# How it Works

**Step by step**

1. Editor – Type the program (.java file)
2. Compiler
    a. To convert high level language to Bytecode
    b. Java uses javac compiler
    c. After the compilation, .class file created (Bytecode)
3. Linker – Combine different program files & references together
4. Loader
    a. Load the files from secondary storage device like hard disk to RAM.
    b. Automatically load when execution of the code
5. Execution – Actual Execution of the code by platform

**Command line Execution**

File Name -> Hello.java

- **javac Hello.java** (It compiles the java file & create the bytecode - .class file)
- Hello.class file created after the compilation
- **java Hello** (Used to run the .class file)

**JDK (Java Development Kit)**

- Provides the environment to develop and execute the Java program
- JDK-> JRE + Development tool Kit

**JDB**

- Java Debugger -> Used to analyse the code & fix the bugs

**JRE (Java Runtime Environment)**

- It's a software bundle that allows Java program to run
- JRE -> JVM + Library

**JVM (Java Virtual Machine)**

- It provides the environment to execute the bytecode & converts to machine code.
- JVM is platform dependant.
- It uses JIT (Just In Time) compiler - Optimizes the bytecode to machine code.