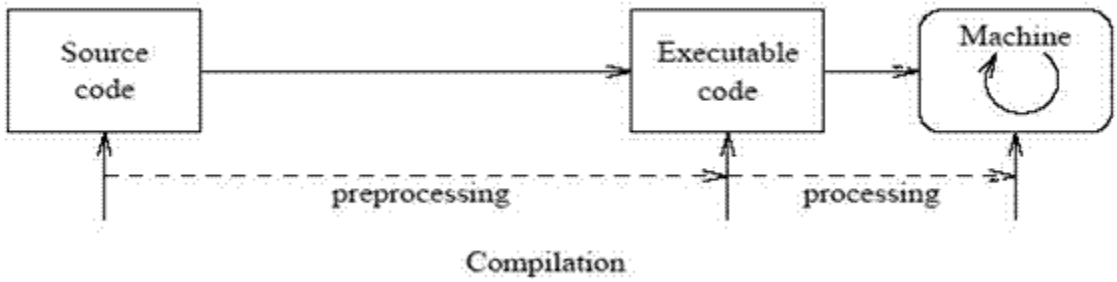
JAVA PROGRAMMING DAY 1 ASSIGNMENT

COMPILER

Compiler. **Translates program one statement at a time**.

Scans the entire program and translates it as a whole into machine code.

Interpreters usually take less amount of time to analyze the source code. A compiler is a piece of code that translates the high level language into machine language. When a user writes a code in a high-level language such as Java and wants it to execute, a specific compiler which is designed for Java is used before it will be executed. The compiler scans the entire program first and then translates it into machine code which will be executed by the computer processor and the corresponding tasks will be performed.



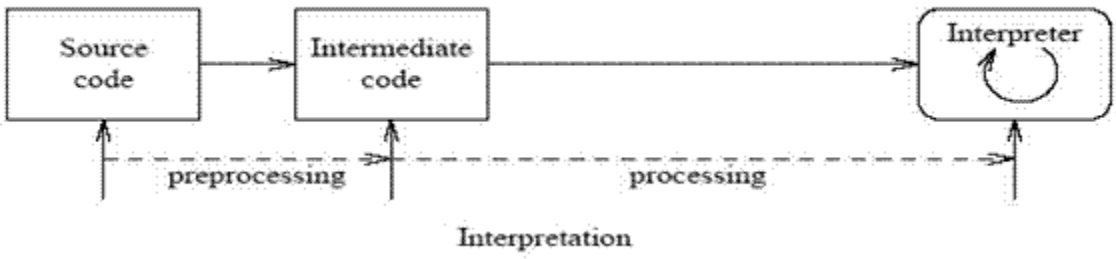
Shown in the figure is basic outline of the compilation process, here program written in higher level language is known as source program and the converted one is called object program.

Interpreter

Translates program one statement at a time.

Interpreters usually take less amount of time to analyze the source code. However, the overall execution time is comparatively slower than compilers.

Interpreters are not much different than compilers. They also convert the high-level language into machine readable binary equivalents. Each time when an interpreter gets a high-level language code to be executed, it converts the code into an intermediate code before converting it into the machine code. Each part of the code is interpreted and then execute separately in a sequence and an error is found in a part of the code it will stop the interpretation of the code without translating the next set of the codes.



Outlining the basic working of the interpreter the above figure shows that first a source code is converted to an intermediate form and then that is executed by the interpreter.

The main differences between compiler and interpreter are listed below:

· The interpreter takes one statement then translates it and executes it and then takes another statement. While the compiler translates the entire program in one go and then executes it.

· Compiler generates the error report after the translation of the entire page while an interpreter will stop the translation after it gets the first error.

· Compiler takes a larger amount of time in analyzing and processing the high-level language code comparatively interpreter takes lesser time in the same process.

· Besides the processing and analyzing time the overall execution time of a code is faster for compiler relative to the interpreter.