

- Programming language
  - set of instruction → algorithm
    - ↳ To make a tea
    - 1. Take a pan
    - 2. Add some water to it / milk / tea/ chai/ sugar / ginger
    - 3. Switch on the burner
    - 4. Start boiling
    - 5. wait to boil
    - 6. filter / drink it.
- Types of programming language.
  - High level language
    - programmer friendly
    - ↳ Java, C++, C, Python
    - ↳ n - memory
  - Low level language
    - machine friendly lang.
    - ↳ 0/1
    - ↳ more memory efficient

- ↳ Java, C++, C, Python
- ↳ less memory efficient
- ↳ simple to debug
- - / +
- ↳ more memory efficient
- ↳ difficult to debug

### • What is Java?

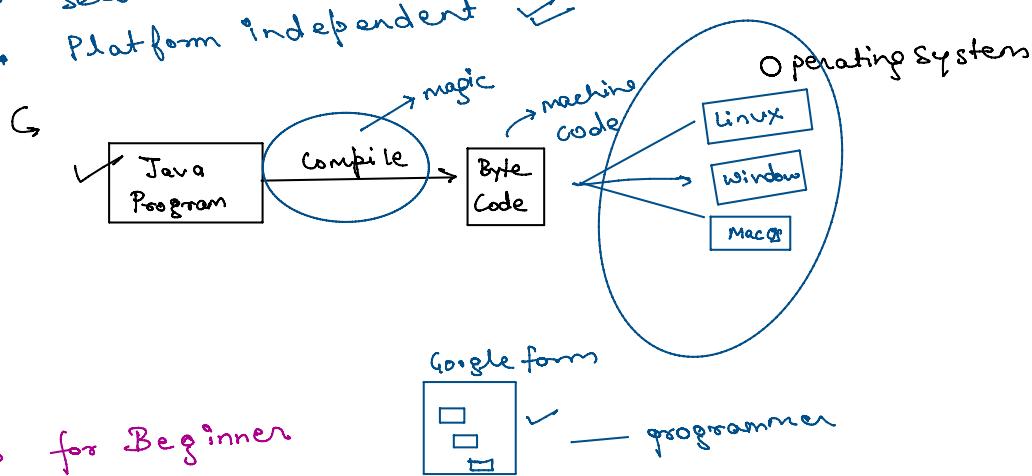
Java is high level lang., object oriented, secure  
 programming lang., James Gosling, at Sun Microsystem, Inc  
 in 1991

DRY

- ↳ Java → Oak → before that
- ↳ 1995 → Java was introduced
- ↳ 2009 → Oracle Corporation has takeover Sun Microsystem

### # feature of Java

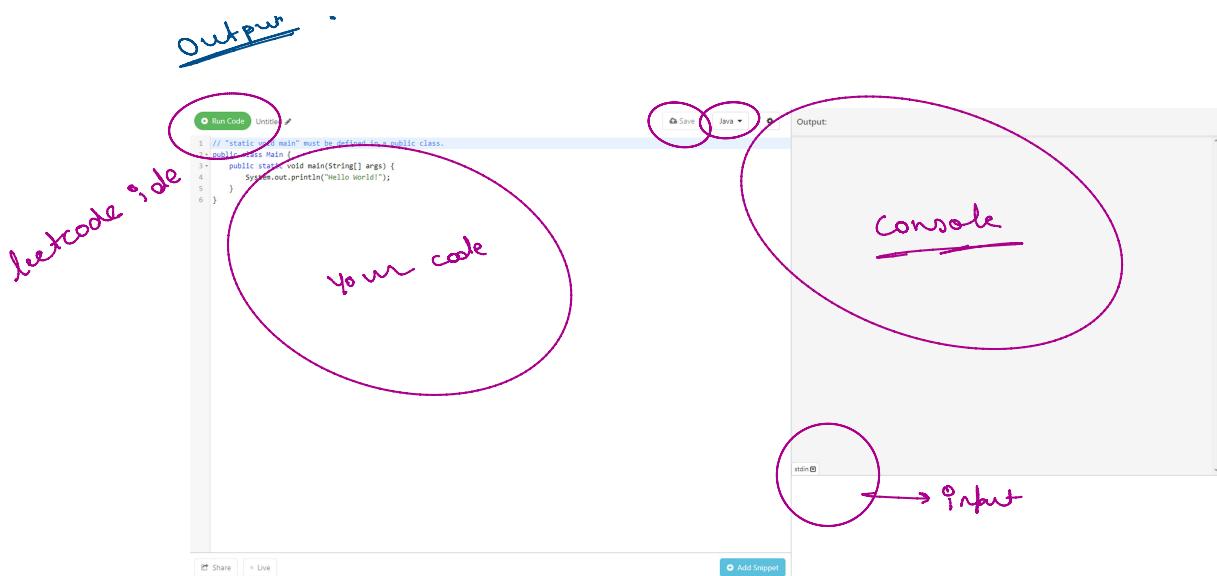
- Simple
- Object Oriented
- Secure
- Platform independent ✓



### # Tips for Beginner

Input → anything user provide





Boiler plate — template

```

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

```

String  
↳ text

```

// System.out.println("Hello World!");
// System.out.println("Krishna Madan");
System.out.print("Krishna Madan");
System.out.print("Hello World!");

```

add enter do

same line

enter

```

Hello World!
Krishna Madan

Finished in 76 ms

```

System.out.print() ≡ System.out.println();  
+ enter  
'\\n'

# Question discussion

1) Print "Hello World. I am here."

2) Print the below pattern

Hello  
World.  
I  
am  
here.

3) Print \*\*\*\*\*

4) Print the below pattern

\*\*\*\*\*  
\*\*\*\*\*  
\*\*\*\*\*

5) Print the below pattern

\*\*\*\*\*  
\*  
\*  
\*  
\*\*\*\*\*

Comment

//  
window → ctrl + /  
/\* \*/ → multiline comment

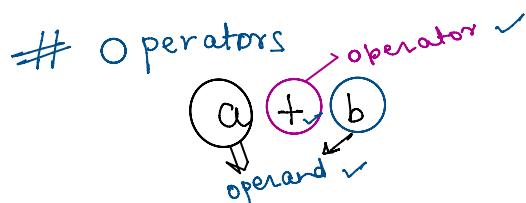
```
System.out.println("Hello World. I am here");
```

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

```
System.out.println("*****");
```

```
System.out.println("*****");  
System.out.println("*****");
```

```
System.out.println("*****");  
System.out.println("* ");  
System.out.println("* ");  
System.out.println("* ");  
System.out.println("*****");
```



question  
remainder  
 $\rightarrow x = x + 1$

+	Addition	Adds together two values	$x + y$
-	Subtraction	Subtracts one value from another	$x - y$
*	Multiplication	Multiplies two values	$x * y$
/	Division	Divides one value by another	$x / y$
%	Modulus	Returns the division remainder	$x \% y$
++	Increment	Increases the value of a variable by 1	$++x$

quotient  
15    200    15 ↓    50    45    5 → remainder    0%

$200 / 15 \rightarrow 13$

$200 / 15 \rightarrow 5$

$x + x \Rightarrow x = x + 1$

$x++ \rightarrow x = x + 1$	++	Increment	Increases the value of a variable by 1	$x++$
$x-- \rightarrow x = x - 1$	--	Decrement	Decreases the value of a variable by 1	$--x$

$x++ \Rightarrow x = x + 1$   
 $y-- \Rightarrow y = y - 1$   
 $y = 10 \Rightarrow y = 10 - 1$   
 $y = 9$

*assigning*

=	$x = 5$	$x = 5$ ✓
$+=$	$x += 3$	$\equiv x = x + 3$
$-=$	$x -= 3$	$\equiv x = x - 3$
$*=$	$x *= 3$	$x = x * 3$
$/=$	$x /= 3$	$x = x / 3$
$%=$	$x \% = 3$	$x = x \% 3$

*12)  $200 \% 12 \rightarrow 8$*

- 6) Add two numbers 10,20. →  $System.out.println(10 + 20);$
- Multiply three numbers 10,20,30. →  $System.out.println(10 * 20 * 30);$
- Subtract two numbers 40-20. →  $System.out.println(40 - 20);$
- 7) Find the sum and product of 20, 30, 50. →  $System.out.println(20 + 30 + 50);$
- 8) Divide two numbers 25/10. →  $System.out.println(25 / 10);$
- 9) Find the remainder when 438 is divided by 9. →  $System.out.println(438 \% 9);$
- 10) Find the remainder when 4596 is divided by 10. →  $System.out.println(4596 \% 10);$
- division → quotient  
% → modulo → remainder*
- 200 / 5 → 40      5) 200      20 / 1      00  
200 % 5 → 0      0      0      remainder*

```
System.out.println(10 + 20);
System.out.println(10 * 20 * 30);
System.out.println(40 - 20);
```

```
System.out.println(20 + 30 + 50);
System.out.println(20 * 30 * 50);
```

```
System.out.println(20 / 10);
```

```
System.out.println(438 % 9);
System.out.println(4596 % 10);
```

→ github

```
System.out.println(10 + 20);
System.out.println(10 * 20 * 30);
System.out.println(40 - 20);

System.out.println(20 + 30 + 50);
System.out.println(20 * 30 * 50);

System.out.println(20 / 10);

System.out.println(438 % 9);
System.out.println(4596 % 10);
```

