What is Java? Why choose Java?

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Java is a high-level programming language, developed by Sun Microsystems, initiated by James Gosling and released in 1995 as a core component of the Java platform of Sun Microsystems (Java 1.0 [J2SE]). Java runs on many different platforms, such as Windows, Mac and different versions of UNIX.

The latest version of Java Standard Edition is Java SE 8. With the advancement of Java and its widespread popularity, many configurations have been built to suit different types of platforms. Example: J2EE for enterprise applications, J2ME for mobile applications.

New J2 versions were renamed to Java SE, Java EE and Java ME. Java is guaranteed to be Write Once, Run Anywhere (write once, run everywhere).

Although Java and JavaScript seem to be interrelated, they are completely different languages, so don't be mistaken.

Characteristics of Java

1. **Object-oriented:** In Java, everything is Object. Java can be expanded because it is based on the Object model.
2. **Independent platform:** Unlike many other programming languages ??(C, C ++), when Java is compiled, it does not compile to a specific computer on any platform, instead of independent code bytes with platform. This Byte code is distributed on the web and translated by the Virtual Machine (JVM) on any platform it is running.
3. **Simple:** Java is designed to be easy to learn. If you basically understand the concept of Java object-oriented programming, it is possible to capture this language very quickly.
4. **Security:** With Java's security features, it allows the development of systems without viruses and forgeries. Public encryption-based authentication techniques.
5. **Neutral architecture:** Java compiler creates an object file format that has a neutral architecture, making the compiled code can run on multiple processors, with the presence of the Java runtime system.
6. **Portable:** Being a neutral and independent architecture is the most important feature when talking about the Portable aspect of Java. The Java compiler is written in ANSI C with a neat portable boundary, which is a POSIX subset (flexible operating system interface). You can bring the Java code byte to any platform.

7. **Powerful:** Java attempts to eliminate error-prone situations by emphasizing mainly compile-time error checking and runtime checking.
8. **Multithreading:** With Java's multithreading feature, you can write programs that can perform multiple tasks simultaneously. This feature allows developers to build interactive applications that can run smoothly.
9. **Interpretation:** Java's Byte code is translated directly to the original platform and it is not stored anywhere.
10. **High performance:** Using Just-In-Time compiler, Java allows execution with high performance, fast detection and debugging.
11. **Distributed:** Java is designed for the distributed environment of the Internet.
12. **Flexibility:** Java is considered more dynamic than C or C ++ because it is designed to adapt to a growing environment. Java programs can carry a large amount of run-time information, which is used to verify and resolve access to objects at runtime.

```
/**
 * Create an input stream from a socket.
 */
public In(java.net.Socket socket) {
    try {
        InputStream is = socket.getInputStream();
        scanner = new Scanner(new BufferedInputStream(is), CHARSET_NAME);
        scanner.useLocale(LOCALE);
    }
    catch (IOException ioe) {
        System.err.println("Could not open " + socket);
    }
}

/**
 * Create an input stream from a URL.
 */
public In(URL url) {
    try {
        URLConnection site = url.openConnection();
        InputStream is     = site.getInputStream();
        scanner            = new Scanner(new BufferedInputStream(is), CHARSET_NAME);
        scanner.useLocale(LOCALE);
    }
    catch (IOException ioe) {
        System.err.println("Could not open " + url);
    }
}
```

Where is Java used?

You can find Java in many places, from e-commerce websites to Android applications, from scientific applications to financial applications like electronic trading systems, games like Minecrafr to applications. on computers like Eclipse, Netbeans, IntelliJ, .

Android application

If you want to see a product created from Java, it's simple, open up your Android phone and any application you see is such a product, written in the Java programming language, with Google's Android API, similar to JDK. With the development of Android today, most Java programmers are people who write apps for Android. Android uses different JVM and packaging methods, but the code is still written in Java.

Server applications used in financial services

In the financial services industry, Java occupies a large position. Many global investment banks such as Goldman Sachs, Citigroup, Barclays, Standard Charted and other banks use Java to write front office and back office electronic trading systems, write settlement and certification systems, and projects. Data processing, . Java is mainly used to write applications for servers, no front end, receive data from another server, process it and send to a subsequent process.

Web application

Java also has a large market share in e-commerce and web applications. There are many RESTfull services created using Spring MVC, Struts 2.0 and similar frameworks. Even simple web applications like Servlet, JSP and Struts are also very popular in various government projects. Many government, health, insurance, education, defense and other departments have web applications built in Java.

Software tools

Many useful software and development tools are written and deployed in Java, such as Eclipse, InetelliJ Idea and Netbans IDE. A lot of desktop software is also written in Java.

Big Data technology

Hadoop and other large data technologies are also using Java in one way or another. Apache of Java is based on HBase and Accumulo (open source), as is ElasticSearch. While Java is not a dominant player in this area, there are technologies like MongoDB written in C ++, but Java has the potential to gain growing market share if Hadoop or ElasticSearch is strong.

Scientific application

Java is often selected by default for scientific applications, including natural language processing. The main reason is because Java is more secure, portable, maintainable, and comes with high-level tools equivalent to C ++ or other programming languages.

In the 1990s, Java accounted for a large portion of the Internet thanks to Applet, but gradually, Applet lost popularity, mainly due to security issues on the sand-box model. Currently, Applets are almost "dead". Java has become the application programming language that many programmers love, widely used in application development, financial services, investment banking, e-commerce. Anyone who learns Java can have a bad future. Java 8 has continued to strengthen the belief that Java will dominate the field of software development in the coming years.

If you want to learn Java, save our Java category to start learning about this famous programming language.

The article compiles from Java Overview of Tutorialspoint.com and blog Javarevisited.blogspot.com.

See also: What is Python? Why choose Python?