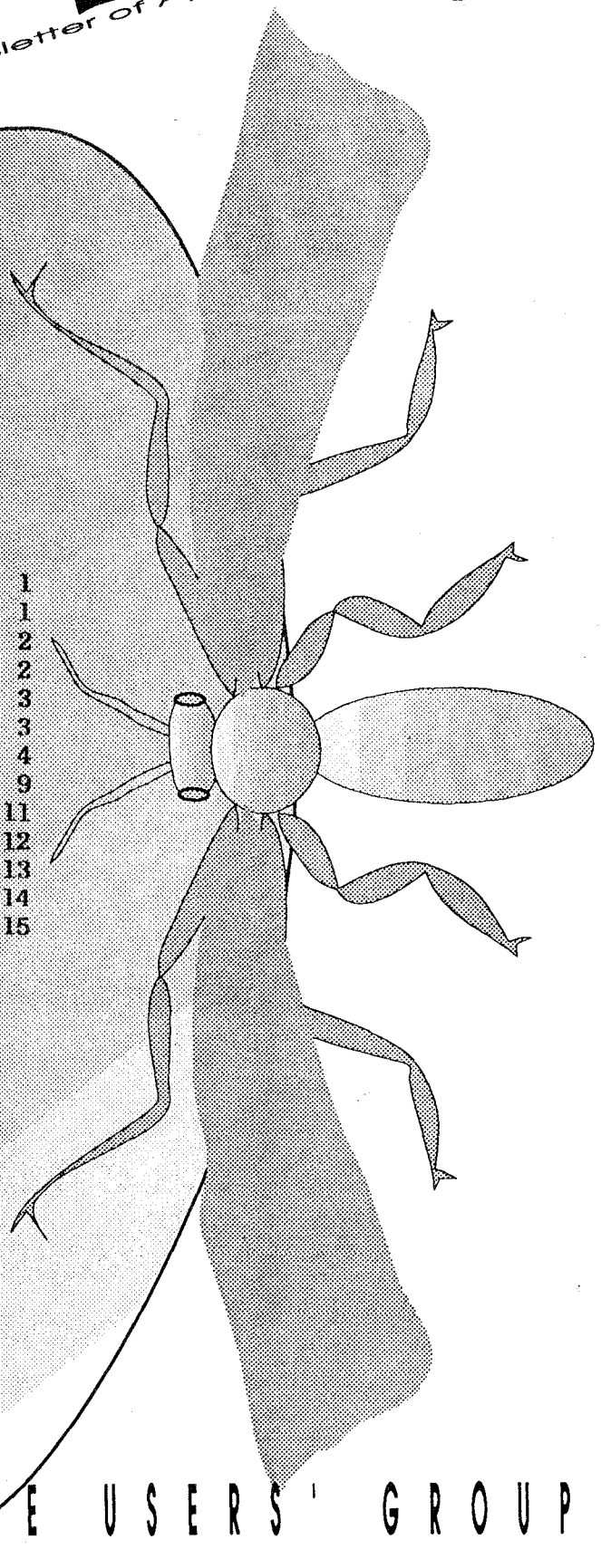
April 1989 Edition

Apple Bug

the newsletter of Apple-Q Inc.



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P.O. BOX 721, SOUTH BRISBANE, QUEENSLAND 4101

THE BRISBANE APPLE USERS' GROUP

Apple-Q Inc. Information Page

This Month...

Open Day
Sunday 16th April 1989
Hours: 9.00 am to 4.30 pm

Committee Meeting
Monday 17th April 1989
Starts: 7.00 pm

Next Month...

Open Day
Sunday 21st May 1989
Hours: 9.00 am to 4.30 pm

Committee Meeting
Monday 22nd May 1989
Starts: 7.00 pm

Executive Committee

Vince Crosdale	President	(07) 351-3090
John Finch	Vice-President	(07) 260-5218
Bob Godbehere	Secretary	(07) 808-3892
Bernie Benson	Treasurer	(07) 345-1545
Graham Black	Registrar	(07) 883-1525
Dale Rodgie	Editor	(075) 38-6942
Sheryl Mann	Software Librarian	(071) 96-7401
Brett Dutton	Hardcopy Librarian	(07) 397-8087

Bulletin Board - Apple-Q Inc. BBS

On-line: 24 hours a day
Telephone: (07) 284-6145 (Bulletin Board)
(07) 883-1525 (Voice)
Baud Rates: 300, 1200/75, 1200 & 2400 (CCITT & BELL)
Data Specs: 8 Data bits, 1 Stop bit, No Parity, Full Duplex
Sysops: Graham Black, Vince Crosdale, Brett Dutton

Now with a 60 megabyte Hard Disk

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Joining Fee :	$10.00 (add to Membership Fee when first joining)
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Corporate Membership :	$50.00
Associate Membership :	$ 5.00 (plus $5.00 joining fee - BBS only)

(At the discretion of the Executive Committee)

Copying Fees

Apple-Q has a wide selection of Public Domain, Shareware and Demonstration software available to members. We charge a copying fee so the group can obtain more software to expand the library. The copying fee for 5.25 inch disks is 50 cents a side with a minimum charge of $2.00. For the 3.5 inch disks, the fee is $3.00 per disk. See the software librarian at the next Open Day for a catalogue.

More Info...

- All club meetings are held at the Hooper Education Center, Kuran Street, Wavell Heights.
- The copying of Commercially produced software cannot be sanctioned by Apple-Q Inc. and members who do so risk expulsion from the group.
- All contributions fo the newsletter should be handed to a committee member at the Open Day, or posted to P.O. Box 6375, Gold Coast Mail Centre, Bundall, Queensland 4217. The deadline date is the committee meeting immediately following the Open Day.
- Application for membership or Renewal of membership should be sent to P.O. Box 698, Redcliffe, Queensland 4020. All other mail should be sent to the club's post office box - listed on the cover.
- Due to space restrictions, only Apple-Q Inc. members are allowed to set up their machines at the meetings. Make sure to display your membership card on your machine, or you will be required to pay a membership fee.
- No one is allowed behind the Trading Table counter except the committee members and anyone appointed to work at the Trading Table.

Editorial

by Dale Rodgie

Welcome to the second edition of the new improved Apple-Bug. By the time you read these words, a delegation of members attended the first Apple User Group Conference at Manly in Sydney. In the next edition, we will report on the happenings at the conference.

Back on the home front, the Auction last month was a great success! We had a record number of lots, of which, 90 items were sold. Those 90 lots sold for $1171.20 and the group made $117.12 in commissions. This money will be used to provide more services to the members. We also have a GREAT programming competition starting this month. Read-on for more details.

The Apple-Q BBS is moving

Yes, the BBS will soon be moving to Vince's humble abound. The change of phone number should help people who have had difficulties contacting the BBS. The BBS is also moving into the central Brisbane telephone district, so members on the southside will be able to contact the BBS at the cost of a local phone call. At the time of writing, the new phone number was not available, however, a message will be placed on the BBS (at the old phone number) a week before the BBS is moved. The current number for the BBS is (07) 284-6145.

Sale! Sale! Sale!

We have two types of joysticks available at the Trading Table this Open Day. They are priced at $39.95 and $49.95. And for the GS users, we have the latest game craze "Zany Golf" for $49.95. Financial members will also be able to get 10% off these three items. So be quick!

Programming Competition

by Brett Dutton

At the last committee meeting, I brought up the idea of having a programming competition. So after I had the idea, I had to come up with the problem for you to solve. I have thought up two problems.

The first is a mathematical problem that will need a lot of thought to solve, the second is a bit easier but will require a lot of programming time.

There will be one software prize in the mathematical program for the best solution to the problem. In the menu problem there will be two software prizes, one for the best junior programmer (14 years and under) and one for the best overall programmer. One snag though, only one prize per person, so you smarties can't take out the lot.

The programs may be written in any language or in any format (ie Pascal, CP/M) but must run on my Apple //e (so no toolbox utilities for you GS users). If you are choosing between DOS and ProDOS then I would prefer ProDOS, but I will accept DOS. All submissions then become the property of Apple-Q Inc and go into the software library. Can be submitted on either 3.5" or 5.25" disk but the program must be able to run from that disk. Also must include source code in either a text file or an Applesoft BASIC file. I will be judging the programs in the following areas:

1. Correctness (i.e. if it works)
2. Effort put in
3. Originality
4. Ease to follow
5. How well it is commented

So for the definition of the problems.

1. Mathematical Problem

Introduction

Everything we see is in 3 dimensions, everything has length, width and height. Any point can be represented as a distance from the origin in the length direction, a distance from the origin in the width direction and a distance from the origin in the height. If the origin is considered to be (0,0,0) then a point 3 units in the length direction (called 3 units along the x-axis), 4 units in the width direction (called 4 units along the y-axis) and 5 units in the height direction (called 5 units along the z-axis) can be written like (3,4,5). So now I have defined a point which has no length, width or height, just position (distance from the origin). Now if you have two points joined together, then you have a line, so any two points can define a line.

The Problem

If you have two lines in space then they might intersect. Just where they intersect is the problem that I want you to solve.

Requirements of the Program

The program will accept four points entered from the keyboard which will define two lines, then calculate the intersection of these lines if they intersect at all. The program must know if the lines are parallel or are skew (i.e. if they aren't parallel and don't intersect) and report to the user. I am not interested if this program is user friendly, or looks like the next Mathematica because that is not the problem. It must only work.

2. Menu Problem

Introduction

I'm sure that everybody has seen AppleWorks and the main menu. Menus are very useful in that it makes life very easy for users.

The Problem

The problem is that menu systems are usually written for one application only. Like some of the hello programs around only read the catalog of a disk. The AppleWorks menu system is written just to drive AppleWorks. The thing that isn't so common is a versatile menu program that can be adapted through a textfile.

Requirements of the Program

The program must be able to read a textfile, which will contain the menu option title then the command that it must do. When the menu option is selected it will preform the appropriate command. Here is a sample of what your textfile might look like:

```
AppleWorks
-/AW/APPLEWORKS
Reboot
PR#6
Utilities
BRUN /UTIL/DISK.UTIL

etc...
```

You can choose the commands that you want to perform so make up your text files appropriately, but I might want to try it with another text file and other commands so no bodgies. This program must be user friendly and I will be looking for presentation and versatility in this one.

So these are the problems. If you are having any problems I will be happy to assist at the Open Day but not to the extent that you will have an unfair advantage. The entries must be submitted by the May Open Day personally or by post to our usual address. Remember that the more I have to try to decipher how to work your program the less chance you will have. Also label the disk with your name and membership number so I know who's entry it is.

Disk of the Month

This month we have gone one better with the Disk of the Month. We have two Disks of the Month. Another first for this month - we are offering the Disk of the Month also on a 3.5 inch disk. As you read on, you will see why.

You can also obtain a Disk of the Month using your own disk. Price for the Disk of the Month is as follows:

Disk Size	with disk	without disk
5.25 inch	$5.00	$4.00
3.5 inch	$8.00	$5.00

The price for the Disk of the Month is a copying fee. The programs on these disks are Public Domain, Freeware, Shareware and Demonstration software. Each month I pick the best of these programs. Remember also that past Disks of the Month are still available from the Trading Table on Open Day. Let's have a look at the disks for this month:

Apple II Technical Notes

If you are into programming your Apple II series computer, this is the disk for you!. On the 3.5 inch disk is 141 technical notes covering subjects like: ProDOS, Pascal, Appletalk, Apple IIe, Apple IIc, Imagewriter, SmartPort, UniDisk, Filetypes, Apple IIGS and more. These technical notes take up over one and a half 3.5 inch disks. However, they have been compressed by a program called

BLU. The latest version of BLU is also included on the disk. Because of the lack of space, all these files would not fit on a double-sided 5.25 inch disk. Technical notes missing from the 5.25 inch disk include the subjects: Pascal, Filetypes, Apple IIGS and GS/OS.

Just boot the disk and stand back. More information than you have seen before is at your finger tips. Also, on the 3.5 inch disk, are three extra files. I have created a data base of the technical note subjects. It is stored in an Appleworks and Appleworks GS data base file. And for those still saving up to buy Appleworks, I have included the data base as a text file.

Apple IIGS Games Disk

Here is a collection of six of the best Public Domain, Shareware and Demonstration games for the GS. Lets have a look at the games on the disk:

Bounce It - Based on the old Brick-out game from the DOS 3.3 System Disk, this version bursts into full colour graphics and great sound. It keeps the highest score. See if you can beat my highest of 75,000.
F1 Race - Here's another action packed Shareware game from the States. Drive this formula one car (don't forget to brake) past those slower cars. This one also makes full use of the GS's sound chip.
Shanghai - This is the only Demonstration game on this disk and worth its weight in gold. You have a number of tiles on the screen. You have to remove two matching tiles at a time. Your goal? Remove all the tiles. Sounds Easy? Well, give it a go.
Mastermind - Here is the GS version of that old game. You can save the state of the game to disk to play later and guess the colours of up to eight markers.
Othello - The object of the game is to have a majority of the disks on the board showing your color. Players move by placing a disk on the board on an empty square with their color facing up. The only requirement for a legal move is that it must outflank one or move of the other players disks.
Towers of Hanoi - The object of this game is to more a set of blocks from one pole to the one on the other side of the screen. However, the blocks are different sizes and you can't place a larger block on a small block. You can also watch the computer play this one.

New IIGS Internal Hard Disk Drive

by Charlie Carmody

EDITOR: This article comes from the March 1989 edition of Signal (Honolulu Apple Users' Society Newsletter). The prices in this article are in U.S. dollars. The Inner Drive is now available in Australia from the Australian GS Users Assoc. Their prices are $1098.00 for a 20 megabyte and $1398 for a 40 megabyte Inner Drive. These prices do not include sale tax. For more information, phone (02) 688-2701.

In December, I noted an advertisement in inCider magazine (January issue - inside back cover) for a radically new hard disk drive for the Apple IIGS - an internal drive, reasonable in cost and "simple" to install! It sounded too good to be true, not being the adventurous nor the mechanically adept type, I did a little checking on the GEnie roundtables. I found quite a little discussion, but few people with hands-on experience - and nothing but glowing reports. I called the 800 number and had a long discussion, especially when they found I was from Hawaii and active in our Apple group. I ordered the 40 mb model on my Visa card December 29th and was promised shipment by air, on January 3rd, in time for me to be able to report on my experience at our January General Meeting!

As you all, who attended that meeting know, the "promised shipping date" was just "vaporware" and I began to suspect that the equipment, also, would not live up to the advertising! Repeated phone calls were merely responded to by "our normal delivery schedule is 3 to 4 weeks", with "no record of any early shipping date promise". My Visa account however was billed promptly! When I complained, they offered to cancel my order! After this experience, I was convinced I had been had, and refused to pay the Visa charge.

As I was filing the necessary written confirmation with Visa, I received a small box by air shipment on January 26th. I decided to do a "scientific" test - I noted the time and started to open the box; read the extensive Instruction Book (one sheet of paper, printed on both sides); unpacked the box and started the "installation", following the instructions to the letter. I unplugged my CPU and System Saver, opened the CPU case, disconnected the power cord, pressed one plastic clip at the front of the power-supply, lifted it loose and disconnected its plug connector to the motherboard. I slid the new power-supply into place, plugged in its connector plug, carefully inserted the new controller in slot 7, and connected the ribbon connector from the new power supply, re-checked all the instructions and closed up the CPU case. In only moments, I re-connected my system and TURNED ON THE POWER - NOTHING!!!!

After checking and re-checking, panic started to set in. Then I noted that power light on my CPU was not showing (I had inadvertently turned off the power switch on the back of the CPU - with my System Saver, I normally never use it!). Turned on the

power and viola! - my monitor came to life and I was up and running. Checking the clock, all of thirty-five minutes (including the brief panic period) had elapsed!

The unit is from Applied Ingenuity, of Baldwin Park, California. It consists of a replacement power-supply for the IIGS, which includes the hard disk and a built-in fan (just slightly larger than the old power-supply - but does not block any slots). The controller card fits easily into slot 7, and the ribbon connector fits easily within the CPU case. The system is completely noiseless, despite the added fan, and except for being able to "see" the operation on your monitor there is no outward evidence, either visually or by sound, of an added component - less noise than your 3.5 inch drive. The drive comes with GS/OS installed, with an additional "AI Utility" file to be used, if necessary, to reformat the disk. It comes formatted in two volumes of equal size (40 megabyte model) - but can be changed, if you wish to two volumes of any size (so long as the smaller is at least 10 megabytes). The disk is formatted at a 6:1 interleave ratio (will not operate faster at 2:1, as with GS/OS 3.5 inch disks) but is noticeably faster than the best I have been able to achieve with GS/OS and my present system!

The "instructions", despite appearing to be somewhat crude and amateurish, are extremely complete and understandable by the non-technical layman. Actual installation instructions take up only five small paragraphs of the two-page sheet (less than one-half page). The 800 number - (800) 346-0811 - provides immediate assistance and/or information if needed.

Applied Ingenuity also supplies other Apple IIGS components, including a memory expansion card (called "GS Juice Plus") with 1 to 4 Megabytes (and were offering a "trade-in" deal for those with Apple expansion cards), as well as a "Memory Saver" and a "GS Stereo". I do recommend their internal hard disk (20 meg. at about $500.00 and 40 meg. at about $650.00, plus $15.00 second-day air shipment, these prices are approximate, since, like all other hard drives, were increased in January). No dealers have been authorized so far, and must be ordered directly.

I do certify that I have no connection with Applied Ingenuity whatsoever, and that my "review" is solely for the information of HAUS members. Despite their obviously excellent equipment reviewed here, I would not wish to be associated with a company who apparently believes their equipment quality obviates the need for good customer relations. On behalf of other AI equipment owners, I hope their equipment, in the long run, lives up to expectations.

I am now in the throes of attempting to put as many of my programs as possible on the HD - some are giving me trouble (copy-protection, programs that will not operate without being on a volume with a specific volume name, etc. - problems common to all HD users). I will report, later, on my adventures in this area.

Double High-Resolution Graphics

EDITOR: This is an example of one of the Technical Notes available on the Disk Of the Month. Because of this articles size, I have published only the first part of the Technical Note. Read the May Apple-Bug for the exciting conclusion.

Apple IIe
#3: Double High-Resolution Graphics

Revised by: Matt Deatherage, Glenn A. Baxter & Cameron Birse November 1988 Written by: Peter Baum September 1983
This Technical Note is a tutorial on double high-resolution (hi-res) graphics, a feature available on 128K Apple IIe, IIc, and IIGS computers.

Introduction

This Note was originally written in the early days of double high-resolution graphics. At that time, there was no Apple IIc or IIGS, therefore, some of the things originally said may seem a little strange today, five years later.

For example, this Note talks a fair amount about being sure that you have a Revision B Apple IIe with the jumper installed. All Apple IIe computers shipped since about mid-1983 have a Revision B motherboard, so this is not that big a concern anymore; furthermore, nearly every IIe out there has the aforementioned jumper already installed (it is not even an option on some third-party 80-column cards for the IIe).

Also, the IIc and IIGS are functionally equivalent (for the purposes of this article) to a Revision B IIe with the properly-jumpered 80-column card installed, and most of the references made to the Apple IIe apply equally to the IIc and IIGS. We have tried to update most of the references to avoid confusion.

Considering the myriad of programming utilities, games, graphics programs, and other software that now uses double high-resolution graphics, it is probable that this Note will not be as vital as it once was. If you are writing in AppleSoft BASIC, you

will probably find it easier to purchase a commercial double hi-res BASIC utility package to add double hi-res commands to AppleSoft, rather than writing your own routines. Similarly, those who want double hi-res art will find a double hi-res art application much easier than trying to draw it from the monitor or machine language.

However, if you have the insatiable curiosity about these things that Apple II owners and developers so often are blessed (cursed?) with, this Note will show you how double high-resolution works, as well as giving a few type-along examples in the monitor to get your feet wet.

This article describes the double high-resolution display mode which is available in the Apple IIc, IIGS, and the Apple IIe (with an extended 80- column card). Double hi-res graphics provides twice the horizontal resolution and more colors than the standard high-resolution mode. On a monochrome monitor, double hi-res displays 560 horizontal by 192 vertical pixels, while on a color monitor, it allows the use of 16 colors.

Double High-Resolution on the Apple II Series - What is It?

The double high-resolution display mode that is available for the Apple IIe provides twice the horizontal resolution of the standard high-resolution mode. On a standard black-and-white video monitor, standard hi-res displays 280 columns and 192 rows of picture elements (pixels); the double hi-res mode displays 560 x 192 pixels. On a color monitor, the standard hi-res mode displays up to 140 columns of colors, each color being selected from the group of six colors available, with certain limitations. Double hi-res displays 140 columns of color, for which all 16 of the low-resolution colors are available.

	Black/White	Colour
Standard Hi-Res	280 x 192 pixels	140 columns 6 colours
Double Hi-Res	560 x 192 pixels	140 columns 16 colours

Table 1-Comparison of Standard and Double Hi-Res Graphics

How Do I Install It?

Installation of the double hi-res mode on your Apple IIe depends on the following three conditions, discussed in detail below:

1. Presence of a Revision B motherboard
2. Installation of an extended 80-column text card with jumper
3. A video monitor with a bandwidth of at least 14 MHz

First, your Apple IIe must have a Revision B (Rev-B) motherboard. To find out whether your computer's motherboard is a Rev-B, check the part number on the edge of the board nearest the back panel, above the slots. If the board is a Rev-B, the part number will be 820-0064-B. (Double hi-res does not work on systems containing a Rev-A motherboard.) If your computer's motherboard is not a Rev-B, and if you want to obtain one, contact your local Apple dealer.

The second condition for installing double hi-res on your IIe is that it must have an extended 80-column text card installed. This card must be installed with a jumper connecting the two Molex-type pins on the board.

Warning: If your IIe has a Rev-A motherboard, do not use an extended 80-column card with the jumper connection mentioned above; the system will not work at all if you do.

The last requirement for operation in double hi-res mode is that your video monitor must have a bandwidth of at least 14 MHz. This bandwidth is necessary because a television set that requires a modulator will not reproduce some characters or graphic elements clearly, due to the high speed at which the computer sends out dots in this mode. Because most of the video monitors having a bandwidth of up to 14 MHz are black-and-white, the working examples in this article do not apply to color monitors. If you have a video monitor, please use it--instead of a television set--to display the following examples. The AppleColor composite monitors will work just fine.

Your Turn to be Creative (Volunteers, Anyone?)

The tutorial that occupies the rest of this Note assumes you are working at your Apple II as you read. The second part of the lesson demonstrates the double hi-res mode; therefore, before embarking on the second part, you should install a jumpered extended 80-column card in your Rev-B Apple IIe (or use any Apple IIc or IIGS).

Hands-On Practice with Standard Hi-Res

The Apple II hi-res graphics display is bit-mapped. In other words, each dot on the screen corresponds to a bit in the computer's memory. For a real-life example of bit-mapping, perform the following procedure, according to the instructions given below. (The symbol <cr> indicates a carriage return.)

1. Boot the system.
2. Engage the Caps Lock key, and type HGR<cr>. (This instruction should clear the top of the screen.)
3. Type CALL -151 <cr>. (The system is now in the monitor mode, and the prompt should appear as an asterisk (*).)
4. Type 2100:1 <cr>. One single dot should appear in the upper left- hand corner of the screen.

Congratulations! You have just plotted your first hi-res pixel. (Not an astonishing feat, but you have to start somewhere.)

With a black-and-white monitor, the bits in memory have a simple correspondence with the dots (pixels) on the screen. A dot of light appears if the corresponding bit is set (has a value of 1), but remains invisible if the bit is off (has a value of zero). (The dot appears white on a black-and- white monitor, and green on a green-screen monitor, such as Apple's Monitor /// or Monitor II. For simplicity, we shall refer to an invisible dot as a black dot or pixel.) Two visible dots located next to each other appear as a single wide dot, and many adjacent dots appear as a line. To obtain a display of another dot and a line, follow the steps listed below:

1. Type 2080:40 <cr>. A dot should appear above and to the right of the dot you produced in the last exercise.
2. Type 2180:7F <cr>. A small horizontal line should appear below the first dot you produced.

From Bits and Bytes to Pixels

The seven low-order bits in each display byte control seven adjacent dots in a row. A group of 40 consecutive bytes in memory controls a row of 280 dots (7 dots per byte, multiplied by 40 bytes). In the screen display, the least- significant bit of each byte appears as the leftmost pixel in a group of 7 pixels. The second least-significant bit corresponds to the pixel directly to the right of the pixel previously displayed, and so on. To watch this procedure in action, follow the steps listed below. The dots will appear in the middle of your screen.

1. Type 2028:1 <cr>.
2. Type 2828:2 <cr>.
3. Type 3028:4 <cr>.

The three bits you specified in this exercise correspond to three pixels that are displayed one after another, from left to right.

The most-significant bit in each byte does not correspond to a pixel. Instead, this bit is used to shift the positions of the other seven bits in the byte. For a demonstration of this feature, follow the steps listed below:

1. Type 2050:8 <cr>.
2. Type 2850:8 <cr>.
3. Type 3050:8 <cr>.

You will notice that the dots align themselves vertically. Now do the following:

4. Type 2450:88 <cr>.

The new dot (that is, the one that corresponds to the bit you just specified) does not line up with the dots you displayed earlier. Instead, it appears to be shifted one "half-dot" to the right.

5. To demonstrate that this dot really is a new dot, and not just the old dot shifted by one dot position, type 2050:18 <cr>, 2850:18 <cr>.

You will notice that the dot mentioned under step 4 (the dot that was not aligned with the other seven dots) is straddled by the dots above and below it. (The use of magnifying lenses is permitted.)

Shifting the pixel one half-dot, by setting the high, most-significant bit is most often used for color displays. When the high bit of a byte is set to generate this shifted dot (which is also called the half-dot shift), then all the dots for that byte will be shifted one half dot. The half-dot shift does not exist in the double hi-res mode.

For example, the first memory address of each screen line for the first few lines is as follows:

$2000, $2400, $2800, $2C00, $3000, $3400, $3800, $3C00, $2080, $2480, etc.

Each of the 24 boxes contains 8 screen lines for a total of 192 vertical lines per screen. Each of the 40 boxes per line contains 7 pixels for a total of 280 pixels horizontally across each line.

The Intricacies of Double Hi-Res

Because the double high-resolution graphics mode provides twice the horizontal dot density as standard hi-res graphics does, double hi-res requires twice as much memory as does standard hi-res. If you spent many hours committing the standard hi-res memory map to memory, don't despair; double hi-res still uses the hi-res graphics page (but only to represent half the picture, so to speak). In the double hi-res mode, the hi-res graphics page is compressed to fit into half of the display. The other half of the display is stored in memory (called the auxiliary (aux) memory) on the extended 80-column card. (This article refers to the standard hi-res graphics page, which resides in main memory, as the motherboard (main) memory.)

The auxiliary memory uses the same addresses used by the standard hi-res graphics page (page 1, $2000 through $3FFF). The hi-res graphics page stored in auxiliary memory is known as hi-res page 1X. The graphics pages in auxiliary memory are bank-switched memory, which you can switch in by activating some of the soft switches. (Adventurous readers may want to skip ahead to Using the Auxiliary Memory, which appears later in this Note.)

The memory mapping for the hi-res graphics display is analogous to the technique used for the 80-column display. The double hi-res display interleaves bytes from the two different memory pages (auxiliary and motherboard). Seven bits from a byte in the auxiliary memory bank are displayed first, followed by seven bits from the corresponding byte on the motherboard. The bits are shifted out the same way as in standard hi-res (least-significant bit first). In double hi-res, the most significant bit of each byte is ignored; thus, no half-dot shift can occur. (This feature is important, as you will see when we examine double hi-res in color.)

Each box is subdivided exactly the same way it is in the standard hi-res mode.

Obtaining a Double-Hi-Res Display

To display the double hi-res mode, set the following soft switches:

	In the monitor	In AppleSoft
	Read	**PEEK**
HI-RES	$C057	49239
GR	$C050	49232
AN3	$C05E	49246
MIXED	$C053	49235
	In the monitor	**In AppleSoft**
	Write	**POKE**
80COL	$C00D	49165,0

Annunciator 3 (AN3) must be turned off to get into double hi-res mode. You turn it off by reading location 49246 ($C05E). Note that whenever you press Control-Reset, AN3 is turned on; therefore, each time you press Control-Reset, you must turn AN3 off again.

If you are using MIXED mode, then the bottom four lines on the screen will display text. If you have not turned on the 80-column card, then every second character in the bottom four lines of text will be a random character. (The reason is that although the hardware displays 80 columns of characters, the firmware only updates the 40-column screen, which consists of the characters in the odd-numbered columns. The characters in even-numbered columns then consist of random characters taken from text page 1X in the auxiliary memory.)

To remove the even characters from the bottom four lines on the screen, type PR#3<CR> from AppleSoft (type 3^P in the monitor). This procedure clears the memory locations on page 1X.

Using the Auxiliary Memory

The auxiliary memory consists of several different sections, which you can select by using the soft switches listed below. A pair of memory locations is dedicated to each switch. (One location turns the switch on; the other turns it off.) You activate a switch by writing to the appropriate memory location. The write instruction itself is what activates the switch; therefore, it does not matter

what data you write to the memory location. The soft switches are as follows:

		In the monitor	In AppleSoft
		Write	POKE
80STORE	off	$C000	49152,0
	on	$C001	49153,0
RAMRD	off	$C002	49154,0
	on	$C003	49155,0
RAMWRT	off	$C004	49156,0
	on	$C005	49157,0
PAGE2	off	$C054	49236,0
	on	$C055	49237,0
HIRES	off	$C056	49238,0
	on	$C057	49239,0

A routine called AUXMOVE ($C311), located in the 80-column firmware, is also very handy, as we will see below.

Accessing memory on the auxiliary card with the soft switches has the following characteristics. Memory maps, which help clarify the descriptions, are in Figures 4, 5, and 6.

1. To activate the PAGE2 and HIRES switches, you need only read (PEEK) from the corresponding memory locations (instead of writing to them, as you do for the other three switches).
2. The PAGE2 switch normally selects the display page, in either graphics or text mode, from either page 1 or page 2 of the motherboard memory. However, it does so only when the 80STORE switch is off.
3. If the 80STORE switch is on, then the function of the PAGE2 switch changes. When 80STORE is on, then PAGE2 switches in the text page, locations $400-7FF, from auxiliary memory (text page 1X), instead of switching the display screen to the alternate video page (page 2 on the motherboard). When 80STORE is on, the PAGE2 switch determines which memory bank (auxiliary or motherboard) is used during any access to addresses $400 through 7FF. When the 80STORE switch is on, it has priority over all other switches.
4. If the 80STORE switch is on, then the PAGE2 switch only switches in the graphics page 1X from the auxiliary memory if the HIRES switch is also on. (Note that this circumstance is slightly different from that described in item 3.) When 80STORE is on, and if the HIRES switch is also on, then the PAGE2 switch selects the memory bank (auxiliary or motherboard) for accesses to a memory location within the range $2000 through 3FFF. If the HIRES switch is off, then any access to an memory location within the range $2000 through 3FFF uses the motherboard memory, regardless of the state of the PAGE2 switch.
5. If the 80STORE switch is off, and if the RAMRD and RAMWRT switches are on, then any reading from or writing to address space $200- $BFFF gains access to the auxiliary memory. If only one of the switches, RAMRD, for example, is set, then only the appropriate operation (in this case a read) will be performed on the auxiliary memory. If only RAMWRT is set, then all write operations access the auxiliary memory. When the 80STORE switch is on, it has higher priority than the RAMRD and RAMWRT switches.

Shortcuts: Writing to Auxiliary Memory from the Keyboard

Press Control-Reset, then type CALL -151 <cr> (to enter the monitor). Now type the following hexadecimal addresses to turn on the double hi-res mode:

```
C057      (for hi-res)
C050      (for graphics)
C053      (for mixed mode)
C05E      Turns off AN3 for double hi-res
C00D:0    Turns on the 80COL switch
```

This procedure usually causes the display of a random dot pattern at the top of the screen, while the bottom four lines on the screen contain text. To clear the screen, follow the steps listed below:

1. Type 3D0G <cr> to return to BASIC.
2. Type HGR <cr> to clear half of the screen. (The characters you type will probably appear in alternating columns. This is not a cause for alarm; as noted above, the firmware simply thinks you are working with a 40-column display.) Remember that hi-res graphics commands do not know about the half of the screen stored on page 1X in the auxiliary memory. Therefore, only page 1 (that is, the first half) of the graphics page on the motherboard is cleared. As a result, in the screen display, only alternate 7-bit columns appear cleared. On the other hand, if all of the screen columns were cleared after the HGR command, then chances are good that you are not in double hi-res mode. If your screen was cleared then to determine which mode you are in, type the following instructions:

```
CALL -151
2000:FF
2001<2000.2027M
```

If a solid line appears across the top of the screen, you are not in double hi-res mode. (The line that appears should be a dashed or intermittent line: - - - - - across the screen.) If you are not in double hi-res mode, then make sure that you do have a Rev. B motherboard, and that the two Molex-type pins on the extended 80-column card are shorted together with the jumper block. Then re-enter the instructions listed above.

If you are staring at a half-cleared screen, you can clear the non-blank columns by writing zeros to addresses $2000 through $3FFF on graphics page 1X of auxiliary memory. To do so, simply turn on the 80STORE switch, turn on the PAGE2 switch, then write to locations $2000, $2001, $2002, and so on up through $3FFF. However, this procedure will not work if you try it from the monitor. The reason is that each time you invoke a monitor routine, the routine sets the PAGE2 switch back to page 1 so that it can display the most recent command that you entered. When you try to write to $2000, etc. on the auxiliary card, instead it will write to the motherboard memory.

Another way to obtain the desired result is to use the monitor's USER command, which forces a jump to memory location $3F8. You can place a JMP instruction starting at this memory location, so the program will jump to a routine that writes into hi-res page 1X. Fortunately, the system already contains such a routine: AUXMOVE.

Using the Apple-Q Inc. BBS

EDITOR: Some of the members have asked about information about using the Applw-Q BBS. So I have included part of a manual Vince has been working on. Some of the information in this article may be dated (like the Logg-on screen), however, it will give you a good idea on how to log-on for the first time.

Getting Through Logon

The first part of the BBS encountered by the user is the logon section. This section of the BBS allows the system to identify which user is currently on the system. It is also the entry point for a new user to the system. Figure 1 shows the title page and first prompt encountered when a user logs onto the system.

```
 Welcome to   -   Apple-Q Inc. BBS   On-line 24 hours   Data  (07) 284-6145
                                                      Voice (07) 883-1525
        ^
       / \        Official East Coast Distributors of GBBS.PRO software and
       |  |       add-on modules from Peripherals + and First Word Software.
       |   \_
      /      \     West Coast Distributor - NEMO Systems of Perth, W.A.
     |        |
| \_/         \__   Baud rates supported  300/300, 1200/75, 1200/1200, 2400
|     Sysops:    \__                      Bell and CCITT standards.
|     ~~~~~~       \                     8 Data Bits - 1 Stop bit - No Parity
|   Graham Black     |
|   Vince Crosdale    \
|   Brett Dutton      |
|____                 \_
     |                  |
     |            __    _/  Many thanks to NetComm (AUST) Pty. Ltd for
     |__________/  \__/     supplying our 1234A modem at a GENEROUS discount.

Apple-Q Inc. Postal Address - P.O. Box 721, South Brisbane, Qld. 4101.

The views or opinions expressed in messages left on this ABBS, do not reflect
the views or opinions of Apple-Q Inc.: The Brisbane Users` Group.


NOTE : NEW USERS PLEASE ENTER 0

USER NUMBER or USER`S FIRST NAME
-->_
```

At this stage, the system is waiting for the user to either enter his FIRST NAME, his USER NUMBER or a `0' if he is a new user to the system. Depending upon your response to this prompt, you will be greeted by one of three prompts.

The New User

If you are a new user to the BBS, then entering a `0' at the first prompt will tell the machine that you have not logged onto this system before, and you wish to enter your personal details to create a form of access for yourself on the BBS. The machine will now prompt:

```
    New User Registration
    ~~~ ~~~~ ~~~~~~~~~~~~

PLEASE READ ALL PROMPTS CAREFULLY.

Please note : aliases will not be tolerated.

FIRST NAME ONLY -->_
```

At this stage the system requires your FIRST NAME ONLY. Type in your christian name and press [RETURN]. The system will then prompt:

```
     LAST NAME ONLY -->_
```

Enter in your SURNAME and then press [RETURN]. The system now has a name that it can associate you with. It will then ask:

```
     Calling From (Suburb)
    -->_
```

Enter in the suburb in which you live. The system then performs a check on the information you have entered to check that the length of the strings does not exceed tha available space. If the string is too long, you will be informed and placed back at the prompt asking for your home suburb. If the string is not too long the system will then ask:

```
We require your phone number for the system records.
Please read the following prompts CAREFULLY.

Note: Phone numbers will remain confidential

STD AREA CODE ONLY (2 or 3 digits, no spaces permitted)
-->_
```

Enter your STD area code ONLY. This means that if you live in Brisbane, enter 07, Melbourne 03, Sydney 02, etc. The system will check that the number you have entered is correct and if it is found to be too long, you will be asked to enter it again. When the system is satisfied with the area code being correct, it will ask:

```
     PHONE NUMBER ONLY (5 to 7 digits, no spaces permitted)
    -->_
```

Enter either your home phone number or your business phone number. This information is necessary in case the Sysop needs to contact you for some reason. After this, the system will display the information you have entered and ask if the information you have provided is correct. This will be displayed as follows

```
 You are:

JOHN CITIZEN
BRISBANE
07--222-0000

Correct (default = Yes) : _
```

The default statement as shown in this example, is a common statement throughout the entire BBS. This means that the default keystroke is taken as being `Yes'. The majority of the prompts in the actual system require you to only press the key relating to the command you wish to carry out. There are a few exceptions to this rule and these will be discussed later in the relevant sections. Pressing the `N' key at this point will tell the machine that there is something wrong with the information you have entered and you

wish to change it. This will return you to the initial prompt for your Christian name. Pressing `Y' or [RETURN] will tell the machine that you are happy with the details as entered and you wish to go onto the next phase of logon.

After the machine has your personal details, it will then start to create a `user identity'. This identity is used by the system to classify the type of access that is afforded to each user of the system. This identity will be built up over the next few lines of information that the system prompts you for, before it informs you of your access capabilities. To protect each user's `system identity' from outside interference, the system will now offer the following prompt:

```
For security purposes, you will need a personal password to verify
your user number. Please enter your personal password now and we ask
that you keep this password UNIQUE to this board.
Your password should be 4-8 chars long.

Enter your Personal Password -->_
```

The system now waits for you to type in your password. The reasoning behind uniqueness to this board stems from the fact that a person who uses a number of BBS systems, and retains the same password on each system, leaves his access open to tampering in the event that a person manages to obtain his password from another BBS. When you enter your password, it is kept hidden from prying eyes by the system echoing `*' for each letter that you enter into the system. The system will then prompt you:

```
     Enter it again to verify      -->_
```

This is the only time that you will have to enter your password twice. This is to allow the system and yourself to make sure that the first password you entered is indeed the correct password you wish to use. If you get the password wrong the system will inform you and will ask you to re-enter your password from the intial stage. Please remember that the system also requires your password be a minimum of 4 characters and a maximum of 8. This is to increase the amount of possible combinations that a person must go through in an attempt to `crack' your personal password. Once this is done, the system will then scan the user file, looking for deleted entries, or if none are found, adding you to the end of the file. If it is found that your name matches another name in the user file, the system will notify you of this and will send you back to the intial new user prompt for your Christian name. In the case that this occurs, we ask that you make some subtle change to your name so that the system will recognise it as unique. If you wish, you may inform the Sysop that you have made a change to your name so that our hard copy records may be set straight. If the system is successful in finding a free space, or adds you to the end of the list, it will then type:

```
New User Information
~~~ ~~~~ ~~~~~~~~~~~
There are  two  categories  of User  to this system. These are as follows:

NON-PAYING USER : You  will  be allowed access to the Public Boards only
                  Limited File Transfer (on the credit system)
                  30 minute time limit

FULL MEMBER     : Access to the Public  & Members Boards
                  GAMES
                  Full File Transfer
                  60 minute time limit
```

The BBS then gives details of membership fees etc.

Review of Shanghai for the Apple //gs

by Craig Johnson

EDITOR: Those who wish to give the game a go can get the Disk of the Month. It contains a Demostration version of this game.

Shanghai is the sort of game you say; 'Oh, I'll just play one game!', and then a few hours later and ten games later, you say, 'Maybe just one more game....' It looks simple but there are many traps for the unwary.

The game is played using Mah Jong tiles, laid out (supposedly) in the shape of a dragon on the screen.

You begin with 144 tiles, and remove them in pairs. Sound easy? Well, wait. Some tiles are stacked on top of others, indicated by

progressively thicker lines and you are only permitted to move tiles that can be moved sideways, i.e. right or left. In practice, this means that tiles that are higher, because others are under them, may be paired with tiles around the edges.

There are four copies of each tile somewhere on the board with the exception of: the flower and season tiles, which are all individuals, e.g. Summer, Winter, Plum, Bamboo, and they may be matched with any other of the same type.

The basic stratergy is to remove the tiles from the sides and the top first, so you give yourself as many options as possible. You will find it very frustrating to have long lines of tiles, plenty of matches but few that can actually be removed, particually towards the end of the game, so attempt to work down and in, right from the start.

As with the card game Solitaire, not all games generated are winnable, but they are all enthralling.

A variety of options are available to suit just about everyone's tastes. You can have a randomly created game every time you play, or replay and save games until you are perfect at them.

There are a number of different game modes, including Solitaire, (which speaks for itself); Challenge, in which two players work on the same puzzle, taking in turns to remove pairs of tiles, with a time limit on each player, with the computer keeping score for you; Tournament, which lets a number of players work at the same puzzle at different times, the computer maintains a score card for you, and if you like you may play the same game over and over until perfected.

Shanghai required careful thought, planning and strategy to remove the right tiles at the right time so that you can finish the game. Another interesting phenomenon about this game is that it is capable of converting computer haters into computer fanatics, seemingly overnight.

Even though it is a relatively simple concept as computer games go, Shanghai looks great on the screen and is sure to give hours and hours of pleasure, particualy if you prefer to use a few of your own brain cells, for a change, and you don't need graphic and sound special effects to get your thrills.

Don't be misled, it is also an excellent game to help children identify similiar objects, and to be patient and observant. Eventually the Shanghai dragon will appear to let you know that you have been successful.... then, 'Hmm, maybe just one more game.....'

Advertisements

FOR SALE
Contact: Peter Calverley by phoning (07) 353-2292

1 x Apple III - includes: Twin Disk Drives, Profile Hard Disk, Epsom Printer, Basic Manuals, with Word Processor, VisiCalc and Data Base programs. Also available is a compatible Electronic Typewriter, which is practically new. Any reasonable offer considered.

FOR SALE **Contact:** Graham Black at the Trading Table or phone (07) 883-1525 after 12.00 noon.

1 x	Apple Enhanced //e system includes: 2 x 5.25" disk drives, New Amber screen (Mitsubishi)	$1000.00
2 x	3.5" Unidisk drives plus controller card (note: these drives will not be sold until the //e is sold)	$ 950.00
1 x	Samsung Amber screen	$ 165.00
1 x	Roland DXY-800 Plotter (8 colour) Sheet size: A3, includes approx. $200 coloured pens and some paper	$ 900.00

If some-one offers me enough, I might even sell my Apple //c system.

FOR SALE **Contact:** Sheryl Mann at Software Library on Open Day.

1 x	Micro-Educational Mouse Mat Unused (Retail Price $15.95)	$12.00

FOR SALE **Contact:** John Gauci on (07) 265-1642

I am forced to sell my Apple IIe compatible (100%) as the computer has developed an intermittent fault and I am unable to obtain the two chips required to repair it.

1 x	Amber Monitor	$ 50.00
2 x	Disk Drives	$100.00 each
1 x	RAMWorks card (512K) and software	$200.00
1 x	Mouse, Mouse Card and MousePaint	~~$100.00~~
1 x	PAL Card	$ 30.00
1 x	80-column Card (64K RAM & Double Hires Graphics)	$ 50.00
1 x	Z-80 Card	~~$ 20.00~~
1 x	Printer Card and Cable	~~$ 40.00~~
1 x	Printer Card	$ 30.00
1 x	6502 Microprocessor Chips (100% ProDOS compatible)	$ 40.00
1 x	IIe Enhancement Kit in box (65C02)	~~$ 60.00~~
1 x	RF Modulator (orginal in box)	$ 25.00
1 x	Case and Keyboard	$ 50.00
1 x	Power Supply	~~$ 20.00~~
	Nearly all chips on the Motherboard	$???.??
	Manuals - Appleworks, ProDOS Users, Applesoft Basic, 6502 Programming, and lots more...	
	Disks - several hundred with lots of games and other programs	$ 1.00 each

[Registrar's Notes]

It is that time of year again when we publish the membership list in the newsletter. Only your Name, Suburb and Phone Number are published. If you do not want your details published, then you are required to let us know by the MAY Committee meeting, as the list will be published in the JUNE edition of APPLE-BUG.

Mailing labels. Please take note.....

Your membership number and membership expiry date are on the first line (at the top) of the mailing label on your copy of APPLE-BUG. This is the only notice you will receive that your membership is due to expire. When your membership does expire, you will receive an INVOICE/STATEMENT and no newsletter. If you do not receive a newsletter, then either your membership will have expired, or you have changed your address without telling us.

Your Mailing Label looks like this:

```
MBR # 0999  -  Renewal Date: Apr 89

BLOGGS.JOE

34 BOGGUS CRESENT
BLOGGSVILLE.QLD        4101
xxx
```

Many thanks to those members who have taken the time to fill in the Membership Renewal forms, and return them to us so we could update the club records.

ooooo000ooooo

The coffee machine at the Hooper Centre does not belong to the club. We have been given permission to use it, but the coffee cups cost 20 cents each, with or without the contents. The cups are not to be used as buckets in the sand pit, because *THE PLAY AREA IS STRICTLY OUT OF BOUNDS*, and they are not there to be used as ashtrays. If you require a cup for some reason other than coffee, then please bring your own. The 20 cents for the coffee should be left on top of the coffee machine.

Macintosh News

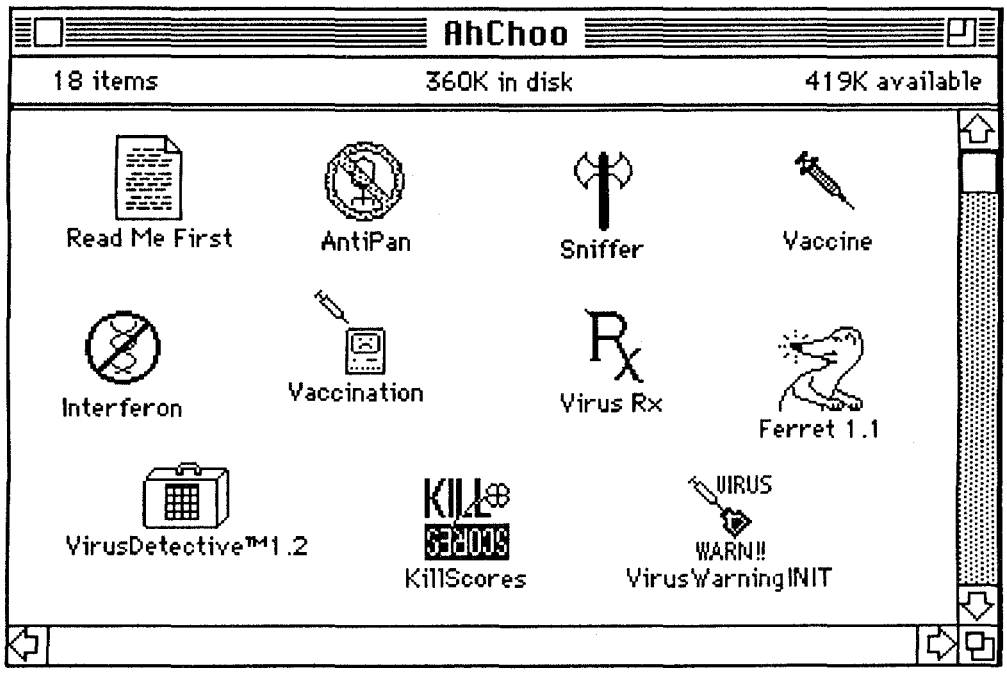
Are you running a hard disk? Do you often import disks from other people? Do you use bulletin boards? Are you protected against viral infection?

If the answer to the last question is "no", and the answer to any other question is "yes", then you could be in trouble. Macintosh computer viruses (virus', virii - well, more than one anyway!) are in Australia.

Help is at hand. The latest club disk is full (well nearly full) of anti virus programs complete with documentation on how to keep your system free of unwanted pets. "Ah! " I hear you ask, "But supposing the disk has a virus in the anti virus programs?" Well, I ran all the programs one at a time, against themselves, plus a couple of programs I already had, and it passed them all. This must be the most squeaky clean disk in existence.

The programs on the disk are: Kill scores, Antipan, Interferon v 3.1, Vaccination, Vaccine, Virus Detective v1.2 DA, Virus Warning INIT, Sniffer, and Ferret v1.1.

You have been warned.



Membership Number: .....

APPLE-Q Inc: The Brisbane Users Group.

APPLICATION

for

RENEWAL of MEMBERSHIP

Dear Member

Please check the expirey date of your membership. This can be found on both your membership card, and the mailing label of this newsletter. Please fill in the necessary details below, tick the box where indicated, and forward your remittance along with this completed Renewal Form to the Registrar, to allow for the updating of our records. The Postal address is: P.O.Box 698 - Redcliffe - Qld 4020.

Annual Subscriptions:

[ ] $20.00 Adults/Family
[ ] $12.00 Full Time Students *under 21 years* on production of Student Card
[ ] $12.00 Pensioners on production of Pension Card
[ ] $50.00 Corporate Membership (Schools/Business Houses)
(at the discretion of the Executive Committee)

Surname: ..... Given Name: .....

Postal Address: .....

Suburb/Town: ..... State: ..... Post Code: .....

Telephone: Home (....)..... Business (....).....

Full time Student under 21 years (D.O.B.: .....)

A membership list is published every year in the Newsletter. Only your Name, Suburb and Phone number, are listed.

Do you require exemption from this list ? (Y/N) ..... *(Default = N)*

System Information: [ ] Apple][[ ] Apple][+ [ ] Apple //c [ ] Apple //e
[ ] Apple //GS [ ] Apple /// [ ] Macintosh [ ] other _____

I hereby declare that the above details are true and correct, and agree to abide by the Rules and Regulations of the Group.

Signed .....

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