

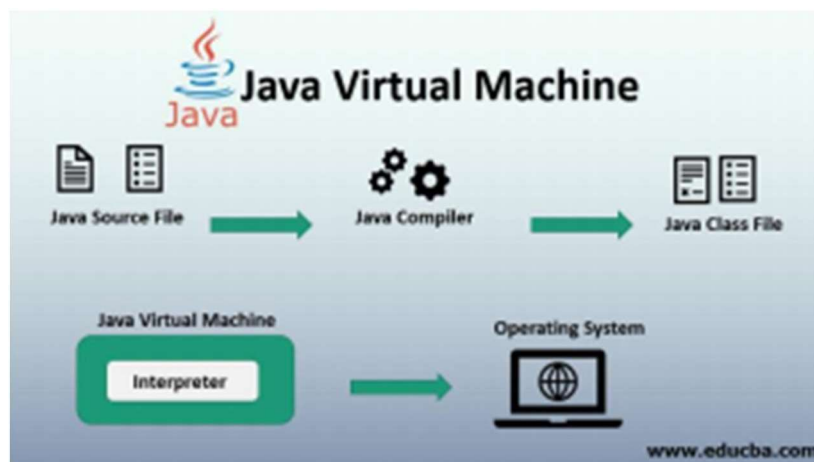


Introduction to java programming:

JAVA was created by Sun Microsystems Inc. in 1991 and later acquired by Oracle Corporation. Created by James Gosling and Patrick Naughton. Writing, compiling and editing is easy for Java. It helps to create projects that are scalable and re-code. It is a straight forward programming language.

Java Terminology:

Java Virtual Machine (JVM)



This is generally referred to as JVM. Let's examine JVM periods of program execution. Stages are as per the following: we compose the program; at that point we incorporate the program and finally, we run the program.

- Writing of the program is done by java programmer
- Compilation of the program is finished by javac compiler, javac is the essential java compiler remembered for java development kit (JDK). It takes a java program as input and produces java byte-code as output.
- In the last phase, JVM executes the byte-code created by the compiler. Also known as the program run phase.

Thus, since we comprehended that the essential function of JVM is to execute the byte-code created by the compiler. JVM is different for each OS, anyway the output they produce after the execution of byte code is the same over all OS. That's why we call Java a platform-independent language.

Byte-code – Javac compiler of converted java source code into byte code to be executed by JVM. The byte code saves in a .class file by compiler.

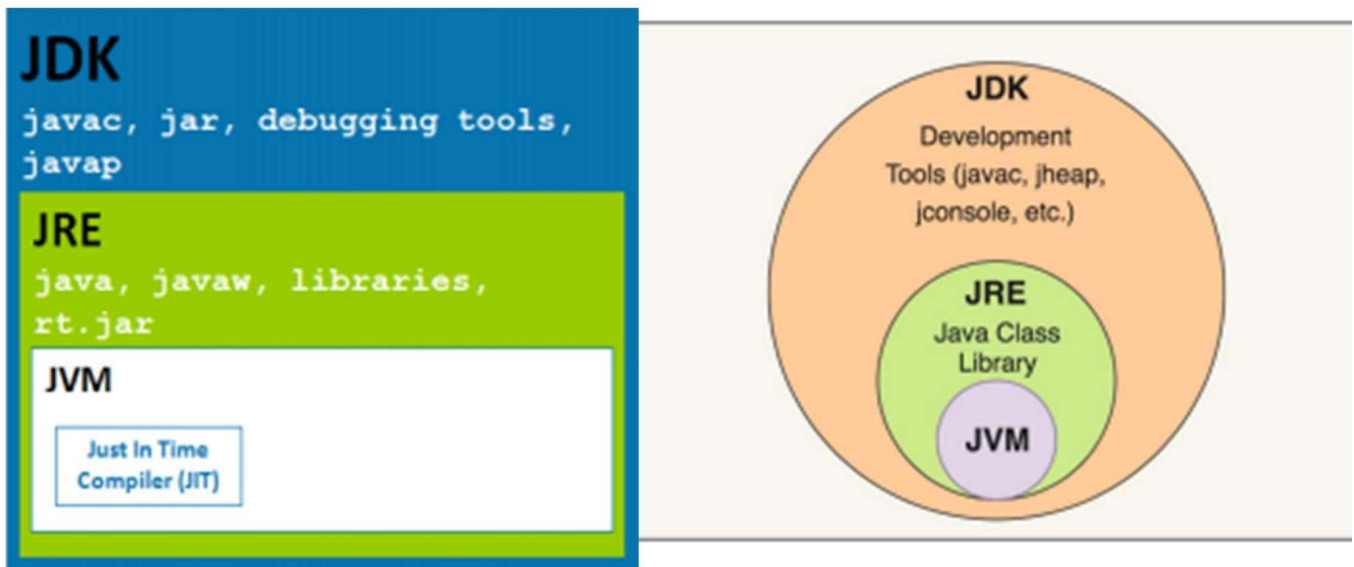
Java Development Kit (JDK)

As the name recommends this is a finished java development kit that incorporates JRE (Java Runtime Environment), compilers and different devices like JavaDoc, Java debugger and so forth. So as to make, compile and run your Java program you would require JDK installed on your PC.

Java Runtime Environment (JRE)

JRE is a part of JDK which implies that JDK incorporates JRE. At the point when you have JRE introduced on your OS, you can run a java program anyway you won't have the option to gather it. JRE incorporates JVM, program modules and

java applets. This is the point when you need to run a java program on your Personal Computer, you would just need JRE.



Features of java



Java is a MUST for understudies and working experts to turn into an extraordinary Software Engineer extraordinarily when they are working in Software Development Domain. Here, list down a portion of the key preferences of learning Java Programming:

Object-Oriented Language – In Java, each and everything is an Object. Java can be effectively reached out since it depends on the Object model.

Platform-Independent – when Java is compiled, it isn't accumulated into stage explicit machine, platform-independent byte-code. This byte code is conveyed over the web and translated by Virtual Machine (JVM) to any platform on which it is operated.

Secure – With Java's protected component it empowers to create infection free, alter free frameworks. The validation methods depend on open key encryption.

Portable – Being design unbiased and having no execution subordinate parts of the determination makes Java versatile. Compilers in Java are written in ANSI C with a perfect movability limit, which is a POSIX subset.

Robust – Java puts forth an attempt to take out mistake inclined circumstances by underscoring principally on assemble time blunder checking and runtime checking.

Types of java applications:

Web Application - Java is utilized to make worker side web applications. At present, Servlet, JSP, Struts, JSF, and so forth innovations are utilized.

Standalone Application - It is also called the desktop application or window-based application. An application that we have to install on each machine or server, for example, media player, antivirus, and so forth. Swing and AWT are utilized in java for making independent applications.

Enterprise Application - An application that is distributed in nature, for example, banking applications, and so on. It has the benefit of significant level security, load adjusting, and bunching. In Java language, EJB is utilized for making JAVA enterprise applications.

Mobile Application - Java is used to make application programming for cell phones. As of now, Java ME is utilized for building applications for little gadgets, and furthermore, Java is a programming language for Google Android application improvement.

Let's create a first program of Hello World in java!

```
public class First_Program {  
  
    /* This is my first java program.  
    * This will print 'Hello World' as the output  
    */  
  
    public static void main(String []args) {  
        System.out.println("Hello World"); // prints Hello World    } }  
}
```

Output:

- Hello World

Images reference

<https://image.jimcdn.com/app/cms/image/transf/none/path/s43e7277b181ca307/image/1f14bda78371be8a6/version/1546776530/image.jpg>

<https://cdn.educba.com/academy/wp-content/uploads/2019/11/Java-Virtual-Machine.png>

<https://s3.shunyafoundation.com/s3/1578452c3f66d8fd0d04d5d195328ae1359d8caa/jdk-jvm.png>

<https://java.meritcampus.com/core-java-topics/images/JDK-JRE-JVM-JIT-Java-Compiler.png>

<https://specials.images.forbesimg.com/imageserve/5e7cce1921695a000666cc29/960x0.jpg?fit=scale>