

Introduction to Java

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Java

- ♦ It is general purpose programming language created by sun microsystems.
- ♦ Developed by ***James Gosling*** and team.
- ♦ It is a general purpose object oriented programming language.
- ♦ Most of the syntax derived from C and C++.
- ♦ Java is now acquired and maintained by Oracle Corporation.

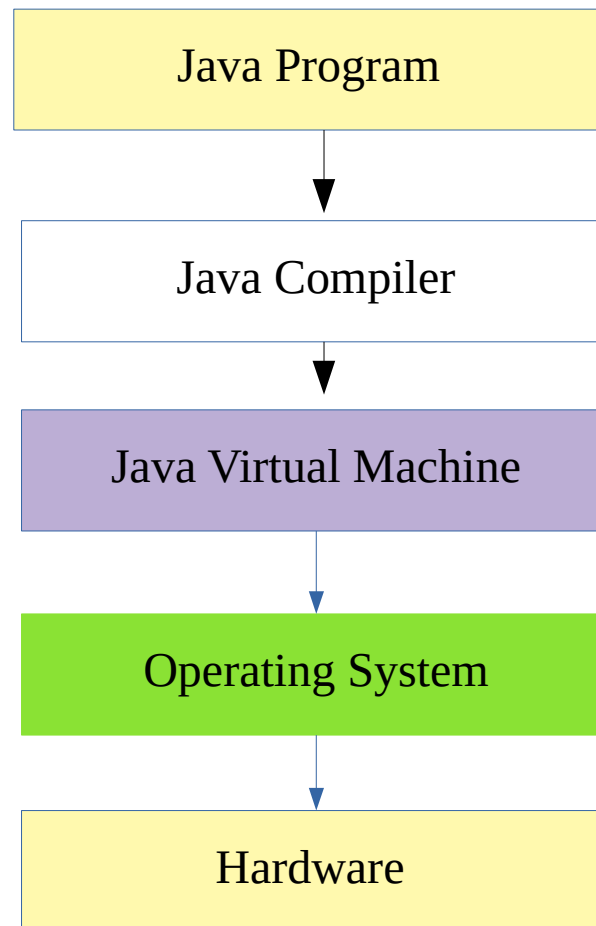
Creator of Java

James Gosling

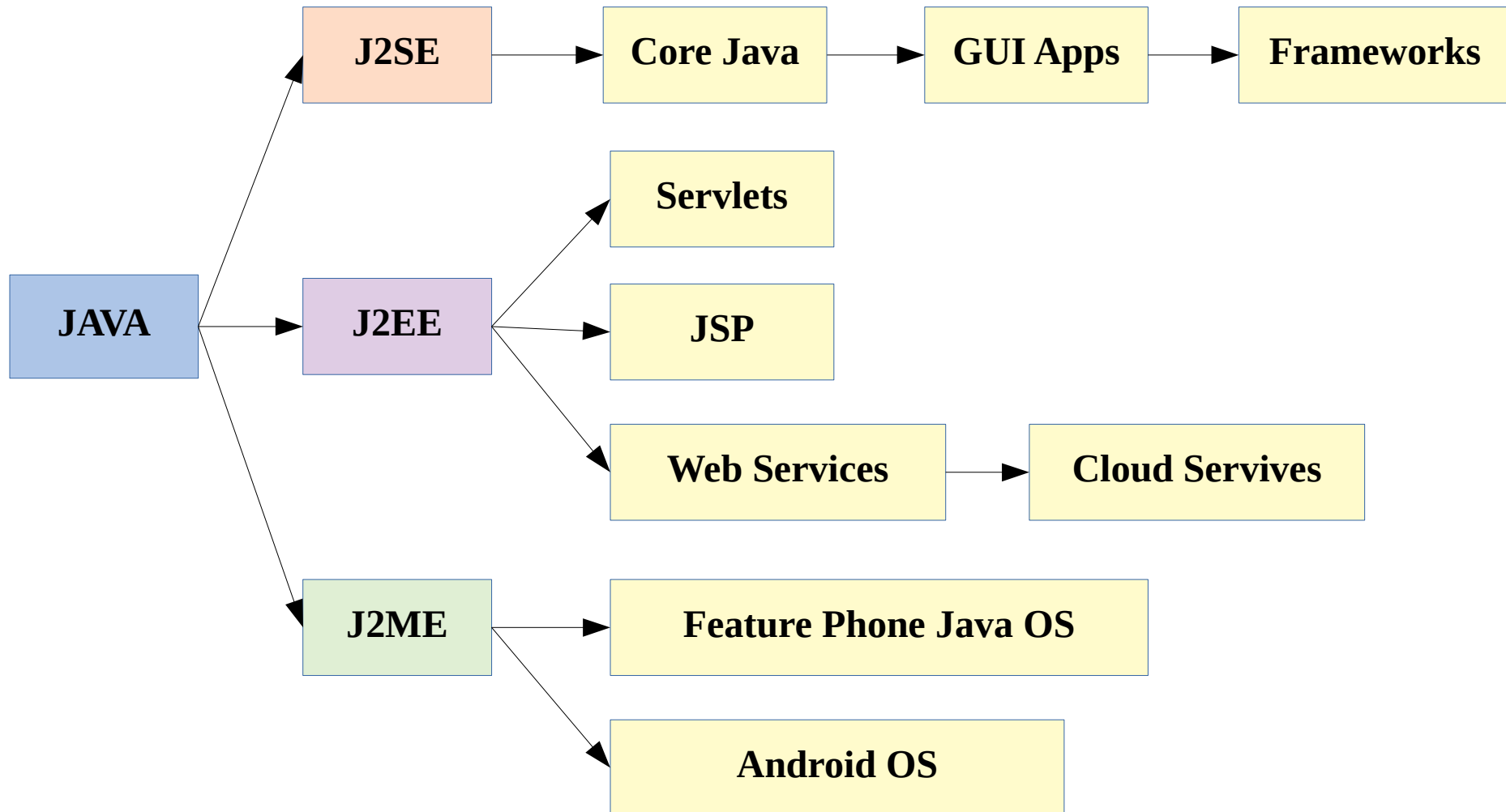
- Initially named as Oak.
- Later it renamed to Java.
- Later Java is realised as Free Open Source Software (**FOSS**) under GNU General Public Licence.
- More than 7,000 predefined classes available for developers.



Architecture of Java

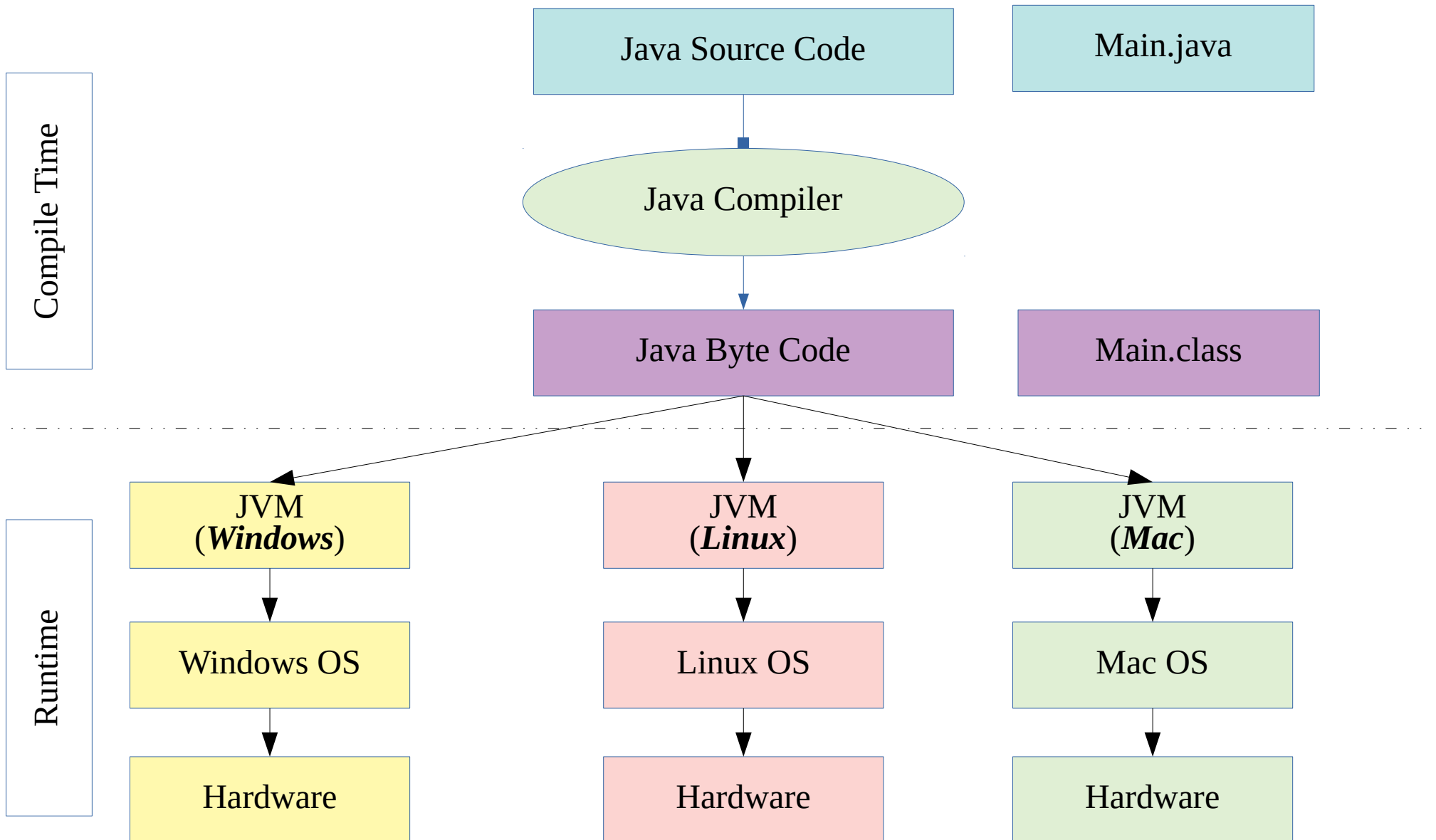


Applications of Java



Much More...

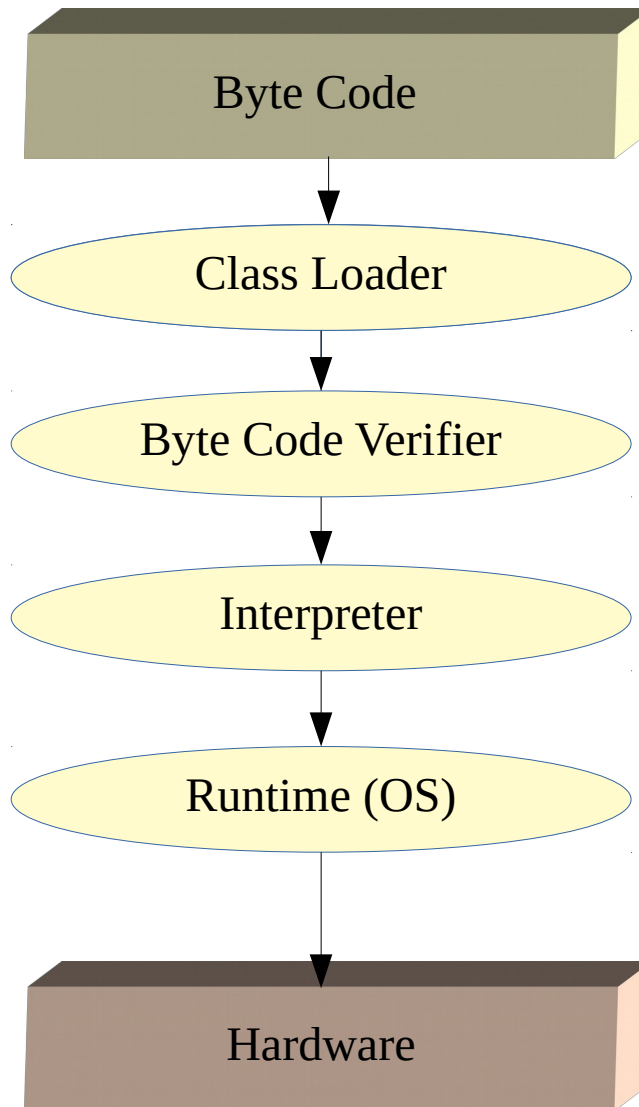
How Java Code Works



Java Compiler [*Compile Time*]

- ♦ Java Compiler Compiles the Java Source Code [*Main.java*].
- ♦ It checks for syntax errors and if none found then compiler generates Byte code [*Intermediate Code called Main.class*] as class file.
- ♦ This class file targeted to JVM not the actual operating system of target machine.
- ♦ This class file can run by any OS which has a JVM.

Inside JVM [*Runtime*]



Java Interpretation

- ♦ ***Classloader***

- ♦ It is the subsystem of JVM that is used to load class files.

- ♦ ***Bytecode Verifier***

- ♦ Checks the code fragments for illegal code that can violate access right to objects.

- ♦ ***Interpreter***

- ♦ read bytecode stream then execute the instructions in a native code.