

# Java for beginners

## Setup Environment



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# Agenda

- ① Setup Environment
- ② JDK
- ③ JVM
- ④ JRE
- ⑤ Develop and run c/c++ program
- ⑥ Develop and run Java program
- ⑦ Installation of JDK on windows
- ⑧ Installation of JDK on Mac Os
- ⑨ Installation of IDE

## Setup Environment

- ① Download and Install JDK 21
  - ② Download and Install IntelliJ IDEA
- Download and Install vs code  
<sup>or</sup>

# JDK

## Java Development Kit

It implements the Java Language and the Java Virtual Machine Specification and provides the Standard Edition of the Java Application Programming Interface

JDK can be installed on the following platforms:

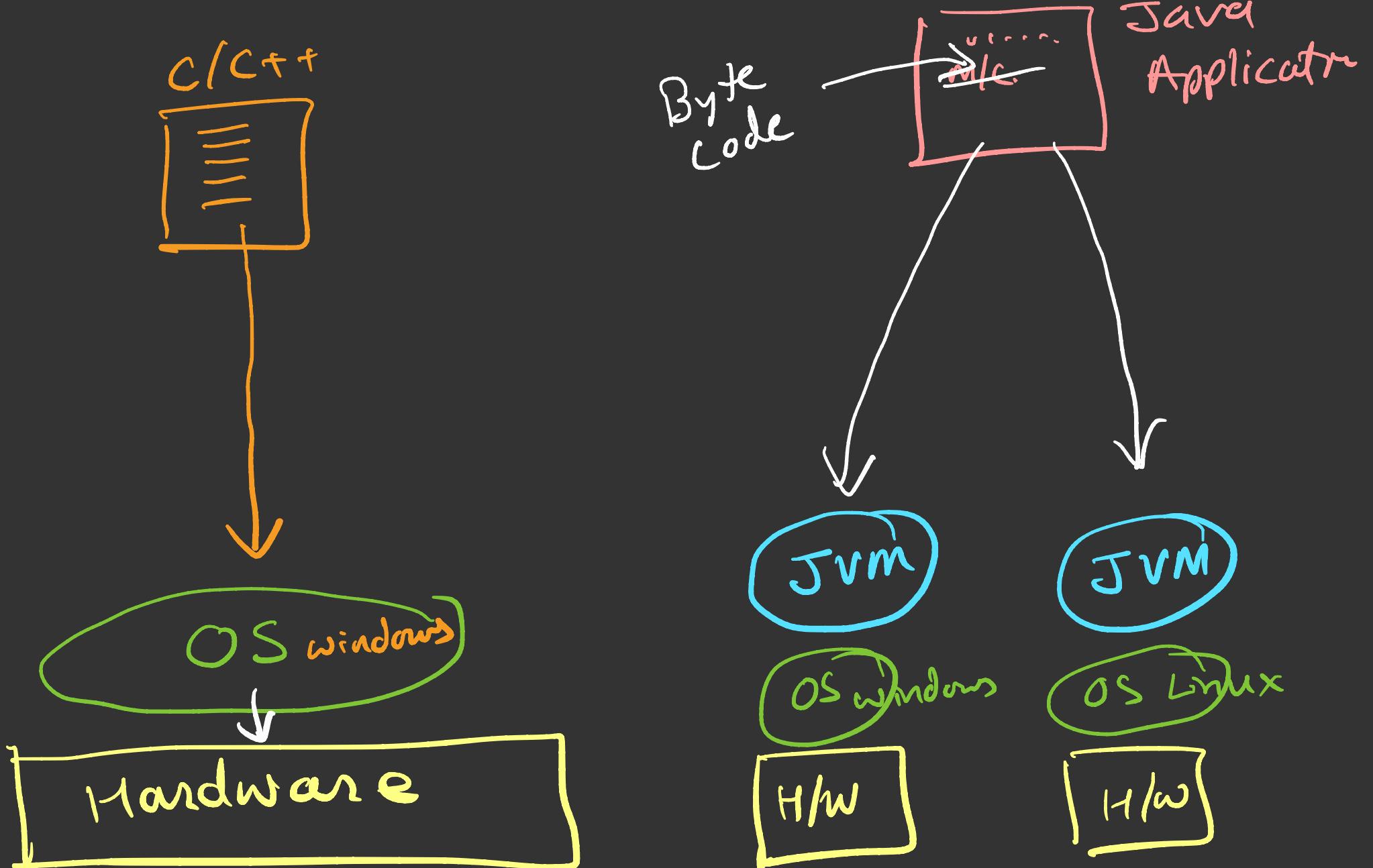
- Microsoft Windows
- Linux
- macOS

## JVM

### Java Virtual Machine

JVM is a software, enables a computer to run Java programs as well as programs written in other languages that are also compiled to Java byte code

JVM contains JIT compiler (Just In Time Compiler), whose job is to translate byte code into OS specific machine code



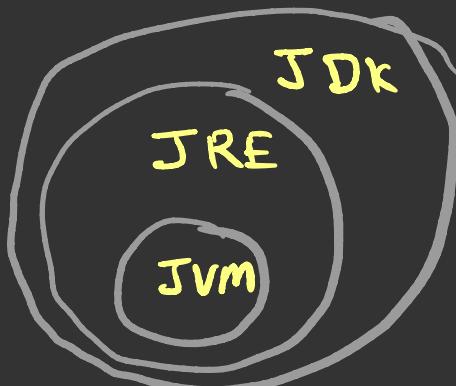
JVM contains three major components

- ① Class Loader
- ② Runtime Memory / Data Area
- ③ Execution Engine (contains JIT compiler & Garbage Collector)

# JRE

## Java RunTime Environment

If you want to run Java Programs, but not develop them, then download JRE and not JDK. JDK includes JRE, so if you are downloading and installing JDK, then no need to download JRE Separately.

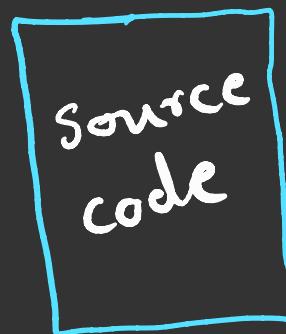


JRE contains JVM | JDK contains JRE

# How to develop and run C/C++ program ?

C/C++

.C or .CPP



Build

preprocessor  
Compiler  
Linker

.exe



Source file

Executable (software)

Build

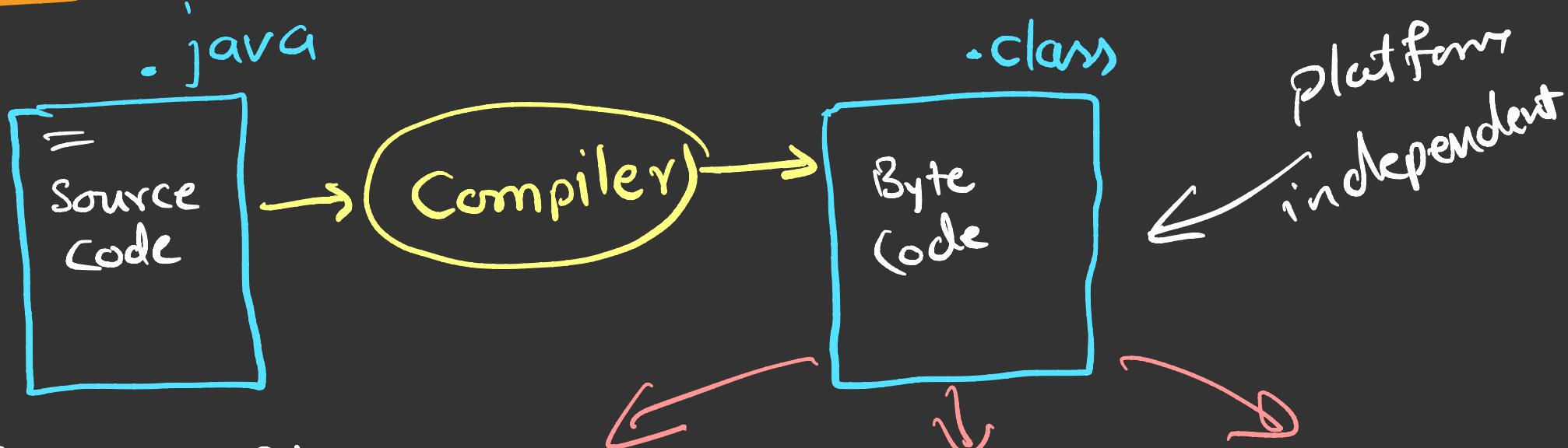
preprocessor  
Compiler  
Linker



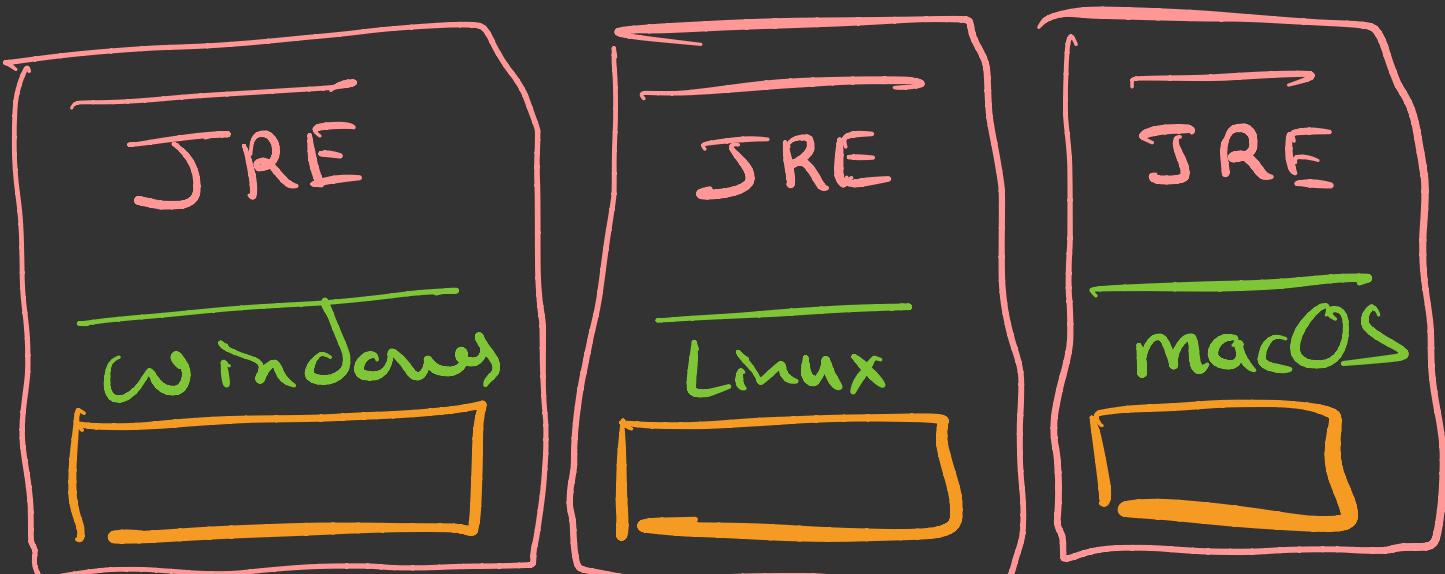
Executable

# How to develop and run Java Programs?

Java



Source file



# JIT Compiler

Compiler → new file  
store translated code

Interpreter → ~~new file~~  
translate

JIT compiler → Reads Byte code  
and translate to ~~मा~~ machine code

## Installation of JDK on Windows

1. Download the JDK installer
2. Installing the JDK

## Installation of the JDK on macOS

1. Download JDK.dmg or file from .tar.gz

2. Installing JDK

Double click .dmg file

Double click .pkg icon

## Download and Install IntelliJ Idea

- 1 . Download community edition
2. run installer

# VS code

You can use VS code in place of IntelliJ IDEA.

- Download JDK and Install it.
- Download vs code and Install.
- Extension Pack for Java from Microsoft (optional)

H.W.

1. How to define a class in C++?
2. How to create an object of a class in C++?
3. static member variables & static member functions
4. public and private
5. instance variable, static member variable, global variable, static local variable and local variable