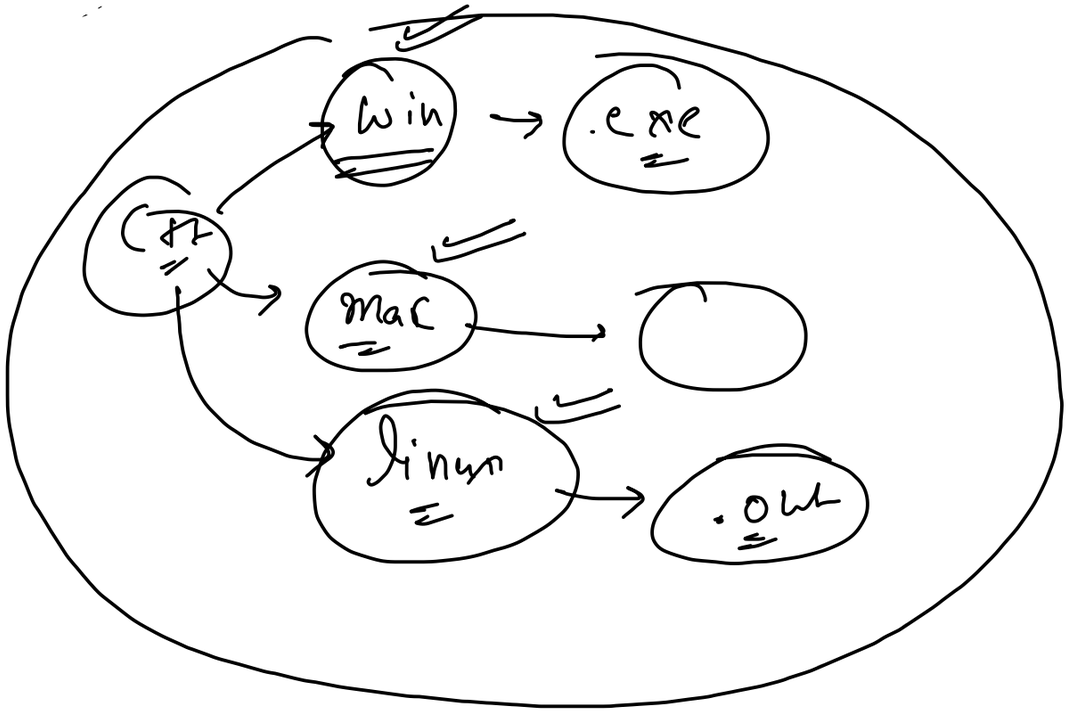
→ Learning (3 hours) ⇒ (2 hours, 2.5 hours.)

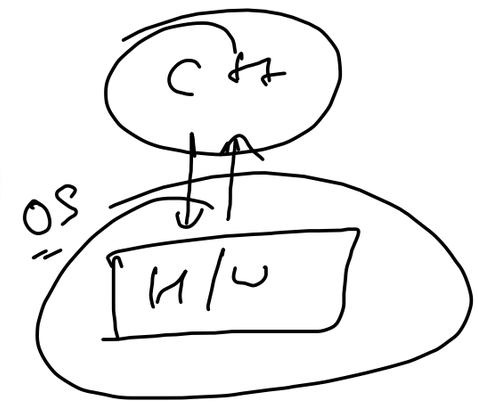
→ Path the boys → listen

(chat disable)

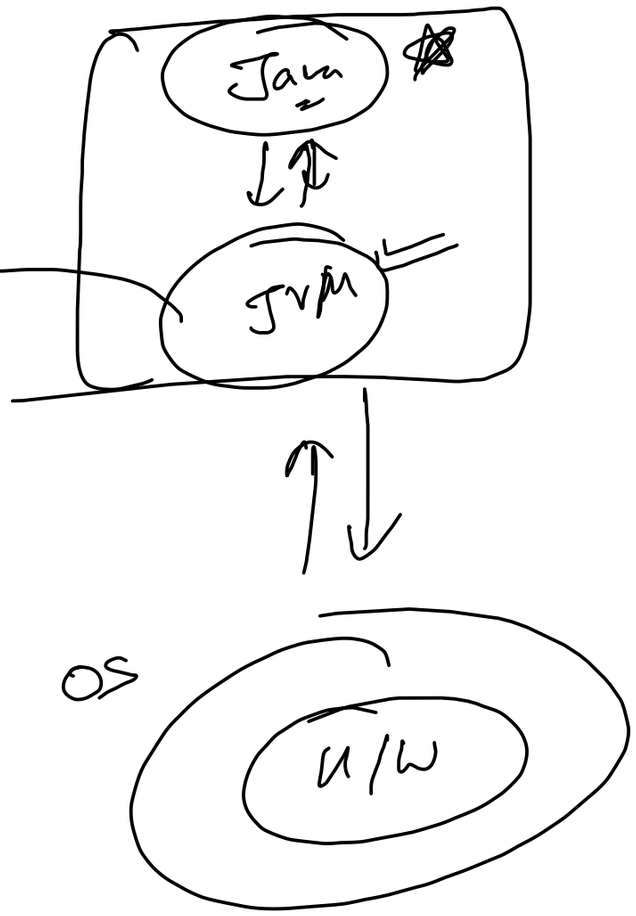
→ dedicated Time → Code + doubts

→ faith





Java Virtual Machine



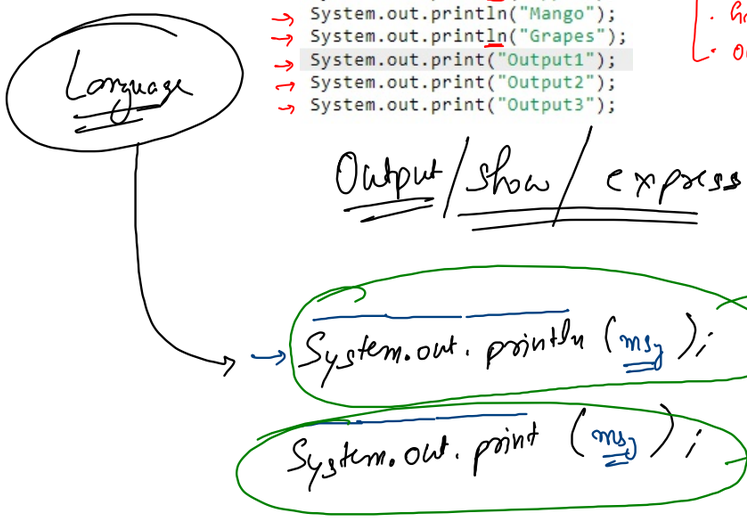
```java
import java.util.*;

public class Main {

    public static void main(String[] args){
        System.out.println("Hello World");
    }
}
```

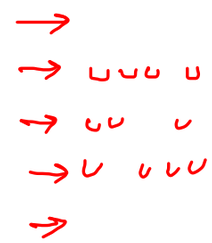
line by line

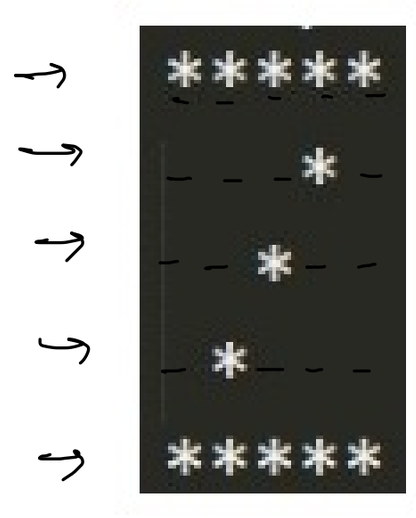
RUN

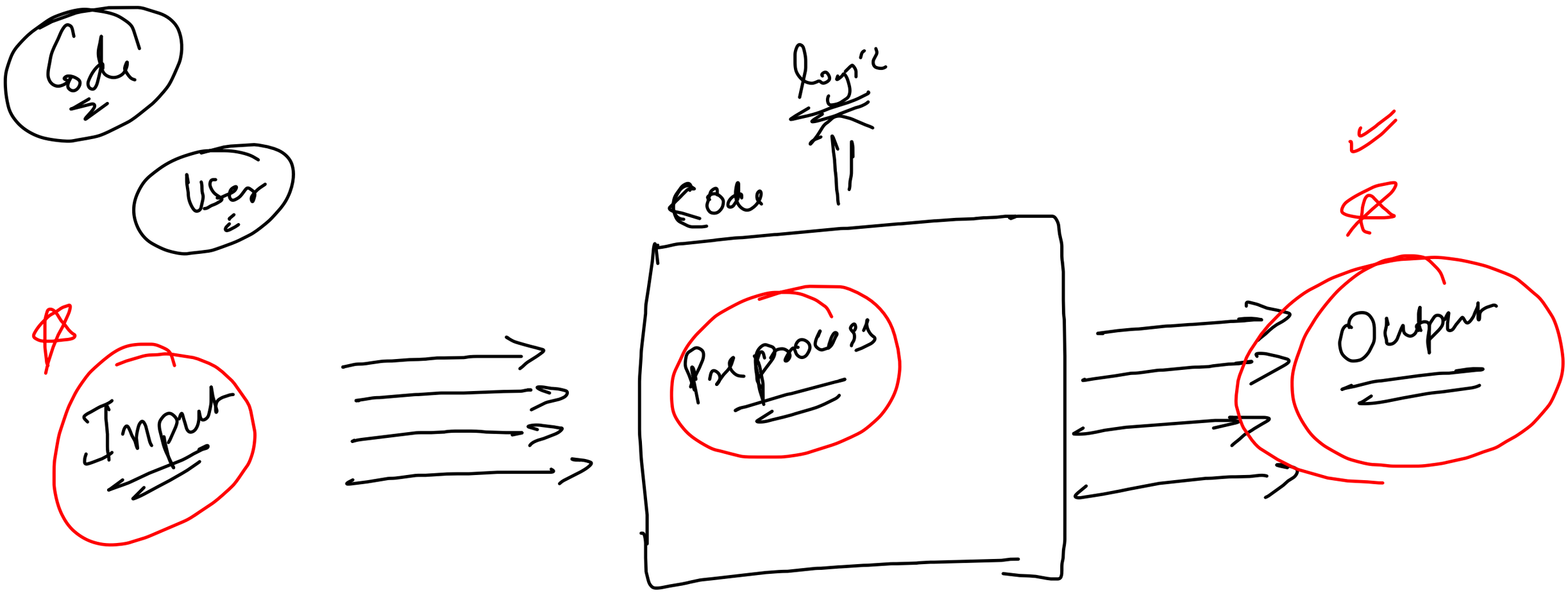
Special block

Jar file

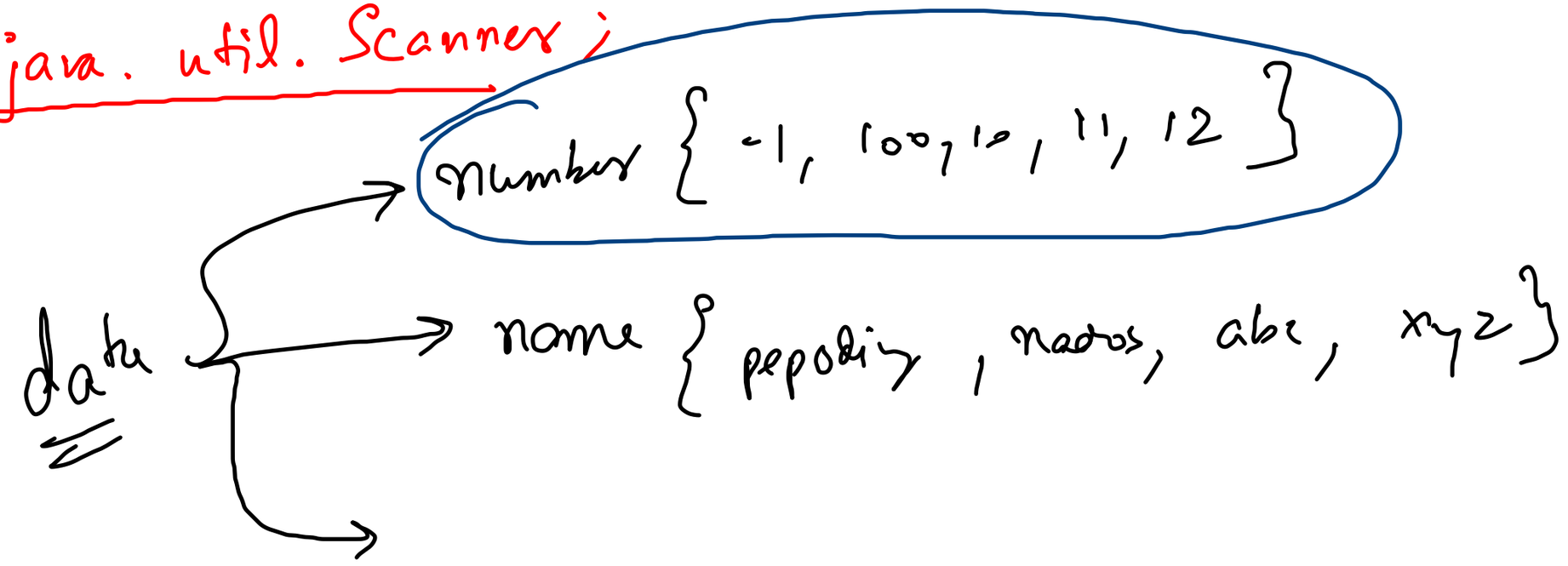

Language
System.out.println("apple");
System.out.println("Mango");
System.out.println("Grapes");
System.out.print("Output1");
System.out.print("Output2");
System.out.print("Output3");
Output/Show/express
apple
Mango
Grapes
Output1 Output2 Output3
System.out.println (msg);
print + move to next line
System.out.print (msg);
print






Code
User
Input
Logic
Code
Preprocess
Output

import java.util.Scanner;



→ Scanner scn = new Scanner (System.in);

scn.nextInt();

Input feature

```java
import java.util.Scanner;

public class Main {
    public static void main(String[] args){
        Scanner scn = new Scanner(System.in);

        System.out.println(scn.nextInt());
    }
}
```

Output

Input → data

variable

Number → Input

Num → Int

store

Scn.nextInt();

int var = 5;

10

8

SYNTAX

datatype varname = value;

int x = 5;

```java
public class Main {
    public static void main(String[] args){
        int var1 = 10;

        int var2 = 50;

        int var3 = var1 + var2;
    }
}
```

10 + 50

60

data → Store

→ manipl

→ process

Assignment operator

```java
public class Main {
    public static void main(String[] args){
        int var1 = 10;

        int var2 = 50;

        int var3 = var1 - var2;

        System.out.println(var3);
    }
}
```

Java

$7/2 = 3.5 \simeq 3$

$7\%2 = 1$

2) 7 (3 → 7/2

6

1 → 7%2

operators

- ✓ + → addition
- ✓ * → multiply
- ✓ - → subtract
- / → integer division
- % → integral remainder
- = → assignment
- == → Equality operator

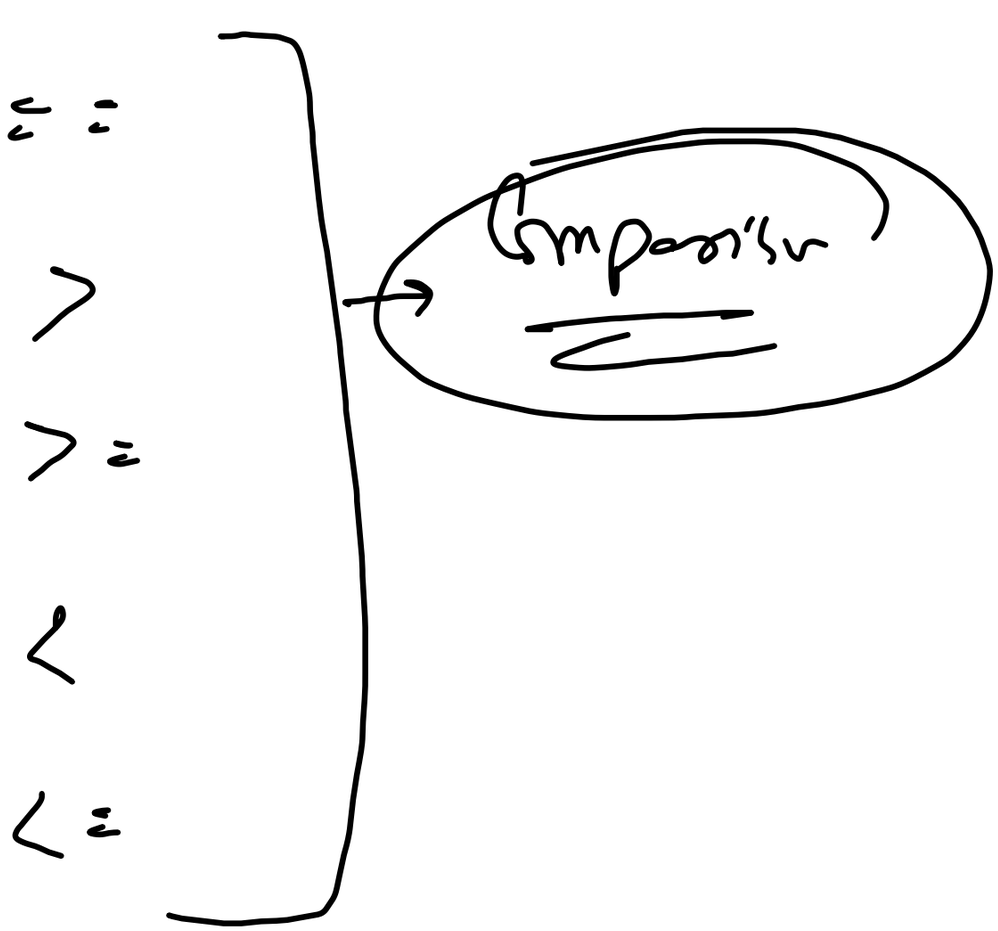
→ arithmetic opts

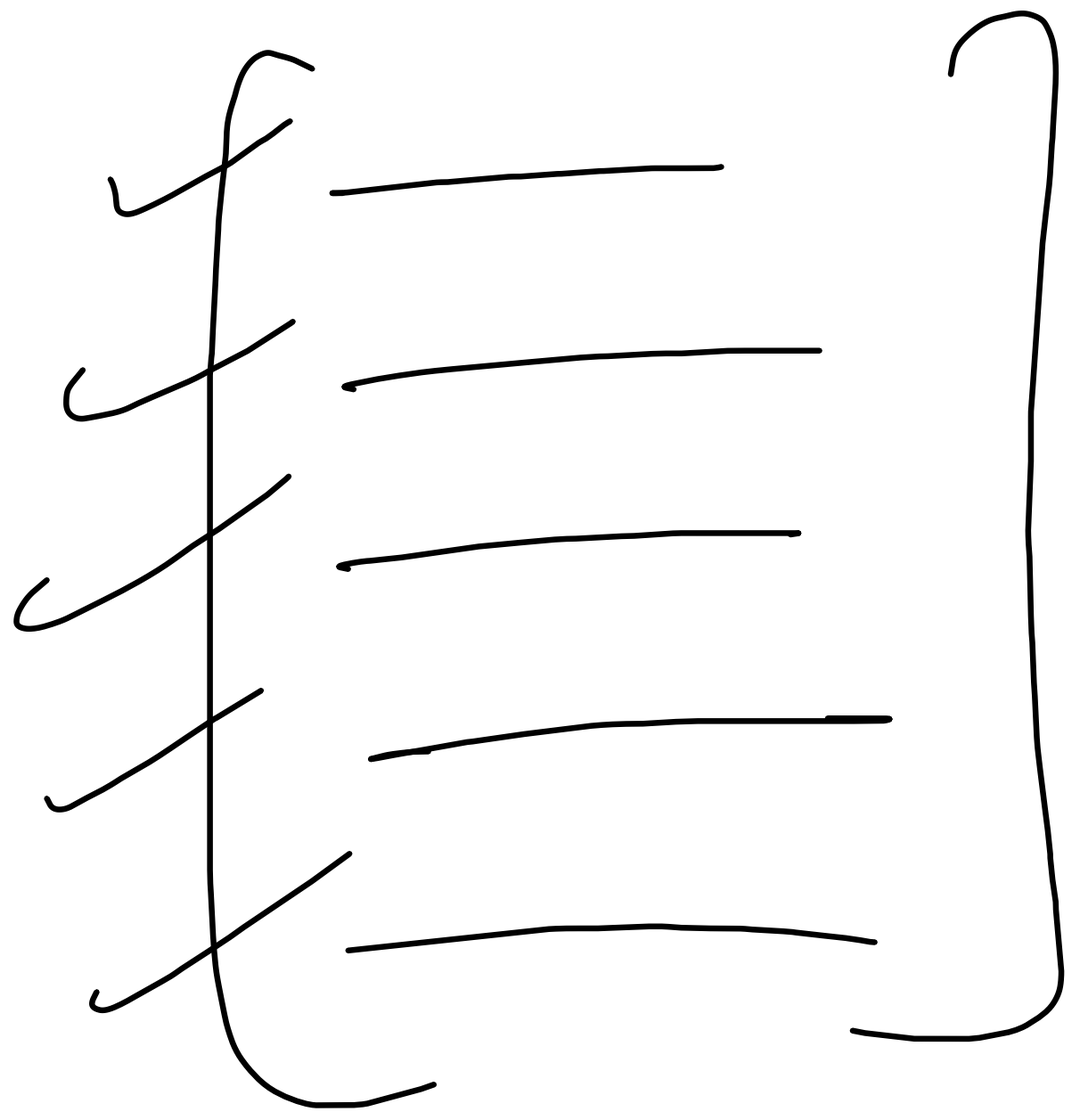
odd / Even

modulus

7 == 2 → false

2 == 2 → True


==
>
>=
<
<=
Comparison



→ Inp

→ Outp

→ data → store variable

→ operators

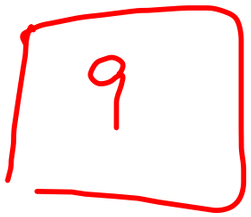
→ Decision making capability

Decision

```
if ( raining ) {
    ✓ bring umbrella.
} else {
    ✗ bring umbrella.
}
```

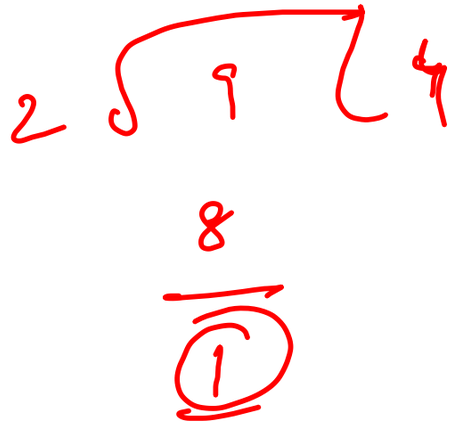
```
if ( num is odd) {

    print (                    )

} else {

    print (                    )

}
```

```java
import java.util.Scanner;
public class Main {
    public static void main(String[] args){
        Scanner scn = new Scanner(System.in);

        int num = scn.nextInt(); // input

        // process
        int rem = num%2;
        if(rem == 1){ // number is odd
            System.out.println("Number is odd");
        }else{
            System.out.println("Number is even");
        }
    }
}
```

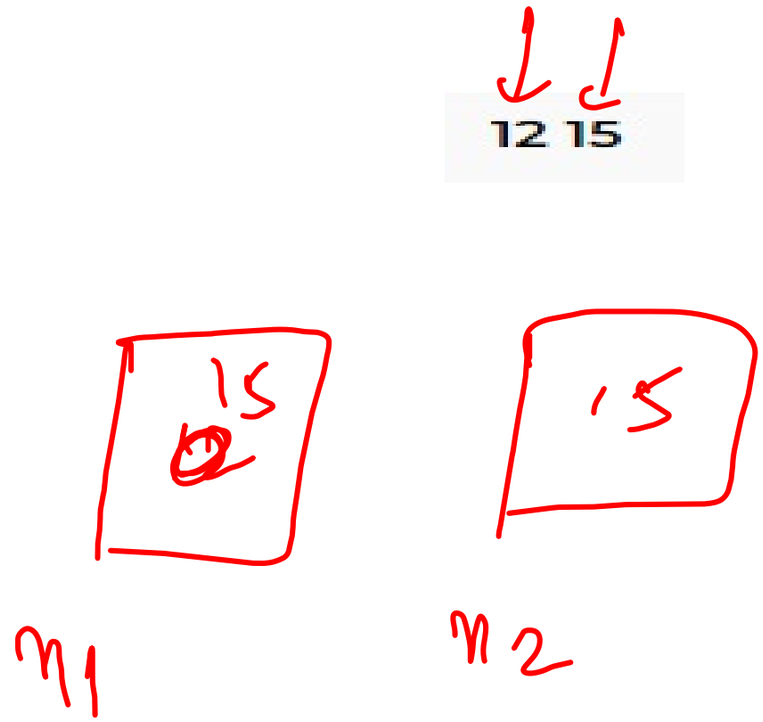


num

9 % 2



```java
import java.util.Scanner;
public class Main {
    public static void main(String[] args){
        Scanner scn = new Scanner(System.in);
        int n1 = scn.nextInt(); // num1 ki input
        int n2 = scn.nextInt(); // num2 ki input

        if(n1 == n2){
            System.out.println("Both are equal");
        }else if(n1 > n2){
            System.out.println("n1 is greater than n2");
        }else{
            System.out.println("n1 is smaller than n2");
        }
    }
}
```



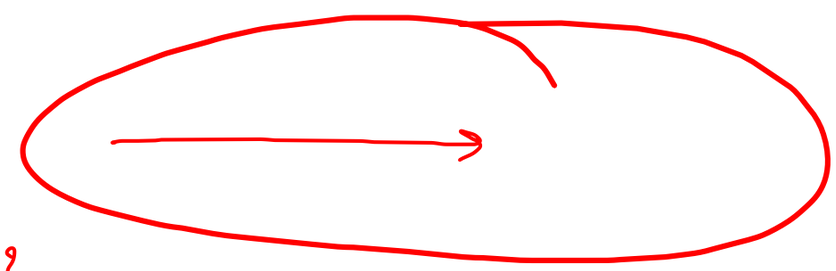
logical operator

&& → and

|| → or

! → not

```
if ( exp1 && exp2){
}
```



```
if (exp1 || exp2){
}
```

```java
import java.util.Scanner;
public class Main {
    public static void main(String[] args){
        Scanner scn = new Scanner(System.in);
        int n1 = scn.nextInt(); // num1 ki input


        if(n1 > 0 && n1 < 10){
            System.out.println("Valid Input");
        }else{
            System.out.println("Invalid Input");
        }
    }
}
```

Exp1 Exp2

```java
if(n1 > 0 || n1 % 2 == 0){
    System.out.println("valid input");
}else{
    System.out.println("invalid input");
}
```

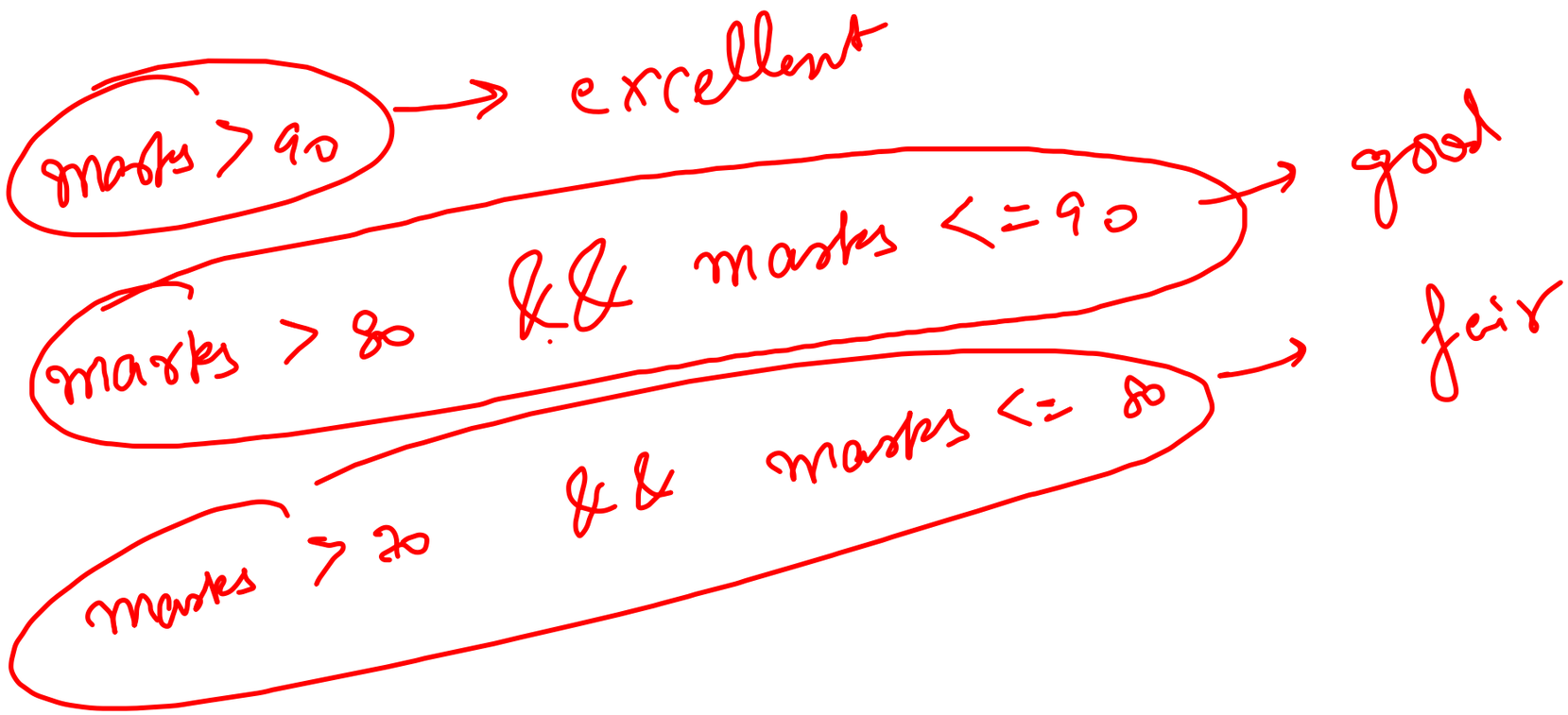
Exp1	Exp2	(exp1 || exp2)	(exp1 && exp2)
T	T	T	T
T	F	T	F
F	T	T	F
F	F	F	F

val1 == val2

val1 != val2

. You are given as input marks of a student.
. Display an appropriate message based on the following rules:
    2.1 for marks above 90, print excellent.
    2.2 for marks above 80 and less than equal to 90, print good.
    2.3 for marks above 70 and less than equal to 80, print fair.
    2.4 for marks above 60 and less than equal to 70, print meets expectatio
    2.5 for marks less than equal to 60, print below par.

Note -> Only change the code in area after - // code here



Input

Output

Conditional

Variable

operators

logical operators (&&, ||, !)

if else

add

v1 + v2

int int

join

"Hello" for

str int

Hello is