

Basic Concepts of Java

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← JVM - JRE - JDK →

• What is java?

- Java is a platform independent language.
- Highly popular Object Oriented Programming.
- Java Portability [WORA]



Write Once , Run Anywhere.

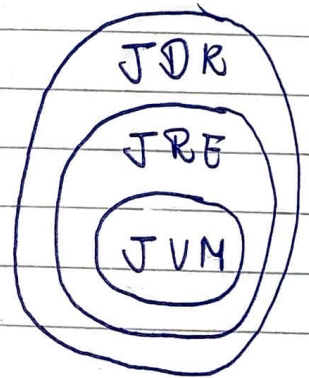
→ 3 main components of Java

1. JVM [Java Virtual Machine]
2. JRE
3. JDK

⇒ JVM [Java Virtual Machine]

[•]

↳ Abstract Machine



[Abstract : Doesn't exist Physically]

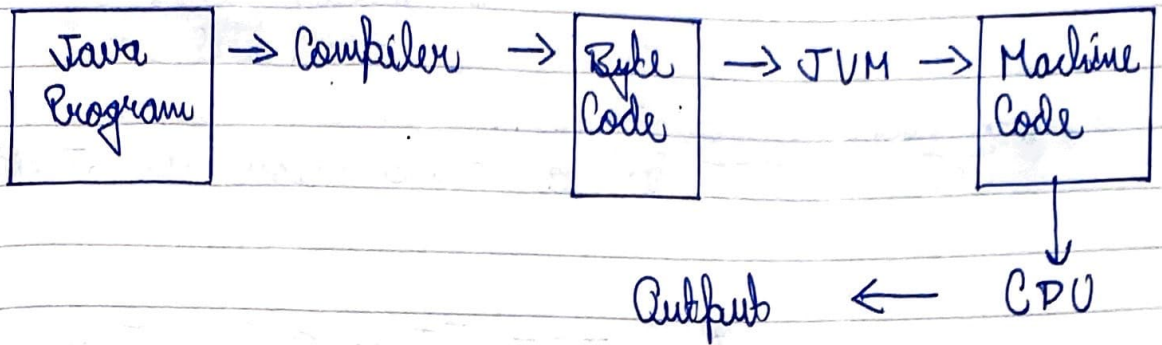
[•]

- JVM has [JIT compiler]. Just in time.
- JVM is dependent.

[•]

• JVM is a virtual machine that enables a computer to run java programs as well as programme written in other language. That are also compiled to java bytecode.

- How Java Works



- [•] • JVM Makes java platform Independent.
- [•] • Any JVM can read any Bytecode.
- [•] • JVM can run any Byte Code.

[•]

Ex:

- Written code in Mobile
- Converts it in Byte Code
- Run this into any JVM like : Linux, MacOS, Windows.

Java Program → Compiler → Bytecode

[File Name . java]

[File Name . class]

← JRE [Java Runtime Environment] →

[•]

• It has JVM

[•]

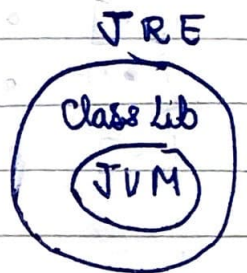
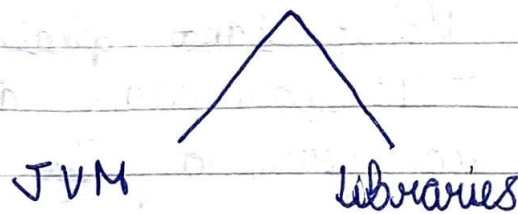
• JRE has Class Library.

[.] • Class libraries

↳ `java.Math.*;`
`java.util.*;`

[.] • JRE is a combination of JVM and library.

∴ JRE [Java Runtime Environment]



[.] • If you have JRE you can run any Java program or any Bytecode.

But you cannot code it.

[.] • You can not have only JVM.

↳ We do be JRE. JVM will be part of JRE.

← JDK [Java Development Kit] →

[•] • From JDK we have programming language.

Ex :

• `System.out.println ();`

• This feature is present into java development.

[File Name • java]

[•] • JDK has compiler

[javac]

• java → javac → • class

[•] • JDK has Debugger.

[•] $JDK = JRE + \left[\begin{array}{l} \text{Programming Lang} \\ + \text{Compiler} \\ + \text{Debugger} \\ \text{and so on} \end{array} \right]$

[JVM JDK JRE] → Platform Dependent

[Java Code → Bytecode] is Platform Independent.

← JSE, JEE, JME →

- JSE [Java Standard Edition]
- JEE [Java Enterprise Edition]
- JME [Java Micro/Mobile Edition]

[•] JSE → Core Java.

[•] JEE →

JSE + API /
Transitional API
[Roll Back, Commit,
Severless, JSP]

JEE → Large Scale e-commerce websites.

[•] JME → API for Mobile Editions.
or Applications.

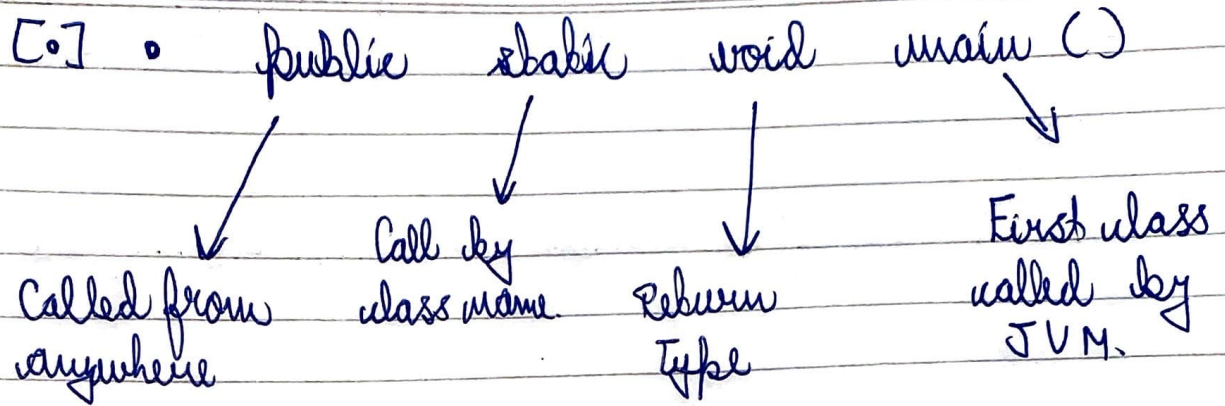
← First Java Program →

[•] file name == class name

[•] 1 file only 1 public class

[•] main () is the starting point of the Programme.

Java Program → Compile → Byte Code → JVM
↳ Calls main ()



- public → a program, a method, a variable can be provide from anywhere.
- static → You can directly access it by the class name.