一、basic knowledge

1.both a compiled and an interpreted language;(interpreter is relatively lightweight and small)

2.**JIT(just-in-time)**: In a additon to compliing source code down to portable bytecode, java has also been carefully designed so that software implementations of the runtime system can further optimize performance by compling bytecode to native machine code on the fly.(also called dynamic compilation)-->with JIT compilation, java code can execute as fast as native code and maintain its transportability and security.

3.Adaptive compilation also allows the Java runtime to take advantage of new kinds of optimizations that simply can’t be done in a statically compiled language, hence the claim that Java code can run faster than C/ C++ in some cases.

EG: Hotspot, tarts out as a normal Java bytecode interpreter, but with a difference: it measures (profiles) the code as it is executing to see what parts are being executed repeatedly. Once it knows which parts of the code are crucial to performance, HotSpot compiles those sections into optimal native machine code.

Interpreter;

Compiler;

4.