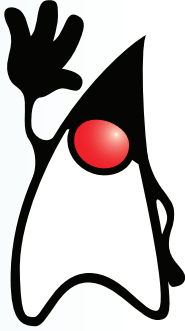# Introduction

The Java™ programming language was first developed in 1990 by an engineer at Sun Microsystems named James Gosling. He was unhappy using the C++ programming language so he created a new language that he named "Oak", after the oak tree that he could see from his office window.

As the popularity of the World Wide Web grew, Sun recognized that Gosling's language could be developed for the internet. Consequently Sun renamed the language "Java" (simply because that name sounded cool) and made it freely available in 1995. Developers around the world quickly adopted this exciting new language and, because of its modular design, were able to create new features that could be added to the core language. The most endearing additional features were retained in subsequent releases of Java as it developed into the comprehensive version of today.
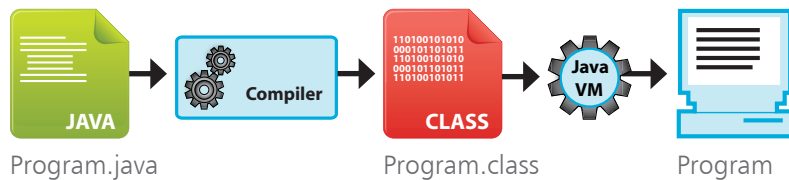
The essence of Java is a library of files called "classes", which each contain small pieces of ready-made proven code. Any of these classes can be incorporated into a new program, like bricks in a wall, so that only a relatively small amount of new code ever needs to be written to complete the program. This saves the programmer a vast amount of time and largely explains the huge popularity of Java programming. Additionally, this modular arrangement makes it easier to identify any errors than in a single large program.

Java technology is both a programming language and a platform. In Java programming the source code is first written as human-readable plain text files ending with the **.java** extension. These are compiled into machine-readable **.class** files by the **javac** compiler. The **java** interpreter can then execute the program with an instance of the Java Virtual Machine (Java VM):

Program.java   Program.class   Program

As the Java VM is available on many different operating systems the same **.class** files are capable of running on Windows, Linux and Mac operating systems – so Java programmers theoretically enjoy the cross-platform ability to "write once, run anywhere".

Hot tip

There is no truth in the rumor that JAVA stands for Just Another Vague Acronym.

In order to create Java programs the Java class libraries and the **javac** compiler need to be installed on your computer. In order to run Java programs the Java™ Runtime Environment (JRE) needs to be installed to supply the **java** interpreter. All of these components are contained in a freely available package called the Java™ Platform, Standard Edition <u>D</u>evelopment <u>K</u>it (JDK).

The Java programs in this book use version JDK 7 which, incorporating both the Development Kit itself and the Runtime Environment, can be downloaded from the Oracle® website at **http://www.oracle.com/technetwork/java/javase/downloads**

The JDK 7 package is available in versions for 32-bit and 64-bit variants of the Linux, Solaris and Windows operating systems – accept the Oracle License Agreement, then select the appropriate version for your computer to download the Java Development Kit.

Don't forget

The Oracle download page also features other packages, but only the JDK 7 package is required to get started with Java programming.