DAY - 1

JAVA HISTORY

- Father of Java **James Gosling.**
- It was developed by James Gosling 1991 with a small team called Green Team.
- Initially it was designed for electronic appliances like set-top boxes.
- Firstly, it was called **Greentalk** 1991.
- Then it was renamed to **OAK.**
- The name Oak was used by Gosling after an oak tree that remained outside his office.
- **Trademark issues** with Oak Technologies
- JAVA, DNA, SILK, RUBY
- Launch Name is **Java**
- Initially developed by James Gosling at Sun Microsystems and released in 1995.
- Currently Owned by Oracle in 2010

WHAT IS JAVA?

- It is a **Simple** Programming Language.
- It let programmers **write once, run anywhere** (WORA)
- In Java, Writing, Compiling and Debugging is easy
- Compiling – Converting Source code to Byte Code
- Debugging - to find out the errors

FEATURES

- **Platform Independent** – Java Code can be executed on multiple platforms. Such as Windows, Linux, Sun Solaris, Mac OS.
- **Open Source (Free of Cost)**
- **Secured** – Java Programs run inside a Virtual Machine Sandbox. So it does not allow **Scam, Virus popups.**

- **Robust (Strong)** - Java provides automatic garbage collection which runs on the Java Virtual Machine to get rid of objects which are not being used by a Java application anymore.

> **-** Due to JVM it avoids Security Problems.

- **Portable -** Java is portable because it facilitates you to carry the Java bytecode to any platform **(WORA)**.
- **Multi-Threading -** More than one task can be completed at one time (note pad, note pad, note pad)
- **Multi-Tasking -** Different task can be completed at a time (notepad, chrome, opera)

JAVA ARCHITECTURE

- **JDK (JAVA DEVELOPMENT KIT)**
    1. JDK contains tools required to write Java programs
    2. It includes a compiler, Java application launcher.
    3. Compiler converts code written in Java into byte code.
    4. Java application launcher opens a JRE, loads the necessary class, and executes its main method.

- **JVM (JAVA VIRTUAL MACHINE)**
    1. It converts Java bytecode into machine language.
    2. JVM is a part of the Java Run Environment (JRE).
    3. In other programming languages, the compiler produces machine code for a particular system. However, the Java compiler produces code for a Virtual Machine known as Java Virtual Machine.
    4. JVM provides a platform-independent way of executing Java source code.

- **JRE (JAVA RUNTIME ENVIRONMENT)**
    1. It has numerous library files.
    2. It does not include any tool for Java development like a debugger, compiler, etc.
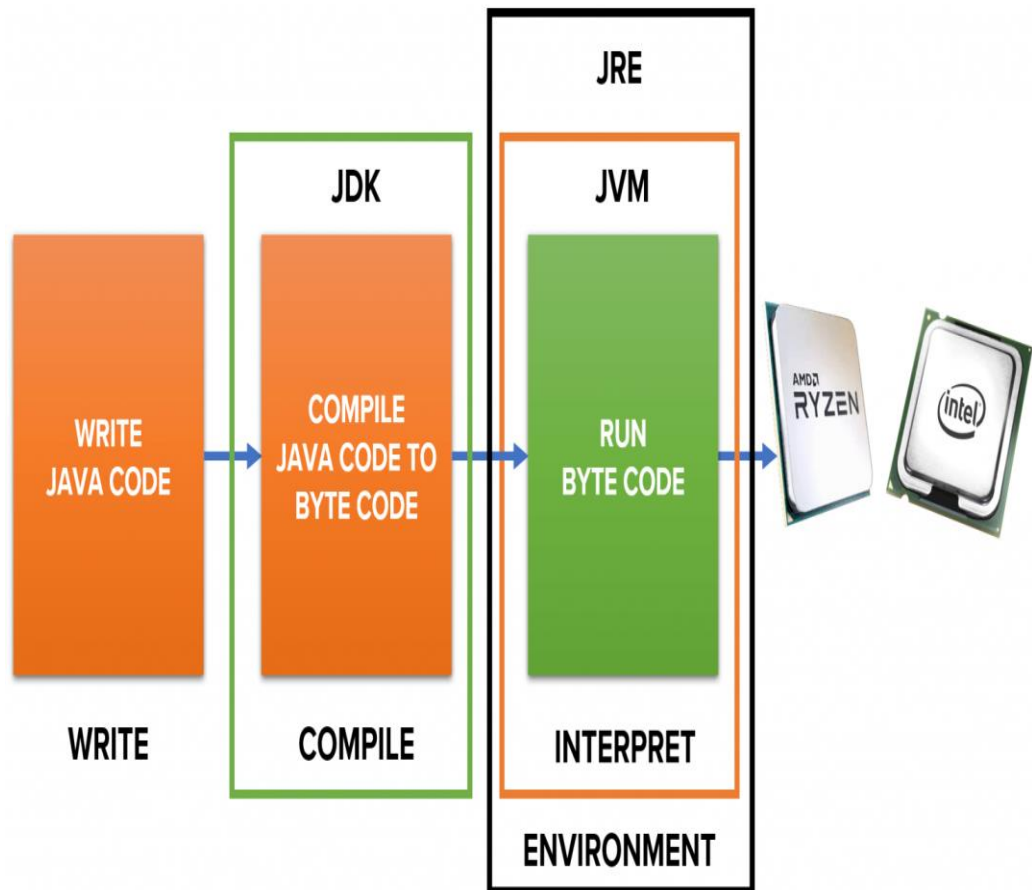
CODING STANDARDS:

Pascal standard-

Every First Letter Of Word Should Be In Uppercase/Capital.
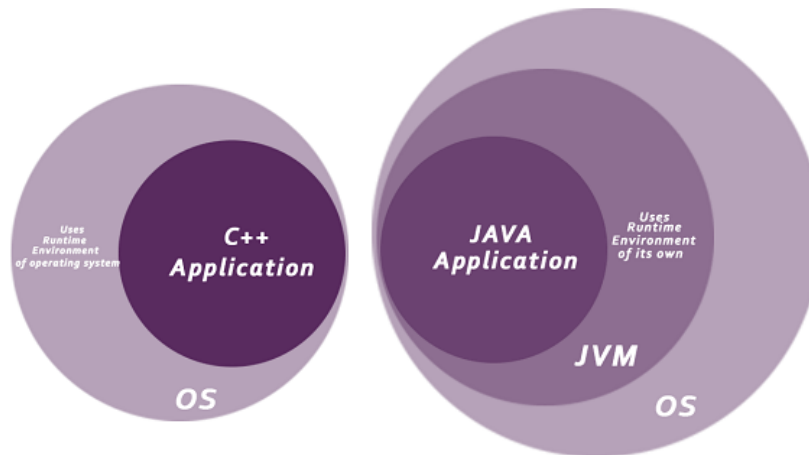
- Used in Project Name, Class Name

Camel standard -

Except first word remaining words first letter must be UpperCase/ Capital

- Used in method Name, object Name, variable Name.

camelCase

JRE

JDK

JVM

WRITE
JAVA CODE

COMPILE
JAVA CODE TO
BYTE CODE

RUN
BYTE CODE

AMD
RYZEN

(intel)

WRITE

COMPILE

INTERPRET

ENVIRONMENT

C++ Application — Uses Runtime Environment of operating system — OS

JAVA Application — Uses Runtime Environment of its own — JVM — OS

JAVA PROGRAM EXECUTION

Java Source Code → Java Byte Code → Windows / Linux / Macintosh

Development

Compile

Execute using Interpreter

JavaQueries.com

JavaQueries.com

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