1. What is source code? Give an example.

Source code is the human-readable set of instructions written in a programming language that forms the basis of a software application. It is written by developers and needs to be translated into machine-readable code for execution by a computer.

Example

```
public class HelloWorld {

    public static void main(String[] args) {

        System.out.println("Hello, World!");

    }

}
```

2. What is byte code? Give an example.

Byte code is the intermediate code generated by a compiler when a program written in a high-level language (e.g., Java) is compiled. Byte code is platform-independent and can be executed by a virtual machine, such as the Java Virtual Machine (JVM).
Example:
The Java code example above, when compiled, generates a byte code file named HelloWorld.class which contains instructions in a format readable by the JVM.

3: What is compiler? Give an example.

A compiler is a software tool that translates source code written in a high-level programming language into machine code or byte code. This translation enables the program to be executed by a computer.
Example:
The javac compiler is used to compile Java programs.

4: What is IDE? Give an example.

An Integrated Development Environment (IDE) is a software application that provides tools for writing, debugging, and managing source code in a unified interface. IDEs often include a code editor, compiler, debugger, and other features to simplify software development.
Example: IntelliJ IDEA, Eclipse, and Visual Studio Code are popular IDEs.

5: What is runtime? Give an example.

Runtime refers to the period during which a program is running and being executed. It includes the environment and conditions under which the program operates. Errors encountered during runtime are called runtime errors.
Example:
When running the compiled HelloWorld.class file: