Java Programming Language

- Java has been one of the most popular programming languages for many years.
- Java is Object Oriented. However, it is not considered as pure object-oriented as it provides support for primitive data types (like int, char, etc)
- The Java codes are first compiled into byte code (machine-independent code). Then the byte code runs on **J**ava **V**irtual **M**achine (JVM) regardless of the underlying architecture.
- Java syntax is similar to C/C++. But Java does not provide low-level programming functionalities like pointers. Also, Java codes are always written in the form of classes and objects.
- Java is used in all kinds of applications like Mobile Applications (Android is Java-based), desktop applications, web applications, client-server applications, enterprise applications, and many more.
- When compared with C++, Java codes are generally more maintainable because Java does not allow many things which may lead to bad/inefficient programming if used incorrectly. For example, non-primitives are always references in Java. So we cannot pass large objects (like we can do in C++) to functions, we always pass references in Java. One more example, since there are no pointers, bad memory access is also not possible.
- When compared with Python, Java kind of fits between C++ and Python. The programs are written in Java typically run faster than corresponding Python programs and slower than C++. Like C++, Java does static type checking, but Python does not.