Module 1 FS-28

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↳ Java & DSA

→ understand

→ Approach

→ code

→ Dry run

→ H|W & C|W

→ Notes

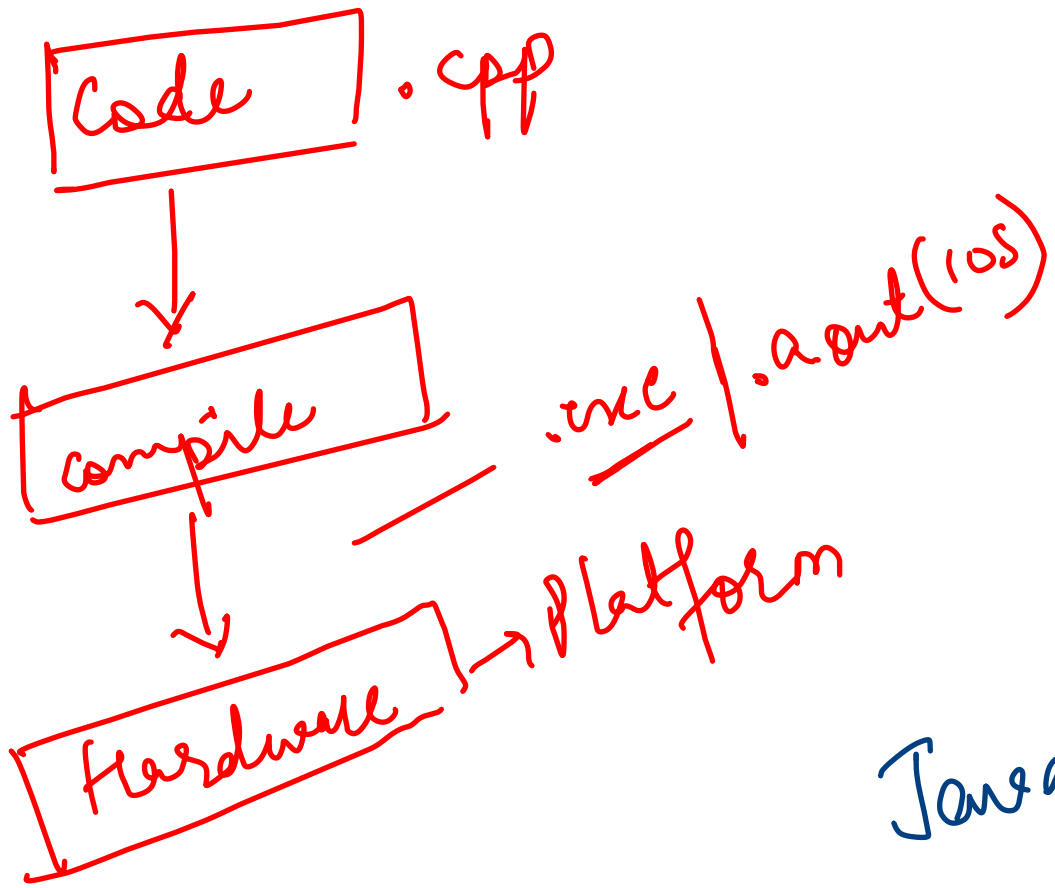
→ doubts.

Why Java?

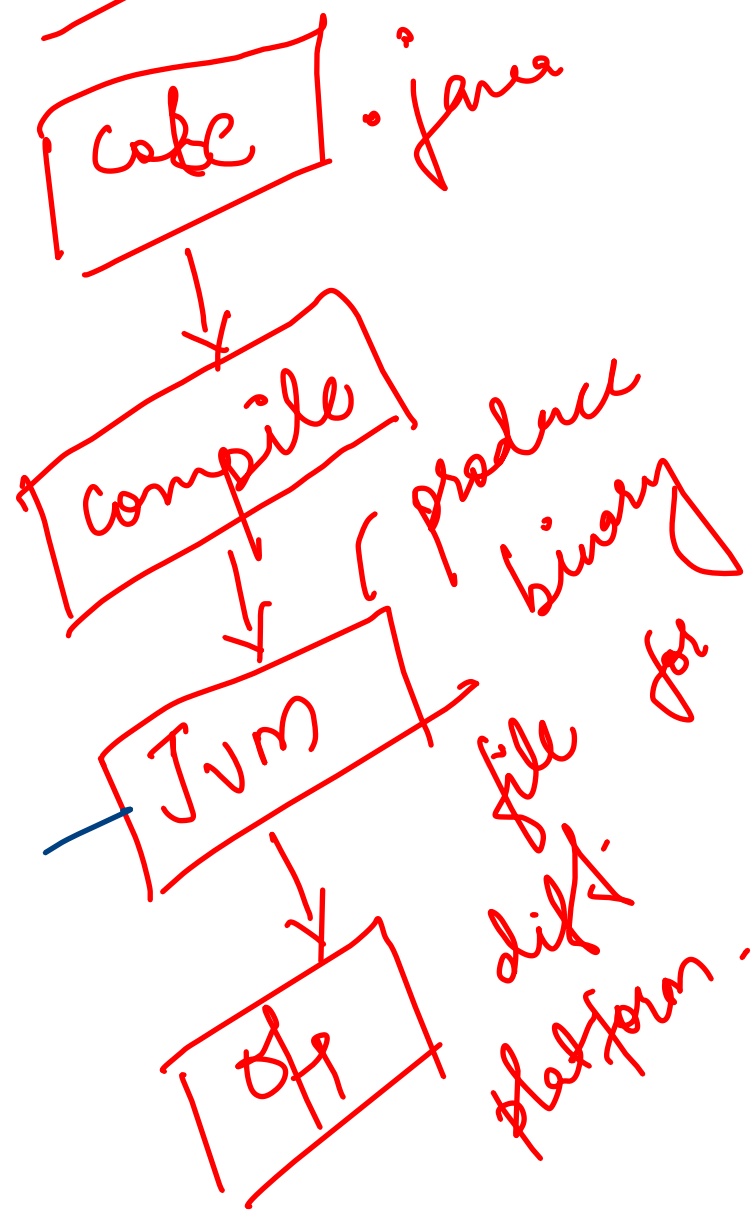
→ OOPS

→ Platform Independent

C++



Java



Java Virtual machine

→ JRE
→ JVM
→ JDK
} Do yourself.

Java IDE

offline → Eclipse, Intellij, vscode

online → Programiz.

output

Input

libraries

```java
import java.io.*;
import java.util.*;

public class Solution {

    public static void main(String[] args) {
        /* Enter your code here. Read input from STDI
    }
}
```

class

main function

Output : Hello World!

Same line o/p ↴

System.out.print("Hello");

"Sachin"

"Jyoti"

o/p → Hello Sachin Jyoti

Next line o/p system

System.out.println(" ");

In a new line

print"Hello World. I am here."

```
System.out.print("Hello World. I am here.");
```

print the pattern-1

```
System.out.println("Hello");
System.out.println("World.");
System.out.println("I");
System.out.println("am");
System.out.println("here.");
```

Data types → type of the data.

long →

int → Integer

char → Character

boolean → True/False

double → decimal

float →

byte → Integer

Java Primitive Type	Description	Java Data Range
int	signed 32 bits	**-2147483648 to 2147483647**
long	signed 64 bits	-9223372036854775808 to 9223372036854775807
float	32 bits	1.40239846e-45f to 3.40282347e+38f
double	64 bits	4.94065645841246544e-324 to 1.79769313486231570e+308

bit

1 byte → 8 bits

char → 2 bytes

int → 4 bytes

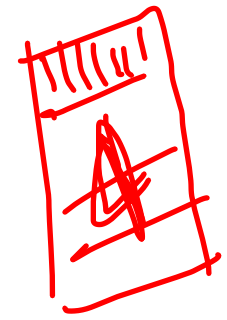
long → 8 bytes

float → 4 bytes

double → 8 byts

boolean - 1 byte

int a = 4



Define variable

data type variable name = value ;

int a = 6 ;

int a = 4;

byte b = 11

long l = 117

float f = 10.5f

double d = 100.0

char ch = 'a' ;

boolean b1 = true;

```java
class HelloWorld {
    public static void main(String[] args) {
        int a = 4;
        byte b = 11;
        long l = 117;
        float f = 10.5f;
        double d = 100.5;
        char ch = 'a';
        boolean b1 = true;

        System.out.println(a);
         System.out.println(b);
          System.out.println(l);
           System.out.println(f);
            System.out.println(d);
             System.out.println(ch);
              System.out.println(b1);
    }
}
```

Output

```
java -cp /tmp/v6YLa6IOd8/HelloWo
4
11
117
10.5
100.5
a
true

=== Code Execution Successful ==
```

→ Already defined keywords can't be used.

→ Can't use variable before "initialization.

"int a; → declare

"int a=4 → initialization

→ follow sequence create → initialize → print

→ give logical names; can't start with numbers

→ Camel case "int sumOfTwo

Arithmetic Operators

+ → addition

− → subtraction

/ → division

* → multiply

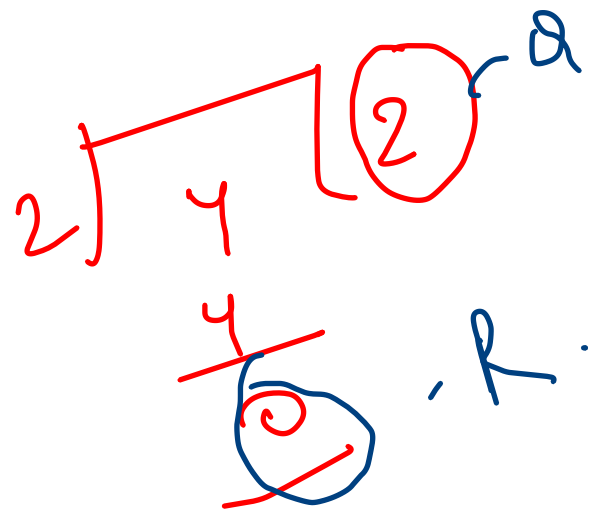
% → modulus ⇒ remender

→ BODMAS

→ Brackets b | (a+b)

4 % 2 = 0

4 / 2 = 2



Take input from user

```
Scanner s = new Scanner(System.in);
int x = s.nextInt();
int y = s.nextInt();
double d = s.nextDouble();
```

variable name

i/p

10
20
50.5

import java.util.Scanner; → before class

Sum and Difference of x and y

```
Scanner s = new Scanner(System.in);
int x = s.nextInt();
int y = s.nextInt();

int sum = x + y;
int diff = x - y;

System.out.println(sum);
System.out.println(diff);
```

o/p → 55
9

32, 23

sum = 32 + 23
= 55

diff = 32 - 23
= 9

45, 45

sum = 45+45
= 90

diff = 45-45
= 0

90
0

Fahrenheit and Celsius

32° f

```
Scanner s = new Scanner(System.in);
double f = s.nextDouble();

double c = (f - 32) * (5.0/9.0);
System.out.println(c);
```

32.0

0.0

0.0 → dp

Comments

single line comment → //

multi line comment → /* - - - -

- - - - */