

Plugged In

Interest in Java perking up

Sun Microsystem's stripped-down computer language gets new life as web programming system / **Simson L. Garfinkel**

RECENTLY, THERE WAS A seminar at MIT about a stripped-down computer language called Java. Originally scheduled for a large classroom, the talk was moved to a lecture hall that could accommodate more than 300 people. Still, the room was filled beyond capacity, with hundreds of hackers from all over Boston taking off the afternoon, packing the isles to hear about the Java phenomenon.

So just what is this Java thing, anyway?

Fundamentally, Java is simply that — a stripped-down computer language designed to create tiny applications. The language was originally developed by Sun Microsystems to run inside computerized cable-TV converters — those set-top boxes that three years ago were going to be connecting everybody to the Information Superhighway. The idea of the set-top boxes got detoured, but the language persevered, and now it's being offered up as a programming system for the World Wide Web.

Right now, most Java programmers are concentrating their energies on "applets" that get automatically downloaded when you look at a particular web page. For example, take a look at CNet's home page (<http://www.cnet.com>) or The Right Side of the Web (a conservative politics home page, at <http://www.clark.net/pub/jeffd/index.html>), and you'll see a marquee with a tiny animated message scrolling across your screen. See? Java! Of course, in order to view it, you'll need a web browser that has Java built-in. Right now, the only such browser is the 2.0 beta version of Netscape

Navigator (and then, just the UNIX and Windows versions). But Microsoft has announced plans to license Java for use in its Internet Explorer, and other Java companies are jumping on the Java jeep.

Right now, it looks like Java just might become the *lingua franca* of the computer world in just a few years.

Although nifty little animations are cute, expect to see Java doing a lot more in the future. Using Java, a catalog company could download a "smart form" to your web browser that would automatically total your orders and compute shipping. The Internal Revenue Service could download tax forms that did their own math. A few years from now, if you want to set up a video conference, you might use Java to download a desktop conferencing system.

One of the reasons that people are excited about Sun's Java is that it looks like the language solves some of those pesky computer-security problems that other companies have, until now, been simply ignoring. For example, Microsoft's Internet Explorer will happily download programs and run them when you click on their links — even if the programs happen to contain the code to erase all of the files on your hard disk or infect your applications with a nasty virus. Java applications, on the other hand, are cute but benign: They can't access the files on your hard disk unless you specifically give them permission. (Computer science jocks might get a kick out of learning that Java programs have to be "proved correct" before they are allowed to be run on your computer.)

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Sun has given away the specifications for Java and invited other companies to create compatible versions of the language. The company plans to make its money from Java by developing the best Java implementations and licensing them to other companies. This is the approach that Sun followed successfully with some of its early products, such as Sun's Network File System, and many people attribute Sun's success to this "open" strategy. It's a strategy that's diametrically opposed to Microsoft's business practices, which are based on capturing market share with systems that are fundamentally incompatible and proprietary. Which strategy is better

for long-term success remains an open question.

Writing Java programs is a three-step process. First you write your program with a text editor. Next, you compile the program with the Java compiler. Finally, you put the compiled program on a web server. A number of companies, such as Borland and Symantec, are working on their own Java development environments. The good news for Macintosh users is that Cambridge-based Natural Intelligence has already developed one. It's called Roaster.

Hillel N. Cooperman, Natural Intelligence's director of business development, gave me a tour of Roaster last week. The system is an integrated development environment, meaning that it has a built-in editor, compiler and debugger. Roaster comes with an applet viewer, which right now is the only way for Macintosh users to run Java applets. And because Roaster is a native Macintosh application, it really flies.

Unlike other companies, Natural Intelligence has decided not to license Java from Sun, but instead develop its own Java technology from Sun's specifications. "The engineers at Sun call us 'those clean-room guys,'" says Cooperman. Although developing its own technology means more work for Natural Intelligence, it also means that the company will be able to deploy new technology at its own pace, rather than having to wait for Sun's engineers. It also might give tiny Natural Intelligence, with only 42 employees, a way of standing out once large companies start offering similar products.

If you want to learn more, fear not: nearly a dozen books on Java are due to be published in the next few months. But save your money. Learn more by cruising Sun's Java server, <http://Java.sun.com/>. You'll find papers describing the language, manuals and many sample programs.

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