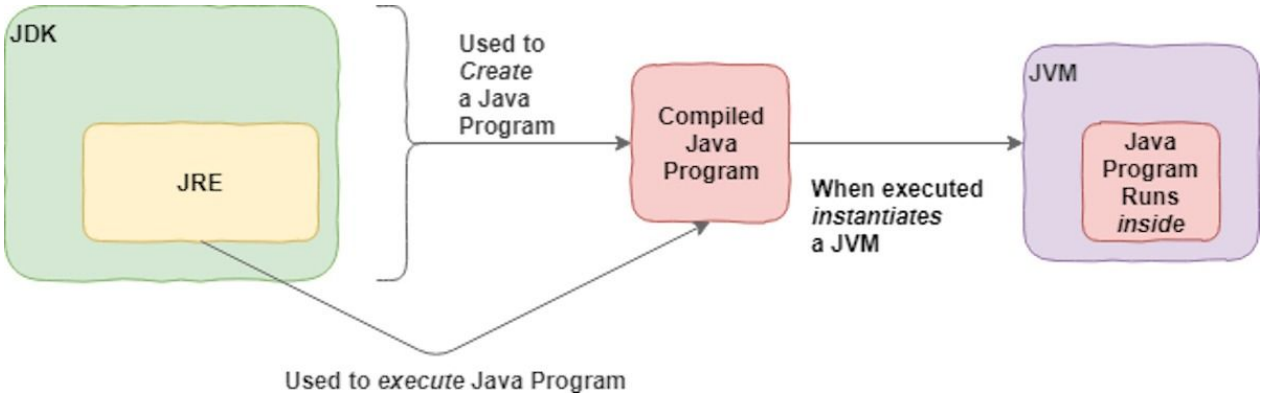
There are three core technological tools used in java programming.These tools include Java Development Kit (JDK),Java Runtime Environment(JRE),Java Virtual Machine(JVM).

JAVA DEVELOPMENTS KIT(JDK)

Java Development Kit is a tool used to create java based software or applications using various tools like the JRE and JDK.The JDK allows developers to create software or applications that would later be run by the JVM or the JRE.Also,the JDK has a **java compiler**.This Java compiler is capable of taking raw .java files which are plain text and converting them to executable class files.



JAVA RUNTIME ENVIRONMENT

JRE is a package in the JDK which is used to run java code written. A *runtime environment* is a kind of software that is programmed to run other software. As the runtime environment for Java, the JRE contains tools like Java class libraries, the Java class loader, and the Java Virtual Machine.

- *class loader* is involved in loading classes and connecting them with the core Java class libraries.

A software program needs to execute, and for that to happen it needs a suitable environment to run in. The runtime environment loads class files and makes sure there is an access to memory and other system resources to run them. Before now, most software used the operating system (OS) as its runtime environment. The program ran inside whatever computer it was on, but relied on operating

system settings for resource access. Resources in this case would be things like memory and program files and dependencies. When the Java Runtime Environment came,it changed all that, at least for Java programs.

JAVA VIRTUAL MACHINE(JVM)

The Java Virtual Machine is a program whose purpose is to execute other programs. JVM has two functions: to allow Java programs to run on any device or operating system also, managing and optimizing program memory. Java was released in 1995, That period of time .computer programs were always programmed to a specific operating system, and program memory was managed by the software developer.When JVM was created,It made memory management easier.The most common interaction with a running JVM is to check the memory usage in the heap and stack.Before Java, all program memory was managed by the programmer. In Java, program memory is managed by the JVM. The JVM manages memory through a process called *garbage collection*, which continuously identifies and eliminates unused memory in Java programs. Garbage collection happens inside a running JVM.The *JVM* is responsible for ensuring Java applications have the resources they need to run and perform well in your device or cloud environment.

In conclusion,
JVM:JVM is the java platform components that executes the program

JRE:This is the on disk part of java that creates the JVM

JDK: JDK allows developers to create Java programs that can be executed and run by the JVM and JRE.

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