2. Interacting with Java Programs

Lesson 2:
Your first Java application

2.3 Creating a Source File HelloWorld

- Any text editor can be used to create a Source file
  - E.g. Notepad

- Type the following on your text editor

```
class HelloWorld
{
    public static void main (String[] arguments)
    {
        System.out.println ("Hello World!!!");
    }
}
```

- Save the file as "HelloWorld.java" in a convenient folder (E.g. "C:\MyJava").

- Source Files should be saved with a .java extension. The Java compiler will only handle source files with this file extension.

2.4 Compiling and Running a Source File
2.4.1. Setting the PATH variable

- Setting the path variable allows you to conveniently run the Java tools (javac, jar, javadoc etc) from any directory without having to type the full path of the command.

- If you don't set the PATH variable, you need to specify the full path to the executable every time you run it.

- Follow the following steps to set the path variable:
  - Right click on “My Computer” and Select “Properties”.
  - On the “Advanced” tab, click “Environment Variables”.
  - On the “System variables” list, select “Path” and click “edit”.
  - Add the full path of the Java “bin” folder (E.g. “C:\jdk1.5\bin”) to the string in the “Variable value” textbox.
  - Click “OK” and close all the windows.

- You can verify whether you have correctly set your path variable by typing “path” on the command prompt, and verify whether the full path of your Java “bin” folder is contained in the displayed string.

2.4 Compiling and Running a Source File
2.4.2. Compiling your Source File

- We assume that you have saved your source file as "C:\MyJava\HelloWorld.java", and you have correctly set the PATH variable.
- In the command prompt and set "C:\MyJava" as the current directory.
  - You can do this by typing: **cd C:\MyJava** on the command prompt.
- Type: **javac HelloWorld.java** on the command prompt.
- If you have followed the steps correctly and all is well, you should see no output. If not, you might see some error messages. If so, go back and re-check your work.
- As we mentioned, javac.exe is a compiler, which converts java source code into Java bytecode. Here, it complies the java source code in "HelloWorld.java" and saves the resulting java bytecode as "HelloWorld.class" in the same directory (E.g. "C:\MyJava\HelloWorld.class").

2.4 Compiling and Running a Source File
2.4.3. Executing your Java Bytecode File

- Type: **java HelloWorld** on the command prompt.

- You should see “HelloWorld!!!” displayed.

- As we mentioned, java.exe is an interpreter, that plays the role of the Java Virtual Machine converting the java bytecode into the machine code of the host computer and executing it. Here, it takes the java bytecode in “HelloWorld.class” and interprets it.