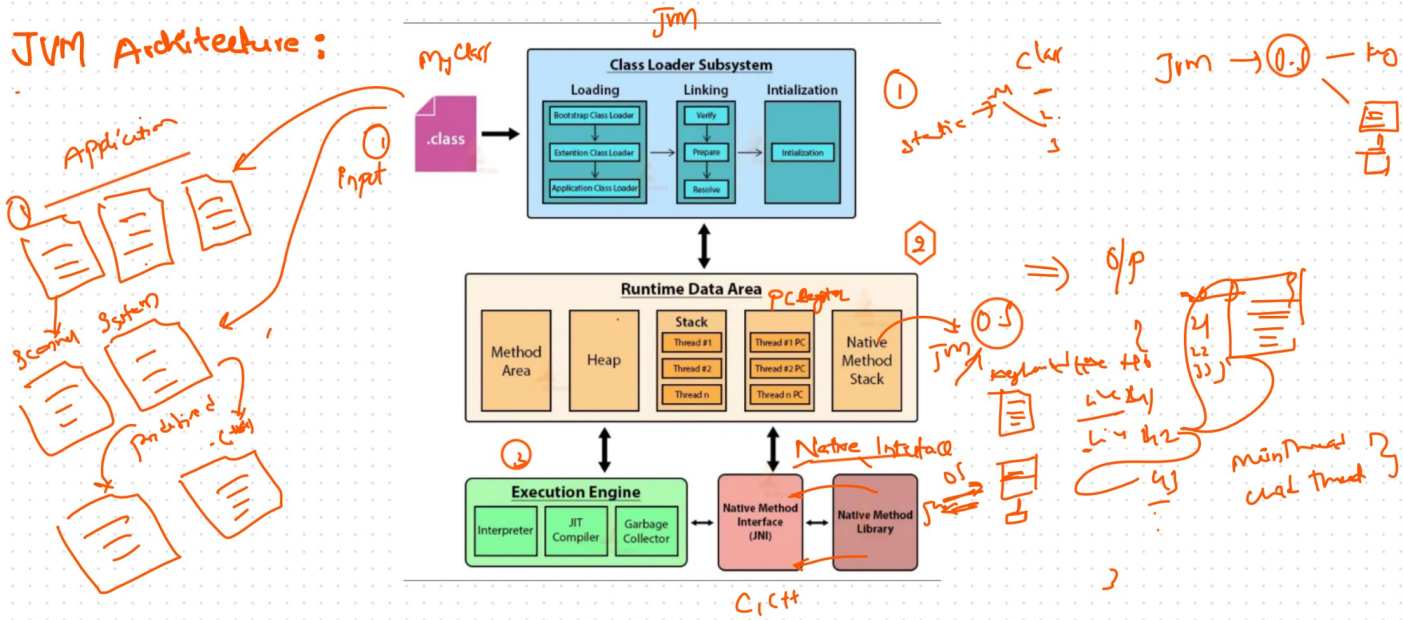
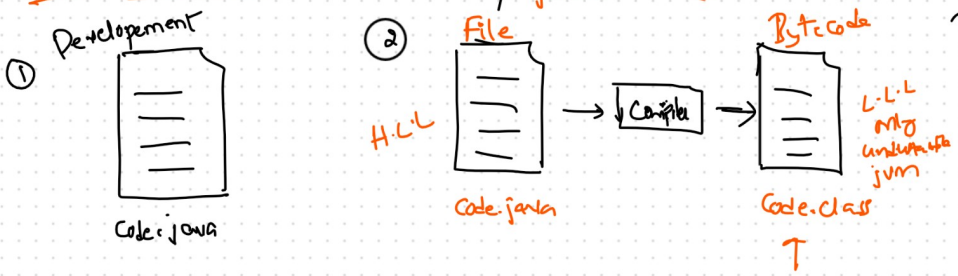
JVM Architecture :



How we execute code :



Key components of Java Architecture :

* JDK
* JRE
* JVM

(1) **JDK :** Jdk is a complete s/w development kit for Java, providing tools to develop, compile, debug & execute

Compiler (javac) : Convert source code to byte code

Java Debugger (jdb) : Debugs Java written programs

Java Virtual Machine (JVM) : Execute java byte code (.class)

(2) **JRE :** It is a subset of JDK that provides runtime environment for executing java programs

Components :

Java API / Libraries : predefined classes & interfaces in packages

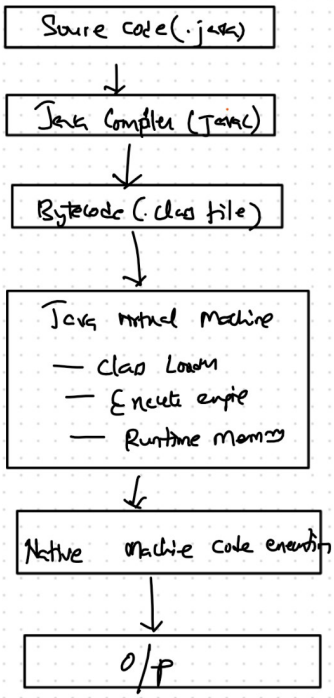
java.util.Scanner , java.io

Class Loader : loads Java classes at runtime

Jvm : Call to execution of byte code

* JVM (Java virtual Machine): Crucial part of architecture that make java language as platform-independent. It interprets bytecode & execute it on the host machine

High level



Advantage

JVM

* platform independent
* Security
* Robustness: Automatic garbage collection & exception handling
* Performance: JIT compiler optimizes performance over time

Conclusion: JVM communicates with the host operating System to perform I/O operations, provides the program outputs.