JAVA: JVM, JRE AND JDK

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What is Java?

- Platform Independent
- OPP's
- Portability [WORA]
- Write Once Run Any Where

3 Main Component's

JVM: [JAVA VIRTUAL MACHINE]

- It's an abstract machine[doesn't exist physically]

JAVA PROGRAM - COMPILER -> BYTE CODE[filename.class] -
JVM -> MACHINE CODE - CPU -> OUTPUT

- JVM is Platform dependent
- MAC OS -> Need JVM compatible to MAC OS
- WINDOW OS - Need JVM compatible to Window.
- LINUX -> Same goes for Linux also.
- JIT compiler
- Just In Time Compiler
- Any JVM can read BYTE CODE SO, that's why Java Program Platform Independent.

```
import java.util.Arrays;
import java.lang.Math;
public class Student{
  public static void main(String[] args){
    int a = Math.abs(-1);
    int[] arr = new {1,2,3,4};
    Arrays.sort(arr);
    System.out.println("value of a is: "+a);
  }
```

```
}
```

JRE: [JAVA RUNTIME ENVIRONMENT]

- Talking about existing library
- Math.abs(), Arrays.sort()
- Use class path to use this library.
- You cannot hinder existing library code
- It is combination of JVM and libraries

JDK: [JAVA DEVELOPMENT KIT]

- Program Languages
- Compiler [javac] □ change to .class file
- JDK = JRE + [COMPILER DEBUGGER]

> *HERE IS ONLY **BYTE CODE** IS PLATFORM INDEPENDENT NOT **JVM***

Download **JDK**