Compiling & running programs

Before a Java program can run it must first be compiled into a **class** file by the Java compiler. This is located in Java's **bin** sub-directory and is an application named **javac**. The instructions on page 11 described how to add the **bin** sub-directory to the system path so that **javac** can be invoked from any system location.

Follow these steps to compile the program on the previous page:

1 Open a Command Prompt/Terminal window then navigate to the directory where you saved the **Hello.java** source code file

2 At the prompt type **javac** followed by a space then the full name of the source code file **Hello.java** and hit Return
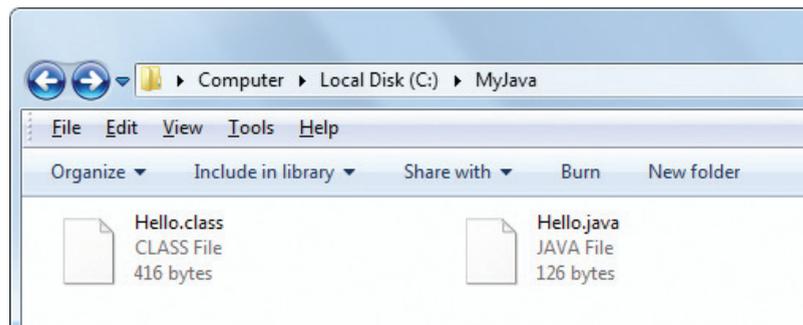
```
Command Prompt

C:\>cd MyJava

C:\MyJava>javac Hello.java

C:\MyJava>_
```

If the **javac** compiler discovers errors in the code it will halt and display a helpful report indicating the nature of the error – see page 22 for Troubleshooting Problems.

If the **javac** compiler does not find any errors it will create a new file with the program name and the **.class** file extension.

Computer ▶ Local Disk (C:) ▶ MyJava

File Edit View Tools Help

Organize ▼   Include in library ▼   Share with ▼   Burn   New folder

Hello.class
CLASS File
416 bytes

Hello.java
JAVA File
126 bytes

When the Java compiler completes compilation the Command Prompt/Terminal window focus returns to the prompt without any confirmation message – and the program is ready to run.

The Java program interpreter is an application named **java** that is located in Java's **bin** sub-directory – alongside the **javac** compiler. As this directory was previously added to the system path, on page 11, the **java** interpreter can be invoked from any location.

Follow these steps to run the program that was compiled using the procedure described on the page opposite:

1 Open a Command Prompt/Terminal window then navigate to the directory where the **Hello.class** program file is located

2 At the prompt type **java** followed by a space then the program name **Hello** and hit Return

```
Command Prompt

C:\>cd MyJava

C:\MyJava>java Hello
Hello World!

C:\MyJava>_
```

The **Hello** program runs and executes the task defined in the statement within its main method – to output "Hello World!". Upon completion focus returns to the prompt once more.

The process of compiling and running a Java program is typically combined in sequential steps, and is the same regardless of platform. The screenshot below illustrates the **Hello** program being compiled and run in combined steps on a Linux system:

```
Linux Terminal

File  Edit  View  Search  Terminal  Help
user> cd /home/mike/MyJava
user> javac Hello.java
user> java Hello
Hello World!
user> █
```

Beware

Do not include the .class extension when running a program – only use the program name.