



# JAVA PROGRAMMING LANGUAGE

## What is Java ?

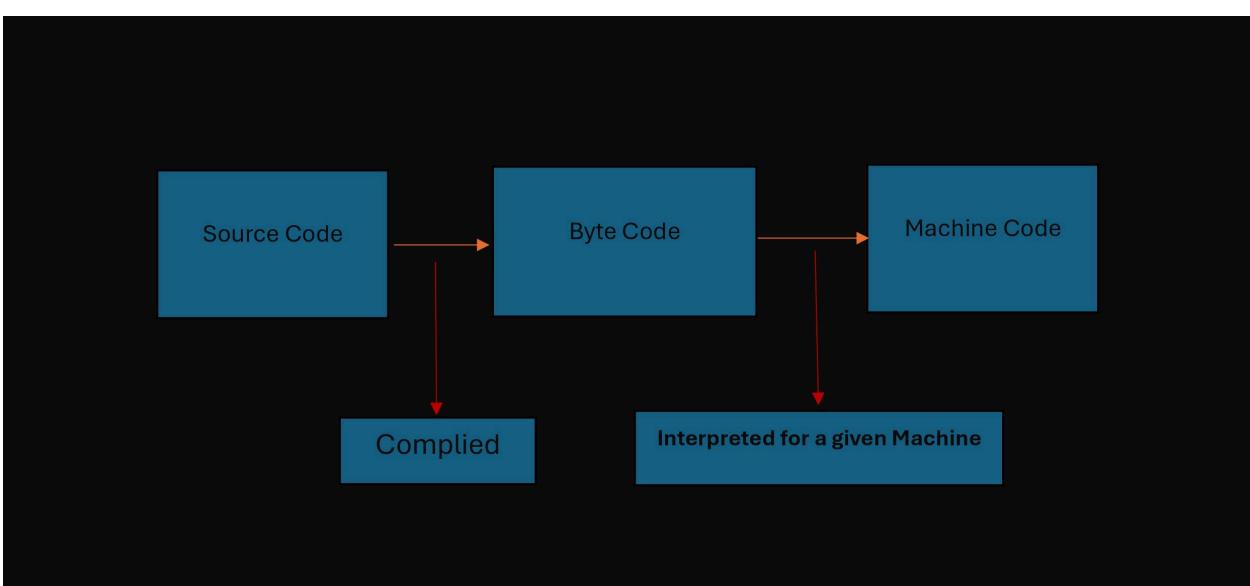
Java is an object oriented programming language ,developed by Sun MicroSystems of USA in 1991.

It was originally called oak by James Goslin . (one of the inventors of java)

## JAVA - Purely Object Oriented

## How Works JAVA ?

Java is Compiled into the bytecode and then it is interpreted to machine code.



## JDK → JAVA DEVELOPMENT KIT

Collection of tools used for developing and running java program.

## JRE → JAVA RUNTIME ENVIRONMENT

Helps in Executing program developed in Java.

# Basic Structure of a Java Program

```
// 1. Package declaration (optional)
package mypackage;

// 2. Import statements (optional)
import java.util.Scanner;

// 3. Class definition (mandatory)
public class MyFirstProgram {

    // 4. Main method (mandatory)
    public static void main(String[] args) {

        // 5. Statements (program logic)
        System.out.println("Hello, World!");
    }
}
```

## Explanation of Each Part

### 1. Package Declaration (optional)

- Used to organize classes into groups (like folders).
- Example:

```
package mypackage;
```

### 2. Import Statements (optional)

- Used to access built-in or user-defined classes from other packages.
- Example:

```
import java.util.Scanner;
```

### 3. Class Definition (mandatory)

- Every Java program must have at least one class.
- Syntax:

```
public class ClassName {  
    // class body  
}
```

### 4. Main Method (mandatory)

- Entry point of the program; execution starts here.
- Syntax:

```
public static void main(String[] args) {  
    // statements  
}
```

### 5. Statements (Program Logic)

- Actual code you want to execute, such as input/output, loops, or conditions.
- Example:

```
System.out.println("Hello, World!");
```

## Important Points

- The **file name must match the public class name** (case-sensitive).
  - Example: Class name `MyFirstProgram` → File name `MyFirstProgram.java`.
- Every statement in Java ends with a **semicolon ( ; )**.
- Without the `main()` method, the program won't run (except in special cases like applets or JavaFX).