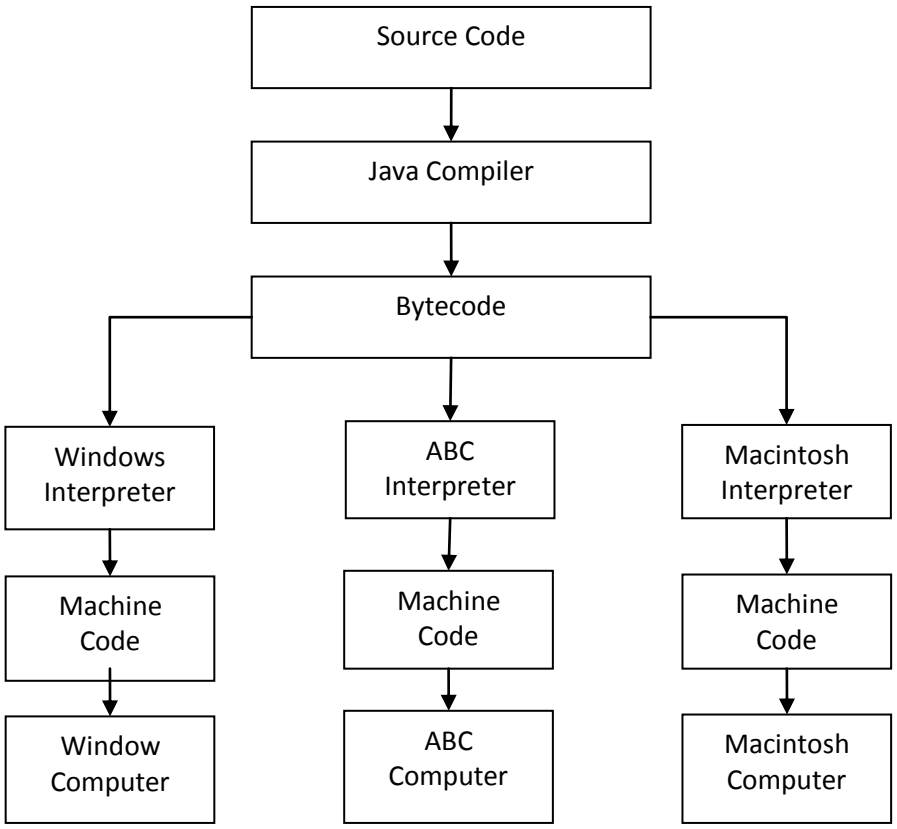
Implementing a Java Program

Implementation of a Java application program involves a series of steps. They include:

- Creating the program
- Compiling the program
- Running the program



Implementation of java program

Creating the Program

We can create a program using any text editor. Assume that we have entered the following program:

```
Class Test
{
```

```
    Public static void main(String args[])
    {
        System.out.println("Hellow");
        System.out.println("Welcome to the world of Java");
    }
}
```

We must save this program in a file called **Test.java** ensuring that the filename contains the class name properly. This file is called the source file. All java source files will have the extension **java.**

Also, if a program contains multiple classes, the file name must be the classname of the class containing the main method.

Compiling the Program

To compile the program, we must run the Java Compiler **javac,** with the name of the source file on the command line as shown below:

```
javac Test.java
```

If everything is OK, the **javac** compiler creates a file called **Test.class** containing the bytecodes of the program. Note that the compiler automatically names the bytecode file as <classname>.class

Running the Program

We need to use the Java interpreter to run a stand-alone program. At the command prompt, type

```
java Test
```

Now, the interpreter looks for the main method in the program and begins execution from there. When executed, our program displays the following:

Hellow
Welcome to the world of Java

Java Virtual Machine

The Java compiler produces an intermediate code known as *bytecode* for a machine that does not exist. This machine is called the *Java Virtual Machine* and it exists only inside the computer memory. It is simulated computer within the computer and does all major functions of a real computer.

Below Figure (illustrates the process of compiling a Java program into bytecode which is also referred to as *virtual machine code.*

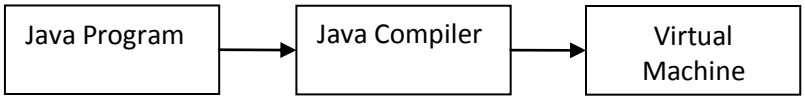


Fig. Process of compilation

The virtual machine code is not machine specific. The machine specific code (known as machine code) is generated by the Java interpreter by acting as an intermediary between the virtual machine and the real machine as shown in below Figure