
4. Char
5. String

Note :

For Datatype long, **l/L** should be used after the value of data, if no compiler shows error.

eg :long a = 8328016507l (datatype variablename = data value**l**)

For float also after the value **f** should be mentioned

eg :float a = 8.2f (datatype variablename = data value**f**)

Naming Rules for a Variables :

1. Variable name can be a single character or a combinations of characters.
2. Variable name should always start with Alphabets (capital/small).
3. Variable name should not start with numbers.
4. Variable name should not contain any symbols except (_ and $).
5. Variable name should not have **SPACE.**
6. Variable name should not contain (‘ ‘ and “ “).

1. Write a Programme on java to save data and print it ?

```
class My_Data
{
        public static void main (String [] args)
        {
                String name = “Venkat”;
                String clg_name = “GEC”;
                char Grade = ‘A’;
                double percentage = 67.8;
                long ph_number = 8328016507l;
                long adhar_number = 214283804103l;
                String Pan_number = “BYOPV2238G”;
                System.out.println(name);
                System.out.println(clg_name);
                System.out.println(Grade);
                System.out.println(percentage);
                System.out.println(ph_number);
                System.out.println(adhar_number);
                System.out.println(Pan_number);
        }
}
```

Output :

Venkat
GEC
A
67.8
832016507
214283804103
BYOPV2238G

Operators :

An Operators is a symbol which is used to perform specific operation.

Operand :

Operand is a Data/Value which which is used to perform operation.

Eg : 5 + 3 = 8 ; 8 - 3 = 5; 2 * 3 = 6
(In this Data (**5,3,8,3,2,3** are the **Operands** and **+ , - , *** are the **Operators**)

Types of Operators :

1. **Unary Operator** (Operator requires one Operand to perform operation (++,--)).
2. **Binary Operator** (Operator requires Two Operands to perform operation (+,-,*,/,%)).
3. **Ternary Operator** (Operator requires more than Two Operands to perform operation (conditional operators)).

Major Types of Operators :

1. Arithmetic Operator.	(+ , - , * , / , %)
2. Logical Operator.	(And, OR, NOT)
3. Relational Operator.	(< , <= , >, >=, == , !=)
4. Assignment Operator.	(=)
5. Conditional Operator.	(? , :)
6. Incremental / Decrement Operator.	(++ , --)
7. Combination Operator.	(+=, -= , *=, /=)

1. Arithmetic Operator (+ , - , * , / , %) **:**

Syntax

```
System.out.println(10+20); //30
System.out.println(20-10); //10
System.out.println(10*2);  //20
System.out.println(47/5); //9
System.out.println(47.0/5);  //9.4 (To print decimal values, Operand should also be a decimal ).
System.out.println(47%5); //2
```

ASCII (American Standard Code for Information Interchange)

ASCII Values : In java all character have an integer values.

A - Z = 65 - 90
A - z = 97 - 122
0 - 9 = 48 - 57

For Eg :

```
System.out.println('A'+20); //85 (Because A has an ASCII value of 65).
System.out.println('3'+20); //59 (Because '3' (' ' this indicates the character) has an ASCII value of 31).
System.out.println('A'+'B'); //131 (Because A and B has an ASCII value of 65 , 66).
```

Note :

char + char = Number
char + number = Number
Number + char = Number
char + num + String =numberString //Eg : System.out.println('A'+10+Venkat); Output : 75Venkat **(String has no integer values)**.
String+num1+num2=Stringnum1num2//Eg : System.out.println(Venkat+10+20); Output :Venkat1020 **(JVM will read left to right only (+ can be add / Concatenation(merge))**.

2. Relational Operator (<, >, <=, >=, ==, !=) **:**

Syntax

```
System.out.println(3<4);   // True.
System.out.println(3>4);   // False.
System.out.println(3<=4); // True.
System.out.println(3>=4); // False.
System.out.println(3==4); // False.
System.out.println(3!=4);  // True.
```

3. Logical Operator (AND(&&), OR(||), NOT(!)) **:**
Syntax

Eg : (AND ==> &&)
```
System.out.println(3<4 && 4>5);   // True && False output = False.
System.out.println(3>4 && 3<=4);   // False && True = False.
System.out.println(3>=4 && 3==4); // False && False = False.
System.out.println(3!=4 && 3==3);  // True && True = True.
```

Eg : (OR ==> ||)
```
System.out.println(3<4 || 4>5);   // True && False output = True.
System.out.println(3>4 || 3<=4);   // False && True = True.
System.out.println(3>=4 ||3==4); // False && False = False.
System.out.println(3!=4 || 3==3);  // True && True = True.
```

Eg : (NOT ==> !)
```
System.out.println(!(3<4));   // False.
System.out.println(!(3>4));   // True.
```

4. Assigning Operator (=) **:**
To Assign the Specific value or data.
Eg :
```
class Classname
    {
        public static void main(String [] args)
        {
            int a=5;
            int b=6;
            a=b; // a value will become value of b.
            System.out.println(a);
            System.out.println(b);
        }
    }
```
Output : 6
6

5. Conditional Operator (?, :) **:**
Eg :
```
class Classname
    {
        public static void main(String [] args)
        {
            int a=5;
            int b=(a<=3)?10:15; // int b=(a<=3 (True))?n1:n2 ==> ans=n1
                                // int b=(a>=3 (False))?n1:n2==> ans=n2
            System.out.println(b);
        }
    }
```
Output : 10

1. Write a java Programme on Even or Odd ?

Eg :1:-

```
class Classname
        {
                public static void main(String [] args)
                {
                        int a=5;
                        String result=(a%2==0)? “Even” : “Odd”;
                        System.out.println(result);
                }
        }
```

Output :

Odd

Eg :2:-

```
class Classname
        {
                public static void main(String [] args)
                {
                        int a=2;
                        String result=(a%2==0)? “Even” : “Odd”;
                        System.out.println(result);
                }
        }
```

Output :

Even

2. Write a java Programme on Person Eligible for Vote or not ?

Eg :1:-

```
class Classname
        {
                 public static void main(String [] args)
                {
                        int a=16;
                        String result=(a>=18)? “Eligible” : “Not Eligible”;
                        System.out.println(result);
                }
        }
```

Output :

Not Eligible

Eg :2:-

```
class Classname
        {
                public static void main(String [] args)
                {
                        int a=20;
                        String result=(a>=18)? “Eligible” : “Not Eligible”;
                        System.out.println(result);
                }
        }
```

Output :

Eligible

3. Write a Java Programme on Largest Number Among Two given Numbers ?

Eg :1:-

```
class Classname
        {
                public static void main(String [] args)
                {
                        int a=5;
                        Int b=55;
                        String result=(a>b)?a:b;
                        System.out.println(“Largest number is : “+result);
                }
        }
```

Output :

Largest number is : 55

Eg :2:-

```
class Classname
        {
                public static void main(String [] args)
                {
                        int a=66;
                        Int b=55;
                        String result=(a>b)?a:b;
                        System.out.println(“Largest number is : “+result);
                }
        }
```

Output :

Largest number is : 66

Eg For Larger number upon five numbers

```
class Largest_numother_typ
{
    public static void main(String[] args)
    {
        int a=3;
        int b=44;
        int c=55;
        int d=98;
        int e=222;
        int large=(a>b&&a>c&&a>d&&a>e)?a:(b>c&&b>d&&b>e)?b:(c>d&&c>e)?c:(d>e)?d:e;
        System.out.println("Largest number is : "+large);
    }
}
```

Output : 222

Eg For Larger number upon five numbers_2 Method

```
class Largest_other_typ
{
    public static void main(String[] args)
    {
        int a=3;
        int b=4444;
        int c=55;
        int d=98;
        int e=222222;
        int f=(a>b)?a:b;
        int g=(c>d)?c:d;
        int h=(f>g)?f:g;
        int large=(e>h)?e:h;
        System.out.println("Largest number is : "+large);
    }
}
```

Output : 222222

6. Increment / Decrement Operator (++, --) :

1. Pre-Increment Operator :

int a = 10;
int b = ++a // operation first next value will assign (++a => 10+1 = 11 ; a=11 and 11 will assign for b.
System.out.println(a);
System.out.println(b);
Output : a = 11 ; b=11.

2. Pre-Decrement Operator :

int a = 10;
int b = a-- // operation first next value will assign (++a => 10-1 = 9 ; a=9 and 9 will assign for b.
System.out.println(a);
System.out.println(b);
Output : a = 9 ; b=9.

3. Post-Increment Operator :

```
int a = 10;
int b = a++; // operation first next value will assign (a++ => first value of a will assign for b and then operation will done b=10; a++ => 10+1 =a=>11
System.out.println(a);
System.out.println(b);
```

Output : a = 11 ; b=10.

4. Post-Decrement Operator :

```
int a = 10;
int b = a--; // operation first next value will assign (a-- => first value of a will assign for b and then operation will done b=10; a-- => 10-1 =a=>9
System.out.println(a);
System.out.println(b);
```

Output : a = 9 ; b=10.

Eg 1 :

```
int a= 10;
int b = ((++a)-(--a));
System.out.println(a);
System.out.println(b);
```

Output : a = 10 ; b=1.

7. Combinational Operator (+=, -=,*=,/=,%=) **:**

Eg 1 :

```
int a= 10;
a+=2;
System.out.println(a);
```

Output :

a = 12

Eg 2 :

```
int a= 10;
a-=2;
System.out.println(a);
```

Output :

a = 8

Eg 3 :

```
int a= 10;
a*=2;
System.out.println(a);
```

Output :

a = 20

Note :In java mathematical operation is done by left to right

1. Brackets.
2. *,/,% (First preference)
3. +, - (First preference) .

Eg :
System.out.println(5+4-2*6/3%7); 5+4-12/3%7==>5+4-4%7==>5+4-1==>9-1==>8

Output:
8

1. Scanner Programming :
Scanner programme is used to take inputs from the user.
Syntax :

```
Import java.util Scanner;
class Classname
{
        public static void main(String [] args)
        {
                Scanner scan = new Scanner(System.in);
                Operations done here….
        }
}
```

2. Syntax for Variable Scanners :

1. int variablename = scan.nextInt();
2. double variablename = scan.nextDouble();
3. boolean variablename = scan.nextboolean();
4. char variablename = scan.nextcharAt();
5. String variablename = scan.next();

Eg 1 :

```
Import java.util Scanner;
class Sum_of_twoNum
{
        public static void main(String [] args)
        {
                Scanner scan = new Scanner(System.in);
                System.out.println("Enter the First Number :");
                int n1 =scan.next.Int();
                System.out.println("Enter the Second Number :");
                int n1 =scan.next.Int();
                System.out.println("Sum of Two Numbers is  :"+ (a+b));
        }
}
```

Write a Java programme on Product of Three Numbers

```
1  import java.util.Scanner;
2  class Product_TwoNum
3  {
4      public static void main(String[] args)
5      {
6          Scanner scan = new Scanner(System.in);
7          System.out.print("Enter the first Value :");
8          int n1=scan.nextInt();
9          System.out.print("Enter the Secound Value :");
10         int n2=scan.nextInt();
11         System.out.print("Enter the Third Value :");
12         int n3=scan.nextInt();
13         System.out.println("The Product of Three Numbers is :" +(n1*n2*n3));
14     }
15 }
16
```

1. Control Statements :

Control Statement is used to control the flow of the java programme.

1. Decision making / Conditional Statement :

- **Simple if**
- **if else**
- **else if**
- **switch**

2. Looping Statement :

- **for**
- **while**
- **do while**

1. if else :

Syntax

```
If(condition)
{
        Operation
}
else
{
        Operation
}
```

Eg :

Write a Java programme on Person Eligible for voting or not

```java
import java.util.Scanner;
class Condition_Stat_Voting
{
    public static void main(String[] args)
    {
        Scanner scan =new Scanner(System.in);
        System.out.print("Enter your Age : ");
        int Age= scan.nextInt();
        if (Age>=18)
        {
            System.out.println("Eligible");
        }
        else
        {
            System.out.println("Not Eligible");
        }
    }
}

```

Write a Java programme on Couple are Eligible for Marriage

```java
import java.util.Scanner;
class Condition_marrage
{
    public static void main(String[] args)
    {
        Scanner scan =new Scanner(System.in);
        System.out.print("Enter Male Age : ");
        int Age1= scan.nextInt();
        System.out.print("Enter Female Age : ");
        int Age2= scan.nextInt();
        if (Age1>=23 && Age2>=21)
        {
            System.out.println("Couple is Eligible for Marriage");
        }
        else
        {
            System.out.println("Couple is Not Eligible for Marriage");
        }
    }
}

```

Write a Java programme on Person Eligible for IAS Exam

```java
import java.util.Scanner;
class Condition_IAS
{
    public static void main(String[] args)
    {
        Scanner scan = new Scanner(System.in);
        System.out.print("Enter your age :");
        int age =scan.nextInt();
        if (age>=21 && age<=32)
        {
            System.out.println("Your Eligible for Write IAS Exam");
        }
        else
        {
            System.out.println("Your not Eligible for Write IAS Exam");
        }
    }
}

```

Write a Java programme on Number Divisible by 5

```java
import java.util.Scanner;
class  Condition_Vowel
{
    public static void main(String[] args)
    {
        Scanner scan =new Scanner(System.in);
        System.out.println("Enter Any Number : ");
        int a=scan.nextInt();
        if (a%5==0)
        {
            System.out.println("Number is Divisible by 5");
        }
        else
        {
            System.out.println("Number is not divisible by 5");
        }
    }
}

```

Write a Java programme on Letter is Vowel

```java
import java.util.Scanner;
class  Condition_Vowel
{
    public static void main(String[] args)
    {
        Scanner scan =new Scanner(System.in);
        System.out.println("Enter a Letter : ");
        char a=scan.next().charAt(0);
        if(a=='A'||a=='E'||a=='I'||a=='O'||a=='U'||a=='a'||a=='e'||a=='i'||a=='o'||a=='u')
        {
            System.out.println("Entered Letter is Vowel");
        }
        else
        {
            System.out.println("Entered Letter is not Vowel");
        }
    }
}

```

2. else if :

Syntax

```
If(condition)
{
        Operation
}
else if (condition)
{
        Operation
}
else if (condition)
{
        Operation
}
else
{
        Operation
}
```

Eg : Write a Java programme on Grading for the Marks Obtained ?

```java
import java.util.Scanner;
class  Grade
{
    public static void main(String[] args)
    {
        Scanner scan = new Scanner(System.in);
        System.out.print("Enter the Marks Obtained : ");
        int marks=scan.nextInt();
        if (marks>=90&&marks<=100)
        {
            System.out.println("You got A Grade");
        }
        else if (marks>=80&&marks<=89)
        {
            System.out.println("You got B Grade");
        }
        else if (marks>=70&&marks<=79)
        {
            System.out.println("You got C Grade");
        }
        else if (marks>=50&&marks<=69)
        {
            System.out.println("You got D Grade");
        }
        else if (marks>=35&&marks<=49)
        {
            System.out.print("You got E Grade");
        }
        else if (marks>=0&&marks<=35)
        {
            System.out.println("Your Are Failed");
        }
        else
        {
            System.out.println("Enter the Valid Input");
        }
    }
}

```

Write a Java programme on Ranking for the Grade Obtained ?

```
import java.util.Scanner;
class  Grade_1
{
    public static void main(String[] args)
    {
        Scanner scan=new Scanner(System.in);
        System.out.println("Enter your Grade Point : ");
        char grade=scan.next().charAt(0);
        if (grade=='a'||grade=='A')
        {
            System.out.println("You Got 1st Rank");
        }
        else if (grade=='b'||grade=='B')
        {
            System.out.println("You Got 2st Rank");
        }
        else if (grade=='c'||grade=='C')
        {
            System.out.println("You Got 1st Class");
        }
        else if (grade=='d'||grade=='D')
        {
            System.out.println("You Got 2st Class");
        }
        else if (grade=='e'||grade=='E')
        {
            System.out.println("Just Pass");
        }
        else if (grade=='f'||grade=='F')
        {
            System.out.println("Failed");
        }
        else
        {
            System.out.println("Enter Valid Grade Point");
        }

    }
}

```

Write a Java programme on Fee to paid in park in given Range ?

```java
import java.util.Scanner;
class park_fee
{
    public static void main(String[] args)
    {
        Scanner scan=new Scanner(System.in);
        System.out.println("Wellcome to Fees Board , Select Your Group from The Below");
        System.out.println(" ");
        System.out.println("Press [M] if Your Male :");
        System.out.println("Press [F] if Your Female :");
        System.out.println("Press [T] if Your Transgender :");
        System.out.println("Press [S] if Your Senior Citizen :");
        System.out.println("Press [C] if Your Childern :");
        char group=scan.next().charAt(0);
        if (group=='M'||group=='m')
        {
            System.out.println("You need to Pay : 100Rs/-");

        }
        else if (group=='M'||group=='m')
        {
            System.out.println("You need to Pay : 100Rs/-");
        }
        else if (group=='F'||group=='f')
        {
            System.out.println("You need to Pay : 80Rs/-");
        }
        else if (group=='T'||group=='t')
        {
            System.out.println("You need to Pay : 50Rs/-");
        }
        else if (group=='S'||group=='s')
        {
            System.out.println("You no need to Pay : Free Entery");
        }
        else if (group=='C'||group=='c')
        {
            System.out.println("You need to Pay : 5Rs/-");
        }
        else
        {
            System.out.println("Enter Valid Input");
        }

    }
}
```

3. switch :

Syntax

```
int variable
switch (variable)
{
        case 1 :
                Operation

        case 2 :
                Operation
        Case 3 :
                Operation

}
```

Eg : Write a program using Switch Condition ?

```
import java.util.Scanner;
class Switch
{
    public static void main(String[] args)
    {
        Scanner scan=new Scanner(System.in);
        System.out.println("Wellcome to Caluculator");
        System.out.println();
        System.out.println("Choose the Below Option to Perform Operation");
        System.out.println();
        System.out.println("Press 1 : To Addition :");
        System.out.println("Press 2 : To Subtract :");
        System.out.println("Press 3 : To Multiplication :");
        System.out.println("Press 4 : To Division :");
        System.out.println("Press 5 : To LCM :");
        System.out.println("Press 6 : To HCF :");
        System.out.println("Press 7 : To Prime or Not :");
        System.out.println("Press 8 : To Leap Year or Not :");
        int option = scan.nextInt();
        switch(option)
        {
            case 1:
                System.out.println("Enter Any Two Number for Addition");
                int a= scan.nextInt();
                int b=scan.nextInt();
                System.out.println("Addition of Two number :"+(a+b));
            break;
            case 2:
                System.out.println("Enter Any Two Number for Subtraction :");
                int c= scan.nextInt();
                int d=scan.nextInt();
                System.out.println("Subtrction of Two Numbers"+(c-d));
            break;
            case 3:
                System.out.println("Enter Any Two Number for multiplication :");
                int e= scan.nextInt();
                int f=scan.nextInt();
                System.out.println("Multiplication of Two Numbers :"+(e*f));
            break;
            case 4:
                System.out.println("Enter Any Two Number for Divide :");
                int g= scan.nextInt();
                int h=scan.nextInt();
                System.out.println("Reminder  of Two Numbers :"+(g/h));
            break;
            case 5:
                System.out.println("Enter Any Two Number for LCM :");
                int i= scan.nextInt();
                int j=scan.nextInt();
                System.out.println("Reminder  of Two Numbers :"+(i-j));
            break;
```

```
            break;
            default:
                System.out.println("Enter the Valid Option...!");
        }
    }
}
```

3. Looping Statements :

1. For :

Syntax :

For(variable deceleration and inclination;Condition;Increment /Decrement)
{
        Operation
}

Eg : Write a program to print your name 10 times ?

```
import java.util.Scanner;
class For
{
    public static void main(String[] args)
    {
        Scanner scan=new Scanner(System.in);
        System.out.println("Enter any Number :")
        for (int a=1;a<=5;a++)
        {
            System.out.println("India");
        }
    }
}
```

Write a program to print Natural Numbers from 1 to 100 ?

```
import java.util.Scanner;
class  NaturalNum
{
    public static void main(String[] args)
    {
        Scanner scan=new Scanner(System.in);
        for (int a=1;a<=100;a++)
        {
            System.out.println(a);
        }
    }
}
```

Write a program to print Even Natural Numbers ?

```
class EvenNaturalNum
{
    public static void main(String[] args)
    {
        for (int a=2;a<=100;a++)
        {
            if (a%2==0)
            {
                System.out.println(a);
            }
        }
    }
}
```

2. while :

Syntax :

```
variable deceleration and initialization;
While(condition)
{
        Operation ;
        Variable++;
}
```

Eg :

```
int a=1;
while(a<=10)
{
        System.out.println(a);
        a++;
}
```

Output :

1
2
3 upto 10

3. do while :

Syntax :

```
variable deceleration and initialization;
do
{
        Operation ;
        Variable++;
}While(condition)
```

Eg :

```
int a=1;
do
{
        System.out.println(a);
        a++;
}while(a<=10)
```

Eg : Write a program on printing even numbers from (10-38) using while Condition ?

```java
class While
{
    public static void main(String[] args)
    {
        int a=10;
        while (a<=38)
        {
            if (a%2==0)
            {
                System.out.println(a);
            }
        a++;
        }
    }
}
```

Eg : Write a program to even even numbers in given range by user using while Condition ?

```java
import java.util.Scanner;
class  MinMaxEven_Num
{
    public static void main(String[] args)
    {
        Scanner scan=new Scanner(System.in);
        System.out.print("Enter the min range to print Even Number :");
        int a =scan.nextInt();
        System.out.print("Enter the max range to print Even Number :");
        int b =scan.nextInt();
        while (a<=b)
        {
            if (a%2==0)
            {
                System.out.println(a);
            }
            a++;
        }
    }
}
```

Eg : Write a program to print odd numbers in given range by user using while Condition ?

```java
import java.util.Scanner;
class  OddNumMin_Max
{
    public static void main(String[] args)
    {
        Scanner scan=new Scanner(System.in);
        System.out.print("Enter the minimum range for print Odd Number : ");
        int a=scan.nextInt();
        System.out.print("Enter the maximum range for print Odd Number : ");
        int b=scan.nextInt();
        while (a<=b)
        {
            if (a%2==1)
            {
                System.out.println(a);
            }
            a++;
        }
    }
}
```

4. while :

Syntax :

variable deceleration and initialization;
do
{
        Operation ;
        Variable++;
}while(condition);

Eg : Write a program on printing even numbers from (10-38) using do_while Condition ?

```
class doWhile
{
    public static void main(String[] args)
    {
        int a=10;
        do
        {
            if (a%2==0)
            {
                System.out.println(a);
            }
        a++;
        }while(a<=38);
    }
}
```

Eg : Write a program on printing odd numbers in given range using do_while Condition ?

```
import java.util.Scanner;
class  doOddNumMin_Max
{
    public static void main(String[] args)
    {
        Scanner scan=new Scanner(System.in);
        System.out.print("Enter the minimum range for print Odd Number : ");
        int a=scan.nextInt();
        System.out.print("Enter the maximum range for print Odd Number : ");
        int b=scan.nextInt();
        do
        {
            if (a%2==1)
            {
                System.out.println(a);
            }
            a++;
        }while(a<=b);
    }
}
```

Eg : Write a program on printing odd numbers in given range using do_while Condition ?

```
import java.util.Scanner;
class  doMinMaxEven_Num
{
    public static void main(String[] args)
    {
        Scanner scan=new Scanner(System.in);
        System.out.print("Enter the min range to print Even Number : ");
        int a =scan.nextInt();
        System.out.print("Enter the max range to print Even Number : ");
        int b =scan.nextInt();
        do
        {
            if (a%2==0)
            {
                System.out.println(a);
            }
            a++;
        }while(a<=b);
    }
}
```

Eg : Write a program to print Multiplication table by user defined Value and Limit ?

```java
import java.util.Scanner;
class multiple7
{
    public static void main(String[] args)
    {
        Scanner scan=new Scanner(System.in);
        System.out.print("Enter the Number you need to Multiple : ");
        int x = scan.nextInt();
        System.out.print("Enter the Limit to print the Table : ");
        int b=scan.nextInt();
        for (int a=1;a<=b;a++ )
        {
            System.out.println(x+"*"+a+"=" +(x*a));
        }
    }
}
```

Eg : Write a program to print prime or Not-prime ?

```java
import java.util.Scanner;
class  PrimeORnot
{
    public static void main(String[] args)
    {
        Scanner scan=new Scanner(System.in);
        System.out.println("Enter a Number : ");
        int x=scan.nextInt();
        int c=0;
        for (int a=1;a<=x ;a++ )
        {
            if (x%a==0)
            {
                c++;
            }
        }
        if (c==2)
        {
            System.out.println("Entered Number is Prime Number");
        }
        else
        {
            System.out.println("Entered Number is not a Prime Number");
        }
    }
}
```

Eg : Write a program to print Exponential value of Given base value and power value ?

```java
import java.util.Scanner;
class Exponential
{
  public static void main(String[] args)
  {
    Scanner scan=new Scanner(System.in);
    System.out.println("Enter the Exponential value : ");
    int x =scan.nextInt();
    System.out.println("Enter the Number value : ");
    int y =scan.nextInt();
    int product = 1;
    for (int a=1;a<=x;a++)
    {
      product = product*y;
    }
    System.out.println(product);
  }
}
```

Eg : Write a program to print Factorial of given Number ?

```
import java.util.Scanner;
class  FactorialOfNum
{*
   public static void main(String[] args)
   {
      Scanner scan=new Scanner(System.in);
      System.out.print("Enter the Number to give Factorrial :  ");
      int x=scan.nextInt();
      int product=1;
      int a=1;
      while(a<=x)
      {
         product=product*a;
         a++;
      }
      System.out.println();
      System.out.println("Factorial of the Number is : "+product);
   }
}
```

Eg : Write a program to print Factors of given Number ?

```
import java.util.Scanner;
class  factors
{
   public static void main(String[] args)
   {
      Scanner scan=new Scanner(System.in);
      System.out.println("Enter the value to multiple : ");
      int x =scan.nextInt();
      System.out.println("Enter the min range : ");
      int y =scan.nextInt();
      int c =0;
      for (int a=y;a<=x;a++ )
      {
         if (x%a==0)
         {
            System.out.println(a);
            c++;
         }
      }
      System.out.println("count : "+c);
   }
}
```

Eg : Write a program to count No.of Digits in given Number ?

```
import java.util.Scanner;
class count
{
   public static void main(String[] args)
   {
      Scanner scan=new Scanner(System.in);
      System.out.println("Enter the Number : ");
      int a=scan.nextInt();
      int count =0;
      for(int i=a;i!=0;i=i/10)
      {
         count++;
      }
      System.out.println("Entered number digits are : "+count);
   }
}
```

Eg : Write a program to find Sum of Digits in given Number ?

```java
import java.util.Scanner;
class  SumofDigitGivenNum
{
   public static void main(String[] args)
   {
      Scanner scan=new Scanner(System.in);
      System.out.println("Enter the Number : ");
      int num=scan.nextInt();
      int sum=0;
      int lastdigit=0;
      while (num!=0)
      {
         lastdigit=num%10;
         sum=sum+lastdigit;
         num=num/10;
      }
      System.out.println(sum);
   }
}
```

Eg : Write a program to find Sum of Even Digits in given Number ?

```java
import java.util.Scanner;
class  SumofEvenDigit
{
   public static void main(String[] args)
   {
      Scanner scan=new Scanner(System.in);
      System.out.println("Enter the Number : ");
      int num=scan.nextInt();
      int sum=0;
      int lastdigit=0;
      for(int a=num;a!=0;a=a/10)
      {
         lastdigit=a%10;
         if (lastdigit%2==0)
         {
            sum=sum+lastdigit;
         }
      }
      System.out.println(sum);
   }
}
```

Eg : Write a program to find Sum of factorials in given Number ?

```java
import java.util.Scanner;
class  SumofFactorial
{
   public static void main(String[] args)
   {
      Scanner scan =new Scanner(System.in);
      System.out.print("Enter the Number : ");
      int num=scan.nextInt();
      int sum=0;
      int lastdigit=0;
      while (num!=0)
      {
         int product=1;
         lastdigit=num%10;
         for (int a=1;a<=lastdigit;a++)
         {
            product=product*a;
         }
         sum=sum+product;
         num=num/10;
      }
      System.out.println("Sum of Factorial of given Number is : "+sum);
   }
}
```

Eg : Write a program to find Number is Strong Number or Not ?
(Sum of factorials of digits in a number is same as given number is called STRONG NUMBER).

```
import java.util.Scanner;
class  StrongNum
{
   public static void main(String[] args)
   {
     Scanner scan =new Scanner(System.in);
     System.out.print("Enter the Number : ");
     int num=scan.nextInt();
     int temp=num;
     int sum=0;
     int lastdigit=0;
     while (num!=0)
     {
       int product=1;
       lastdigit=num%10;
       for (int a=1;a<=lastdigit;a++)
       {
         product=product*a;
       }
       sum=sum+product;
       num=num/10;
     }
     if (sum==temp)
     {
       System.out.println(temp+" is a Strong Number");
     }
```

Eg : Write a program to find Number is Spy Number or Not ?

```
   {
     Scanner scan=new Scanner(System.in);
     System.out.print("Enter the Number : ");
     int num=scan.nextInt();
     int temp=num;
     int temp1=temp;
     int sum=0;
     int lastdigit = 0;
     while (num!=0)
     {
       lastdigit=num%10;
       sum=sum+lastdigit;
       num=num/10;
     }
     int product=1;
     while (temp!=0)
     {
       lastdigit=temp%10;
       product=product*lastdigit;
       temp=temp/10;
     }
   if (sum==product)
   {
     System.out.println(temp1+"Entered Number is Spy Number");
   }
   else
```

Eg : Write a program to Reverse the given number Eg (123 = 321) ?

```
import java.util.Scanner;
class reverse
{
   public static void main(String[] args)
   {
      Scanner scan = new Scanner(System.in);
      System.out.print("Enter the Number : ");
      int a=scan.nextInt();
      int temp=a;
      int lastdigit = 0;
      int reverse=0;
      while (a!=0)
      {
         lastdigit=a%10;
         reverse=reverse*10+lastdigit;
         a=a/10;
      }
      System.out.println(reverse);
   }
}
```

Eg : Write a program to find Number is Palindrome or Not ?

```
import java.util.Scanner;
class  Palindrome
{
   public static void main(String[] args)
   {
      Scanner scan=new Scanner(System.in);
      System.out.println("Enter the Number : ");
      int num=scan.nextInt();
      int temp=num;
      int lastdigit=0;
      int reverse=0;
      while (num!=0)
      {
         lastdigit=num%10;
         reverse=reverse*10+lastdigit;
         num=num/10;
      }
      if (reverse==temp)
      {
         System.out.println(temp+" is Palindrome");
      }
      else
      {
         System.out.println(temp+" is Not Palindrome");
      }
```

Eg : Write a program to print 1st Ten Fibonacci Series ?

```
class Fibonacci
{
   public static void main(String[] args)
   {
      int a=0;
      int b=1;
      int c=0;
      for (int i=1;i<=10;i++)
      {
         System.out.println(c);
         a=b;
         b=c;
         c=a+b;
      }
   }
}
```

Eg : Write a program to find given Number is Armstrong or Not ?

```
import java.util.Scanner;
class Armstrong1
{
   public static void main(String[] args)
   {
      Scanner scan=new Scanner(System.in);
      System.out.print("Enter the number : ");
      int num=scan.nextInt();
      int temp=num;
      int temp1=num;
      int sum=0;
      int lastdigit=0;
      int count=0;
      while (num!=0)
      {
         count++;
         num=num/10;
      }
      num=temp;
      while (num!=0)
      {
         lastdigit=num%10;
         int expo=1;
         for (int a=1;a<=count ;a++ )
         {
            expo=expo*lastdigit;
         }
         sum=sum+expo;
         num=num/10;
      }
      if (sum==temp)
      {
         System.out.println(temp+" is the ArmStrong Number");
      }
      else
      {
         System.out.println(temp+" is Nit the ArmStrong Number");
      }
   }
```

Eg : Write a program to find given Number is Perfect Number or Not ?

```
import java.util.Scanner;
class  perfectNum
{
   public static void main(String[] args)
   {
      Scanner scan =new Scanner(System.in);
      System.out.printq("Enter the Number : ");
      int num=scan.nextInt();
      int temp=num;
      int sum=0;
      for (int a=1;a<num;a++)
      {
         if (num%a==0)
         {
            sum=sum+a;
         }
      }
      if (sum==temp)
      {
         System.out.println(temp+" is Prefect Number");
      }
      else
      {
         System.out.println(temp+"is Not Prefect");
      }
   }
```

Eg : Write a program to find given Number is Magic Number or Not ?

```
import java.util.Scanner;
class  magicNum

{
   public static void main(String[] args)
   {
     Scanner scan=new Scanner(System.in);
     System.out.println("Enter the Number");
     int num=scan.nextInt();
     int lastdigit=0;
     while (num>9)
     {

       int sum=0;
       while (num!=0)
       {
         lastdigit=num%10;
         sum=sum+lastdigit;
         num=num/10;
       }
       num=sum;
     }
     if (num==1)
     {
       System.out.println("Magic Number");
     }
```

Eg : Write a program to find HCF of given Numbers ?

```
import java.util.Scanner;
class  HCF
{
   public static void main(String[] args)
   {
     Scanner scan=new Scanner(System.in);
     System.out.print("Enter the First Number : ");
     int n1=scan.nextInt();
     System.out.print("Enter the Secound Number : ");
     int n2=scan.nextInt();
     int HCF=0;
     for (int a=1;a<=n1 ;a++ )
     {
       if (n1%a==0&&n2%a==0)
       {
         HCF=a;
       }
     }
     System.out.println("For "+n1+" & "+n2+" HCF is "+HCF);
   }
}
```

Eg : Write a program to find LCM of given Numbers ?

```
import java.util.Scanner;
class  LCMofTwoNUm
{
   public static void main(String[] args)
   {
     Scanner scan=new Scanner(System.in);
     System.out.print("Enter the First Number : ");
     int n1=scan.nextInt();
     System.out.print("Enter the Secound Number : ");
     int n2=scan.nextInt();
     int LCM=0;
     int HCF=0;
     for (int a=(n1*n2);a>=1 ;a--)
     {
       if (a%n1==0&&a%n2==0)
       {
         LCM=a;
       }
     }
     System.out.println("LCM of "+n1+" and "+n2+" is : "+LCM);
   }
}
```

Eg : Write a program to find Sum of N numbers ?

```
import java.util.Scanner;
class sumofn
{
   public static void main (String [] args)
   {
     Scanner scan=new Scanner(System.in);
     System.out.println("Enter the How may Numbers you want to Print :");
     int x=scan.nextInt();
     int sum=0;
     for (int a=1;a<=x ;a++ )
     {
       System.out.println("Enter the " +a+ "Number : ");
       int num=next.scanInt();
       sum=sum+num;
     }
     System.out.println(sum);
   }
}
```

Eg : Write a program to find Average of N numbers ?

```
import java.util.Scanner;
class AvgofN
{
   public static void main(String[] args)
   {
     Scanner scan=new Scanner(System.in);
     System.out.println("Enter the How Many Numbers you want the Average : ");
     int x=scan.nextInt();
     double sum=0;
     for (int a=1;a<=x;a++ )
     {
       System.out.print("Enter the "+a+" Number  : ");
       int num=scan.nextInt();
       sum=(sum+num);
     }
     sum=sum/x;
     System.out.println(sum);
   }
}
```

Eg : Write a program to find Sum of Given Numbers ?

```
import java.util.Scanner;
class SumofUnlimited
{
   public static void main(String[] args)
   {
     Scanner scan =new Scanner(System.in);
     int sum=0;
     for (int a=0;a>=0 ;a++ )
     {
       System.out.print("Enter the Number : ");
       int num=scan.nextInt();
       sum=sum+num;
       System.out.println(sum);
     }
   }
}
```