1. Introduction to Programming

Lesson 2:
Nature of Java

1.3 What is Java

- Java was developed by James Gosling at Sun Microsystems in 1991.

- Gosling's goals were to implement a virtual machine and a language that had a familiar C/C++ style of notation

1.4 JVM and JRE

1.4.1 Virtual Machines and Virtual Machine Code

- A virtual machine is a piece of software that gives a user running an application on it the impression that he/she is running the application on a computer different to the host computer; it is a sort of computer running on a computer.

- The virtual machine has its own "virtual machine code" which it understands. When a user runs an application on the virtual machine, the virtual machine converts the virtual machine code into the machine code of the actual host computer and runs it.

1.4 JVM and JRE
1.4.2. Java Virtual Machine (JVM)

- The Java Virtual Machine is a Virtual Machine that enables compiled java programs to run on any platform.

- Java compilers do not directly convert java source code into machine code. Instead, the source code is converted into a special code known as Java Bytecode. Java Bytecode is the virtual machine code for the Java Virtual Machine.

- Java Virtual Machine converts the Java Bytecode into the machine code that would suit the host computer that it is running on, and executes it. Hence, the Java Bytecode itself is independent of the machine code of the host machine.

1.4 JVM and JRE

1.4.3. Java Runtime Environment (JRE)

- The Java Runtime Environment is a set of software provided by Sun Microsystems that allows a computer system to run a Java application.

- It consists of the Java Virtual Machine (JVM) and the Application and Programming Interface (API), a large body of reusable code that is provided to simplify the programmer's job.