{ Java }

- Java :-

Java is a popular programming language created in 1995, owned by Oracle.

- JVM :-

Stands for java virtual machine that enables computer to run java program written in other language that are also compiled to java bytecode.

It is responsible for converting the bytecode into machine - specific code and is ~~necessary~~ never for JDK and JRE.

- JDK :-

Stands for java development kit and is a superset of JRE. It enables java applications and java applet development.

- JDK VS JRE VS JVM

→ → →

i) JDK is a development platform, while JRE is for execution.

ii) JVM is a heart of java programming and ensure the program's java source code will be platform agnostic.

iii) JVM is included in both JDK & JRE java programs do not run without it.

- **Data - type :-**

There are two data types.

Primitive	Non - primitive
boolean	class
Char	object
byte	String
short	array
int	interface.
long	
float	
double	

- Variables :-

A variable is a container which holds the value while the Java program runs. It is assigned with a data type.

i) Local variable
ii) Instance variable
iii) Static variable.

i) A variable declared inside the body of method is called local variable. You can use this only within that method. It cannot be defined with static keyword.

ii) It's called instance variable because it's value is instance - specific and is not shared amongst instances.

iii) A variable that is declared as static is called static variable.

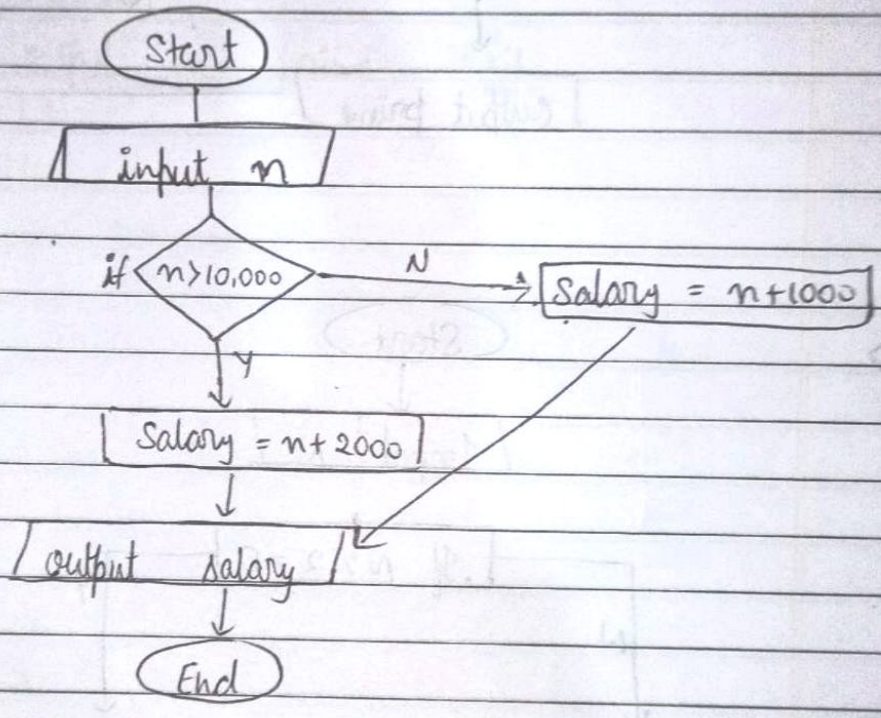
Ex program :-

```
public class A {
    static int m = 100; //Static variable
    void method ();
{
    int n= 90; //Local variable.
}
public SVm (String [] args)
{
    int data = 50; // Instance variable
}
```

- **Flow Chart :-**

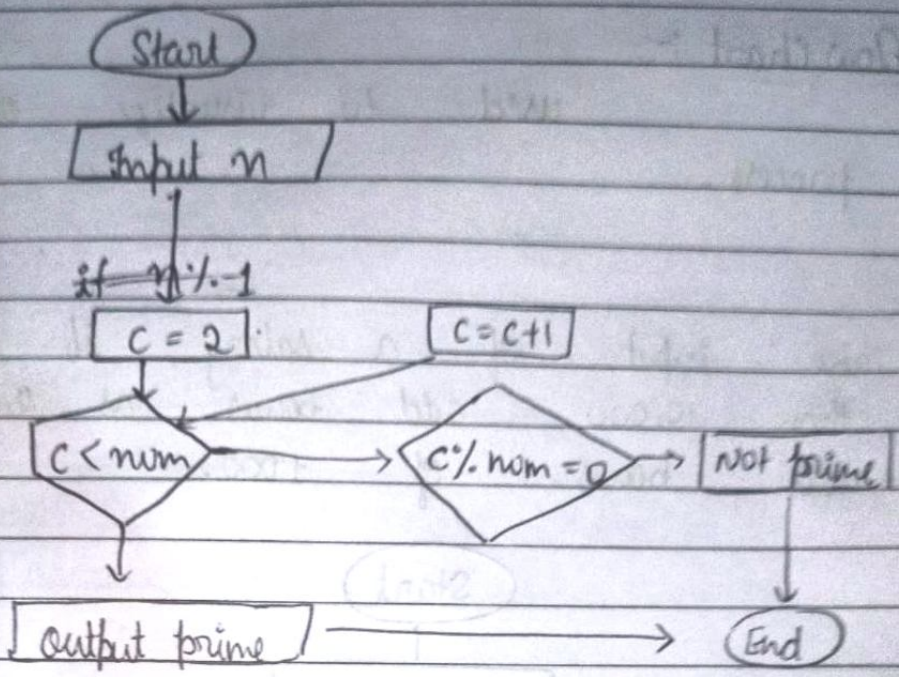
used to visualize our thought process.

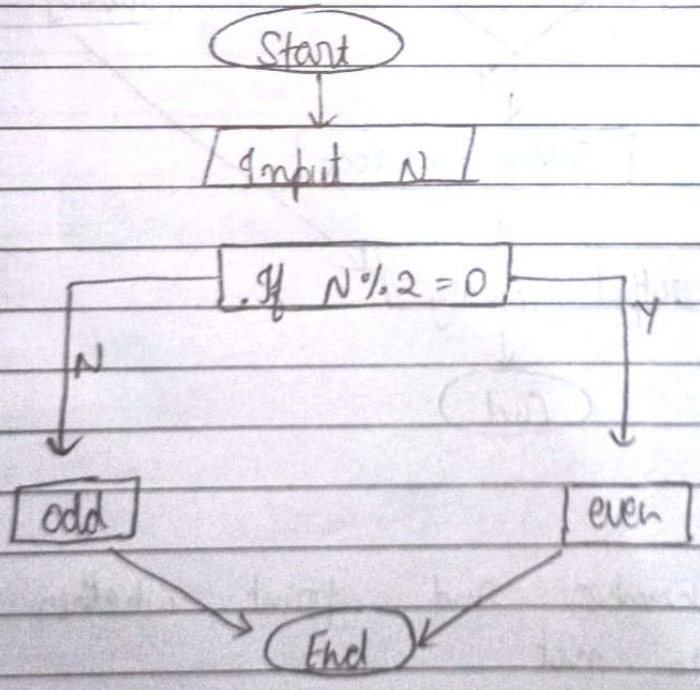
① Take input of a salary, if it's greater than 10,000 add bonus as 2,000 otherwise add bonus of 1,000.



② Input a number and print whether it is prime or not.

③ Input a number and print it's odd or even


Start
Input n
if n%.1
c = 2
c = c+1
c < num
c%. num = 0
Not prime
output prime
End


Start
Input N
If N%.2 = 0
N
Y
odd
even
End

- **Pseudo Code :-**

① write the pseudo code for checking the prime no.

Start the program.
input num
c = 2 { because prime is divisible by 1 }
while c < num :
if n % c = 0 :
output not prime. exit.
c = c + 1 :
end while
output is prime.
Exit.

② Pseudo code for flow chart problem 1.

Start
input n
if n > 10000 :
n = n + 2000
else :
n = n + 1000
exit.

- Float into int :-

```
int n = (int)(68.346f);
Syso(n);
```

Q>> what is floating point error?

Ans>> Round off error made by float data type is known as floating point error. Due to it's limitation of range. So we should use double data types.

- automatic type promotion in expressions.

```
int a = 260;
byte b = (byte)(b);
Syso(b);
// it will give the output 4 because the range of byte is 256.
```

#.

```
int number = 'a';
Syso(a);
// output will be the output of ascii value of small a.
```

#→

```
byte b = 42;
char c = 'a';
short s = 1024;
int i = 50,000;
float f = 5.67f;
double d = 0.1234;
double result = (f*b) + (i/c) - (d-s);
Sys.o (result);
```

Output → byte will be change into float. because float is bigger one.
char will be change into int.
short will be change into double.

↳ 1777.0166146.

It is known as automatic type conversion. which is done by the java only.

- write a basic program for to convert the temprature from C to F.

```
import java.util.*;
public class temprature
{
    public static void main (String [] args)
    {
        Scanner sc = new Scanner (System.in);
        float tempC = sc.nextFloat ();

        float tempF = (tempC * 9/5) + 32;
```

```
        Syso (tempF);
    }
}
```

(2) → W.A.P. to calculate simple interest.

```
import java.util.*;
public class assignment
{
    public static void main (String[] args)
    {
        Scanner SC = new Scanner (System.in)
        int p = SC.nextInt ();
        int n = SC.nextInt ();
        int T = SC.nextInt ();

        * float SI = (p* n* T)/100;

        Syso (SI);
    }
}
```