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1.3: The World Wide Web

I think many journalists would still be surprised to learn that the Internet has existed in one form or another since the late 1960s, beginning as a government research project on computer networks that would degrade gracefully when individual machines were lost. Certainly every company whose advertisement announces "Find us on the Internet at USEDCARS.COM" appreciates the media's portrayal of the World Wide Web as the raison d'etre of the Internet.

It is perhaps more surprising still that the World Wide Web, that most commercial corner of today's Internet, was itself the invention of a small group of particle physicists at CERN, the European particle physics laboratory. The WWW was originally developed in 1989 as a mechanism for those same physicists to publish and share late-breaking data with their peers, and within a year or two was in common use at European universities. In 1993, a group of graduate students at the National Center for Supercomputing Applications (in Illinois) wrote the first graphical WWW browser, named Mosaic, and released free versions for the IBM PC, the Macintosh, and UNIX systems. By late 1994, WWW traffic had surpassed all other Internet usage, and the Wall Street Journal finally noticed the **25-year-old** "novelty" called the Internet.

It was in the spring of 1995 that Sun Microsystems (now an Oracle acquisition) released its first public development version of HotJava, a graphical WWW browser written entirely in Oak--which was renamed Java in the wake of a last-minute copyright search. Acceptance of HotJava was hampered by the rapid development of the Java language itself, which left much of the original HotJava code obsolete soon after its release. But in the fall of 1995, Java was introduced to the public at large, when version 2.0 of the Netscape browser, including Java support, was released (Netscape 1.0 was largely a commercial version of NCSA Mosaic).

Netscape 2.0 supported the embedding of Java applets in a WWW page. An applet is bit of code meant to be embedded inside a larger application. The portability and safety of Java meant that these applets could be written and compiled once, and could then be sent over the WWW to many different kinds of computers for execution. Netscape was instrumental in perfecting versions of the Java virtual machine program that would run on the Macintosh as well as on many flavors of UNIX besides Sun's own Solaris.

While Java's portability, safety, and security make it an ideal language for writing applets, it is important to keep in mind that Java is also a full-fledged applications development language, and that the first WWW browser to support embedded applets (HotJava) was itself written entirely in Java. Although most programmers' first exposure to Java is in the form of WWW applets, it is as an applications language that Java's promise is fully realized.

During this course, remember that Java's association with the World Wide Web and Netscape was purely happenstance; do not consider Java only an applet development language.