

# J2A4

## **1. What is a source program?**

A source program is a text file that contains a program (such as above) written in a programming language. Since it contains ordinary text (stored as bytes) it can not be directly executed (run) by the computer system. As a text file, you can print it, display it on the monitor, or alter it with a text editor.

## **2. A file is usually identified by 'filename.extension'. What is the '.extension' of a Java source program?**

.java

## **3. Can you edit a Java source program file with a text editor such as Windows Notepad?**

Yes

## **4. Can a source program be directly executed (executing a program means running the program) by the computer?**

Yes through CMD and Windows notepad

## **5. What are two ways that a source program can be executed on a computer?**

1. Translation (into machine instructions, which are then directly executed by the processor)
2. Interpretation (by an interpreter program)

## **6. What does the Java compiler do?**

The javac program is a compiler (a translator) that translates the source program into a bytecode file.

## **7. If you compile a Java source program called 'MyProgram.java', what is the name of the file created by the Java compiler?**

MyProgram.class

## **8. The file created by the Java compiler contains Java bytecodes. If you compile the same Java source on a Windows PC and on an Apple computer, will the bytecodes be different on the two computers?**

The bytecodes are the same on both operating softwares. Java is designed to be universally compatible.

**9. What does the JVM (Java Virtual Machine) do with the compiled Java program file(ie. the .class file)?**

A Java source program (such as Hello.java) can be written and compiled on one computer (say a Windows computer) to produce bytecode (say Hello.class). Now that bytecode can run on any computer that has a Java interpreter.

**10. What does the word 'portable' mean when describing Java programs?**

Java programs are **portable**, which means that the same bytecode program can run on any computer system that has a Java interpreter. Also, a source program can be compiled into bytecodes on any computer that has a Java compiler.