About the Java Technology

Java technology is both

a ***Programming Language*** and a ***Platform***

from ***Oracle Corporation***.

Java 8 is a major update that was launched on

March 2014						
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The Java programming language is a high-level language that has following features:

Simple	No Pointers, No Multiple Inheritance
Platform Independent	Compile once run anywhere
Object Oriented	Strong Object Oriented Language, No Global Variable, No Friend Function
Portable	Data types occupy same no. of bytes on all platforms
Distributed	Client Server Application can be made effectively

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High Performance	Due to JIT, execution becomes faster
Multithreaded	You can create Multithreaded Applications
Robust	Safe, most of the things are checked during compile time so no risk at runtime
Dynamic	Supports late binding since beginning. You can load any class on the fly and find out its information.
Secure	If bytecode contains virus or malicious code , it cannot be executed on the system. Thanks to Java's secure feature.

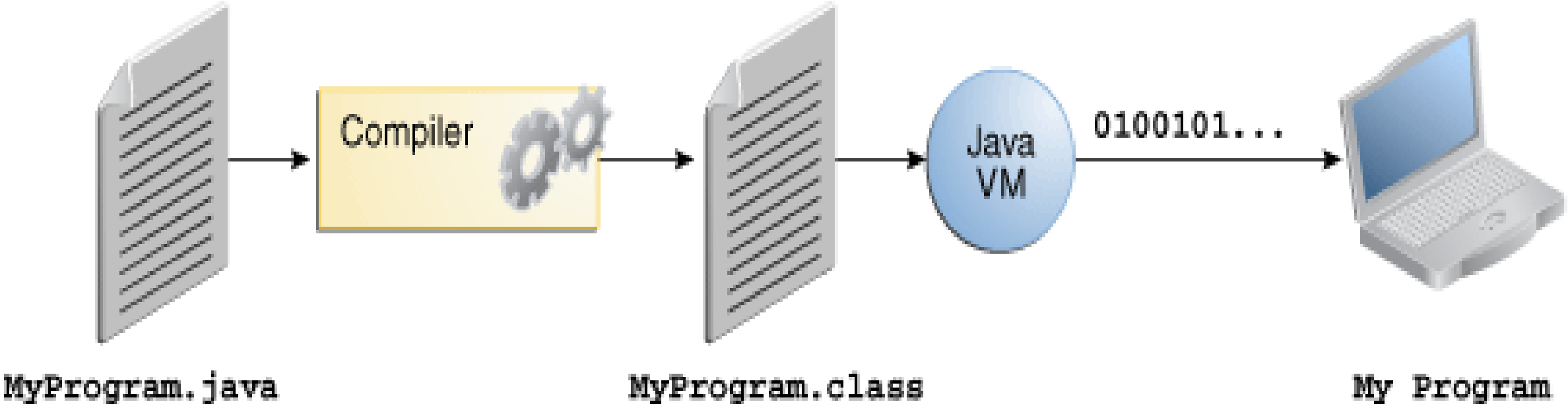
In the Java programming language, all source code is first written in plain text files ending with the ***.java extension***.

Those source files are then compiled into ***.class*** files by the ***javac compiler***.

A *.class* file does not contain code that is native to your processor; it instead contains *bytecodes* — the machine language of the Java Virtual Machine (Java VM).

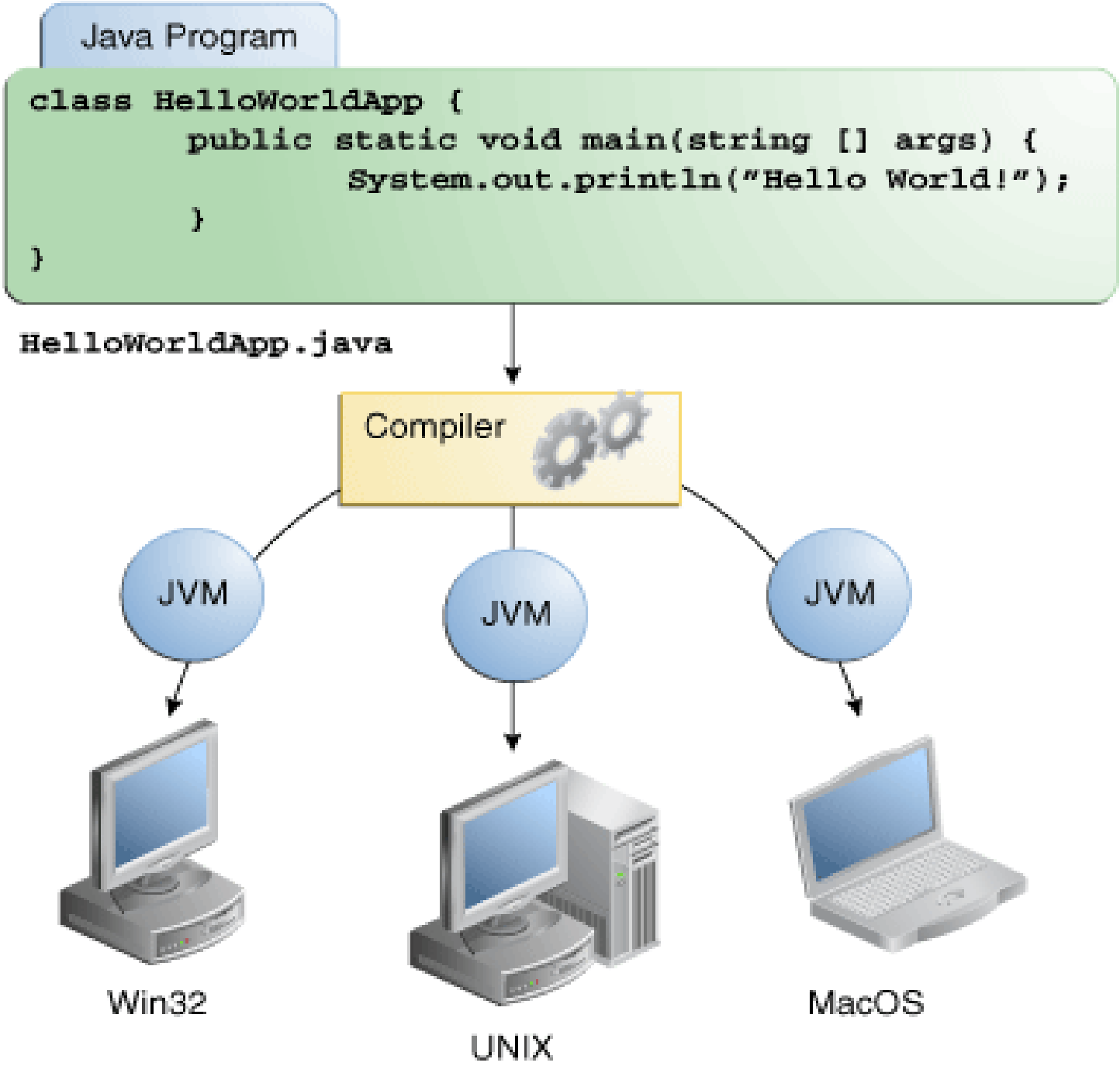
The java launcher tool (JRE) then runs your application with an instance of the Java Virtual Machine.

An overview of the software development process



Because the Java VM is available on many different operating systems, the same *.class* files are capable of running on Microsoft Windows, the Solaris™ Operating System (Solaris OS), Linux, or Mac OS.

Through the Java VM, the same application is capable of running on multiple platforms.



The Java Platform

A *platform* is
the hardware or software environment in which a program runs.

Some of the most popular platforms are
Microsoft Windows, *Linux*, *Solaris OS*, and *Mac OS*.

Most platforms can be described as a
combination of the **operating system** and **underlying hardware**.

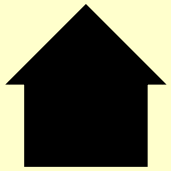
The Java platform differs from most other platforms in that it's a software-only platform that runs on top of other hardware-based platforms.

The Java Virtual Machine

(JVM)

The Java Application Programming Interface

(API)



OS and hardware based Platform [Windows, Linux,Mac etc.]

The Java Virtual Machine (JVM)

Java Virtual Machine (JVM) is the base for the Java platform and is ported onto various hardware-based platforms.

The Java Application Programming Interface (API)

The API is a large collection of ready-made software components that provide many useful capabilities. It is grouped into libraries of related classes and interfaces; these libraries are known as packages.

API mainly consists of jar and dll files.

The API and Java Virtual Machine insulate the program from the underlying hardware.