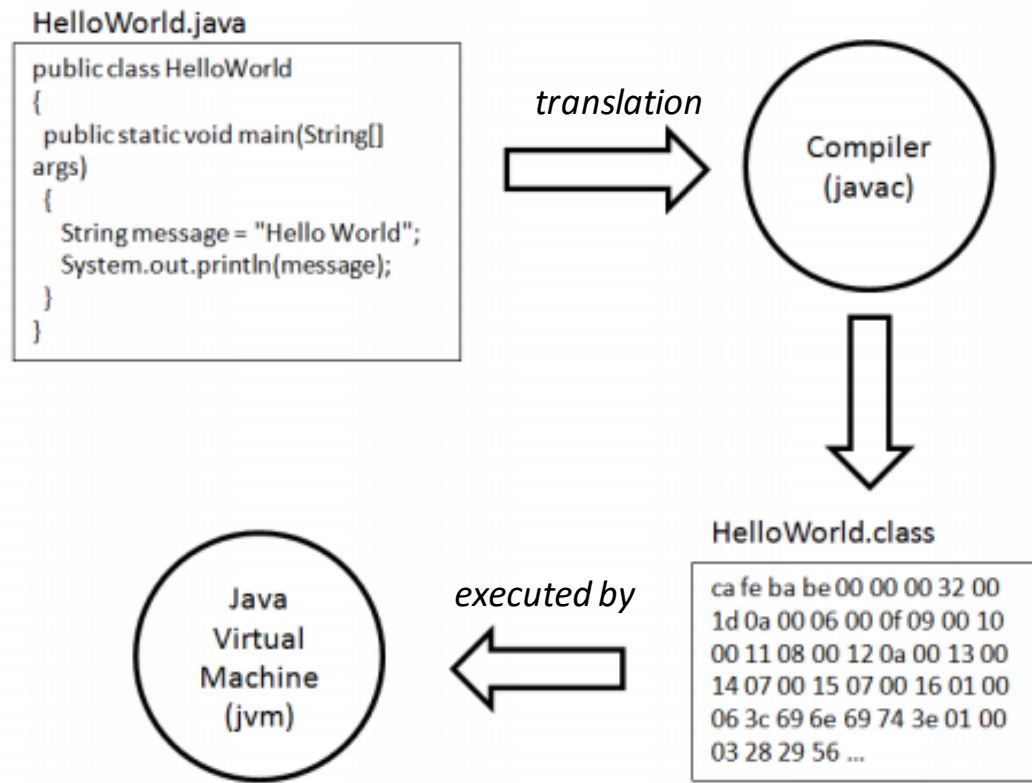- Java
  - A programming language for specifying instructions for a computer to execute

- Java compiler
  - Translates a Java program into an executable form

- Java Virtual Machine (JVM)
  - A Java program does not execute directly on a computer
  - A Java program that has been compiled to a form called bytecode is executed by special software called a virtual machine

- A Java program as source code (readable by humans) is translated to bytecode which is executed by the JVM

HelloWorld.java

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

translation

Compiler
(javac)

HelloWorld.class

```
ca fe ba be 00 00 00 32 00
1d 0a 00 06 00 0f 09 00 10
00 11 08 00 12 0a 00 13 00
14 07 00 15 07 00 16 01 00
06 3c 69 6e 69 74 3e 01 00
03 28 29 56 ...
```

executed by

Java
Virtual
Machine
(jvm)

- ACS-1903 students can use **BlueJ** to create, compile, and run their programs

- **BlueJ** is available in ACS labs 3C13 and 3D03
  - You must login to workstations

    If you use ACS workstations, your user id/password:

    ```
    Username: acs\WebAdvisorUserID
    Password: studentNumberACS!

    e.g.  Harry Potter...
    Username: acs\potter-h
    Password: 1122333ACS!
    ```

- BlueJ is free to download and use on your own computers
  - Go to www.bluej.org

Pages 13-16 of text:

Using BlueJ and the sample programs of the text.