

Mathematica for NEXTSTEP

WOLFRAM RESEARCH has released *Mathematica 2.2* for NEXTSTEP for Intel processors, NeXT's object-oriented software for Intel-486 and Pentium-based computers. The NEXTSTEP version is identical to *Mathematica* for NeXT computers.

Mathematica for NEXTSTEP for Intel processors costs \$1,245. Academic pricing starts at \$995. Volume discounts and academic site licenses are available.

Notebook Front End for X

A *Mathematica* notebook front end for UNIX workstations running the X Window System is now available. The X front end features PostScript rendering and printing; the ability to import GIF, X11, and X Window Dump (xwd) graphic files; pull-down menus; editing and searching commands; animation; a function browser; and an on-line help system.

Since the X Window System is based on a client/server model, the *Mathematica X* front end gives users a variety of choices of how to use their resources on a UNIX network. For example, users can cache bitmaps to a local or remote machine, run *Mathematica* kernels on local or remote machines, and run a number of *Mathematica* kernels simultaneously.

Versions of *Mathematica* that incorporate the X notebook front end currently are available for Sun SPARC under Sun OS 4.1, Silicon Graphics, Hewlett-Packard 700 Series, DEC RISC (MIPS), Sun Solaris (2.0 or higher), and IBM RISC System/6000 workstations. Current *Mathematica Plus* subscribers who have a *Mathematica 2.2* license will receive the X front end from Wolfram Research at no additional cost.

Under Development

A native OS/2 port of the *Mathematica* kernel is being tested and will be available soon. It features full 32-bit addressing. (Currently, *Mathematica* for Windows runs under OS/2 2.1, and *Mathematica 2.2* for MS-DOS runs under OS/2 2.0.) A *Mathematica* version for Windows NT is also being tested. It features both a 32-bit kernel and a 32-bit front end. *Mathematica* for Windows NT will be compatible with Windows 3.1.

A version of *Mathematica 2.2* optimized for Power PC-based Macintosh computers is being developed. Initial tests indicate that this native

port of *Mathematica* is remarkably faster than existing versions for 68K-based Macintoshes. Numerical calculations, for example, run approximately eight to ten times faster, graphics are rendered between four and five times faster, and symbolic operations run between six and ten times faster.

1994 Developer Conference

The *Mathematica* Developer Conference for Advanced Users will be held April 21-23 at Wolfram Research headquarters in Champaign, Illinois. The conference will feature an opening address by Stephen Wolfram, workshops, panels, problem solving clinics, a computer lab, and sessions. Topics will range from *Mathematica* programming, package and notebook design, *MathLink*, and graphics, to marketing, distribution, and developer support. At workshops and luncheons, publishers will give technical information about book publishing. Professors, authors, and other *Mathematica* experts will talk about their experiences in writing courseware, books, and *Mathematica* packages.

For more information on the Developer Conference, send e-mail to conference@uri.com or fax 217-398-0747.

Symbolic Toolbox for MATLAB

Wolfram Research has released the *Mathematica* Symbolic Toolbox for MATLAB version 1.0, giving users full access to the *Mathematica* kernel from within MATLAB. The Toolbox provides a transparent connection between *Mathematica* and MATLAB, with both programs running on the same computer or on different computers on a network. Users can construct matrices in either *Mathematica* or MATLAB and pass them to the other, and mix *Mathematica* and MATLAB code within a single environment.

The Toolbox is based on the *MathLink* communication protocol and is implemented as a single MEX-file. It works with all *MathLink*-capable versions of *Mathematica 2.1* or later and requires MATLAB 3.5 or 4.x.

Users can obtain a free copy of the Toolbox from MathSource by [ftp](ftp://mathsource.wri.com) to [mathsource.wri.com](ftp://mathsource.wri.com). Look in the directory [/pub/WhatsNew](ftp://pub/WhatsNew) for either the file [matLab2math.sea.hqx](ftp://pub/WhatsNew/matLab2math.sea.hqx) (for Macintosh) or [matLab2math.tar.Z](ftp://pub/WhatsNew/matLab2math.tar.Z) (for UNIX). Users also can send the e-mail message "send 0205-951" to mathsource@uri.com.

Mathematica Applications Library

Wolfram Research has released the Electrical Engineering Pack and the Finance Pack, the first packs developed as part of the new Mathematics Applications Library. The Library consists of *Mathematica* material from Wolfram Research and applications created by independent *Mathematica* developers.

The Electrical Engineering Pack is a collection of notebooks and packages created to enhance electrical engineers' use of *Mathematica* for problems in circuit analysis, transmission line theory, antenna analysis, and so on. The pack targets the approximately 30% of *Mathematica* users worldwide who are engineers. Electrical engineers account for the largest segment of this group.

The pack provides a new set of *Mathematica* functions useful in common electrical engineering tasks. These tools range from one-line programs to complex modeling routines. The pack's open architecture format lets users examine functions' source code and use them as examples of *Mathematica* programming or as a foundation upon which to develop their own algorithms. The pack also presents practical examples, ranging from elementary to advanced, of how *Mathematica* is used to solve electrical engineering problems.

The Electrical Engineering Pack is available from Wolfram Research for Macintosh, Windows, and the X Window System, and costs \$195. The Pack requires *Mathematica* 2.2 to make full use of the pack's contents.

The *Mathematica* Finance Pack is a set of specialized *Mathematica* tools designed for traders, investment analysts, portfolio managers, and others in the financial market with critical tasks in data analysis and strategy design. Some of the topics covered in the pack include: interest rates (conversion function, flat constant rates, and term structure of interest rates), bonds (bond payment, accrued interest, valuation, and sensitivity measures), cash flows (present valuation and security measures), options (valuation, sensitivity measures,

and implied volatility), finance calendar functions, and programming examples (random number generation, Markowitz efficient portfolio function, betas and security-market line, and moving averages).

The Finance Pack is available for Macintosh, Windows, and the X Window System for \$395.

MathLink for Excel

MathLink for Excel and *Mathematica* is now available, giving Excel users access to *Mathematica*'s capabilities directly from within Microsoft Excel. *MathLink* for Excel lets users send data sets from Excel to *Mathematica* for analysis and receive the results back in Excel, access mathematical functions, and use *Mathematica*'s programming language. Excel can use *Mathematica* as its calculator or embed complete *Mathematica* programs in Excel macros. The add-in includes several hundred custom Excel macro functions that call *Mathematica* and return results to Excel automatically.

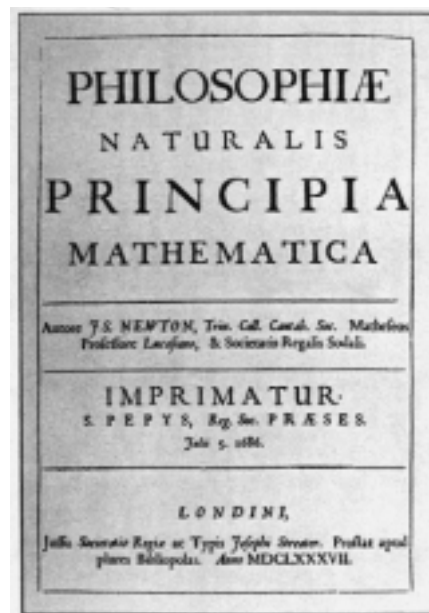
MathLink for Excel and *Mathematica* costs \$50 and requires Microsoft Excel 4.0 or higher and *Mathematica* 2.2 or higher. Excel running on a Macintosh or Windows machine can connect to *Mathematica* running on the same or any other networked machine.

—Patty Enrado

Naming the Mathematica Language

The casual user of *Mathematica* may not realize that much of *Mathematica*'s success is due to its built-in programming language. Recently, there has been talk at Wolfram Research of releasing the programming language as a separate product. What should this new product be called? In the MathGroup *Mathematica* mailing list, a number of serious, frivolous, and inflammatory names have been suggested. These include:

Tongue, "because of its ability to express the thoughts of people in many



different ways" (R. Rigon). Kevin McIsaac pointed out that bugs in the program could then be called "slips of the Tongue." Presumably, the parallel version would be called Forked Tongue and the pipelined version, Tongue in Groove (R. Fateman).

Unity, "It unites programming contexts from various disciplines and makes them all into one wonderfully functioning program" (J. Mathews).

Amenity, "something pleasant that adds to one's comfort" (C. Wells).

"How could it be anything other than 'Principia'?" (B. Weller).

Matlan, "acronymical and clear;" Fusion, "indicative of the combining of conceptual tools, mathematical theory and programming;" Spock, "its all very logical" (C. Gericke).

Babel, "It claims to reach for the sky, be universal and usable by all, no matter what their favorite programming style" (M. Bronstein).

M, a name discussed in various articles and at conferences.

Mathematica Application Programming Language & Environment: "We could call it by its acronym M.A.P.L.E. Never mind. :-)" (R. Love).

Additional suggestions can be sent to MathGroup or Wolfram Research.

—Steve Christensen