

\$3

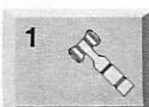
Volume 21, Issue 9



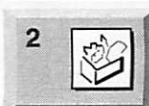
mini'app'les newsletter

the minnesota apple computer users' group, inc.

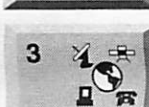
S E P T E M B E R 1 9 9 8						
SUN	MON	TUE	WED	THU	FRI	SAT
		1 7:00	2 7:00	3 7:00	4	5
6	7	8 7:00	9 7:00	10 7:00	11	12
13	14 7:00	15 7:00	16 6:30	17 7:00 7:00AM	18	19
20	21 7:00	22 7:00	23	24 6:30	25	26
27	28 7:00	29	30	1 7:00	2	3



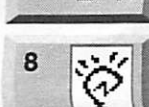
1 Board of Directors
mini'app'les members welcome.
Byerly's
7171 France Ave. S., Edina
Bruce Thompson, 612-546-1088



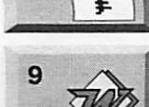
2 ClarisWorks SIG
Washburn Library
5244 Lyndale Avenue S., Mpls
John Hunkins, Jr., 651-457-8949



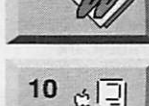
3 Telecommunications SIG
Epiphany Lutheran Church
1414 East 48th Street S, Mpls
Bert Persson, 612-861-9578



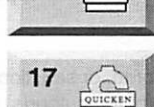
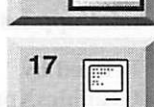
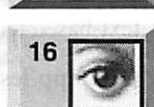
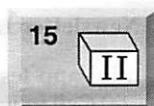
8 Newton/eMate SIG
Java Jacks
818 W 46th Street, Mpls
Jennifer Hunt, 612-623-4754
jhunt@med.umn.edu



9 Microsoft Word SIG
2850 Metro Drive Rm 124, Blmgtn
Tom Ostertag
D 612-951-5520 E 651-488-9979



10 Macintosh Main
Washburn Library
5244 Lyndale Avenue S., Mpls
"Adobe: Prezo/Roll Out"
Denis Diekhoff, 612-920-2437



14 Apple II/GS Main
Augsburg Park Library,
7100 Nicollet Ave., Richfield
Tom Gates, 612-789-6981

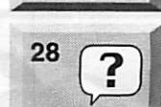
15 Apple II Novice SIG
Ramsey County Library
2180 Hamline Avenue, Roseville
Tom Gates, 612-789-6981

16 Photoshop
Southdale Library
7001 York Avenue S, Edina
Denis Diekhoff, 612-920-2437

17 Macintosh Consultants SIG
Embers
7525 Wayzata Blvd
St. Louis Park
Bob Demeules, 612-559-1124

17 Quicken/Investment SIG
2850 Metro Drive, Rm 124
Bloomington
Dale Strand, 612-835-5872

21 Fourth Dimension SIG
8200 Humbolt Ave South
2nd Fir. Conference Rm. Blmgtn
David Ringsmuth, 612-853-3024



22 Mac Programmers SIG
Meeting pending... Call for info
Gervaise Kimm, 612-379-1836

24 FileMaker Pro SIG
1410 Energy park Dr #5
Saint Paul
Steve Wilmes, 651-458-1513

28 Macintosh Novice SIG
Merriam Park Library
1831 Marshall Ave, St. Paul
Tom Lufkin, 651-698-6523

mini'app'les

The Minnesota Apple Computer Users' Group, Inc.
P.O. Box 796, Hopkins, MN 55343

Board of Directors:

President	Bruce Thompson 612-546-1088 bthompson@macconnect.com
Vice President	Denis Diekhoff 612-920-2437
Secretary	Jacqueline Miller 612-890-2071 jm@jmillerassociates.com
Treasurer	Don Walz 651-426-5602
Marketing Director	Brian Bantz bdbantz@bitstream.net 612-956-9814
Publications Director	John Hunkins, Sr 651-457-8949 jhunkins@tcilink.com
SIG Director	Bert Persson 612-861-9578 bpersson@isd.net
Past President	Eric Jacobson 651-603-9111 ej@jatex.com

Coordinators:

Membership	Erik Knopp
Mac Software	Bryan Lienke
Apple II	Owen Aaland

Introduction – This is the Newsletter of mini'app'les, the Minnesota Apple Computer Users' Group, Inc., a Minnesota non-profit club. The whole newsletter is copyrighted © by mini'app'les. Articles may be reproduced in other non-profit User Groups' publications except where specifically copyrighted by the author. (Permission to reproduce these articles must be given by the author.) Please include the source when reprinting.

Questions – Please direct questions to an appropriate board member. Users with technical questions should refer to the Members Helping Members section.

Dealers – mini'app'les does not endorse specific dealers. The club promotes distribution of information which may help members identify best buys and service. The club itself does not participate in bulk purchases of media, software, hardware and publications. Members may organize such activities on behalf of other members.

Advertisers – For information, see Newsletter Ad Rates box within this issue.

Newsletter Contributions – Please send contributions directly to our Post Office, Box 796, Hopkins, MN 55343 or upload them to our BBS at 612-824-4394.

Deadline for material for the next newsletter is the 1st of the month. An article will be printed when space permits and, if in the opinion of the Newsletter Editor or Manager, it constitutes material suitable for publication.

Editor/Publisher: Tom Ostertag 651-488-9979

Newsletter Layout: John Hunkins

mini'app'les BBS – 612-824-4394, 24 hrs. Settings: 8-1-0. Call in with FirstClass® Client software or any text-based terminal program.

mini'app'les Voice Mail – 651-229-6952

mini'app'les WWW site: <http://www.miniapples.org>

Printed by
GraphicsXpress



The mini'app'les Newsletter is an independent publication not affiliated, sponsored, or sanctioned by Apple Computer, Inc. or any other computer manufacturer. The opinions, statements, positions, and views herein are those of the author(s) or editor and are not intended to represent the opinions, statements, positions, or views of Apple Computer Inc., or any other computer manufacturer. Instead of placing a trademark symbol at every occurrence of a trade-marked name, we state that we are using the names only in an editorial manner, to the benefit of the trademark owner, with no intention of infringement of the trademark.

CHANGE OF ADDRESS

Moving? Going to be away from home and leaving a forwarding address with the Post Office? Please send us a Change of Address when you are informing others. By using a moment of your time and a few cents to drop us a card, you save the club some money and you get your newsletter delivered promptly to your new address. If you don't inform us, the Post Office puts your newsletter in the trash (they don't forward third class mail) and charges the club for informing us of your new address. Change of Address should be sent to the club's mailing address: mini'app'les, Attn: Membership Director, Box 796, Hopkins, MN 55343.

FOR RENT: BRILLIANT PRESENTATIONS



Proxima On CallSM Rental Program. For the Multimedia Projector You Need. When You Need It.

- Local service and support
- Fast delivery
- PC and Macintosh compatibility
- A variety of projectors and panels to choose from
- Expert advice on selecting equipment
- Rental credit program

For more information regarding:

Computer Projection Systems—
LCD, Data or Video Projectors
Complete Conference and Training Rooms
Printers • Labeling • Signage Systems
All A/V Equipment—Sales • Service • Rentals

PLEASE CALL



TIERNEY BROTHERS INC

3300 University Ave. S.E.
Minneapolis, MN 55414-9852
612-331-5500 • 1-800-933-7337
(Ask for Extension 254)

Table of Contents

Mac eDOM #982 - About This Mac Utilities.....	5
Pam Works with ClarisWorks	6
Les Works with ClarisWorks	7
Problems!! & Their Solutions!!.....	7
All About Memory:	
A Quickie Overview Of The Different Types Of Memory.	8
All About ROM:.....	9
Have You Backed Up Today? Part 3	10
The Eye-Conning of America	11
Takin' the Bus:	
Public transportation in your computer.....	12
NiftySpell.....	14
Ongoing Deals for Mini'app'les Members	14
Members Helping Members	15



Cactus Software & Communications, Inc.

"Sharp and to the point"

Documentation Services for:

Computer Software
Mechanical Systems
612 / 757-6916

Technical Manuals
Training Courses
Fax 757-4515

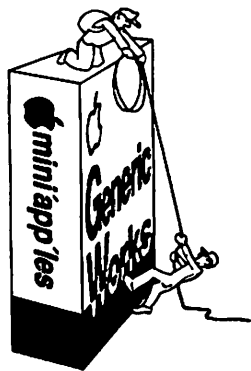
Members Helping Members

Need Help? Have a question the manual doesn't answer? Members Helping Members is a group of volunteers who have generously agreed to help. They are just a phone call (or e-mail) away. Please call only during appropriate times, if you are a Member, and own the software in question.

Macintosh	Key
Claris Draw	3
Claris Resolve	2
Claris Works	2,8,9,10
Cross-Platform File Trnsfr	6
FileMaker Pro	2
First Class	2
MacWrite Pro	2
Microsoft Excel	3,6,7
Microsoft Word	6
MYOB	7
Photoshop	4
Quicken	3,7
QuickBooks & Quickbooks (Pro)	7
System 7	9
Word Perfect	5
New Users	11

If you would like to be a "Members Helping Members" volunteer, please e-mail John Hunkins Sr. with your name & phone number on our BBS, or leave a voice-mail message at 229-6952, or use the MultiForm mailer near the back of this issue.

AppleII	Key	AppleII GS	Key
Appleworks	1,6,9	Hypercard GS	1
Applewriter	6	Smartmoney GS	1
Publish It!	1		
To. Superfonts	1		
To. Superform	1		



- | | | |
|---------------------|----------------|-----|
| 1. Les Anderson | 735-3953 | DEW |
| 2. Brian Bantz | 956-9814 | DEW |
| 3. Mike Carlson | 1-218-387-2257 | D |
| 4. Eric Jacobson | 645-6264 | D |
| 5. Nick Ludwig | 593-7410 | DEW |
| 6. Tom Ostertag | 488-9979 | EW |
| 7. Ardie Predweshny | 823-6713 | DEW |
| 8. Owen Strand | 427-2868 | D |
| 9. Bruce Thompson | 546-1088 | EW |
| 10. Pam Lienke | 457-6026 | EW |
| 11. Tom Lufkin | 698-6523 | EW |

D-days (generally 9 a.m. to 5 p.m.)
 E-evenings (generally 5 p.m. to 9 p.m.)
 W-weekends (generally 1 p.m. to 9 p.m.)
 In any case, call at reasonable hours and ask if this is a convenient time for them. By the way, these volunteers can also be reached on our BBS! We appreciate your cooperation.

Newsletter Ad Rates

1/12 page 2.25" Width x 2.5" Height. \$5	Outside back cover . 7-1/2" Width x 7-1/2" Height . . \$50
1/6 page 2.5" Width x 5" Height \$10	Inside back cover . . . 7-1/2" Width x 10" Height . . \$60
1/3 page 2.5" Width x 10" Height Vert or 5.5 H. . \$20	
1/2 page 7.5" Width x 5" Height (save 5%) . . . \$30	
2/3 page 5" Width x 10" Height (save 7%) . . . \$40	
Full page . . . 7-1/2" Width x 10" Height (save 15%) . . \$60	

All ads must be prepaid and submitted on electronic media. Ads of \$20 and under must run for a minimum of three months.

Mail inquiries to: PO Box 796, Hopkins, MN, 55343
 Phone inquiries to: John Hunkins, Sr. 457-8949

Mac eDOM #982 - About This Mac Utilities

by Bryan Lienke
Copyright © 1998 mini'app'les
August 1998



InformINIT 8.1

InformINIT is an application which provides information on a mind-boggling number of System Folder files: control panels, extensions, system folder contents, and more — from both Apple and third-party developers. Information includes file descriptions, who needs what, version numbers, RAM consumption, and helpful tips (even a few “secrets”). Where appropriate, files are organized into “groups” that are mainly used together. Live URLs to information sources on the Web are provided for files that require extensive discussion.

InformINIT is not just “INITs” — it contains sections on installing the latest system software, files which don't take up system RAM, items found loose in the System Folder, startup file management utilities, PRAM, and the Modern Memory Manager. It also contains a primer on system software for beginners, and a thorough discussion of the new HFS Plus file format by Eric Belsley of the Mac Resource Page. It also provides links to some of the best Mac info sites on the Web.

InformINIT is THE reference for System Folder information. Even Apple's own technical support staff uses it and recommends it to customers. InformINIT will run on all Mac OS computers except for those with 68000 processors. It requires 1.5 MB of free RAM, and less than 1 MB of hard drive space. InformINIT is well worth the \$15 shareware fee.



Extension Overload 2.7

Extension Overload is a “self-reading” document with lots of information about all the system extensions and control panels that are littering the System folder of every Macintosh. Extension Overload conveniently lists them by name and explains their purpose.

That way you (the user) can decide whether to keep a certain control panel or extension or not. Additionally, Extension Overload contains information about Mac error codes, Easter Eggs (little gimmicks hidden somewhere in the software) and other useful things.

Currently Extension Overload reviews 666 extensions and 245 control panels - of course this does not mean that all of them are in the system folder of your Macintosh. Extension Overload is distributed as shareware, so if you find yourself using it, please pay the shareware fee of \$10.



Guru 2.7

GURU is an acronym that stands for GUIDE to Ram Upgrades. It is an application which provides you with information concerning the memory upgrades that are possible for every model of Macintosh that has ever been made. It also includes memory information on all Apple LaserWriter printers and many of the Macintosh clone computers. GURU covers not only RAM, but also DRAM, VRAM, EDO, SDRAM, PSDRAM, Static RAM, and FRAM. Best of all GURU is free to use.



Newer Technology Gauge Series

Clockometer[®] (rhymes with thermometer)

This application was created to provide you with the answers to two very simple questions. The first question is, “How fast is my computer really running”, and the second is “What CPU is in this box”? These questions may at first blush appear to be incredibly easy to answer, but as you will soon see...looks may be deceiving. If you, or someone in your organization, has placed a clock enhancing accelerator (such as the Newer Technology MacClip[®] or PowerClip[®]) in a computer, then what speed is that computer running? Or better yet, what if someone

installed the accelerator in one of say...ten 6100s in the office. How do you quickly determine which one it is installed in? In the past people have used programs such as Scott Berfield's Speedometer in order to determine overall speed. However, these programs don't actually provide you with a “real world” speed. Instead they give you a relative performance number which you can then compare against another relative number for some other CPU and in this manner you can get an idea of whether you are running faster or slower. A better solution is to run Clockometer, and in one second you can know exactly how fast your computer is running. As to the second question of, “what CPU is really in my box?”, this is becoming a real issue. If you have a Macintosh 9500, 8500, 7600, or 7500 with a removable CPU card, how do you know what card is actually in the computer at any given moment? Or better yet, how do you know what speed the card is? Since CPU cards can have 601's, 604's, or 604e's on them and they can be running at any speed, how do you know when you walk into a room, what is in the box that is sitting there? The answer,...run Clockometer[®] and get your answers within a second.

Cache-22[®]

This application was also created to provide you with the answers to two very simple questions. The first question is, “How much L1 and L2 Cache does my computer really have?”, and the second is “What CPU is in this box”? These questions appear childishly easy to answer, but as you will soon see...they may not be. When Apple made it possible to add L2 Cache to their new line of PowerPC computers back in 1994, everyone saw it as a very positive step for the performance oriented user. Now a user could add 256K, 512K or even 1MB of Cache to their new computer. But here is where people began running into prob-

lems. If you are the MIS Director or work for the IS Department, and you have say...twenty-five PowerPCs, how do you quickly determine which ones have L2 Cache Modules and which do not? Or better yet, how do you quickly determine which two machines have the 1MB Cache Modules? Up until now it has been a real chore. You had to take each box apart and physically inspect them for cache modules. No longer! Cache-22 provides an answer in under 6 seconds, as to what amount, if any, of L2 Cache is in a computer. It also informs you as to what CPU is in the computer you are testing. The reasons for displaying the CPU information are covered above in the Clockometer^a description.

RAMometer^a (rhymes with thermometer)

This was created to provide you with a high-speed no-cost RAM Tester. At this stage, RAMometer, will not inform you where an error occurred during testing. It will simply indicate that an error has occurred. Future versions will expand on this. RAMometer appears to be testing too fast to really be doing anything, however, this is clearly a case of "looks being deceiving". It runs an extensive series of tests and provides a solid test bed for your memory. If you suspect that your RAM is going bad then fire up a copy of RAMometer and check it out.

SCSI Info^a

This was created because we had too much time on our hands one

day. Actually it is the beginnings of an extensive SCSI Test tool. It will provide you with information on multiple SCSI Buses such as those found in an 8100/100. This tool may cause some computers to lock up. If it happens, just remember that it is free.

Slot Info^a

This was created to provide you with a way to quickly test and see what is in your computer. It will provide you with information on what version of ROMs are on cards in your computer. It will also inform you of what Motherboard-based video controller is in your Mac. This is a useful tool which we have just recently begun to play with. Expect to see bigger-better-faster versions in the near future.

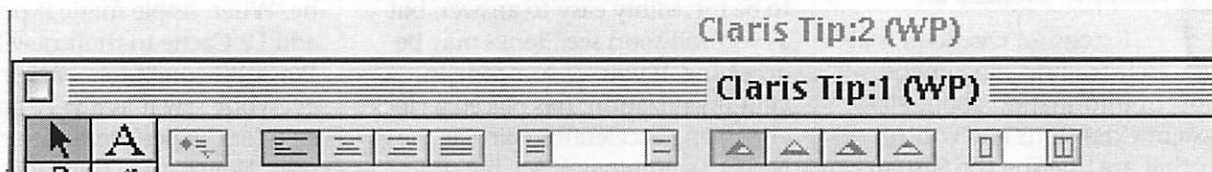
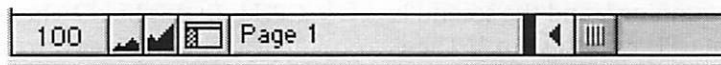
Pam Works with ClarisWorks

by Pam Lienke



There are times when I'm working on a document and need to see how a full page looks or to view some detail. I can do this using the zoom controls at the bottom of the window to zoom in or out and then zoom back to 100 per cent. This gets to be a bother when I need the alternate view several times while I am working on the same document. To remedy this, I select New View from the Window menu to create a second version of the document. I zoom the new view to a larger or smaller magnification, whatever I need in order to see what I'm after. The name in the title bar for the second window has a colon followed by a number 2. Now,

rather than using the zoom controls, all I need to do is switch between the views on the Window menu. I can go back and forth between the windows as I continue to work on the text and appearance of my document. When I save, both views are saved, ready for the next time I work on the document.



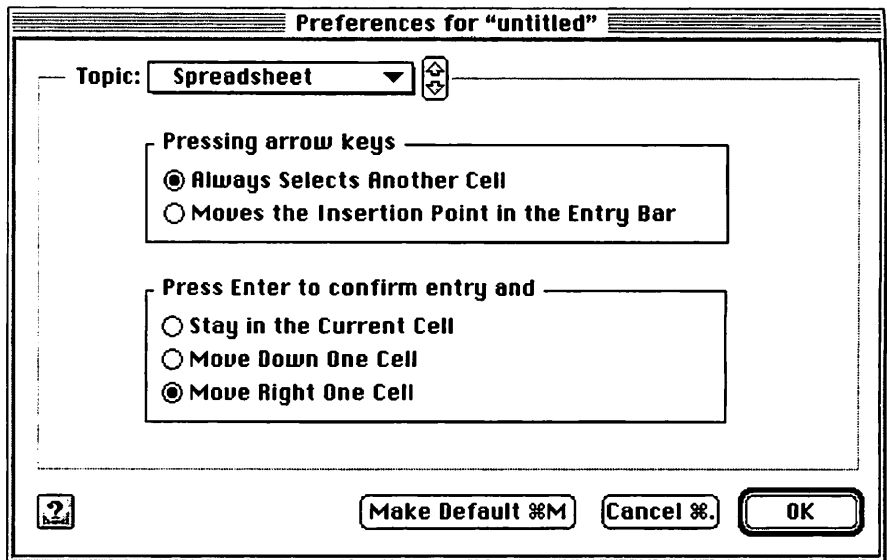
Les Works with ClarisWorks

ClarisWorks Spreadsheet Tip

by Les Anderson

If you use other spreadsheets like Excel or Lotus 123, you know that you can press the arrow key to both enter your data and move to the next cell. With ClarisWorks the default settings do not allow this use of the arrows. If you want to use the arrow keys this way, you only need to change the preferences. In the Edit menu, open Preferences and select Spreadsheet. It should look like this.

If you check Always Select Another Cell, the arrow key will allow you to both enter your data and move to the desired cell.



Problems!! & Their Solutions!!

by Alice Lium

(First Published in the March/April 1998 issue of Seeds & Stems, bi-monthly publication of the Maryland Apple Corps, PO Box 668, Riderwood, MD 21139-0668.)

Problem #1

A friend called me when her Performa 630 wouldn't print on her Stylewriter 1200. "I have homework, and it's due Monday," she wailed. I now have new respect for those tech support people who help you over the telephone. When I tried to talk her through the steps, I couldn't remember all the keystrokes unless I did it on my own machine, and mine had a different operating system and was printing just fine. So I packed up and went over there. With help from Larry Carton and the book "Sad Macs, Bombs and other Disasters," here is what we found:

The error message more or less said that "the serial port was in use, computer to the modem port.

Bingo! Homework produced! Apparently there was a fault in the printer port, so my friend now prints through her modem port (they do the same thing). At the moment she is not interested in modem communications, so we just unplugged the modem completely. Then we went

back into the Extensions Manager, turned on any other extensions that she might want—like Norton extensions, MacLink, and her virus stopper—named the set "Normal with SW," restarted the computer and made sure the system still printed.

In another bit of housecleaning, we went through and tossed out all the irrelevant printers because if there was corruption in any one, it might mess things up (advice courtesy of Victor N).

Also, someone had said that when doing computer stuff, the person with the keyboard learns three times as much as the person without, so until we ran into a time crunch, my friend had the keyboard and I said things like, "OK, click on that triangle. Now select the set labeled '7.5.1 only'...." And, we're still friends—what can I say.

Problem #2

I don't like it when my icons go funny. I'm always afraid it portends some computer breakdown on the horizon. It never has so far, but that doesn't stop me from worrying. The first time that happened, my icons were teeny generic things. Turns out I had reinstalled software and hadn't turned on the middle-sized

icons in the Views Control Panel.

Other times a couple icons would go generic, and I just needed to reset the PRAM and rebuild the desktop so the little icon programs would be cleaned up.

But this time when I had a couple icons that went generic, I reset the PRAM, and rebuilt the desktop to no effect—still had generic icons. So with help from Larry Carton and the "Sad Macs..." book, we found that it was my Jaz drive, sort of.

My Performa 638 only came with 340 MB of hard disk, and that's pretty small now, so I have been using the Jaz drive. I store my more seldom-used applications and most of my documents on the Jaz, keep it turned on all the time, and presto, an extra gigabyte of disk space. Except that, if I turn on the 638, then the Jaz, the icons end up loaded differently from the applications, all of which results in generic icons on some of the Jaz-loaded applications. Solution: start the Jaz, THEN the 638.

Copyright 1995 - 1998 Maryland Apple Corps, ALL RIGHTS RESERVED. by Alice Lium

All About Memory: A Quickie Overview Of The Different Types Of Memory.

By: David K. Every ©Copyright 1998
<http://www.MacKiDo.com>
Submitted by Denis A. Diekhoff

Computers have many different types of memory. The concepts are not as hard as people think. This is a mile-high fly-over of what the different types of memory are, and what they are used for. There are a few types of memory in your computer. These generally fall into the categories of either temporary storage (only while the power is on), or permanent storage (remembers everything even when the power is off). Your hard-drives and CD-ROMs are permanent storage, it is where you save things when the power is going to turn off, but they are not technically called "memory". Memory is electronic chips that are inside of your computer, not mechanical devices (like hard drives or CD-ROM's).

HOW MEMORY IS COUNTED

Memory is just a collection of 1's and 0's called "bits". Similar to counting on your fingers (which are either up or down) this is probably where the term "digital" came from. When they are grouped together, you can count to very large numbers, or represent all the characters in the alphabet (if you used unique finger patterns to represent each character). Computer memory has a lot of these bits (digits).

Bits are grouped by 8's- called Bytes. Each Byte contains a value between 0 and 255, or is used to represent some character of the alphabet (or digit or symbol, etc.). By grouping bytes you can make very large numbers, or pages of characters (words, sentences, paragraphs, etc.). Bytes are further grouped into kilobytes or "K" which

is not 1,000 bytes, but close. The grouping goes on to million (Megabytes), billion (Gigabytes), trillion (Terabytes), quadrillion (Petabytes), and so on.

People usually think in base 10 — 10's, 100's, 1,000's and so on. So we used those groupings to make the computer groupings. However, the computer deals in powers of 2 (not 10). So the number closest to 1,000 that is a power of 2, is 1024 (2 to the power of 10). Many people round 1024 to 1,000 and call that 1K, but this "rounding error" causes for errors and confusion. Look at the following table on what happens. (See figure 1)

So remember that 1K in computer-speak is 1,024 and is not 1,000.

How much space does something take?

Important to users is not the name, but what that memory space could (or does) represent. Many people need a frame of reference for what a bit, byte or megabyte can store. Numbers and text are pretty space efficient in computers; but Sound, pictures, video, may not be. Because some things are space efficient and other are not, programmers had to come up with tricks (compression) that allow them to pack more data into the same amount of space (by using some complex math). Random data you can often compress to 1/2 of the original size (average), sound can be compressed to 1/4 the original size, pictures can be made 1/40th the original size, and movies/video can

be compressed to 1/400th the original size. The following table will give you an idea of how much space things take to represent in their raw (uncompressed) form — but compressed data can be much more efficient.

(See figure 2, next page)

For now memory (RAM and ROM) is usually measured in Megabytes (or occasionally Kilobytes), and most hard-drives are measured in Gigabytes. But progress marches on, and in a few more years we could have Gigabytes of RAM, and Terabytes of hard-drive space. (To understand about the types of memory, please read the companion article, **All About ROM**, on page 9. **All About RAM** will be published next month.)

CONCLUSION

I believe this set of articles will give you a very good understanding of the basic kinds of memory, and how they vary. Describing some complex concepts in a paragraph is likely to require some "glossing over". However, if you can read and understand this article, then you will have a good knowledge foundation and you can further explore the concepts in much more detail... if you want to (though it will not be necessary for most people). If you didn't get it all, don't worry, there are Hardware engineers who don't know all this stuff, and who don't need to. I do hope this article satiates any curiosity about memory issues that you may have.

Figure 1

Name	Right way	Lazy way
Kilobyte	$2^{10} = 1,024$ bytes	1,000 (2.4% error)
Megabytes	$2^{20} = 1,048,576$ bytes	1,000,000 (4.8% error)
Gigabytes	$2^{30} = 1,073,741,824$ bytes	1,000,000,000 (7.4% error)
Terabytes	$2^{40} = 1,099,511,627,776$ bytes	1,000,000,000,000 (9.9% error)
Petabytes	$2^{50} = 1,125,899,906,842,624$ bytes	1,000,000,000,000,000 (12.6% error)

Figure 2

1 Bit	on or off	2^1	Zero or 1
1 Byte	8 Bits	2^8 (bits)	Value from 0 to 255, or a character of text
2 Bytes	16 Bits	2^{16} (bits)	Value from -32768 to 32767 or a character in any writing system in the world
8 Bytes	64 Bits	2^{64} (bits)	Floating Point +/- value representing 16 digits of accuracy (very large or accurate scientific number)
1 Kilobyte	1024 Bytes	2^{10} bytes	An average page of text, or a regular color icon
1 Megabyte	1024 Kilobytes	2^{20} bytes	1,000 pages of text, 1-Full Screen Picture, 6 seconds of CD Quality Sound.
1 Gigabyte	1024 Megabytes	2^{30} bytes	1 million pages of text, 1 1/2 hours of CD Quality Sound, 50 seconds of raw video.
1 Terabyte	1024 Gigabytes	2^{40} bytes	The entire library of congress in text (approximation), 62 days of continuous music, 14 hours of raw video
1 Petabyte	1024 Terabytes	2^{50} bytes	Probably more text than has been produced in the entire history of man (in every language known), 170 years of music, 19 months of video, actual value of pi (just an engineering joke)

All About ROM:

By: David K. Every

An overview of the different types of ROM.

©Copyright 1998

ROM means Read-Only-Memory. ROM is a form of permanent storage. This is information that is pre-stored in your computer so that when your computer is first turned on, it doesn't have to load this information from the hard drive.

ROM is pre-programmed with its information in the manufacturing process -once made it can never be changed. Because you can not change any of the information on a ROM, it is mostly useful to designers for storing parts of the Operating System that have no need to change. This code or data can be used from ROM, which saves the computer from having to use RAM to achieve the same function (and ROM is cheaper). Macs have about 4 Megabytes (4million characters) of ROM, PC's have 16 Kilobytes (16 thousand characters).

RAM is often faster than ROM, so sometimes people "shadow" or "mirror" the ROM — they copy it into RAM and then always access the RAM version. This is wasteful of RAM, but since RAM is faster, some people are willing to trade performance for space. This may sound

funny, because why wouldn't you just store what was on ROM on the hard-drive? Some people do — but then it has to load all that into Memory first — where copying from ROM to RAM is much faster.

TYPES OF ROMS

There are a few different types of ROM. Primarily users care about just plain old ROM, but engineers are very specific about the type of ROM used. Most computers use plain old ROM, but there are small amounts of the other types of ROMs and so explaining the differences may help users.

PROM means Programmable-Read-Only-Memory. PROM is a form of permanent storage that you can write to, but just once. The process of making ROMs has to be done at a chip-manufacturing plant, but PROMs let many companies make their own ROMs without a long manufacturing process. PROMs work by putting the chips in a special "burner", and sending the information to the chip. The chip starts out as all 1's, and the burner can pop specific 1's into a zero state — the results are that any value can be stored permanently on a PROM, and PROMs can be used in place of ROMs. PROMs cost more, so are used

in small volume manufacturing or in testing stages, on data that will rarely change (every week, month or year).

EPROM means Erasable-Programmable-Read-Only-Memory. EPROM is a form of PROM that you can not only write to, but erase. Erasing is achieved with a little window on top of the chip, that allows programmers to put it under an intense UV (Ultraviolet) light, that will reset all the burned values back to their initial state. Other than that, they work just like any other PROM. EPROMs cost more than PROMs but you can reuse an EPROM many times - so they are used in testing or engineering labs where the data is likely to change a fair amount (daily or weekly).

EEPROM means Electrically-Erasable-Programmable-Read-Only-Memory. EEPROM is a form of EPROM that you can erase electrically (no UV lamps). Erasing is achieved by sending special electrical signals to the chip (usually higher voltage). Other than that, they work just like any other EPROM. With special circuits added to your design, you can have a ROM that can change whenever you want it to. EEPROMs have limited life-spans — you can write to them a few thousand (or million) times - but if you were using them as

main memory (like RAM), a few million writes could mean they would last for only a few seconds. EEPROMs also erase slower than RAM, and have to have special logic to support them. EEPROMs are good for saving settings and preferences or code that will be changes maybe once or twice a day (or week), but not for data much more frequent than that. Modems often have EEPROM in

them (or similar device) to store your settings in a permanent way — but now days something called NV-RAM does a similar function and costs less.

FLASH ROM means that you can erase the ROM in a "Flash". It is a form of EEPROM but may be manufactured a little differently. Erasing is achieved usually in banks of memory (chunks), instead of character by

character like in EEPROM, this helps make it cheaper to manufacture.

Conclusion

I hope this gives you an understanding of what ROM is, and the different types of ROM.
Copyright © 1989-98 David K. Every.
Compilation Copyright © 1998 MacKiDo.
All rights reserved.
Reprinted with permission

Have You Backed Up Today? Part 3

by Adam C. Engst <ace@tidbits.com>
Submitted by Bruce Thompson

In the previous installments of this series on backup, I looked at issues surrounding backup as well as at backup hardware and software that you might want to use. We're nearing the end of this topic, but a few important points remain to be made. Also, be sure to read this issue's review of BackJack, the first Macintosh Internet backup service. <<http://db.tidbits.com/getbits.cgi?tbser=1041>>

Backup Shareware

You may have noticed that last week I discussed only commercial software. I'm normally a huge supporter of freeware and shareware software, but in this case, I have to come down on the side of sticking with commercial software. Here's why.

First, if you go to the effort of backing up your data, you should be assured that you'll be able to access your data in case of problems with the backup, the software, or even your backup device. You need someone to call in case technical support is the key to recovering files essential to your project. Although many shareware authors offer great support via email, it's unusual for them to provide telephone support, which could prove necessary.

Second, the entire point of backups is that they be accessible at some random point in the future. That means you need to know that your backup program will be updated to work under future versions of the

Mac OS. Even if the backup program stores files in normal Finder-readable format (so recovery shouldn't be a problem), being forced to switch backup programs just as you're upgrading to a new version of the operating system can be nerve-racking - that's one of the times you're most likely to need good backups.

Third and finally, all the freeware and shareware programs I've seen fall into either the file copying or file synchronization categories outlined in the second part of this article, with all the related advantages and disadvantages mentioned there.

That said, if you wish to rely on a freeware or shareware solution, I recommend sticking with a program that's updated frequently and that stores files in normal Finder-readable format. Also, think carefully about your backup strategy so you have multiple backup sets and some level of historical backup. Here are the main programs I've seen that claim to back up files, listed alphabetically with version number, download size, price, and a URL to additional information and download links.

- Drag 'N Back 2.7 (242K, \$50)
<<http://www6.zdnet.com/cgi-bin/textis/swlib/mac/infomac.html?fcodes=MC10262>>
- MacUpdate 4.0b7 (625K, \$20)
<<ftp://mirrors.aol.com/pub/info-mac/disk/mac-update-40b7.hqx>>
- NetBackup 1.0 (273K, \$20)
<<http://www.pe.net/~bsheaffer/svsoftware.html>>
- Onyx 1.0b2 (63K, \$10)
<<http://infinitysolutions.ml.org/www/>

[onyx.html](#)>

- SimpleBackup 1.6 (24K, free)
<<http://www.acts.org/roland/thanks/>>
- SmartSaver 3.2 (149K, \$25)
<<http://www6.zdnet.com/cgi-bin/textis/swlib/mac/infomac.html?fcodes=MC10472>>
- SwitchBack 2.6 (272K, \$30)
<<ftp://mirrors.aol.com/pub/info-mac/disk/switch-back-26.hqx>>
- Synk 2.4.2 (621K, \$10)
<<ftp://mirrors.aol.com/pub/info-mac/disk/synk-242.hqx>>

Off-site Storage Companies

If you're concerned about your off-site backup strategy, you might look into a service that stores physical backups off-site. These companies often handle pickup and delivery, providing schedules and materials to simplify an off-site backup strategy. They're undoubtedly not cheap, but in business situations where data is all-important, they may be worth the cost. You can find several of them in Yahoo's Disaster Recovery category.

<http://www.yahoo.com/Business_and_Economy/Companies/Computers/Services/Disaster_Recovery/>

Catastrophic Data Loss

If you find yourself in a catastrophic data loss situation, consider checking out the data recovery services offered by DriveSavers, a company that has developed proprietary software and techniques to recover data even from truly mangled disks that have been in fires, under tires,

(continued on page 15)

The Eye-Conning of America

by Ronald B. Meyer
Submitted by Bruce Thompson

(First Published in the January/February 1998 issue of *Seeds & Stems*, bi-monthly publication of the Maryland Apple Corps, PO Box 668, Riderwood, MD 21139-0668.)

Some time ago, in this magazine—when Microsoft Word 5.1a was brand new, as a matter of fact—I made a casual observation that icons seemed to be more prevalent than they once were. I seem to recall making an observation that America is heading back to the early days—days when you'd know the nature of a shop's business, not by the writing on its "shingle," but by the picture there. Need new shoes? The cobbler's shop has a boot as its icon. Need eyeglasses? Just look for a pair on the sign. But icons are especially prevalent today, and can be found in great numbers in technology, including VCRs and microwaves, but mostly in computer applications.

This "iconing," as I call it—which really should be "eye-conning"—worked very well for simple words and ideas, and for those that didn't have to be explained or translated. Boots and eyeglasses were, and are, common enough to be instantly recognizable, even in a stylized drawing. The idea was clear and the recognition immediate. Indeed, as my speech communication students learn from me, that is how communication works best: when speaker and listener have a common understanding of the symbols used to communicate ideas. Whether those symbols are pictures or language, the essential element in successful communication is this agreement, this common frame of reference. Even the most complex ideas can be communicated, if there is a common frame of reference, such as a common culture or common experience.

But somewhere along the way in the evolution of human communication, from Ancient Egypt when all writing was in pictures, to just before the present era when all writing was

in words, someone, or some group—probably engineers—made the bold assertion that icons, rather than words, would make their arcane software commands more easily understood by the public.

Now icon comes from a Greek word, meaning, well, picture, so we know programmers know at least a little of world culture. But perhaps programmers hold the intelligence of the average computer user in low regard; or perhaps they were playing to an international audience. Whatever the reason, like HTML, which is system-independent, icons are, they asserted, language-independent. The advantage of icons was as obvious as the meanings of the icons themselves: instant, intuitive recognition; they were a shortcut, a time-saving expedient. And this was progress.

Or was it progress in reverse? Writing in pictures instead of in words sounds an awful lot like hieroglyphics. Hieroglyphic is also a Greek word (meaning sacred carving), but in their day hieroglyphics were more like a code than a language. Since less than 1% of the populace then could read—mostly the priests, but even some kings—unlike the 99%, more or less, in America who read today, there was a general understanding among the literate about the language.

Icons, however, are not language. Indeed, in many cases, for many icons, no matter how literate you are, they are meaningless—unless you are told, or instructed, in their meaning. Most young drivers, for example, go to driving school and, if they haven't learned them until now, learn what the various road sign icons mean. They may even learn the various icons scattered across the control panels in their cars.

But when they boot up their favorite computer application, such as a word processor, they are faced with yet another learning challenge. And so am I, since I use a word

processor about 99% of the time; and so are you. Why? Isn't language just as good, perhaps better, for computer users? Perhaps not.

I worked for a time in an office, as a writer of course, where I was exposed to Microsoft's Windows 95. Fortunately the infection has been cured, but not the lasting impression I carry with me to this day: a Babel of icons, on toolbar and desktop, in Microsoft Word (Version 7.0 for Windows 95). But that wasn't all: most of the icons were incomprehensible. I had no idea, from their appearance, what they were supposed to do. But not to worry: if I positioned my mouse pointer over the icon, I got to see its name... in text. And, as if that wasn't enough, an explanation of its function at the bottom of the window... in text.

So here's my question: Why not just the text? What is the purpose of an icon that needs to be translated? Why not just use the translation? It is as if I were to tell you my name is Qwertyuiop, and then explain that it's pronounced "Ron." Well, if it's pronounced "Ron," why isn't it written "Ron"? This may be progress to some, but it's an eye-con to me.

I already know language, that is, words. Indeed, I think I read pretty well. So do you; so do most people who've been to school. In fact, if you know enough English to read this essay, you know enough to operate most computer applications. Words would serve even better than icons; in fact, they could be icons themselves; not as pretty, I guess, but at least as useful.

And I have a theory: I think programmers are trying to invent new hieroglyphics, a new code that pleases the high priests of the computer geek hierarchy. And I think they must be having a good laugh at our expense.

Copyright 1995 - 1998 Maryland Apple Corps, ALL RIGHTS RESERVED

Takin' the Bus:

Public transportation in your computer..

By: David K. Every ©Copyright 1998

<http://www.MackiDo.com/>

Submitted by Denis A. Diekhoff

"Bus" is short for omnibus — Omnibus is Latin meaning "for all". Which is exactly what a bus is — a way for all chips (devices) to talk to each other. Public transportation for your computer chips.

Imagine that a computer is made up of many separate chips that all need to talk to each other though wires (leads). You could have enough wires so that each chip had a set of many wires directly connected to each and every other chip it wanted to talk to. Think about that. Say each chip is "32 bit" (has 32 wires) to talk to other chips - and imagine that there are 50 chips in your computer. Each chip would have to have 1600 pins (wires) just to communicate directly with every other chip. That would be very expensive, and hard to wire up — so it isn't done. Instead chips just share one "bus". This "bus" is a common set of wires, that all the chips share, and talk to each other through.

A bus usually has a set of wires for the "address", and another set for the "data" - and a few extra wires for synchronization, stating whether the bus is already in use by someone else, clock (timing), and other miscellaneous functions. Each chip checks to see if the bus is available (is not in use) — if the bus is in use, the chip waits until it becomes available — otherwise the bus is available, and the chip puts an address and data value on the "bus". All chips are monitoring the "address" lines, and if they see an address that they "own", they grab the message (data) - otherwise they ignore it. (Now technically those addresses are also called "memory locations", or registers - but they basically all mean the same thing.) That is basically all there is to how a bus works.

As you can imagine, this bus is the freeway on which all computer

information travels. The faster the speed limit (clock rate), and the more lanes there are (data width), the more commuters (information) it can handle. Busses are either serial (1 bit wide + control) or parallel; which can be 8, 16, 32 or 64 bits wide (some are even 128 bits wide, though these are rare). The wider the bus, the more data can be passed at one time (per clock). The clock rate regulates how fast the information is put on the bus — one address and one data value per clock cycle. This rate is usually measured in MHz (megahertz) - which stands for millions of cycles per second. So millions of time per second, some chip (often your processor) is sending data to another chip (and the other chip knows this by the address).

Since this bus is shared it is often called a "bottleneck" (or potential bottleneck). It is a point through which a lot of information must flow (and can get stopped up). So if 10 chips all want to talk at once, one will talk, and 9 will wait (until their turn) — slowing down system performance. This is why bus speed is important - but it is only important if your chips are going fast enough to need that speed. If the bus is a lot faster (and wider) than the chips, then the bus just sits there like an empty freeway (or only gets a few lanes used at a time). If the bus is slower (or too narrow), then it is always rush hour, and everyone is delayed. So things must be balanced. (In modern system, your main bus is usually not able to keep up with the demands of the processor and memory in peak times).

Types of Busses

Computers have grown more and more complex... and so there is no longer just one "bus". There are many. Often inside of chips there are many busses as well — but most people referring to busses are talking about multi-chip communication

(not the internal communication of chips). In most cases a bus is something that connects more than two devices or chips. A point-to-point connection of only two devices is usually called a "port". One exception to the rules is something called LocalBus (only some machine have this) — which is a point to point connection (bus) between the CPU and a single card, usually used for Video/Graphics. (Since the graphics card is the most data-hungry of the expansion cards, putting it on a separate bus makes sense and frees up the other bus). But in most cases, a bus generally means more than two — and the more "modern" version of LocalBus is better named AGP (Advanced Graphics Port).

Peripheral busses allow one device to talk to other devices. IEEE488 (GPIB), SCSI, ADB, USB and FireWire are all peripheral busses — through which peripherals talk to each other and the computer. (These are also basically networks, but are seldom referred to as such). Peripheral busses usually talk at slower speeds (compared to other busses), because they have to talk for much longer distances. Fast rates could be the 50MB/sec FireWire (a new serial bus), or 5MB/sec SCSI (20MB for Fast/Wide). The other busses are far slower (ADB is only something like 192KB/second).

Notice that RS-232 (Serial ports), and Parallel ports were not listed as busses. These are device to device connections, and are not shared among many devices — so are not called a bus. Usually they are called a "port", hence you have a serial port, or a parallel port. The same with IDE, EIDE and UltraIDE — these devices have a separate connector for each device and they don't share.

Daisy Chain — many peripheral busses are connected by a "daisy chain". For those who have never seen a real daisy chain, it was a way to link daisies by tying the end of

one stem, to the base of another (next to the flower) — to make a chain of daisies (hence the name). Peripheral daisy chains work in much the same way. Every device is supposed to have an in and an out port. You plug each device to the prior one, in a chain that will eventually end at the computer — but instead of daisies, you have peripherals.

Expansion busses allow many cards to be plugged into computers (to expand functionality). NuBus, LocalBus, and PCI are all forms of expansion busses — as are ISA, EISA, PCI, MCA in the PC world (and of course S100 in the CP/M world), and there have been (and will be) many others. They all have their own timings and data widths. For now, the one that matters the most is PCI, which is a 33MHz, 32bit bus (for a theoretical rate of 132MB/sec). They are expanding the capabilities of PCI, to include fast (66MHz), and/or wide (64bit) versions — which can quadruple the rate that cards could talk to each other and main memory.

Just to make it confusing, some on-board expansion is really done through built-on cards — or basically through the expansion bus, even though the functions are on the motherboard itself (and not separate cards). This would likely make performance worse than if it was “truly” built-in (on the internal bus), but probably not enough so to matter for most people. You’d have to read the technical notes to know for sure, so this not usually mentioned, so you’d have to be a real propeller-head to care. Internal Bus is how chips on the motherboard talk to each other. Most of the time when people say “bus” they are really referring to the internal bus. This is often unique for each version of the processor, and sometimes a tad unique by each model/manufacturer. This internal bus is how the CPU talks to memory, and its “on board” I/O (built in functions) — and is the highest performance bus on a machine. When you hear (or see) people saying that “my

machine has a 66mhz bus”, this is what they are talking about.

Many machines have a 64 bit bus, and transfer at 66MHz (commonly) — or roughly a total theoretical maximum of 528MB/Second. That is pretty fast, but think about this — your computer (CPU) may be a 266MHz machine (or roughly four times faster). So often your CPU can way out-speed the main bus.

Your main RAM can’t even keep up with the bus itself — we are making faster and faster types of RAM, and using a technique called interleaving (alternating between chips so that multiple RAM chips can come closer to keeping up with total bus bandwidth). This performance gap is one of the reasons we use special types of “cache” memory to help keep the CPU fed (and busy) — that, and to keep the CPU from completely saturating the main bus with memory requests (and preventing all the other chips from getting their work done).

There is another trick for keeping a CPU fed, which is to use something called a “backside” cache. What this means is that the CPU can talk to the main bus (and memory) - or- to a second bus on the “backside”. This second bus basically has some very fast, temporary memory (which the CPU stores things on, and gets things from). While it is working on this “backside”, the “front side” (main bus) is usually free to be used by other chips, and for other things. This can simulate having a faster bus — since your main bus isn’t saturated trying to satisfy your CPU’s memory needs (most of the time). If you have an “inline” cache, it is on the main bus, and all those memory accesses can be keeping the main bus “in use”. If you have multiple CPU’s, bus saturation is one of the most critical problems (since you have multiple processors all fighting for the bus at the same time).

Conclusion

So there are many busses in your computer, and often inside a single

chip. As the main bus (internal bus) performance is not keeping up with the rate at which CPU and memory performance has been increasing, it is likely that designers will use more and more busses to solve various problems (to off load other busses, and to reduce bottlenecks). Already it is not uncommon to have a special bus for handling Graphics or Video and Audio — and sometimes there are special sub-busses for sending data or control signals from one point to another. But hopefully, you understand the basics of the bus — that it is just a shared set of connections.

*MacKiDo Copyright Notice
Copyright © 1989-98 David K. Every.
Compilation Copyright © 1998 MacKiDo.
All rights reserved.*

MHC Computing

Macintosh™ Consulting
Individual & Group Training
Computer Problem Assistance

Mike Carlson

(218) 387-2257 (Grand Marais, MN)
Wide Range Pager: 612 580-9281
Internet: mhcncvc@boreal.org

Claris®
Solutions Alliance
Member

NiftySpell

If You Can Use A Mouse, You Can Spell Correctly!

By Joe Kohn

Submitted by Harry Lienke

Shareware Solutions II, in association with Chris Vavruska, is pleased to announce NiftySpell, the first and only Universal Spell Checker for the Apple IIGS computer.

NiftySpell is a flexible and easy to use New Desk Accessory (NDA) that automatically loads whenever your system starts up. Once installed, NiftySpell adds a new menu item to the Apple Pull Down menu, and it can be accessed from any standard Apple IIGS program that supports New Desk Accessories. With NiftySpell installed, you can spell check documents right from your Finder Desktop or from within such diverse programs as Teach, Hermes, Freecell or HyperStudio.

In addition to the NDA, there is also a special Spectrum XCMD included that seamlessly integrates NiftySpell into the Spectrum telecommunications program, making it very convenient to spell check your outgoing e-mail and forum messages while using Spectrum or Crock O' Gold!

With NiftySpell, you'll never again be embarrassed by sending out important documents with spelling or typographical errors, and you'll always look your best in print when the words you use to convey your thoughts are spelled correctly.

Before NiftySpell, only those who used expensive word processing or desktop publishing software packages like AppleWorks, AppleWorks GS or GraphicWriter III could spell check their work. Now anyone has the convenience of a spell checker

within easy reach. If you can use a mouse, you can spell correctly!

NiftySpell requires an Apple IIGS, System 6.0.1, and a hard disk drive. It requires at least 512k of available RAM and at least 1.5 megabytes of hard drive storage space.

NiftySpell is published by Shareware Solutions II, and the cost is \$20, which includes postage to anywhere in the world.

To order NiftySpell, send checks or money orders to:

Joe Kohn, Shareware Solutions II,
166 Alpine St, San Rafael, CA 94901

NiftySpell is expected to ship on or about August 5, 1998.

Ongoing Deals for Mini'app'les Members

Submitted by Tom Gates and Bert Persson

The following businesses have agreed to provide ongoing discounts to members of mini'app'les. When you contact these companies, please identify yourself as a member of mini'app'les to qualify for these discounts. For questions related to these discount offers, please contact Tom Gates - 612-789-1713 evenings and weekends.

Power Protection Products

Surge Protection strips, Battery backups, line conditioners, etc. Contact Keith Kalenda at Business Security Products, 612-789-1190. 1/3 off APC SurgeArrest line of products 25% off APC BackUPS, SmartUPS and related products.

CartridgeCare, Inc.

CartridgeCare, Inc. of Roseville is offering Mini'app'les members an additional \$5.00 off the cost of laser printer cartridges. They handle supplies for, and do repair work on

equipment from a number of manufacturers. For example: Apple, Canon, HP, IBM, Epson, Sharp, Brother, Panasonic, Okidata, Minolta, to name a few. They also provide free next-day delivery and core pickup in the metro area.

For additional information about the user group discount and other services, contact Michael Gigot at 651-331-7757.

Peachpit Press

Peachpit Press offers mini'app'les members a 40 percent discount on their books. Our contact person for Peachpit Press is Keary Olson, he may be contacted at SIG meetings, on our BBS, or his home phone, 612-724-0031. Peachpit books may also be ordered on our BBS. Go to 'Conferences', 'Special Offers', 'Peachpit Books'. From time-to-time, Keary will have Peachpit catalogs at SIG meetings. You may also check Peachpit's web page at <http://www.peachpit.com/> for current and soon to be released books

In order for our members to receive the 40 percent discount, Peachpit Press requires that a minimum number of books be ordered. Therefore please allow sufficient time. Minnesota sales tax and a \$ 0.50 shipping charge will be applied to each book ordered.

Macmillan Publishing

MacMillan offers mini'app'les members a 40 percent discount on their family of books (Hayden, Adobe Press, Que, Sams, Brady, NRP, and Alpha). MacMillan books may be ordered by calling an 800 number. Use the mini'app'les account number, 10782880 -when ordering. Minnesota sales tax and a s/h charge will be added.

MacMillan's web page is at <http://www.mcp.com/>. MacMillan produces frequent listings of new titles that have been added to their catalog. mini'app'les will attempt to have these available on the BBS in addition to the catalogs.

Members Helping Members

by John C. Hunkins, Sr.

A benefit of membership that that many find very worthwhile and helpful is Members Helping Members (MHM). It is a way of sharing our knowledge with one another. Please turn to page 4 of this newsletter for our almost full-page listing folks willing to help other folks.

You will note there are 11 people who have stepped forward willing to help others in 23 various areas. You will also note that it needs updating.

What the heck is Claris Resolve? (It was a spreadsheet in competition with Excel.) There are some topics which should be deleted (such as Claris Resolve) and new topics which should be added (such as MAC OS8). The Board of Directors would like your input: What changes would you like? If you have access to a copy machine, copy Page 4, mark up the copy with your suggestions, and give it to one of the Board members at the next SIG meeting you attend. Another way to offer your input is to call or e-mail one of the Board members; they are listed on the Inside Front Cover. (A marked-up copy or e-mail is better than telling some one because things get lost in translation, things get forgotten.)



I WANT YOU MEMBERS HELPING MEMBERS YOUR NEAREST MAC SIG MEETING

Please consider being one of the 'Helping' people. You don't have to be a 'know it all', frankly because they don't exist. Many have increased their knowledge and became better computer users just by helping others, everyone gains.

Here is an example: Ben Stallings, a relatively new member and the Chief Wizard at Twin Cities Free-Net, recently sent me e-mail offering to be a Helper for HyperCard and communications (Internet, ethernet, LocalTalk, and modem) - especially Twin Cities Free-Net.

Ben also had a suggestion that MHM doesn't seem to include hardware. He cited himself as someone who is proficient in working on the PowerBook 500 series, and rapidly learning more than he ever wanted to know about the compact Macs. Thanks Ben! (Ben's phone number is 612-870-4584; Ben also had some other ideas I have not mentioned here.)

(continued from page 10)

or at the bottom of the Amazon river. DriveSavers recently noted that they're now confident of being able to recover Macintosh Extended Format (MEF, or HFS Plus) disks. There are other recovery companies - I recommend making sure they're experts with Macintosh drive formats before working with them.
<<http://www.drivesavers.com/>>
<http://www.yahoo.com/Business_and_Economy/Companies/Computers/Services/Data_Recovery/>

Whatever You Do

I realize I've come down hard on the side of spending a decent amount of money to put together a coherent backup strategy based on a dedicated backup device, multiple tapes or cartridges, and commercial backup software. That's because I consider the work I do on my Macs to be important, and I feel that spending money up front is more efficient than wasting time and money when the inevitable data loss happens. I like the peace of mind that comes from knowing I've put

together a solid backup system.

If you feel that your files aren't particularly important or that you can afford to spend a few days restoring your Mac to working order, feel free to go with a less expensive and comprehensive backup strategy. Just keep in mind the advice in this series, and whatever you do, remember this: No one ever regrets backing up, only not backing up.

Benefits of your mini'app'les membership include:

A one year subscription to our monthly Newsletter

A free account on the mini'app'les BBS (45 minutes/day)

Communicate with other mini'app'les members plus get up to date information on mini'app'les events and meetings. Get assistance from other members. Download freeware and shareware.

Eligibility for frequent drawings of free equipment, software, and books.

Just a few of the many items given away free in the last year included: Connectix QuickCam, Microsoft Encarta, Books from Peachpit Press and MacMillan, RamDoubler, SpeedDoubler, Lind PowerBook battery Conditioners and Rechargers, Microsoft Art Gallery, and Apple System 7.5 software.

Discounts on book orders

40% off Peachpit Press, 30% off MacMillan family of book companies (Hayden, Adobe Press, Que, Sams, Brady, NRP, and Alpha)

Periodic special User Group discount offers on equipment and software.

In the past year, Apple, Hayes, Brøderbund, and APC Power Protection (Business Security Products), among others, have offered mini'app'les members significant discounts.

Plus, you're supporting all of mini'app'les' special interest group (SIG) meetings that you can attend each month.

***It's easy to recoup your cost of membership
with the above benefits.***

And a one year membership still costs only \$25.

 **mini'app'les**
Box 796
Hopkins, MN 55343

ADDRESS CORRECTION REQUESTED

Non-Profit Org.
U.S. Postage
PAID
St. Paul, MN
Permit 2537

 **mini'app'les membership card**

EXPIRES: 99-12 ID# 160

DAN B BUCHLER
2601 WOODS TRL
BURNSVILLE MN 55337