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FOR IMMEDIATE RELEASE

International standard for the C++ programming language approved!

This week, technical experts representing eight countries and about 40 companies involved with software technologies met in Morristown, New Jersey and completed the content of an international standard for the C++ programming language.

C++:

During the 90s, C++ quietly became the dominant programming language for demanding applications in such diverse fields as finance, telecommunications, embedded systems, and computer-aided design. Unseen by ordinary users of computers and of computerized services (such as making an 800 call on a telephone or making a stock market transaction), C++ has become one of the cornerstones of modern life by becoming the choice of professional programmers for sophisticated applications. Running on all computers from the most powerful supercomputers and commercial mainframes to the ubiquitous personal computers and unseen microprocessors, C++ is used by more than 1.5 million programmers worldwide.

Standardization:

Anticipating this critical role for C++, various national standards organizations and the International Standards Organization (ISO) started in 1989 an effort to standardize C++. Over the years, representatives from Australia, Canada, Denmark, France, Germany, Ireland, Japan, the Netherlands, New Zealand, Sweden, the UK, and the USA have met regularly together with representatives from about a hundred companies and many interested individuals to write a mutually agreed upon standard. The companies that have contributed to the standard include giants such as AT&T, Ericsson, Digital, Borland, Hewlett Packard, IBM, Mentor Graphics, Microsoft, Silicon Graphics, Sun Microsystems, and Siemens. After about 8 years of work, this standard is now complete. Today (Nov 14, 1997), the standard was approved by a unanimous vote of the countries that had representatives present in Morristown. Final ratification by two dozen countries is expected by March 1998.

Impact:

The standard will make it easier to teach C++ (which is just coming into use for the Advanced Placement Computer Science courses in US high schools), to use C++ in applications, and to port C++ programs from one kind of computer to another. Basically, the standard heralds a new era of C++ use where more advanced techniques can be used effectively in industrial, research, and educational software. Software tools providers are already shipping C++ implementations and tools that approximate the standard. The standard allows users greater freedom of choice of C++ implementations, allows implementers and major users to check implementations against the standard using test suites and to compare implementations using performance tests. The increased stability and portability offered by the standard is a boon to library providers and tools provides as well as implementers. These improvements will help C++ application developers to build better applications faster, and to maintain them with less cost and effort. The result will be further improvements in the quality of applications delivered to end users - who, typically, will have no idea that they are relying on C++ in their everyday life.

Scope of the Standard:

The C++ standard covers both the C++ language itself and its standard library. The standard library represents a significant improvement over what has been generally available. It will ease the task of learning C++ and make it far simpler to write programs that run on a variety of platforms. The standard library provides standard input/output, strings, containers (such as vectors, lists, and strings), non-numerical algorithms (such as sort, search, and merge), and support for numeric computation. As could be expected from the result of an international effort, the C++ standard provides extensive support for the use of national character sets (e.g. European national characters and Japanese characters).

C++ background:

C++ was initially designed and implemented by Dr. Bjarne Stroustrup at AT&T Labs (then AT&T Bell Labs). The first commercial release happened in 1985. The language gained widespread use in industry and academia during the 1980s, and around 1990 the major computer and software tools suppliers started to provide C++ to their users as a major implementation tool. After explosive growth of the C++ user population in the 1980s and early 1990s where C++ usage doubled every 7½ months, the use of C++ has settled into a pattern of steady growth (on the order of 15% to 30% a year). The new standard is expected to sustain and stimulate this growth. The number of C++ programmers worldwide is estimated to be more than 1.5 million. More than 400 books are currently in print about C++ programming.

C++ and other programming languages:

C++ is a general-purpose programming language with an bias towards systems programming that supports low-level programming in traditional styles, data abstraction, object-oriented programming, and generic programming. C++ was initially developed from the C programming language by the addition of facilities for object-oriented programming from the SIMULA programming language. Over the years, the flexibility and generality of the facilities offered by C++ has been greatly improved without compromising run-time efficiency. C++ is distinguished among programming languages by a combination of efficiency (like C and Fortran) and abstraction facilities. The "abstraction facilities" provided by C++ allow programs to be expressed in terms natural to application designers (rather than lower-level computer-oriented terminology). Some of these abstraction facilities are also provided by "object-oriented" languages such as Smalltalk and Java, others are only available in experimental "functional" languages. The C++ abstraction mechanism distinguished by their run-time efficiency.

The official designation of the Working Group's product will be ISO/IEC FDIS 14882, where "FDIS" means "Final Draft International Standard".

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