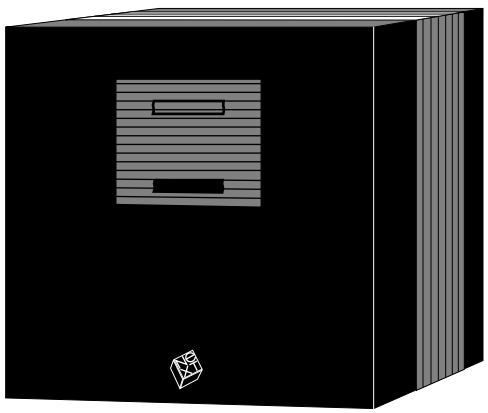
# rmNUG

# Rocky Mountain NeXT Users' Group Newsletter

November, 1990



## *In This Issue!*


Golden Nugget Winners .....1
Impact Winner .....1
Impact Contest .....1
NeXT on Campus .....2
Library of Classes .....2
NeXT Job Openings.....2
Banzai Job Opening .....3
Discopylabs.....3
Celebrate Mozart.....4
1991 Mathmatica Conference .....4
C++ Intigration .....5
FTP Access .....5
Release 2.0 .....6
Rumours.....7
rmNUG Software.....7
Compuserve Access .....7
NeXT Cubes .....8
X For The NeXT.....8
True Confessions .....9
Beta Testing .....9
Supernet Project.....10
rmNUG Finances .....11
October Meeting .....11
User Profiles
Dr. Aaron Gordon .....11
Terry Tautz .....12
Users Groups.....12
Internet Access.....12
Compuserve Forum....12
Wanted: Ideas .....12
From The Editor.....12
**Copyright Controversy**
LPF Point/Counterpoint.....13
Lotus .....22
LPF Member .....23
Ashton-Tate .....25
Copyright Settlement .25
rmNUG Directory .....26


## Golden Nugget Winners!

Here are the thirteen winners of the NeXT Golden Nugget awards for 1990

BaNG - Bay Area NeXT Group (Stanford) President - Rick Reynolds, Eric Ly

Boston Computer Society NeXT Group

President - Dan Lavin

The NeXT Users' Journal (Atlanta) Editor - Erica Liebman

WANSIG - Washington, D.C. Area NeXT Group President - Hugh O'Neill

ChiNUG - Chicago NeXT User Group President - Bill Parod

GUN - Gotham Users of NeXT (New York City) President - Tim Reed

DaNG - Dallas Area NeXT Group (Dallas) President - Dirk Hardy

rm NUG - Rocky Mountain NUG (Denver) President - David Hieb

Vancouver NeXT Group (Vancouver, British Columbia) President - Lionel Tolan

Montreal NeXT SIG of Club Macintosh President, NeXT Section - Robert Paulhus

OSU NUG - Ohio State NeXT User Group (Columbus) President - Chuck Dyer

SCaN - Southern California Area NeXT group (Los Angeles) President - Michael Mahoney

STuN - San Diego Users of NeXT President - Nicholas MacConnell

Next months issue of the rmNUG Newsletter will present the highlights of our winning proposal and discuss in detail the exact plans for the money.

## IMPACT Award Winner

" The top prize for IMPACT's first software contest has been awarded to Michael J. Mezzino, Chairman of the Mathematics Department at University of Houston - Clear Lake. (MEZZINO@cl.uh.edu)

Dr. Mezzino submitted a program called PhaseScope. PhaseScope is a comprehensive user interface and general graphical display program for qualitatively analyzing the stability characteristics of dynamical systems. PhaseScope was written to be used as a learning tool supporting several topics in a typical course in differential equations. It has a very easy to use interface, and includes such advanced features as voice errors.

PhaseScope obtains the solution to the dynamical system by hooking to Mathematica's kernel to perform the numerical integration, thereby allowing different numerical integration routines to be incorporated. In addition to being a general learning tool, PhaseScope also serves as a modeling tool which can be used in other disciplines such as biology and chemistry.

As the top prize winner, Dr. Mezzino received a $1000 award and will be offered a contract to have PhaseScope published by IMPACT Software Publishing, Inc."

## IMPACT Second Software Contest

IMPACT Software Publishing, Inc. is sponsoring a second software contest for the NeXT computer. All programmers who have access to a NeXT computer are invited to develop and submit a NeXT program. The soft-

*"We Are Looking For Exceptional Individuals"*

ware submission deadline for the second software contest is February 15, 1991, but programs may be submitted any time before the deadline. The writer of the best submitted software will be awarded a $1000 prize and offered a contract to have the software published.

Each submitted program will be evaluated as soon as it is received, and IMPACT will immediately offer a publishing contract for any program which shows creativity, originality, and marketability. If the publishing contract is accepted, IMPACT will work with the writer to further develop the program and will then distribute and sell copies of the software for the writer for a flat fee ranging from $5 to $10. Thus if a flat fee of $10 is agreed upon, then for each copy of a software sold by IMPACT, the writer will receive the price of the software minus $10 from IMPACT. (For example, if the writer decides to price the software at $30 each and 1000 copies are sold by IMPACT, then the software writer will receive $20,000 from IMPACT.)

To submit a program, copy the executable codes onto a floppy disk and send the disk to:

IMPACT Software Publishing, Inc.
306 College Avenue
Ithaca, NY 14850

Or else, send a NeXT-mail with the program attached to mlee@cs.cornell.edu.

In addition to the executable codes, please add a README file with a brief description of how to use the software and where to find additional documentation (if any).

IMPACT Software Publishing, Inc. is an entrepreneurial company interested in publishing software written by creative independent programmers. IMPACT will bundle the top programs and distribute them using CD-ROMs, optical disks, and floppy disks. Copies of the top programs will be sold through a software key access system.

Mark Lee
Software Development Support
mlee@cs.cornell.edu

S o f t w a r e P u b l i s h i n g, I n c.
306 College Avenue
Ithaca, New York 14850

The rmNUG Newsletter is published monthly by the Rocky Mountain NeXT Users Group.

Readers are encouraged to send their comments or contributions to:

David Bowdish
73340.2146@compuserve.com

Any submissions of letters, artwork, articles, etc. will constitute implied permission for rmNUG to publish (in whole or in part) in print or electronically.

Sorry, but with our budget ($0) we can only afford to offer our sincerest thanks for any contributions you may send.

Special thanks to David Hieb, Brad Green and Jacob Gore for their articles for this newsletter.

Editor:
David J. Bowdish

Contributing Editors:
David R. Hieb and Brad Green

## Request From NeXT On Campus

We are designing the next issue of NeXT On Campus and we NEED your input and suggestions. WE'RE LOOKING FOR LEADS ON GREAT ACADEMIC PROJECTS.

We're looking for the most exciting, interesting, mind-blowing, academic projects that are being developed across the country. If you've had a chance to read the last issue of NeXT On Campus, you know what we're looking for -- we want to highlight projects in a variety of disciplines that show NeXT technology is being used for things that can't be done on other platforms. This is your chance to see your favorite account highlighted.

Please submit your ideas to David Spitzler (NOC's editor):

The email address is:
David_Spitzler@next.com

Or call David collect at (415)780-3875.

## Request for Library of Classes

I am starting up a library of classes. Such libraries will be available to every one thru an anonymous ftp account.

The success of such library depends on WHAT YOU CAN SEND ME. Please send me the classes you re using, you've written, etc. — to please feed it as much as you can.

S uch server class will give developers flexibility and power.

Itemss must be sent to :
phil@cnam.cnam.fr

I will email when the server will be ready. please start NOW to feed it :)

Phil Provost

ps: Add a short file which describes capabilities of your classes, with other details such as its domain (music, graphic, ...)

## NeXT Job Openings

NeXT's Customer Support Team is seeking Application Support Engineers. We are looking for exceptional individuals with a strong understanding of and experience in graphical user interfaces and the applications associat-

*"We Think That The Market Will Be Moving To This New Industry Standard"*

ed with them (previous NeXT and/or Macintosh experience is preferred).

As a member of the Customer Support Team an Application Support Engineer performs post-sales technical activities relating to the use of applications on NeXT systems. This includes NeXT bundled applications (WriteNow, Workspace, Librarian) and those of the most important third parties.

The expectations of the position include:

* Respond to questions regarding the use of applications.
* Understand and explain applications from a design and "problem to be solved" perspective.
* Communicate strategies for effective use of applications; especially in the area of integration and interaction of multiple applications.
* Feedback customer input to Product Marketing, Sales, Developer Partnerships and Engineering.

Relevant experience/qualities are:

* Interest to help others understand and solve problems, customer empathy, patience.
* Great experience in the use of applications with sophisticated user interfaces & features - Pre- or post-sales support experience.
* Demonstrated aptitude working as part of a team - Ability to articulate technically complex issues to the entire range of users.
* Attention to detail and follow through.
* B.S.C.S or relevant experience (2 years experience preferred)

Positions are also available for Support Engineers in the areas of networking/system administration and programming. If you feel you are qualified for any of these positions, please respond to Eric Larson at:

NeXT Computer, Inc.
900 Chesapeake Dr.
Redwood City, CA 94063

email: Eric_Larson@next.com

## Banzai Job Opening

The Banzai Research Institute (aka Pages) is looking for a hot-shot NeXT programmer to join an existing team (Bruce Webster, Deirdre Poeltler) working on next-generation word processing/page layout technology. Great salary, beautiful location (San Diego), loyal companions, much fun, and a chance to change the software industry--not a bad combination.

FAX to 619/492-9124
voice to 619/492-1278

USmail and e-mail addresses below.

Bruce F. Webster Director
Banzai Research Institute
VP, Product Development, Pages/KVM Inc.
3914 Murphy Canyon Road
Suite A-156
San Diego, CA 92123
619/492-9050

E-mail

UUCP: crash!pnet01!pnet03!bwebster
INET: bwebster@pnet03.cts.com

## Discopylabs Named NeXT's Software Production Vendor

DisCopyLabs will provide software duplication services in the new 3.5" ED microdiskette 7 format for NeXT's new computer products and.for software products developed by NeXT's third party developers.

DisCopyLabs will be a value-added vendor for NeXT by providing duplication services for the new 2.88 MB media. DisCopyLabs also has the expertise to provide NeXT and its third party developers with other services in graphic design, package assembly, warehousing and order fulfillment.

NeXT reports that DisCopyLabs is the most efficient software duplication facility inspected and was selected because it can provide the quality needed for NeXT's high-end, technologically innovative products..

"The 2.88 MB is the next logical capacity point for the computer industry, given the dramatic increases in file sizes," reported Norman Tu, DisCopyLabs President, "We think the market will be moving to this new industry standard. DisCopyLabs is honored to be chosen as NeXTs software production vendor."

In operation for eight years, DisCopyLabs is the largest independent turnkey software

manufacturing service in the region DisCopyLabs specializes in software replication on data cartridges, tapes and diskettes for software publishers, OEM and peripheral equipment manufacturers and other volume software developers. DisCopyLabs has over 100 dedicated staff members working in a new 85,000 square foot facility in Fremont, Califonnia.

DisCopyLabs
48641 Milmont Drive
Fremont, CA 94538-7354
(415) 651-5100

## Celebrate Mozart

In '91 the world will celebrate Mozart -- Two hundred years since his death we have enjoyed his magnificent achievements.

With this celebration and the many forms and interpretations of his music, the Dallas Area NeXT Group (DaNG!) is coordinating and sponsoring "A Tribute to Mozart" on the Cube.

This salute will encompass three general area's: Mozarts life, His music, His country.

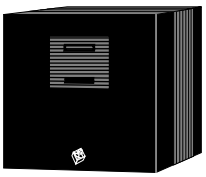
With the NeXT being such a great media, music machine we thought this would be a great way to show the power of the cube, its educational benefits, and at the same time involve alot of people, particularly the NeXT community.

We need your help. If you could get into something like this please send me some mail and let know how you can contribute.

!uunet!blackbox!kti!root or blackbox!kti!root@uunet.uu.net

This could be alot of fun!!

Dirk Hardy DaNG President



## 1991 Mathematica Conference

January 12-15, 1991

San Francisco, California

**Location:**
Hyatt Regency Hotel
Embarcadero Center
San Francisco, California

**Times:**
Sessions and Exhibits:
2 pm Saturday, January 12
2 pm Tuesday, January 15

On-Site Registration begins at 12 noon on Saturday, January 12.

**Related Conferences In San Francisco**

MACWORLD Expo, January 10-13

American Mathematical Society Meeting, January 16-19

**Features:**

* Invited Lectures
* Application Highlights Show
* Forums/Panels
* Mathematica Clinics
* Workshops
* Programming Competition
* Special Interest Groups

**Tutorials**

*Elementary:*
* Introduction to Mathematica
* Introduction to Mathematica Programming
* Numeric Computation
* Algebraic Computation
* Text Manipulation
* Using Notebooks
* New Features Update

*Intermediate:*

* Graphics Programming
* Data Analysis
* Calling Programs from Mathematica
* Mathematica Programming Style
* Producing Graphics for Publication
* Mathematica Educational Labs
* Creating Mathematica Courseware

*Advanced:*

* Advanced Programming
* MathLink
* Mathematica Implementation
* Designing Mathematica Packages
* Networking
* Advanced New Features
* Mathematica System Administration
* Other topics to be announced.

**Exhibits**

* Hardware systems
* Compatible software
* Books/Publications
* Mathematica services
* Training/Consulting

**Other Contributed Material**

* Short Talks
* Computer-aided Poster Presentations
* Teaching Laboratory Sessions
* Graphics Gallery

**Fees**

Before December 14, 1990:
Regular: $275
Educational: $175
Student: $50

After December 14, 1990:
Regular: $325
Educational: $225
Student: $75

**Information/registration:**

1991 Mathematica Conference
P.O. Box 3848
Champaign, IL 61826-3848
217-398-0700
fax: 217-398-0747
email: conf@wri.com

Deadline for conference submissions November 15, 1990

**About Mathematica**

Mathematica is an integrated technical computing environment,which performs numeric, symbolic and graphical computations, and embodies a high-level programming language.

Developed by Wolfram Research, Inc. Mathematica is available onMacintosh, MS- DOS 386, workstations and larger computers.

The 1991 Mathematica Conference is intended for all current and prospective users of Mathematica.

Sponsored in part by Wolfram Research, Inc. and Addison-Wesley Publishing Company

## C++ Integration in 2.0

Q: Can Iintegrate C++ code in to my application Interface Builder/Objective-C application? How?

A: Yes, you can and it's pretty easy (once you know how)!

The procedure breaks down into three categories of things that you must do: Compiling,- Interface Builder and getting the two languages to talk to each other.

*Compiling*

First, you must use the C++ compiler for all of your source files — including the Objective-C sources.To do this, add the following line to your Makefile.preamble:

```
CC=cc++
```

Now that you are using the C++ compiler, you have to notify the compiler when/if your header files contain non-C++ code. For Objective - C header files, encapsulate your #import directives like this:

```
extern "Objective-C"
{
#import <appkit/Application.h>
#import <appkit/Panel.h>
#import <appkit/TextField.h>
#import <appkit/Button.h>
}
```

For regular C header files, encapsulate your #import directives like this:

```
 extern"C"
{
#import <appkit/publicWraps.h>
#import <objc/error.h>
#import <objc/NXStringTable.h>
#import<strings.h>
}
```

## FTP access for the rmNUG Newsletter.

Issues of the rmNUG Newsletter are now available via anonymous ftp from the following sites:

nova.cc.purdue.edu:~ftp/pub/next/Newsletters/rmNUG.

cs.ubc.ca:~ftp/next/rmNUG.

The rmNUG Newsletter (along with other goodies) will also be available on our local ftp site, alumni.colorado.edu (ipaddr == 128.138.240.32):

alumni.colorado.edu:~ftp/pub/rmNUG.

This represents a big step for rmNUG as far as national recognition goes. I hope that the rmNUG Newsletter (along with others) will help serve as a motivating paradigm for user groups around the world.

***"It Allows You To Link With Libraries That Have Not Been Compiled With The Objective-C Compiler"***

The C++"linkage" directive serves two purposes (when importing interface files that contain straight ANSI - C / Objective-C code). It: allows you to link with libraries that have not been compiled with the C++ compiler. Since libraries on the NeXT computer are compiled with the Objective-C compiler (cc, not cc++), you must use the C++ linkage directive when importing interface files that represent NeXT libraries (or any library that is not compiled with cc++). This tells the compiler to ignore C++ keywords that will result in syntax errors when importing ANSI-C or Objective-C interface files. The linkage directive essentially tells the C++ compiler to treat key words (such as the method names "new", "delete", etc.) as normal identifiers.

*InterfaceBuilder*

Within Interface Builder you need to add the C++, .c and .h files to your project. Add the files separately — the .c file goes in the .c category, and the .h file goes in the .h (other)category.

If you already have a _main.m file, make sure that the option in Interface Builder for generating the main file is turned off. Then, remove the void declaration of the main procedure by replacing:

```
void main(int argc, char *argv[]) {
```

with:

```
main(int argc, char *argv[]) {
```

*Modifying Source Code*

Since the nib files generated by Interface Builder are based the appkit, and it generates source templates in Objective-C, we must envision our program such that Objective-C and nib files are the foundation of our program, and the C++ code is a supporting library.

Now that we can compile, we need to get an Objective-C object and a C++ object to pass messages to one another. Suppose that we have two created objects — a C++ object and an Objective-C object. This is how you would refer to the C++ object and tell it to "dosomething":

```
class CalcEngine            *cplus_object;
cplusObject = newCalcEngine;
cplusObject->doSomething();
```

C++ objects are implemented as regular C structures, so to access public instance variables, or public methods of a C++ object, you dereference the object with the -> syntax as you would a structure member. And this is how you would refer to an Objective-C object from C++:

```
idobjectiveObj;

[newobjectiveObj];
[objectiveCObj doSomethingElse:what];
```

Basically, in either case you use the language constructs of the object to which you are referring, and imbed them in the source file of the other language.

*Example*

There is an example located in /NextDeveloper/Examples/Calculator++ which illustrates the integration of Interface Builder nib files, Objective-C source code, and C++ source code into one program.

## System Release 2.0

There are two versions of the NeXT Software Release 2.0: the end user release and the extended release. These releases differ in content and also hard disk size availability. See their contents outlined below.

**System Release 2.0 - End User Release**

All NeXT Computers equipped with a 105MB Hard Disk Drive offer the following software preinstalled:

*End User*

Workspace Manager
Edit
Digital Librarian
NeXTmail
Preferences
Preview for PostScript
PrintManager
Webster's Ninth New Collegiate Dictionary
Webster's Collegiate Thesaurus
WriteNow Word Processor
DataViz Bridge (DataViz)

*Developer Tools*

VT100 Terminal Emulator (with cut and paste capability)

*Systems Administration Applications*

MailManager
NetInfoManager
Printer Tester

*"May Be More Rumour Than Fact"*

UserManager Installer

The above 2.0 software backup release is available on floppy.

**System Release 2.0 - Extended Release**

All NeXT Computers equipped with a 340MB, 660MB or 1.4GB Hard Disk Drive come with all the software above plus the following:

*End User*

Oxford Dictionary of Quotations
William Shakespeare,The Complete Works
TeX Document Processing System (Radical Eye Software)

*Developer Tools*

Interface Builder
Objective-C Language Compiler
C++ Language Compiler
Objective-C Class Definitions
56001 DSP Tools
GNU Emacs
GNU Debugger
BUG-56 Debugger (Ariel)
Malloc Debugger
AppInspector
PostScript Tools
Application Kit
Music Kit
Sound Kit
On-line Technical Documentation

## Rumours

Here are some tidbits from Usenet. However, some of the following may be more rumor than fact.

1. All new Lotus products will come out on the NeXT (before any other platform). Apparently, Lotus is prototyping all of their products on the NeXT.

2. The "68040" problems are only problems for Hewlett-Packard. HP apparently need some special features on the chip for their machine, and those special HP-features are still buggy. NeXT will not be affected by the HP problems.

3. The NeXT will ship in quantity in the 2nd week of November.

4. NeXT developer training is offered in Pittsburgh and CA. Cost has risen to $1000 plus travel, lodging, etc.

Here are somerumours we've heard from various sources recently:

1. Steve Tyson tells me states Texas company is coming out with X windows with OSF/Motif for the NeXT.

2. Steve Jobs (in InfoWorld or PCWeek) promised a product to connect a NeXT to an AppleTalk network sometime during this coming year.

## rmNUG's Software Contribution Program.

Here is the list of the software that rmNUG has received as of this date:

TextArt, Stone Design.
Compilation Disk, Lighthouse Design.
TopDraw, Media Logic.

Here is the list of the software that rmNUG has been promised:

Diagram!, Lighthouse Design.
Displaytalk 1.0, Adobe
Adobe Plus Pack, Adobe

Here is the current wish list for the rmNUG software contribution program:

BugByte 1.0
Absoft Fortran 77
FrameMaker 2.1
Wingz 1.1
PaperSight
Contact! 1.0
Communicae
Click Art

## Compuserve Access.

For those of you that do not have direct access to the Internet, but do have a modem, you can exchange email with our Internet users in a fairly easy fashion. Although this might only be an interim solution (until Colorado Supernet provides Internet access to us), it seems reliable and can be utilized immediately.

From the Internet: user#1.user#2@compuserve.com From your UUCP site:...!uunet!compuserve.com!user#1.user#2.

If you already have compuserve access but still have a U.S. air mail address (instead of email) for your rmNUG mailing list entry, please put your compuserve address on the sign-in sheet.

*"They Have Attractively Priced These Machines At Very Low Prices"*

## NeXT Cube Auction

Businessland Inc. is having to clear out their inventory of new/used 68030 cubes to make room for the new machines. They have attractively priced these machines at very low prices and are selling them at an incredibly fast rate. For those of you that are interested in a NeXTDimension system or a cube with a Floptical disk drive, this just might be the best solution for you. Consider this: buying a brand new Floptical disk drive alone would cost you ~ $3000.00 (non-educational pricing) whereas you can buy one of these "In-Box" machines with a Floptical disk drive for right under $ 4000.00.

Even considering the price of upgrading to the 68040 CPU board, you can still come out ahead. My understanding is that several of these "Demo" units have been sold (if not all of them) and that by the time you read this article you will probably just be able to purchase the "In-Box" machines. I also have been told that these machines carry a 1 year warranty. A contact person that I have had success with is:

Businessland
Terry Barbato
801 East Butterfield Rd.
Lombard, Illinois 60148
(708)571-2266

## X11R4 for the NeXT.

Currently there are at least two ports underway of the popular X11R4 windowing system to the NeXT computer. Although some feel that X-windows was not good enough to base the NeXT computer's windowing system on, X-windows has indeed become the De facto windowing standard in distributed computing environments. This fact coupled with the large number of X-windows software applications seem to indicate that it would behoove NeXT computers to have an X-windows interface, at least in addition the NeXTStep windowing interface.

Here is the information from a Peter Deutsch about an X-windows port currently in progress at the McGill University in Montreal:

"Our biggest project, and one which is causing considerable interest on the net, is a port of X11 Release 4 of X-windows. This is now in beta and we hope to have it in general release within weeks. In the meantime, it has gone out to well over half a dozen sites, and more are writing every day asking for details. The server is a true two-bit per pixel port, and is an adaptation of the MIT eight-bit server. This release contains NO proprietary code, so full sources will be available. We plan to give the diffs back to MIT for inclusion in a future release."

We have also included the recent press release from PENCOM Software in regard to their port of the X-windowing system:

**Pencom Software Brings X To NeXT**

New York -- October 31, 1990 -- Pencom Software today announced plans to port and market the MIT X Consortium's X11.R4 and the Open Software Foundation's Motif 1.1 on the NeXT Computer System. The product will be available directly from Pencom Software early next year and will provide a full X11.R4 server running within NeXTstep, NeXT's Display Postscript-based graphical user interface. The server will be capable of supporting standard X11.R4 clients and applications and will provide NeXT machine users with the graphical connectivity critical to functioning in today's heterogeneous networking environment.

Pencom has designed this X-server to coexist in the NeXTstep environment, allowing the execution of X applications and X public domain software. Users will have the capability to develop and use both NeXTstep and X applications. Pencom will also offer and support Motif 1.1 on the NeXT platform.

According to Pencom Software's President Ed Taylor, "Our goal is to provide seamless integration of the X window system and NeXTstep, allowing NeXT users to have the best of both worlds. Pencom will provide support services as well as additional functionality for the product."

Pencom's Austin facility is fully equipped with a variety of hardware platforms and uses NeXT computers for product development. "Ours is one of the few internal development environments consisting of a large network of NeXT Computer Systems," Taylor continued.

***"I Wish To Protest... The Exclusion Of NeXT Computers"***

Pencom Software, a division of Pencom Systems, was the quality assurance consultant for the recent Lotus 1-2-3 port to UNIX System V and offers a complete range of off-site development, porting, testing, and quality assurance services from within its state-of-the-art facilities in Austin, Texas. The firm recently contributed the X terminal performance evaluation and cover story for the October issue of UNIXWorld magazine.

Pencom Software is located at:

9050 Capital of Texas Highway North
Suite. 300
Austin, TX 78759
Telephone: 512/343-1111
Fax: 512/343-9650
Electronic Mail: pensoft!jeff@cs.utexas.edu.

Contact:

Pam O'Neal
Pencom Software
512/ 343-1111
pensoft!pam@cs.utexas.edu

Winnie Shows
Smith & Shows
415/329-8880

Motif is a trademark of the Open Software Foundation, NeXT and NeXTstep are registered trademarks of NeXT Computer, Inc.

## True Confessions of a Devoted NeXT User.

For those of you that might have seen the recent "Shopping for a UNIX workstation" article in UNIX Today, here is one NeXT enthusiasts reaction to the apparent omission of the NeXT computer.

To whom it may concern,

I wish to protest in the strongest possible terms the narrow-minded bias revealed by the exclusion of NeXT computers from your article "Shopping for a UNIX Workstation" by Paul Krill in your October 15, 1990 issue.

I am currently using a NeXT cube in the Geophysics Department here at Texas A&M University, and there are many other NeXT workstations distributed throughout the University. Clearly, the relatively recent entry by NeXT into the workstation market has made strong inroads, and your omission of the product line from your article displays, for whatever reason, an unacceptable myopia on your part.

Those of us who, in the past, have looked to your magazine for a thorough and informative presentation certainly find ourselves perplexed by the article and by the general trend in your magazine of ignoring NeXT. Specifically, I refer to the omission on your part of any reasonable coverage of the recent introduction by NeXT of the new products in their product line.

I have access to a Sun SPARC 1+ as a computing platform for my work, and I can assure you that my preferences lie with NeXT workstations, and if your magazine is to occupy a place in my office other than my trash can, future issues of your magazine will address a full complement of product lines in the marketplace. Naturally, this will include NeXT computers.

Sincerely,
Charles N. Herrick
Geophysics Dept.
Texas A&M Univ.
College Station, TX. 77843
(409) 845-1487

If anyone is interested in mailing the Editor of UNIX Today! with your own comments in regard to this omission, here is the address:
UNIX Today!
CMP Publications Inc.
600 Community Drive
Manhasset, NY. 11030

## rmNUG BETA Testing.

WordPerfect, Lotus and Ashton Tate are in the process of developing software products for the NeXT. rmNUG has been selected by each company to participate in their individual BETA test programs. To date we have received PowerStep from Ashton Tate and Improv from Lotus. WordPerfect has informed me that they will be shipping their BETA product to rmNUG in November and should therefore be available for you to pick up at the December meeting.

Here is the current BETA testing roster from the October rmNUG meeting:

**Word Perfect:**
Dave Bowdish
Jacob Gore

*"We Are In Excellent Position To Provide Internet Access To rmNUG Members"*

**Lotus**
Dave Bowdish
Frank Hadsell
Doug Simons
Chase Turner
Glenn Davis
Bob Gregory

**Ashton Tate**

Chase Turner
Frank Hadsell

Please make sure you make provisions to load your software onto a disk the night of the meeting. Thanks for your participation and enjoy!

## The Colorado Supernet "Internet" project.

Now that rmNUG has secured the Golden Nugget award we are in an excellent position to provide Internet access to rmNUG members. We have been negotiating with the Colorado Supernet project representatives and am very close to deciding on a final agreement. This is one very important item that we will be discussing at the November rmNUG meeting.

Before rmNUG signs an agreement with Colorado Supernet it would be wise to get a good estimate of the number of connections and types of services that will be needed over the next year. Please be thinking about your needs in relationship to an Internet connection.

For those of you that are interested in an Internet connection, included is a pricing/feature overview of Telebit modems from UUNET. UUNET is offering these incredible prices through the end of this year. If you don't have a modem yet, Telebit modems are quality products that are a sound investment (not to mention the fact that your modem will also be talking to another Telebit on the other end).

UUNET Technologies, Inc.
3110 Fairview Park Drive, Suite 570
Falls Church, Va 22032
(703)876-5050 (voice)
(703)876-5059 (fax)
info@uunet.uu.net

The Telebit T1000 is a cost reduced version of the to-be-described TrailBlazer Plus. It provides PEP and slower speed modulation (2400 bps, as do all Telebit modems), but the PEP mode interface is limited to 9600 bps. PEP is Telebit's own proprietary protocol which provides outstanding error free performance on the worst telephone lines. The T1000 is priced at $525.00.

The Telebit T1500 offers the industry standard 9600 bps dialup protocol V.32 with V.42 error correction and V.42bis data compression. The T1500 operates in asynchronous and synchronous mode and supports all major modulations standards, including CCITT V.32, V.22bis, V.22, Bell 212A and 103J. In V.42, the modem uses either the LAP-M protocol or MNP Classes 2-5. The T1500 also supports call back security and dialup password protection built into the modem. The T1500 is priced at $625.00.

The Telebit TrailBlazer Plus modem offers PEP capability, but does not support V.32. The TrailBlazer Plus interface can run at 19,200 bps. The TrailBlazer Plus is priced at $760.00.

The Telebit T2500 is essentially a T1500 modem with PEP capabilities. PEP is Telebit's own proprietary protocol which provides outstanding error free performance on the worst telephone lines. The T2500 is priced at $895.00.

## December rmNUG meeting.

We are pleased to announce that Avie Tevanian will be the special feature for the December rmNUG meeting. Avie is currently Chief Operating System Scientist at NeXT Inc. and is also largely responsible for the current implementation of Mach on the NeXT.

A wonderful side effect of being able to have such a popular speaker is that members of the Front Range Unix Users' Group (FRUUG) will also be joining us. FRUUG is the largest Unix Users' organization in Colorado with ~ 360 members. Hopefully this will be the first of several successful joint meetings with FRUUG. Their members and expertise certainly have a lot to offer rmNUG and hopefully we can satisfy their interests in the technology that the NeXT computer offers.

*"...Provide The Users With The Type Of Newsletters, Meetings And Benefits That They Would Expect"*

NeXT Inc. will be sponsoring this rmNUG meeting and therefore will be held at a to-be-determined hotel in the Denver/Boulder area.

## rmNUG Membership and Finances.

It has finally become apparent to those that manage and pay the expenses of rmNUG that it would be in the best interest of rmNUG to start membership dues in January of 1991. Although we have had fairly good responses to our request for funds in the past, rmNUG needs a more sophisticated method of fund collection to provide the users with the type of newsletters, meetings and benefits that they would expect.

Starting in January of 1991, everyone who wishes to receive the rmNUG newsletter, attend the meetings, utilize the free software and resources of rmNUG and be eligible for an rmNUG Internet connection will have to pay a $24/year (est.) membership fee. This modest fee will be due on or before the day of the January meeting (tentatively scheduled for January 16) and will be utilized to cover the month to month expenses of rmNUG throughout the year 1991.

Since I'm not a salesman, I can't personally motivate myself to convince you that this is the "deal of the century" or anything along those lines. Although, if you can't justify $24/year (est.) to be a member of rmNUG then I would have to say you probably aren't interested in things like: - monthly meetings with interesting and motivating special features. - conversation and feedback from other enthusiasts just like yourself. - usage and evaluation of the latest and greatest software/hardware. - a newsletter that helps keep you up to date at the local/national leve l. - the cheapest (legal) Internet connection you'll find.

## The October rmNUG meeting.

The October rmNUG meeting was extra special thanks to Andrew Stone's entertaining presentation. It was truly delightful to see someone like Andrew with so much enthusiasm and energy for life (and his products). Andrew took the better part of 2 hours demonstrating and explaining his latest products: DataPhile and Create.

DataPhile is a flat-file database application with graphics and sound capabilities that allows even the novice to tailor any database application to their specific needs.

Create is the latest complete graphics application from Stone Design that features some new and exciting things like: true 32-bit color, neon outlines, alpha control and much more.

Thanks so much Andrew, we really appreciated your presentation and your welcome to come visit us again any time.

Other things that night included seeing a video tape of the September 18th presentation given by Steven Jobs and demonstrating a new NeXTstation.

Sorry for the confusion with finding the room. It must truly be factual that one would have to graduate with a 4 year degree from the Engineering Center before you could expect to not get lost in the "inner maze".

## User Profiles

*Dr. Aaron Gordon*

Dr. Aaron Gordon is currently a professor of Computer Science at the Colorado School of Mines, where he teaches Introduction to Programming, Data Structures, Machine Learning, and Artificial intelligence.

Dr. Gordon is originally from the Chicago area and attended the University of Illinois, before completing his baccalaureate degree at West Virginia University. Following this he taught high school math for four years before receiving his Ph. D. in Computer Science (Distributed Computing) from the University of Wisconsin. Dr. Gordon then taught for one year at Northwestern before joining the faculty at the Colorado School of Mines.

His current professional interests include artificial intelligence, machine learning, and neural networks. Outside of work Dr. Gordon relaxes with woodworking, travel, musical pursuits, calling square dances (Maybe he'll demonstrate for us.) and family activities.

We are glad to have Dr. Gordon as an rmNUG member and are looking forward to his contributions.

*"NeXT Now Has 52 Users Groups In Five Different Countries"*

*Terry Tautz*

Terry is one of the newest rmNUG members by virtue of the fact that he is also Colorado's newest NeXT Campus Consultant. Terry is currently a Ph.D. candidate in the Department of Cellular, Molecular and Developmental Biology at CU, where he studies the molecular aspects of development using nematode worms as a model system. His undergraduate education includes Bachelor of Science degrees in Biology, Chemistry, and Computer Science from Union College in Lincoln, Nebraska. Terry is excited about the potential of the NeXT computer as a productivity tool for both the sciences and other disciplines. Terry encourages anyone with a NeXT-related question or need to contact him and he will be happy to assist in any way.

## User's Groups

NeXT now has at least 52 users groups, located in five different counties. Due of the size of list we will not include it in every issue.

If you interested in contacting any of these groups, you can contact Dave Bowdish or David Hieb for the user group information.

## Internet Access

We will no longer be printing in every issue how to access the internet sites. If you should need this information, you may refer to one of our earlier issues.

If you do not have access to one of our earlier issues, you may contact Dave Bowdish or David Hieb for this information.

## Compuserve Forum

As was mentioned in last month's "From the Editor", Dave Bowdish has made a formal proposal to Compuserve for a NeXT forum.

If this forum is approved, it will provide NeXT Users a place hold "live" conferences with other NeXT users and developers from around the world.

A NeXT forum also has a library section where you can upload and download freeware programs, templates, programming tools, and text files.

Finally, the forum will provide a message board that will allow you to post questions and receive answers usually within hours. This forum keep you up to date on what is happening in the NeXT community.

Compuserve currently has 640,000 members from North America, Europe and Japan.

## Wanted: Ideas & Submissions

We will also accept letters to the editor and NeXT-related classified advertising.

All submissions may be sent to:
Dave Bowdish
73340.2146@compuserve.com

or by U.S. Snail

David Bowdish
3400 South Lowell Blvd. 1-106
Denver, CO 80236

## From The Editor

I hope that you enjoy this issue of the rmNUG Newsletter. It is our largest yet! Special thanks should go to Jacob Gore, Lotus, and Ashton-Tate for there contributions. The portions that were written by Jacob Gore and myself involved the reading of over 150 pages of court opinions, press releases, position papers, and articles. We hope that you will enjoy the "Debate".

The December issue will be a special on the new products that are coming out for NeXT. Many of these products are not listed in the Fall Software and Peripherals guide.

The January issue will be our first annual Best and Worst of 1990 issue. In the future you will see more exciting and informative articles. As you can see, we put out one of the largest monthly NeXT Newsletters in the country. If you have any ideas of what you would like to see in future usues of the newsletter, feel free to contact us.

We are currently looking for volunteers to write monthly columns in the newsletter. If you have a special interest and would be interested you can contact me at:

73340.2146@compuserve.com

*Dave Bowdish, Editor-in-Chief*

# The User Interface Copyright Controversy

## Introduction

An issue that has become increasingly important in the computer industry has been the issue of user interface copyrights. This issue affects NeXT users because there are individuals in the industry who are calling for a boycott of prominent software companies that are supporting NeXT by producing NeXT compatible software.

Because this issue has become to emotionally charged. We decided to run the following articles relating to the issue of user interface copyrights. The first article is a position paper that was put out by the League for Programming Freedom. Interspersed within the position paper (in *italics*) is a counterpoint argument written by David Bowdish. This was done because rmNUG has chosen to take a neutral stance on this issue, but wished to have both sides represented.

In addition, rmNUG has gotten exclusive articles from both Lotus and Ashton-Tate. Jacob Gore (a member of LPF) has also written an article in support of LPF's stand. Because the LPF's position paper was not originally intended for a point/counterpoint debate, Jacob offers another view in defense of the LPF stance. We wish to give special thanks to Jacob for the many hours of time he has spent helping to develop this special section.

We wish to make it very clear that these following articles are opinions only and do not necessarily represent the views held by rmNUG, rmNUG members, rmNUG Newsletter or NeXT and/or their employees. Our sole purpose is that when you are done reading these articles you will have a better understanding of this issue from the various parties that are directly or indirectly involved with this very complicated issue.

### Against User Interface Copyright

September 24, 1990

The League for Programming Freedom

In June 1990, Lotus won a copyright infringement suit against Paperback Software, a small company that implemented a spreadsheet that obeys the same keystroke commands used in Lotus 1-2-3.

*Paperback admittedly copied Lotus' unique menu structure, and advertised themselves as being virtually identical to Lotus 1-2-3. The keystroke commands (Macro's) were, admittedly, intended to be exactly like Lotus. In fact, Paperback's V-P Planner was changed from it's independently developed version to copy Lotus' command menu structure.*

Paperback was not accused of copying code from 1-2-3---only of supporting compatible user commands.

*As the final judge's ruling states, they could have created compatibility without copying almost exactly the identical menu structure. For example, they could have incorporated a translation program legally.* ***Supportability is not illegal.***

Such imitation was common practice until unexpected court decisions in recent years extended the scope of copyright law.

*Copying complicated menu structures was not commonplace, and even if it was, that does not necessarily make it a legal right. "unexpected" is not defined or elaborated, but does make the decisions sound ominous.A court decision is based upon the constitution and on Congressional Law, the courts have not extended the scope. Only Congress can, which they did with computer programs and other items such as motion pictures, dramatical presentations, sound recordings, and artwork.*

Within a week, Lotus went on to sue Borland over Quattro, a spreadsheet whose user interface has only a few similarities to 1-2-3. Lotus claims that these similarities in keystroke sequences and/or the ability to customize the interface to emulate 1-2-3 are enough to infringe.

*There has not been a ruling, nor has both sides of the case been fully presented yet. A Lotus spokesman stated that the lawsuit is over the 1-2-3 option in Quattro which mimic's Lotus' 1-2-3 presentation, they are not arguing Quattro's own original presentation of a spreadsheet.*

More ominously, Apple Computer has sued Microsoft and Hewlett Packard for implementing a window system whose displays partially resemble those of the Macintosh system. Subsequently Xerox sued Apple for implementing the Macintosh system, which derives some general concepts from the earlier Xerox Star system.

*"*Ominously*" makes the case sound scary, but the lawsuit was filed over a contract that was made between Apple and Microsoft in 1985. The contract gave Microsoft a "*non-exclusive, worldwide, royalty-free, perpetual, and non-

transferable license*" on various derivative works in present and future programs and the right to license these to third party's. Unfortunately, the agreement said nothing about later versions of Windows, and a lawsuit was filed. The judge has since ruled on what was and wasn't permissible under the contract and rest of the case will decide how much, if at all, Microsoft went beyond the written agreement. Hewlett Packard was included in the lawsuit because they had received a license from Microsoft for the products in question. This case, while involving copyrights, is primarily over a poorly-written contract both parties had signed.*

*Xerox filed a six-claim lawsuit, lost on five claims and chose to withdraw the sixth claim.*

These suits try to broaden the Lotus decision and establish copyright on a large class of user interfaces. The Xerox lawsuit was dismissed because of a technicality;

*The "*technicality*" was that Xerox was trying to circumvent copyright law. In copyright law -* ***ideas are not copyrightable only the expression of an idea****. Xerox's suit was trying to say their ideas (as opposed to expressions) were protected.*

but if their planned appeal succeeds, a monopoly of unprecedented scope could still result.

*What the appeal, if there is one, is based on is unknown; as are the results of the appeal. To say that a monopoly of unprecedented scope could result is alarmist and unrealistic.*

And Ashton-Tate has sued Fox Software for implementing a database program that accepts the same programming language used in dBase. This is a radical demand, but in the current judicial climate, the threat cannot be dismissed.

*This case has not yet been decided in court. Anyway, it is not relevant to this argument because this lawsuit is about the copyrightability of a programing language, not over the copyrightability of a User Interface. "*radical demand*", "*current judicial climate*", "*threat*" — These author's very emotional statements were not supported with any factual data.*

While this paper addresses primarily the issue of copyright on specific user interfaces, most of the arguments apply with added force to any broader monopoly.

*The primary issue* ***is*** *"user interfaces", the rest of the sentence seems to allude to other (unrelated) topics.*

**What Is a User Interface?**

A user interface is what you have to learn to operate a machine. The user interface of a typewriter is the layout of the keys. The user interface of a car includes a steering wheel for turning, pedals to speed up and slow down, a lever to signal turns, etc.

*The user interface is the expressed results of the computer program. It is not analogous to items such as automobiles and typewriters which fall under patent law, instead of copyright law. A proper analogy would be a comparison with elements of a play, book, piece of artwork, etc.. Items that are covered under the copyright law.*

When the machine is a computer program, the interface includes that of the computer---its keyboard, screen and mouse---plus those aspects specific to the program. These typically include the commands, menus, programming languages, and the way data is presented on the screen.

*Again, the point is confused by the mixing of objects that are covered under the copyright law (computer, keyboard, screen, & mouse) with items that are addressed under the copyright law (commands, menus, programming languages, screen presentation).*

A copyright on a user interface means a government-imposed monopoly on its use. In the example of the typewriter, this would mean that each manufacturer would be forced to arrange the keys in a different layout.

*Copyrights (and Patents) are, by definition, limited monopolies allowed by the government and the Constitution. A typewriter is an item that is covered under patent law, not copyright law, and is irrelevant to the author's contentions.*

## The Purpose of Copyright

In the United States, the Constitution says that the purpose is to "promote the progress of science and the useful arts." Conspicuously absent is any hint of intention to enrich copyright holders to the detriment of the users of copyrighted works.

*A more complete reading of the Constitution states that "*The Congress shall have Power . . . To Promote the Progress of Science . . . by securing for limited Time to Authors . . . the exclusive right to their . . . Writings. . . .*" The constitution*

*does give the copyright holder the approval to be "*enriched*". As to the "*detriment of users of copyrighted works*", how is the user detrimented by using a copyrighted program (or reading a book, watching a play, viewing a photograph, etc.)?*

The Supreme Court made the reason for this absence explicit, stating in Fox Film vs. Doyal that "The sole interest of the United States and the primary object in conferring the [copyright] monopoly lie in the general benefits derived by the public from the labors of authors."

*This is not a reasoning of an absence in the constitution, but one sentence, in a longer ruling, that explains why the government allows a limited monopoly (copyright).*

***In fact** the Supreme Court ruled in Mazer v. Stein (1954) that "*encouragement of individual effort by personal gain is the best way to advance public welfare through talents of authors and inventors in 'Science and useful Arts'*"*

In other words, since copyright is a government-imposed monopoly, which interferes with the freedom of the public in a significant way, it is justified only if the benefit to the public exceeds the cost to the public.

*This restatement of the Supreme Courts ruling in **no way** resembles what the ruling stated. Copyright law allows for the copyright of an original expression of an idea as long as that expression is not obvious or functionally necessary.*

The spirit of individual freedom must, if anything, incline us against monopoly.

*Perhaps, but are we not benefited by some limited monopolies such as drug companies that create medicines that save lives because their right to their limited monopoly allows them the ability to recover the cost of research and development?*

Following either the Supreme Court or the principle of freedom, the fundamental question is: what value does user interface copyright offer the public---and what price would we have to pay for it?

*We've already argued the "*Supreme Court*" and "*principle of freedom*" points. Besides, copyrightability is not determined by some imaginary, arbitrary scale of benefit -vs.- cost.*

## Reason #1: More Incentive Is Not Needed

The developers of the Star, the Macintosh system, 1-2-3 and dBase claim that without interface copyright there would be insufficient incentive to develop such products. This is disproved by their own actions.

*Each of these developers made separate claims, any attempt to lump them together is obscuring the issue. Also, the statement about their actions as evidence to the contrary is unsubstantiated.*

Until 1986, user interface copyright was unheard of. The computer industry developed under a system where imitating a user interface was both standard practice and lawful.

*The technology of screen displays (user interfaces), or lack of, is probably a primary reason. The technology limited the expressability of the program.*

*To say that imitation was "*both standard practice and lawful*", "*standard practice*" is a qualitative term that could be stretched to just about anything. To say it was lawful is inaccurate on it's face since recent rulings are based on the Copyright Act of 1976 and amendments of 1980. Because somebody does not defend their rights does not mean that they do not have rights.*

Under this system, today's plaintiffs made their decisions to develop their products. When faced with the choice in actuality, they decided that they did, indeed, have "enough incentive".

*These companies have produced new products. But that is irrelevant.*

Even though competitors were free to imitate these interfaces, this did not prevent most of the original products from being successful and producing a large return on the investment.

*Competitors were not free to copy interfaces as the later lawsuits indicated. As to the second point, is it fair for a company to lose it's copyright because it's product was so good it made money?*

In fact, they were so successful that they became {de facto} standards. (The Xerox Star was a failure due to poor marketing even though nothing similar existed.)

*Again, should a company loose it's copyright because it's product is so good. Besides, hindsight has proven that "*standards*" have not remained constant or permanent.*

Even if interface copyright would increase the existing incentive, additional improvements in user interfaces would not necessarily result.

*It is ludicrous to say that if a copyright increases incentive to improve, that improvements may not come anyway. Either it is an incentive or not, and why would anyone argue against giving incentives for improvement?*

Once you suck a bottle dry, more suction won't get more out of it. The existing incentive is so great that it may well suffice to motivate everyone who has an idea worth developing.

*There is no evidence to support this statement. In fact, some of today's software products cost millions of dollars to produce; the more expensive the project, the riskier it becomes (financially), the more incentive is needed to produce that product.*

Extra incentive, at the public's expense, will only increase the price of these developments.

*What "***extra** incentive*"? These are basic rights given to the people by the Constitution and the Congress. It's hard to have an "*increased*" price if there was no development in the first place because there wasn't enough protection (incentive).*

## Reason #2: "Look and Feel" Will Not Protect Small Companies

The proponents of user interface copyright claim that it would protect small companies from being wiped out by large competitors.

*Many companies have argued that user interface copyright will benefit small companies by preventing larger organizations (with larger resources) from creating visual duplicates that will dominate a market.*

Yet look around: today's interface copyright plaintiffs are large, established companies.

*The size of a company does not determine it's rights. In virtually every area of consumer product you have companies that are producing illegal copies (designer jeans, luxury watchs, etc.).*

User interface copyright is crushing when the interface is an effective standard.

*"*crushing*" sounds terrible but do we say it's okay to copy something because it's favored in the marketplace? Is it okay to sell fake Rolex watches because of the popularity of Rolex? The fakes use different parts to create the same appearance.*

However, a small company is vulnerable when its product is little used, and its interface is little known. In this situation, user interface copyright won't help the small company much.

*So? Because a law doesn't help some people as much, you deny everybody their rights?*

Imagine a small company with 10,000 customers: a large company may believe there is a potential market of a million users, not reached by the small company, for a similar product. The large company will try to use its marketing might to reach them before the small company can.

*As long as it doesn't violate a patent or a* ***copyright****, it's their right. More people will ultimately benefit from the product by it's use, it's called capitalism.*

User interface copyright won't change this outcome.

*If no copyright law is violated, correct.*

Forcing the large company to develop an incompatible interface will have little effect on the majority of potential customers---those who have not learned the other interface.

*The copyright laws would be working. For the larger company to get the customers to adapt to a different interface, it would have to produce a better product. The consumer benefits.*

They will buy from the large company anyway.

*Copyright laws cannot change economic realities, but given a* ***choice*** *people will choose the better product. Again, that's how capitalism works. Remember, all these "*large*" companies were small companies at one time.*

What's more, interface copyright will work against the small company if the large company's product becomes an effective standard.

*If the company cannot produce a better product, but only copy another, why should the big company suffer (i.e. Rolex).*

Then new customers will have an additional reason to prefer the large company. To survive, the small company will need to offer compatibility with this standard---but, due to user interface copyright, it will not be allowed to do so.

*Again, **compatibility is not illegal**. It is blatant copying that is illegal. The final decision clearly stated this in the Lotus' v.Paperback case, the ruling even demonstrated examples of products in the marketplace that were compatible but not infringing on Lotus' copyright.*

Instead of relying upon monopolistic measures, small companies are most successful when they rely on their own inherent advantages: agility, low overhead, and willingness to take risks.

*Aside from the incongruity that there can be small companies in a true monopoly situation, this is correct. The company will have to create a product that is better in order to increase their market share. Again, that's capitalism.*

## Reason #3: Diversity in Interfaces is Not Desirable

The Copyright system was designed to encourage diversity; its details work toward this end. Diversity is the primary goal when it comes to novels, songs, and the other traditional domains of copyright. Readers want to read novels they have not yet read.

*The copyright laws were written to protect the "*author's*" right to their work. Diversity was never a stated goal of the Constitution or Congress. Remember, ideas are not copyrightable, only the expressive elements of an idea.*

But diversity is not the goal of interface design. Computer users want consistency in interfaces because this promotes ease of use.

*Consistency does not mean equal ease of use. For example, look at Lotus' Improv or Ashton-Tate's PowerStep and compare it to the first "*standard*" VisiCalc. Besides, diversity means choice. It is not fair to the consumer to limit the choices available. It creates stagnation.*

Thus, by standardizing street signs and symbols on automobile dashboards, we have made it possible for any driver in the world to operate any car with virtually no instruction.

*Not entirely true, but basically irrelevant to this discussion. Street signs and symbols are not consumable products.*

Incompatibility in interfaces is a price to be paid when worthwhile, not a benefit.

*There are "*benefits*" to any successful product, similarity to another product may or may not be a benefit, let alone a compelling benefit.*

Significantly better interfaces may be hard to think of, but it is easy to invent interfaces which are merely different. Interface copyright will surely succeed in encouraging this sort of "interface development". The result will be gratuitous incompatibility.

*As stated before, a product that is not demonstratively better will have a hard time developing a profitable market share.*

## Reason #4: Meaningful Competition Will Be Reduced

Under the regime of interface copyright, there will be no compatible competition for established products.

*"regime" - another frightening word. A visual duplicate is not "*Meaningful Competition*". Meaningful competition is a product that is substantially different/better to offer a real choice to the consumer.*

For a user to switch to a different brand will require retraining.

*Then the benefits of the product will have to worth the "*switch*" to the new product.*

But users don't like to retrain, not even for a significant improvement. For example, the Dvorak keyboard layout, invented several decades ago, enables a typist to type faster and more accurately than is possible with the standard "QWERTY" layout. Nonetheless, few people use it. Even new typists don't learn Dvorak, because they want to learn the layout used on most typewriters.

*Very poor example. This demonstrates the dangers of a "standard". Progress can be stifled by it.*

Alternative products that require such an effort by the consumer are not effective competition.

*Correct, if they do not provide substantial benefits they will not be "*effective competition.*"*

The monopoly on the established interface will yield in practice a monopoly on the functionality accessed by it. This will cause higher prices and less technological advancement---a windfall for lucky businesses, but bad for the public at large.

*Reality, has proven just the opposite. As stated before, copyrights encourage companies to advance. Advancement is required to compete with a popular product, and the copyright law ensures the company will receive the fruits of it's labors. Competition and advancement is created -- both which are good for the companies and the public.*

## Reason #5: Incompatibility Does Not Go Away

If there had been a 50-year interface copyright for the steering wheel, it would have expired not long ago. During the span of the copyright, we would have got cars steered with joysticks, cars steered with levers, and cars steered with pedals. Each car user would have had to choose a brand of car to learn to drive, and it would not be easy to switch.

*Again we are mixing patent law and copyright law which operate differently. But if this analogy were to be carried out under copyright law, it would still be incorrect. Copyright law protects the expression of an idea, not the idea. Further, the expression must not be obvious or functionally necessary. Steering a car with a steering wheel is an obvious expression of the idea of steering a car. The proof being that there have been almost no alternatives to steering the car introduced since the car was invented.*

The expiration of the copyright would have freed manufacturers to switch to the best of the known interfaces. But if Ford cars were steered with wheels and General Motors were steered with pedals, neither company could change interface without abandoning their old customers. It would take decades to converge on a single interface.

*To continue with the very stretched analogy, why is the steering wheel the standard in Ford and GM cars today? Because under copyright law the steering wheel would be both functional and obvious. They were not protected by the copyright law that the author is valiantly fighting so hard against. Theory is fine, but reality is proving the theory wrong.*

## Reason #6: Users Have Invested More Money Than Developers

The plaintiffs like to claim that user interfaces represent large investments on their part.

*This is playing games with words. The interface is the most visible part of the program and figures heavily in the customers decision to purchase the product. The large investment is in the development of the program, of which the user interface is an integral part. A bad interface = no sales = $$$ losses.*

In fact, the effort spent designing the user interface of a computer program is usually small compared to the cost of developing the program itself. The people who make a large investment in the user interface are the users who train to use it. Users have spent much more time and money learning to use 1-2-3 than Lotus spent developing the entire program, let alone what Lotus spent develop the program's interface.

*There is no loss for the consumer, unless they switch to a different product that does not offer enough benefits to offset the learning curve of the new software. Besides, the use of 1-2-3 has saved the users even more in labor and benefits than they spent in purchasing and training to use the product. If this wasn't the case than the product wouldn't have sold.*

Thus, if investment justifies ownership, it is the users who should be the owners.

*The users do own the product. That was there investment.*

The users should be allowed to decide---in the marketplace---who may use it.

*The marketplace does decide. The products that are perceived to be better will generally sell better, and if the product stinks, than they don't use it and purchasers tell others not to use it.*

According to *Infoworld* (mid January 1989), computer users in general expect user interface copyright to be harmful.

*Expressed expectations are based on knowledge, perceptions and how the question was asked. There are very few computer users who understand how user interface copyrights really effect the developer, consumer and the marketplace. Just as there are lawyers and economists who do not understand the implications of a superconducting computer chip.*

## Reason #7: Discrimination Against Software Sharing

User interface copyright discriminates against freely redistributable software, such as freeware, shareware and public domain software.

*This is not true. If the products truly are freeware, shareware and public domain than they are not affected by the copyright laws.*

Although it *may* be possible to license an interface for a proprietary program, if the owner is willing, these licenses require payment, usually per copy.

*This is true, but why not develop an original interface, instead of copying one.*

There is no way to collect this payment for a freely redistributable program.

*Obviously, copying someone else's work and then giving it away free is illegal.*

The result will be a growing body of interfaces that are barred to non-proprietary software.

*Only PARTS of interface are copyrightable, the parts that are obvious choices or are functionally necessary are NOT copyrightable! The only parts of the user interface that are copyrightable are those that have a virtual limitless way of being expressed.*

Authors of these programs donate to the public the right to share them, and sometimes also to study and change their workings. This is a public service, and one less common than innovation. It does not make sense to encourage innovation of one sort with means that bar donation of another sort.

*Programmers who produce original programs for the free use of others are to be complemented. They are not in danger.*

## Reason #8: Copyright Will Be a Tool For Extortion

The scope of interface copyright is so vague and potentially wide that it will be difficult for any programmer to be sure of being safe from lawsuits.

*The copyright law in regards to user interfaces is very clear. The parts of an interface are copyrightable are those that are an **expression** of an idea that is **non-obvious**, **not functionally necessary** and have a virtual limitless numbers of ways that it can be expressed.*

Most programs need an interface, and there is usually no way to design an interface except based on the ideas you have seen used elsewhere.

***Ideas** are not copyrightable! Furthermore, building on ideas is encouraged by copyright law.*

Only a great genius would be likely to envision a usable interface without a deep resemblance to current practice. It follows that most programming projects will risk an interface infringement suit.

*Since most of the parts of an interface are functionally necessary and are obvious, there will always be similarities. There is virtually no risk to a programmer if he/she really understands what is copyrightable on a user interface. It is not a difficult concept to understand.*

The spirit of "Millions for defense, but not a cent for tribute" is little honored in business today. Customers and investors often avoid companies that are targets of suits; an eventual victory may come years too late to prevent great loss or even bankruptcy. Therefore, when offered a choice between paying royalties and being sued, most businesses pay, even if they would probably win.

*Opinions to the contrary, this type of unethical suing is very rare in the business world. Despite that, just because a company may act unethical it does not make a sound argument against companies having copyright or patent protection by the government.*

Since this tendency is well known, companies often take advantage of it by filing or threatening suits they are unlikely to win. As long as any interface copyright exists, this form of extortion will broaden its effective scope.

*This is a relatively rare practice that is illegal and unethical. It still doesn't make a good defense against copyright and patent laws. If a company would do this, it is just as easy for them to threaten others for copying code, they don't need to use interface infringement. Changing the law would not change the ethical practices of a company.*

## Reason #9: Interface Copyright Inhibits Useful Innovation

Due to the evolutionary nature of interface development, interface copyright will actually retard progress.

*"*Standards*" and "*innovation*" are usually mutually-exclusive terms.*

Fully fleshed-out interfaces don't often arise as *tours de force* from the minds of isolated masters. They result from repeated implementations, by different groups, each learning from the results of previous attempts. For example, the Macintosh interface was based on ideas tried previously by Xerox and SRI, and before that by the Stanford Artificial Intelligence Laboratory. The Xerox Star also drew on the interface ideas that came from SRI and SAIL. 1-2-3 adapted the interface ideas of Visicalc and other spreadsheets. dBase drew on a program developed at the Jet Propulsion Laboratory.

*Once again, IDEAS are NOT COPYRIGHTABLE. This sort of building (legally referred to as "On the Shoulders of Giants") is encouraged by and the reason for copyright law.*

This evolutionary process resembles the creation of folk art rather than the way symphonies, novels or films are made. The advances that we ought to encourage are most often small, localized changes to what someone else has done.

*Again, Ideas are not copyrightable, no matter how good (or small) they are.*

If each interface has an owner, it will be difficult to implement such ideas.

*Each interface does not have an "*owner*" though some parts may be copyrightable and copyrighted. Once again, Ideas are not copyrightable.*

Even assuming the owner will license the interface that is to be improved, the inconvenience and expense would discourage all but the most determined.

*The implication being that interfaces cannot be "*improved*" without the consent of the supposed copyright owner. Improvements are either new expressions or new ideas, both of which are legal. The only thing that would be illegal would be the use of the original's copyrighted elements (which may not exist after the "*improvements*").*

Users often appreciate small, incremental changes that make programs easier or faster to use. This means changes that are upwards compatible, or affect only part of a well-known interface. Thus, on computer keyboards, we now have function keys, arrow keys, a delete key and a control key, which typewriters did not have. But the layout of the letters is unchanged.

However, such partial changes as this are not permitted by copyright law. If any significant portion of the new interface is the same as a copyrighted interface, the new interface is illegal.

*You cannot make a **minor change** to anything that is copyrighted and get around the copyright. That just wouldn't be fair. But if the author is referring to the adding of keys to a keyboard, again that is mixing patent law and copyright law. The analogy does not work, they operate on separate principles.*

## Reason #10: Interface Developers Don't Want Copyright

At the 1989 ACM Conference on Computer-Human Interaction, Professor Samuelson of Emory School of Law presented a "mock trial" with legal arguments for and against user interface copyright, and then asked the attendees---researchers and developers of user interfaces---to fill out a survey of their opinion on the subject.

The respondents overwhelmingly opposed all aspects of user interface copyright, by as much as 4 to 1 for some aspects. When they were asked whether user interface copyright would harm or help the field, on a scale from 1 to 5, the average answer was 1.6. {See the May 1990 issue of the Communications of the ACM, for the full results.}

The advocates of user interface copyright say that it would provide better security and income for user interface designers. However, the survey shows that these supposed beneficiaries would prefer to be let alone.

*In statistical analysis there is a phrase that is also used by computer programmers. GIGO, Garbage In, Garbage Out. In this case you have a non-random homogeneous group of non-legal experts who witnessed a mock trial of unknown quality and then they were asked unspecified questions in which they responded very much alike. This is a reason for not having user interface copyrights? Determining law based on a poll is absurd. Another poll of computer software company directors could give an entirely different response and it would be just as valid an argument.*

## Do You Really Want a User Interface Copyright, Anyway?

For a business, "locking in" customers may be profitable for a time. But, as the vendors of proprietary operating systems have found out, this generates resentment and eventually drives customers to try to escape. In the long run, this leads to failure.

*What is the difference between "*locking in*" and "*industry standards*". They provide the same results. That's why progress*

*is inevitable.*

Therefore, by permitting user interface copyright, society encourages counterproductive thinking in its businesses. Not all businesses can resist this temptation; let us not tempt them.

*User interface copyright is the reward for progress. To take away the award, is to hinder progress and encourage the status quo.*

## Conclusion

Monopolies on user interfaces do not serve the users and do not "promote the progress of science and the useful arts." User interfaces ought to be the common property of all, as they undisputedly were until a few years ago.

*There is a lot of ignorance on this issue of user interface copyrights and the lawsuits that were mentioned. Xerox sued and lost because of the copyright law. Lotus won a lawsuit where the defendants admittedly changed their spreadsheet so that it was virtually identical to 1-2-3. Apple's lawsuits were primarily over a poorly written contract that was signed between Apple and Microsoft. Ashton-Tate's trial hasn't concluded yet, but the lawsuit is not primarily about user interfaces*

*You are being asked to boycott four different companies because they filed lawsuits. The companies are not changing or creating law, but they are only trying to protect what they believe is their legal rights. There has been no evidence to the contrary. They have one other thing in common, they are big companies. It is foolish to assume that because a company is big it must also be bad. There have been several lawsuits filed by small computer companies over many of the same issues. Why hasn't the LPF called for a boycott of those companies? Why has the LPF called for a boycott of companies before all the facts are presented in court? Finally, with new technology there is going to be questions that are going to have to be answered by the courts. This has happened with every new technology that has appeared since the Constitution was written. Why punish these companies with boycotts, just because they are the first big companies to go to court to protect what they believe is their rights? Protect yourself from ignorance and get the facts.*

## What You Can Do

Don't do business as usual with the plaintiffs, Xerox, Lotus, Apple and Ashton-Tate. Buy from their competitors instead; sell their stock; develop new software for other computer systems and port existing applications away from their systems.

Above all, don't work for the "look and feel" plaintiffs, and don't accept contracts from them.

Join the League for Programming Freedom---a grass-roots organization of programmers and users opposing software patents and interface copyrights. (The League is not opposed to copyright on individual programs.) Annual dues are $42 for employed professionals, $10.50 for students, and $21 for others. We appreciate activists, but members who cannot contribute their time are also welcome.

Phone us at (617) 243-4091, send Internet mail to {league@@prep.ai.mit.edu}, or write to:

League for Programming Freedom 1 Kendall Square #143 P.O. Box 9171 Cambridge, MA 02139

Give copies of this paper to your friends, colleagues and customers.

In the United States, write to your representatives and to these Congressional subcommittees:

House Subcommittee on Intellectual Property 2137 Rayburn Bldg. Washington, DC 20515

Senate Subcommittee on Patents, Trademarks and Copyrights United States Senate Washington, DC 20510

In Europe, the European Commission is proposing to institute interface copyright. Express your opposition by writing to:

Jean-Francois Verstrynge DG 3/D/4 Commission of the European Communities 200 Rue de la Loi 1049 Bruxelles BELGIUM

Also write to your own representative to the European Parliament.

*If you disagree with the LPF, contact the companies involved and get the facts for yourself and send your opinions to the above addresses.*

*Support whatever company you feel treats you right and don't buy anything from any company who mistreats you.*

*Take your $10.50 to $42.00 and buy yourself a nice dinner or donate it to a worthy charity, that much money could do a lot of good.*

## Lotus Responds

Recent criticism of Lotus' efforts to protect its copyrights in Lotus 1-2-3 has been spirited. I believe that this criticism reflects a poor understanding of copyrights in general and limited familiarity with Lotus' lawsuits against Paperback Software International, Mosaic Software Inc., The Santa Cruz Operation and Borland International.

About copyrights in general, many are in the dark about what is and what is not a question of copyright. Some seem convinced that Lotus is seeking protection for such non-copyrightable elements of 1-2-3 as its grid of cells organized in rows and columns, its two-line moving-cursor menus, the ability to have the suer select an item by typing its initial letter, or a single command sequence such as "File Save." We are not. These elements are not copyrightable, and we have long made clear that they are not the basis of our suits. Lotus has not been spending its time in court trying to stop developers from including these non-copyrightable elements in their designs.

What we have done is to assert any copyright holder's right to stop other vendors from copying substantial parts of its user interface, in particular 1-2-3's menus, their commands, structure and sequence. What we're talking about here is a complex sequence of more than 300 commands. In each of our four suits, the company we have sued has copied virtually verbatim 1-2-3's menu commands and sequence in their products. The federal copyright law protects authors from having "substantial" parts of their creations copied by others. As Judge Keeton found in the Paperback opinion, there are many ways to express the functions of a spreadsheet in menus; the 1-2-3 interface is but one of those myriad choices. As Microsoft's Excel and as Quattro Pro's non-Lotus 1-2-3 menu choices each show, one can develop a spreadsheet with menus radically different from those of 1-2-3.

The Paperback decision does not break new ground in the copyright law. Before that case, it violated the law to engage in what the Judge called "overwhelming and pervasive" copying, the kind of copying on which we have sued. Our industry's success rests on innovation, and it is copyright law that provides the main bulwark against having someone expropriate your innovation as if it were his property.

Lotus' claims against Borland also remain misunderstood by many. Borland's Quattro and Quattro Pro have their own native menus, developed by Borland's own development teams. Purchasers of Quattro, however, get more than what Borland itself has to offer. At the beginning of each session, Quattro users choose whether to invoke Borland's menus and commands or whether to sue the nearly 300 Lotus 1-2-3 commands in their copyrighted sequence and structure. Typing "Q123" at the DOS prompt brings up the Lotus 1-2-3 menu. That, we believe, is clearly unlawful under the copyright law — just as it is illegal to include two songs on a record — one that is original and one that is a copy of the work of someone else.

Critics suggest that Lotus is litigating at the expense of its development efforts. The accusation that we litigate rather than innovate simply won't stick. Protecting our creations as well as building new products are both important elements in responsible management. We've been doing a lot in the research lab and the marketplace — both to enhance 1-2-3 and to develop and improve other products. We devote immense resources to research and development (much, much, more than to litigation) — and the results are innovative new products such as Notes, Improv, and innovative enhancements to existing products such as 1-2-3/G and Freelance Graphics for OS/2.

We see nothing wrong with standing up for our rights in a highly competitive marketplace. But these rights — not just Lotus' rights, but everyone's rights on this matter — are also in the best interest of the software industry and in the best interest of our users.

Thomas Lemberg
Vice President and General Counsel
Lotus Development Corp.

*Editor's note: the following was included from Lotus, it was not identified but is likely from the closing argument that Lotus presented at the Lotus v. Paperback suit.*

If various elements in new software were not protected by copyright, the big losers would be the small developers. As you know, the history of our industry has been one of creative designers who identify an unfilled need in the market and then design and build a superior product to fill that need.

Without copyright protection, you can imagine what would happen. The first time the developer demonstrated an attractive new product at COMDEX or some other industry gathering, hundreds of programmers in corporate research laboratories would quickly hunker down to create their own versions of the program. A big firm could soon create a clone of almost any new program, and then market it heavily, and rob the developer of the value of his creative efforts. Without copyright protection, creators would lose out. And because rewards matter, there would soon be fewer creators, fewer new products, and users would suffer. Mr. Vizachero, however, expressed a reasonable confidence that government users will always have "plenty" of good software; the irony is that this luxury is contingent upon the very copyright law that Vizachero decries

## LPF Member Responds

**RESPECT**

Due to a mistake in the printed schedule, waiting for the OOPSLA/ECOOP'90 banquet was the kind of experience that...-brings people together. (Two thousand of them in one small lobby.) The food was typical catered banquet stuff. But the banquet speaker made it all worthwhile. I don't envy those who will have to follow Bill Buxton's act at future OOPSLAs.

Bill is an Adjunct Professor in Computer Science at the University of Toronto, and a consultant to Xerox PARC and to Commodore. He controlled his entire audio-visual presentation with his Amiga (which he thanked in his last slide for not crashing). The title was "C. P. Snow's Two Cultures Revisited." The moral of the talk was that computer technology is now at a point where the "two cultures," liberal arts intellectuals and scientific intellectuals, have a wonderful opportunity to cooperate. The gap between them can be bridged using effective and innovative human-computer interfaces. The presentation is really a "must-see," and I hope ACM makes the video tape of it available.

During his talk, Bill, a musician by profession, took out his electronic saxophone and played a jazzy tune. "This is not a toy," he said, displaying the foot-long black instrument. "Built into this thing is RESPECT." Respect for the years he spent perfecting his skills as a saxophonist. While it would be much easier to design something that amounts to a pipe-shaped keyboard, this electronic instrument lets him use his craft of controlling lip muscles ("count them: twelve") to produce music.

**Respect**

This was the gist of Bill's talk. The purpose of a user interface is to bring the computer into the user's world, rather than drag the human into the world of the computer. Respect -- for the senses, for the habits, for the intelligence of the human being.

Let's look at habits. For new uses of technology, a good interface will capitalize on habits from similar activities. For currently popular uses of technology, these habits already exist. If you doubt it, catch an unsuspecting subject and tell them to close their eyes and mimic the following actions: starting a car; opening an oven; winding a watch (may not work on younger Americans); closing a zipper; turning on a TV set (guaranteed to work on younger Americans).

As heretical as this may seem at this point in time in our culture, there is no law of nature that says that watches must be wound by turning a knob clockwise, or that a car must be started by twisting a key beyond its "on" position and releasing it. Just imagine asking Michael Faraday, a man quite good at discovering laws of nature and no novice to the concepts of electricity and motion, to mimic starting a car. Yet, these actions are natural to us now.

This demonstrates that not only do our habits affect the user interfaces to our devices, but the reciprocal is also true. User habit development and user interface development are symbiotic. Same goes for our beliefs and the progress of human knowledge -- just as "habitual," "obvious" is a function of time. Not so long ago, it was obvious that the Earth was flat (still is, to some people).

The understanding of this symbiosis is lacking from Judge Keeton's decision in the case of Lotus v. Paperback. After declaring most of 1-2-3's user interface uncopyrightable (items listed as uncopyrightable in Lotus' article, above), he pronounced the menu structure of 1-2-3 copyrightable. Out of the 113-page decision, this is the paragraph that summarizes why the case went to Lotus:

*I conclude that a menu command structure is capable of being expressed in many if not an unlimited number of ways, and that the command structure of 1-2-3 is an original and non-obvious way of expressing a command structure. Accordingly, the menu structure, taken as a whole -- including the choice of command terms, the structure and order of those terms, their presentation on the screen, and the long prompts -- is an aspect of 1-2-3 that is not present in every expression of an electronic spreadsheet. It meets the requirements of the second element of the legal test for copyrightability.*

Completely neglected in this statement is the fact that what is being discussed is a HUMAN-computer interface. There may well be an unlimited number of ways to make a menu for a spreadsheet, but the limitation here is not on the designer, it is on the user. The number of menu structures a typical human can remember is indeed quite limited. So, this limitation must also be respected: the number of similar structures a human SHOULD have to remember is very small. Respect!

Judge Keeton proceeds to confirm my suspicion that he did not take people's habits into consideration:

*Finally, I consider the third element of the legal test -- whether the structure, sequence, and organization of the menu command system is a substantial part of the alleged copyrighted work -- here Lotus 1-2-3. That the answer to this question*

*is "yes" is incontrovertible. The user interface of 1-2-3 is its most unique element, and is the aspect that has made 1-2-3 so popular. That defendants went to such trouble to copy that element is a testament to its substantiality. Accordingly, evaluation of the third element of the legal test weighs heavily in favor of Lotus.*

If 1-2-3's interface is its most unique element, it is a sad commentary on 1-2-3. Even in the non-graphical PC environment, there are plenty of more convenient ways to organize the menus (for example, as in Quattro). The reason for 1-2-3's popularity is that it was the first spreadsheet on the market to effectively utilize the IBM PC, which was penetrating many offices at the same time. As interest in spreadsheets rose, many outfits started offering courses in their use and programming. Since 1-2-3 was the only significant spreadsheet for the PC, it was the one whose commands were taught. Since it is easiest for offices to have everybody use the same spreadsheet, 1-2-3 became the most widespread one (the whidespreadsheet, so to speak). That is why 1-2-3 became popular. Not because it's user interface was something outstanding -- if it was so wonderful, people wouldn't have to take courses to learn it.

Spreadsheet developers that reached the market later respected the investment made by the users into learning 1-2-3's commands, and provided them as their main command mode (as in Paperback's VP Planner), or as an optional backward compatibility mode (as in Borland's Quattro). That is why 1-2-3's user interface was emulated. Not because the other designers couldn't (or didn't) come up with a better interface.

While there is obviously great variation in usefulness of user interfaces, when a user selects one the odds are largely in favor of the incumbent. Witness the currently raging debate in comp.sys.next about "click-to-focus" (the only behavior in NeXTstep's Window Manager) and "point-to-focus" (the default behavior in X11 window managers). Do you think I'm over-stressing "respect"? Read some postings from people accustomed to "point-to-focus" about not having that as an option on the NeXT -- they are genuinely insulted! Other good examples are the recurring Usenet wars of Emacs v. vi, FORTRAN v. all other computer languages, etc.. While I know that there are technical reasons for using Objective-C instead of C++, I am well aware that I favor Objective-C because it was the medium of my introduction into the world of object-oriented programming. Habit is also why I use the Esc key as the Meta prefix in Emacs, even though using the Alternate is the more reasonable choice. I learned to use Esc for this first, so...

My experience with Lotus, Quattro, and their users was in my job as the manager of Northwestern University's Computer Science and Engineering Lab, which provides support to the faculty and staff of the Electrical Engineering and Computer Science Department. Several of our secretaries and technical staff used a spreadsheet. Initially, it was 1-2-3 -- because it was donated to us by Hewlett-Packard with some Touchscreen computers (MS-DOS but not PC compatible), and because courses were available for it. With time, spreadsheet work moved to IBM PCs, and 1-2-3 was still the one we used.

After a while, though, the support staff, including yours truly, got so fed up with Lotus's user abuse under the name "copy protection," that I started shopping around for another spreadsheet. Respecting the experience (and files) accumulated by our users, the requirements for the new spreadsheet were: (1) it must read 1-2-3 files; (2) it must emulate 1-2-3; (3) it must not be copy-protected; (4) it must be reasonably priced, naturally.

We chose Quattro. It met all four requirements. (Press releases about the Lotus v. Borland suit imply that 1-2-3 emulation option was added in Quattro Pro, but it in fact was always present in Quattro.) Lotus, by the way, announced at about that time that it would stop copy-protecting 1-2-3, but we had to wait for and pay for the next release. Too late.

I observed that as soon as a user found some time to try the native interface to Quattro, they dropped the 1-2-3 interface. So, Borland created a different interface because it was significantly better than Lotus's, not just to be different. But I could not tell my users, "you'll drop the 1-2-3 interface that you already know, and you'll learn and start using the Quattro interface." This is the reason for having a 1-2-3 menu mode. Respect.

Being different for the sake of being different is known to software designers as "gratuitous incompatibility" and "the Not Invented Here (NIH) Syndrome" -- follies that good designers work hard to avoid. Yet, the number of ways one can be different for the sake of being different became the major reason to find 1-2-3's menu structure copyrightable, and then Paperback was punished for not being gratuitously different. "Incontrovertible" indeed.

Here is another illustration of disrespect for the human in the Lotus v. Paperback decision:

*...copying the menu structure was not the _only_ way to achieve aspects of this desired compatibility [of VP Planner with 1-2-3]. For example, the defendants could have instead added a macro conversion capability as the creators of Excel have successfully done (the Microsoft Excel Macro Translation Assistant), and could have provided an on-line help function that would show users the VP-Planner equivalent for 1-2-3 commands.*

Well, thanks for telling us that we can convert the macros in our files, but what are we to do about the macros burned into our brains? I can save a Quattro file with my eyes closed. I can save an Emacs file in my sleep (and probably have). This is a recipe for compatibility with a 1-2-3 file, not with a 1-2-3 user. "On-line help function" is not compatibility, it's an aid for re-learning. A 110V toaster is not made compatible with a 220V power source by providing instructions for replacing the power supply, online or not.

Judge Keeton presented four tests for copyrightability of a user interface, all of which must be satisfied for the interface to be considered copyrightable. But one of them, "are there many ways to do it differently," can never be satisfied, because the "user" in "user interface" refers to a human being, and there is always a very limited number of habits a human can form for a particular action. The fact that the interface's designer can dream up a multitude of ways to invoke an action is irrelevant -- the bottleneck is on the other side of the interface, in the user.

Copyrighting user interfaces and respecting the user are conflicting goals. This is one of the reasons why I oppose user interface copyrights.

*Jacob Gore <jacob@gore.com>*

P.S. I hope Bill Buxton will forgive me if I misquoted the number of lip muscles.

## Ashton-Tate Responds

**Position on "Look & Feel"**

I expect that the legal system will continue to recognize copyright protection for computer program user interfaces, and that we will see increasing acknowledgment that elements of user interfaces such as command sets or "languages" reflect the same create authorship and are deserving of the same copyright protection as other aspects of work.

Those who argue that copyright protection should be different than the standards applied to other works will not find support in the courts. This is because Congress has afforded copyright protection to computer programs, and the courts will follow this Congressional mandate and apply copyright law to programs and user interfaces just as it is applied to other works.

Judge Robert Keeton's recent decision in 'Lotus Development Corporation v. Paperback Software International' offers insight in this regard. He summarily dismissed Paperback's arguments that it had to copy Lotus 1-2-3 because it had become a "standard" in the industry and that it was impossible to compete effectively without copying the industry "standard." Judge Keeton noted that other publishers successfully offer spreadsheet that do not copy Lotus 1-2-3, and he recognized that a successful product like Lotus 1-2-3 should not lose its copyright protection merely because it is successful. As Judge Keeton stated, "Copyright protection would be perverse if it only protected mundane increments while leaving unprotected as part of the public domain those advancements that are more strikingly innovative."

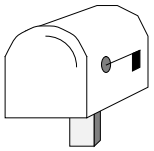
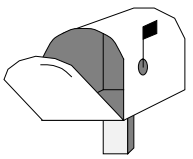
Software companies like Ashton-Tate, which invest significantly in research and development to produce new products and have fiduciary obligations to their stockholders and moral obligations to their employees to attempt to derive the maximum benefit from their collective endeavors, will continue to be assertive in protecting their valuable corporate assets.

As the industry matures, I believe the owners of proprietary rights in software will take innovative approaches to market and license those rights. Much like the practice of cross-licensing patents in industries like electronics. I believe we will see a trend toward cross-licensing of software proprietary rights among software companies.

The software industry is highly dynamics and competitive. Ownership or protection of particular technology or rights will not be an assurance of future success. If customer needs are not adequately met, established leaders will fall and new innovators will rise to take their place. Meaningful legal protection for software will provide the incentive for creative developers to produce the next general of new and imaginative products.

**LOTUS, PAPERBACK SOFTWARE SETTLE COPYRIGHT DISPUTE**

(Oct. 17) Lotus Development Corp. has reached an out-of-court settlement with Paperback Software International and Stephenson Software Ltd. in a dispute over 1-2-3 spreadsheet copyright violations. According to Business Wire, US District Court Judge Robert E. Keeton has ruled that Paperback and its development partner, Stephenson Software, violated Lotus' 1-2-3 copyright by copying substantial elements of the software program's user interface. Paperback has agreed to remove from the market its spreadsheets V-P Planner, V-P Planner Plus and V-P Planner 3D. In addition, the company must pay Lotus $500,000. Paperback also agreed not to appeal the court's June ruling and to drop its counterclaims against Lotus. Business Wire notes that Lotus filed suit against Paperback and Mosaic Software Inc. in January 1987. The defendants were charged with deliberately copying, keystroke for keystroke, the spreadsheet module of 1-2-3. The case was tried in February and March 1990. "We filed suit more than three years ago because these companies had created a competitive product by copying our work," said Thomas Lemberg, Lotus' vice president and general counsel. "We believe the protection of intellectual property is fundamental to the health of the software industry," Lemberg added. "We and our customers benefit from competition, but not from competition based on the theft of someone else's work. Success in this industry is derived from creativity and innovation. The copyright laws protect software creators and innovators and encourage them to deliver products with new benefits for customers." Meanwhile, Mosaic has conceded that its spreadsheet "The Twin" is copied from 1-2-3 and has agreed to be bound by Judge Keeton's rulings in the Paperback case.
(*News announcment from Compuserve Information Services)*

# rmNUG Directory

| Name | Company | Phone (voice) | email address |
|---|---|---|---|
| Naim Abdullah | US West | (303) 938-8685 | naim@uswest.com |
| Jim Alexander | USWest | (303) 889-6426 | jima@uswest.com |
| Richard Beach | CSM | | rbeach@Colorado.EDU |
| Dan Beyers | Motorola | (303) 337-3434 | |
| Steven Boker | Data Transforms | (303) 832-1501 | datran2!smb@uunet.UU.NET |
| Ed Boring | CSU | (303) 491-7653 | boring@euclid.math.Colostate.EDU |
| Dave Bowdish | Designer Documents | (303) 922-4893 | 73340.2146@compuserve.com |
| Mike Bush | USAF Academy | | |
| Steve Coffin | US West | | scoffin@uswest.com |
| David Cook | Cook Commun. | (303) 691-COOK | nyx!dcook%isis.uucp@nike.cair.du.edu |
| Robert Dahlen | DU | (303) 871-4385 | bdahlen@du.EDU |
| Glen Davis | UCAR | (303) 497-8643 | davis@unidata.ucar.EDU |
| Don Dazlich | CSU | (303) 491-8585 | dazlich@erehwon.atmos.Colostate.EDU |
| S. DeAlwis | CU | (303) 492-0511 | dealwis@Colophys.BITNET |
| David Deininger | | | deininge@cotes |
| John Devlin | Prud | (303) 750-5222 | |
| Joseph Dreitlein | CU(PHY) | | jfd@pprince.Colorado.EDU |
| John Dunn | CU | | dunn@mimicad.Colorado.EDU |
| Barbara Dyker | CU | (303) 530-5275 | Barb_Dyker@Amaze.UUCP |
| Kimberly Evans | CU | | |
| Shelly Fields | USGS | (303) 236-5505 | |
| Rich Fozzard | NOAA | | fozzard@alumni.Colorado.EDU |
| Greg Friedman | | | |
| Horacio Fuente | | | delafuen@titan |
| Conrad Geiger | NeXT | (206) 454-6398 | Conrad_Geiger@NeXT.COM |
| Aaron Gordon | CSM | (303) 273-3868 | agordon@mines.Colorado.EDU |
| Jacob Gore | Gore | (303) 696-7893 | jacob@blackbox.Gore.COM |
| Brad Green | CU/NEXT | (303) 786-9371 | Brad_Green@NeXT.COM |
| Robert Gregory | USWest | (303) 733-6573 | |
| Frank Hadsell | CSM | | fhadsell@mines.Colorado.EDU |
| David Hale | CSM | | dhale@mines.Colorado.EDU |
| Darren Hardy | CU | (303) 492-5720 | hardy@eclipse.Colorado.EDU |
| Bjorn Haugen | | | haugen@titan |
| Willy Hereman | CSM | (303) 273-3881 | whereman@mines.ColoradoEDU |
| David Hieb | CU | (303) 492-4316 | boulder!kodiakthorn!davehieb |
| David Hieb | CU | (303) 492-4316 | davehieb@boulder.Colorado.EDU |
| Al Humphrey | | | |
| Robert Gregory | US West | (303) 733-6573 | |
| Kass Johns | | (303) 594-4100 (2477) | |
| Bob Johnson | Martin | (303) 790-3641 | |
| Warren Jokinen | | (719) 637-1479 | 73437.3500@compuserve.com |
| Chris Joslyn | CU | | joslyn@tramp |
| Andrew Kessler | CU(ECE) | (303) 492-1290 | kessler@boulder.Colorado.EDU |
| Chriss Koch | Ampex | (719) 570-3233 | boulder!agcsun!soul!song!Chriss_Koch.COS_ENG |
| Kathleen Lamb | CSM | (303) 273-3436 | klamb@mines.Colorado.EDU |
| Adrianne Link | NCAR | (303) 447-1223 | adrianne@ncar.ucar.EDU |
| Joe Lounge | UNC | (303) 351-2807 | |
| Mehran Majidi | CU | (303) 786-1794 | majidi@tigger.Colorado.EDU |
| David Menges | US West | | boulder!uunet!uswat.uswest.com!dcm |
| Fran Miller | DU | (303) 841-5128 | |
| Eric Mueller | CU | | |
| Joan Nadue | US Geo. Survey | (303) 236-5504 | |
| Ed Narvaez | Businessland | (303) 369-2726 | |
| Bill Nelms | Ampex | (719) 570-3284 | |
| Charles Noren | NCAR | | boulder!ncar!dinl!noren |
| Mavis O'Conner | CSU | | moconnor@salzburg.ir.ColoState.EDU |
| Jason Ornstein | CU | (303) 449-5455 | ornstein@tramp.Colorado.EDU |
| Douglas Pattie | CSU/NeXT | (303) 491-6477 | Douglas_Pattie@NeXTCOM |
| John Pierce | NeXT | (303) 694-6700 | John_Pierce@NeXT.COM |
| Dave Randall | CSU | (303) 491-8474 | randall@ncar.ucar.edu |
| Mark Richards | Bsland | (303) 671-0676 | |
| Wayne Rogers | CU | | rogers@spot.Colorado.EDU |
| Joel Rosenblum | DPI | (303) 733-8158/721-8926 | |
| Ray Rosich | Hughes | (303) 341-3814 | |
| Lisa Saltzman | US West | (303) 896-9533 | |
| John Shive | Hughes | (303) 341-3207 | |
| Karl Sierka | NCAR | (303) 497-1338 | sierka@ncar.ucar.EDU |
| Doug Simons | Thoughtful Sftwr | (303) 221-4596 | |
| Leif Smith | | (303) 778-0880 | |
| Steve Statham | Mlogic | (719) 282-0807 | hp-col.col.hp.com!mlics!steve |
| John Steele | CSM | (303) 273-3663 | jsteele@matchless.mines.Colorado.EDU |
| Ken Tanaka | CU | | tanaka@icarus |
| Julia Taylor | USGS | (303) 236-5453 | |
| Terry Tautz | CU/NeXT | (303) 492-8258 | ttautz@beagle |
| Coy Toavs | CU | | toavs@tramp.Colorado.EDU |
| Chase Turner | CU | (303) 442-4711 | chase@boulder.Colorado.EDU |
| Bruce Wood | CU | (303) 492-8172 | wood_b@Colorado.BITNET |
| Dick Valent | NCAR | | valent@ncar.ucar.EDU |
| Derek Wilson | CSM | (303) 273-3986 | dwilson@mines.Colorado.EDU |
| Beverly Young | FRAME | (303) 770-9404 | |