

Java is a **High-Level Language**(easy for humans to read and write).

HLL : High-Level Language , Human understandable code.

LLL : Low-level language(machine language), contains only 1's and 0's and is directly understood by a computer.

JDK : JAVA DEVELOPMENT KIT

- It is a collection of software tools, libraries, java compiler JRE etc.
- It enables developers to write, compile, and run Java programs.

Compiler

- It translates the entire source code of HLL into LLL or an intermediate code(closer to machine code) in a single step.
- It scans syntax errors.

Interpreter

- The interpreter translates HLL line by line.

WHOLE PROCESS OF RUNNING A JAVA CODE

Java compiler translates source code into byte code.The JVM (DTL) loads and executes the byte code. Optionally, some JVMs may choose to interpret the byte code directly for certain use cases.This combination of compilation and interpretation allows Java programs to be both platform-independent (byte code run on any machine).

INSTALLATION

JDK : <https://www.oracle.com/java/technologies/downloads/#jdk21-windows>

IDE : <https://www.jetbrains.com/idea/download/?section=windows>

Boiler-plate || Default Code

```
public class Demo1 {  
    public static void main(String[] args) {  
  
    }  
}
```

Class- Collection of methods and variables. It is concept of OOPs(DTL).

Method - A method is a block of code which performs certain operations and returns output(DTL).

Entry Point

The **main** method is the entry point for executing a Java application.

When you run a Java program, The JVM or java compiler looks for a public static void main(String args[]) method in that class, and the signature of the main method must be in a specified format for the JVM to recognize it as its entry point.

If we update the method's signature, the program will throw the error **NoSuchMethodError:main** and terminate.