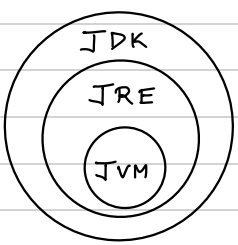
Java Basics Overview

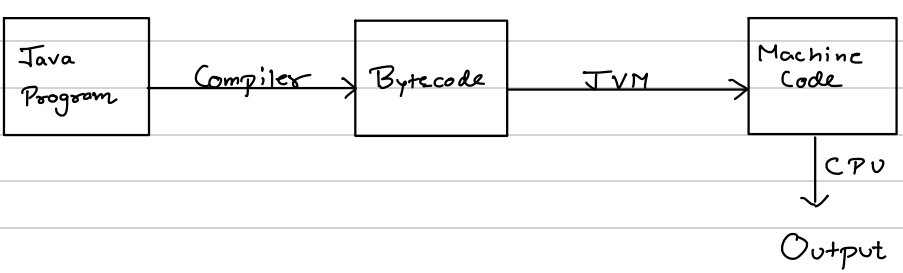
* What is JAVA?
  - Platform Independent Language
  - Supports OOPS
  - Portability [WORA]
    + Write Once Run Anywhere

* 3 Main Components Of Java



So JVM, JRE & JDK are 3 main components of Java

⇒ JVM : Java Virtual Machine
- It's just an abstract machine that doesn't exist physically.

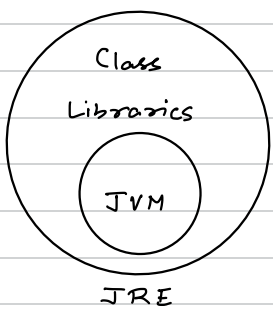


So JVM is platform dependent

So we need to install JVM based on the platform i.e MacOS, Linux or windows. Input for JVM is bytecode & output is machine code. Now since bytecode can be run by any JVM, it makes a Java program platform independent.
JVM has JIT (Just In Time) compiler which takes bytecode & convert it into machine code.

⇒ JRE : Java Runtime Environment

* JRE contains JVM & class libraries i.e the libraries which we've used in the code.



So if we have JRE, we can run any Java Program but we cannot code the program.

⇒ JDK : Java Development Kit
- It has programs language information
- It has compiler (javac)
- It has debugger

So JDK = JRE + (Program Language + compiler + debugger + other dev. components)

So JVM, JRE & JDK all three are platform dependent but the compiled bytecode is platform independent.

* JSE : Java Standard Edition
  JEE : Java Enterprise Edition | Jakarta EE)
  JME : Java Micro/Mobile Edition

JSE is the core Java
JEE = JSE + Servlets + JSP + Transaction API + Persistence API
JME = API for mobile applications