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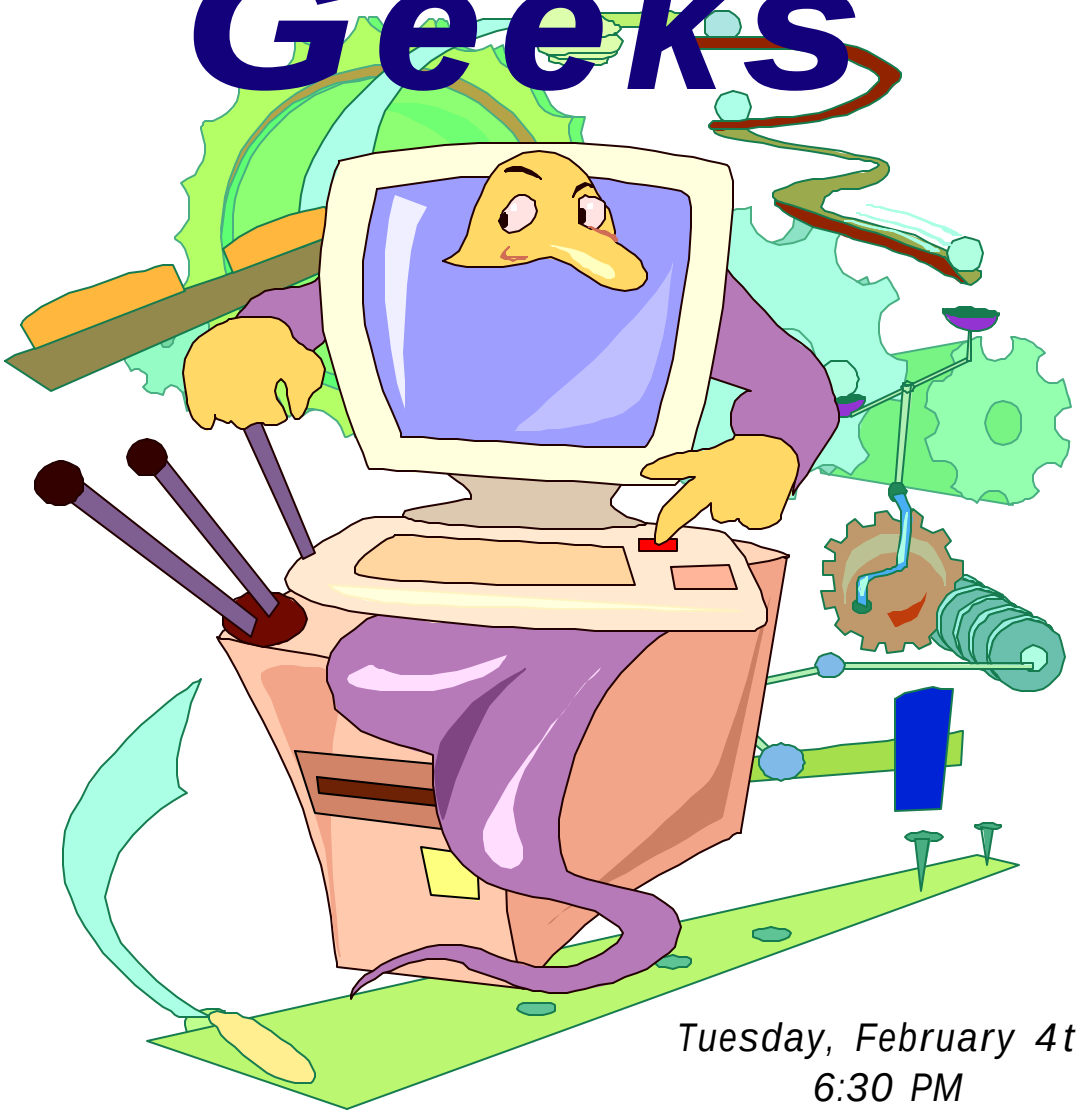
Danbury Area Computer Society, Inc.

February 2003

Volume 14, Issue 2

Toys for Geeks



Tuesday, February 4th
6:30 PM
Danbury Hospital Auditorium

DACS' own Mike Kaltschnee will be leading an interesting discussion and demonstration of a wide variety of Geek toys, including wearable computers, global positioning systems, wireless networking, fuel cells, computer modifications, caffeinated products, and much more. Mike will have the help of other DACS members with interesting stories to tell.

President's File

PRESIDENTIAL RAMBLINGS
ISSUE 0.9

Wow look at that version number! It's creaping up toward the one year mark. For good or bad, I still like this job.

It's a long story about how I came to own an Xbox–you know, the Microsoft game console. To cut that narative short, Vbxtras, an online software store that specializes in developer software, offered a free Xbox with the purchase of a Microsoft MSDN Universal subscription. Since I buy MSDN Universal every year, this seemed like a no-brainer. Little did I know how this no-brainer would show me how little brains I have when it comes to games.

The last time I played any computer games was in the late eighties. My kids enjoyed the King's Quest series and I bought them all. Most of those games ran on the IBM PCjr (remember the jr?) which, I thought, was a great game machine for the time. Hey, what did I know!? I could run those games using one of those old joy sticks that actually had a stick, and the user interface was incredibly simple—so simple even I could play! Well, welcome to the new millenium! The Xbox runs a stripped down version of the Windows 2000 kernal with an awesome video system, however, there is no keyboard or mouse. The old PCjr joy stick had the stick and two buttons (one more than a regular PC joy stick). The Xbox has a controller with two knobs called thumb sticks (similar to the single stick on my old joy stick) plus eight buttons, a directional pad and two triggers! I've had this thing for a week and I just found the triggers. And you can connect four of these controllers to one Xbox. Oh, one more thing—the Xbox has an ethernet port. So far I have determined that this port has no purpose whatsoever untill you spend an additional $50. Then you can connect to something called Xbox Live.

When you open your Xbox, you find only the most basic instructions on paper. The "Quick Start Guide" shows how to connect the three cables—power, the game controller and one for composit video and sound to the television. It then details the use of the two buttons on the front of the box—one is power and other opens the CD/DVD drive. Along with this one sheet of paper is a DVD-style box that contains one DVD and two game instruction books.

The DVD contains the two games and preview videos of several other titles. The two games are *Sega GT2002* and *Jet Set Radio Future* both published by Sega. [Gee, I thought, Sega made their own game consoles... Oh, well!] I'll now tell you everything I know about the two games that come with the Xbox.

GT2002 is a racing game. There are menus where you select (maybe buy?) a car and maybe some other stuff. Once you have a car, you can race – somehow. In *Jet Set Radio Future*, you select a character. From the instruction book, I think the game takes place in Tokyo. That's it. That's all I know. I need to RTFM*. While actually using the game box, the menus in *GT2002* are as far as I've gotten. I find the user interface so obscure that I have not been able to get far enought that I can actually start either game. All those buttons and levers undoubtedly have a purpose but they change with each game—I think. Maybe I need a kid to show me how all this works.

So, you're probably wondering why I bothered with this thing at all. Well I'm beginning to wonder myself! Ever since the Microsoft first annouced the Xbox, pundits have prediced that it would be the "most hacked" device ever. While I think the I-Opener is the most hacked device, an entire industry seems to be growing to allow owners to make their Xbox do things that Microsoft never intended. Most of the actual companies selling mod chips and other devices seem to be in Britan or Europe but the chips themselves are engi-

Ramblings, *continued on page 4*

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Membership Information

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HelpLine

Volunteers have offered to field member questions by phone. Please limit calls to the hours indicated below. Days means 9 a.m. to 5 p.m.; evening means 6 to 9:30 p.m. Please be considerate of the volunteer you are calling. HelpLine is a free service. If you are asked to pay for help or are solicited for sales, please contact the dacs.doc editor; the person requesting payment will be deleted from the listing. Can we add your name to the volunteer listing?

d = day **e** = evening

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Directors' Notes

A Regular Meeting of the Board of Directors was held at the Resource Center on Monday, January 13, 2003. Present were Messrs Bovaird, Buoy, Cohen, Gallichotte, Keane, Ostergren, Powers, Preston, Scheef and Setaro. Also present was Don Pearson. President Jim Scheef presided and Secretary Larry Buoy kept the record. Minutes of the last meeting held December 16, 2002 were approved.

Treasurer Charlie Bovaird presented a Balance Sheet showing combined bank and postal accounts of $18,103.36, plus postage on hand of $110.69, a total of $18,214.05. Also shown was liability for prepaid dues of $7,410.00, leaving net cash assets of $10,804.05. Charlie also reported that current membership stood at 458; of those, 72 were Electronic Only members; and 349 members had provided email addresses.

Following a short discussion of the effectiveness of the few posters announcing the January General Meeting, it was agreed that, posters announcing the February General Meeting again be placed and at additional locations before any assessment of effectiveness could be made.

Programs for future General Meetings were reviewed, with announcement that Richard Ten Dyke would be asked to make his presentation on Digital Photography in the March slot, replacing a presentation on genealogy by Ancestry.com that had been moved to June. Presently, both April and May remain unfilled slots. Frank Powers will approach Turtle Beach as a possible presentation. Faculty members of the Danbury branch of the Naugatuck Valley Higher Education Center also were mentioned as a possible source of programs.

The subject of free "Business Card" ads in the newsletter brought forth the consensus that same be continued with better information regarding placement of such ads given the general membership. President Scheef also announced that there appeared to be interest in the establishment of permanent email addresses for any member desiring same, using the DACS server to forward or receive any messages via that member's current ISP. Again, this would involve the successful installation of Sendmail on the server at the RC.

Jim Scheef next advised that management of Ives Center had changed. Pos-

Directors Notes *continued on page 4*

Directors Notes *continued from page 3*

sible ramifications thereof were discussed, digressing to parking restrictions at the Center, for benefit of new directors.

Considered next was the need for a liability disclaimer on the DACS Web Site and statements as to copyright status of any material therein, which would include any articles or other material included in the newsletter which are posted on or linked to the Web Site. Also considered was revision of the policy statement in the newsletter, regarding reprinting of any article by any other user group and inclusion of a copyright notice for each article.

—LARRY BUOY

Ramblings, *continued from page 2*

neered in the Orient. There are all sorts of "mod chips" for the Xbox to make it do all sorts of cool things—like run Linux, pretend to be other game consoles, or play 'other' DVDs. All of this involves running "unsigned" code. You may be familiar with signed device drivers for Windows XP. The maker of the program has digitally signed the program to help ensure that it's "safe". In the case of the Xbox, only games "signed" in a manner recognized by the Xbox are allowed to run. Mod chips bypass this step so other code can run. After reading a few web sites and message boards it looks like Microsoft is doing what it can to squelch the mod chip industry. However, there is already at least one Linux distribution for the Xbox, a computer that is supposed to only run games—authorized games.

So, my next step is to research the easiest way to run Linux on the Xbox. In the meantime maybe I can learn how to play a game. Hey this might be fun!

For you Linux fans, I would like to point out that this column was written using both Word 2002 and Open Office Writer interchangably. I have Open Office 1.0 installed on Red Hat 8 and it's pretty cool. Plus I use Samba to copy files back and forth between Linux and Windows. I'll have more on Open Office and Red Hat 8 next month. In the meantime, get out and enjoy all this wonderful snow!

(Endnotes)
* Read the freaking manual.

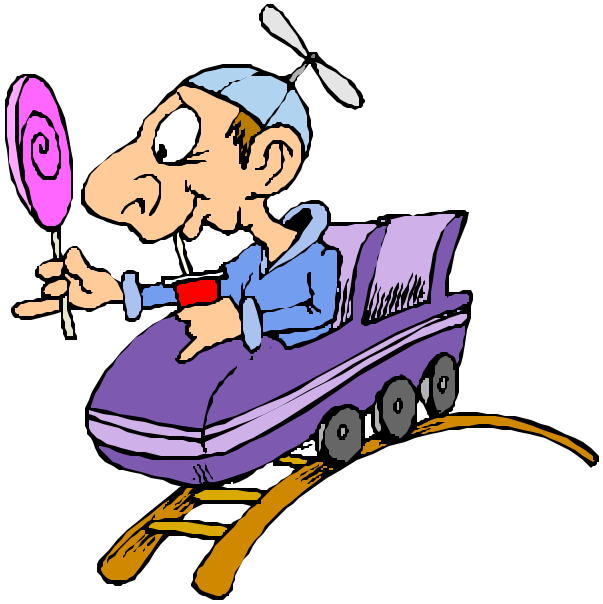
JIM SCHEEF
DACSPREZ@DACS.ORG

Preview

Geeks Bearing Wares
Toys for Techies

By M. Gaberel

DACS MEMBERS know Mike Kaltschnee through his articles on numerous topics—mostly Mac—in the pages of DACS.DOC. A veteran application developer, Mike has been involved in creating many cutting edge software tools, including Hijaak, a popular utility for converting graphic formats, and WebSpice, a collection of tools and images for use on personal Web pages.



The proverbial "busy man", he somehow manages to balance his dacs.doc duties with a three-hour round-trip business commute to New York and a second career in "family development" (his second child just arrived).

At the February 4th, 2002 DACS general meeting. Mike will go live, with a freestyle presentation on his favorite subject of toys—not Tonka, Fisher Price, Bob the Builder, Sponge Bob or Clifford—but geek toys.

Mike is planning a selection of live demos of cool stuff, and is assembling a select team of DACS members to help with the presentation. But as he understandably has not been getting a lot of sleep lately, some of the details are still being dreamed up. At press time, he had released the following tentative outline:

• Wearable Computers. See the latest in computers you wear like clothing.

• Global Positioning Systems (GPS). Learn how to know exactly where you are.

• Wireless Networking. Why run cables through your house?

• Fuel Cells. It's coming faster than you thought to power your house, car, computer and more. See a working fuel cell and learn what the excitement is about.

• Computer Modifications. Why have a boring beige box? See the latest ways to customize your PC. • Caffeinated Products. Learn new and interesting ways to get yourdaily dose, including caffeinated soap.

• ...and more!

When our boy Mikey says he likes it, he backs it up with more than a puffed-up peroration, but with real flavor, punctuated by a snap crackle and pop. Listening to him in the past, I know he can explain complex material in layman terms and bring it to the level of those that are not experts. We are all familiar with Mike as a gifted writer; February will be the time to experience him also as a charismatic speaker.

The regular DACS meeting is held at Danbury Hospital Auditorium. The program begins at 6:30 p.m. with informal networking, followed by Random Access Q&A at 7:00, a short business meeting at 7:30, and the featured presentation at 8:00.

For more information, check the DACS Web site, *www.dacs.org*.

MARLÈNE GABEREL *is a DACS board member and VP of Public Relations. She can be reached at:* marlene_gaberel@yahoo.com.

Meeting Review

Frank Powers
Ripp Star/Desk Jockey

By Marlène Gaberel

AT THE JANUARY 2003 general meeting, Frank Powers, a DACS board member explained to the group gathered at the Hospital Auditorium how to take advantage of music editing and recording programs. Frank started by giving us an introduction of the several of the programs and then explained in details how to record onto a computer vinyl record and tapes.

The three software packages that Frank showed us were Music Match, Jukebox 7.5 and Voyetra. The last is a familiar name to DACS members who attended previous presentations by Frank on Voyetra Turtle Beach, Inc. and Cakewalk Pyro.

While Frank was as thorough and informative as possible within his allocated time there is, the presentation left me with even more questions than when he started. Of course, that's a sign of success, and I'm sure that Frank could come back and tell us a lot more on the subject.

In his introduction Frank recommended to adopt a system and stick to it when organizing music files. Computers facilitate this task. Frank reminded us of the time when we were trying to manually stack albums in some kind of order. On computers, music can be sorted by genre, albums, artists, etc.

Frank demonstrated a few features of Music Match, a program that I also have on my computer at home but which is basically used to pipe in music from the Internet. The program has a lot of capabilities that I have never even had the opportunity to explore. One function Frank mentioned is *Auto DJ*, which randomly selects music from up to three categories—So for instance you can tell it: "Give me one hour of songs from Eric Clapton and George Harrison, but limit the selection to songs from *All Things Must Pass and Unplugged*." The user would get a mix of songs from these two albums that equaled one hour's worth of listening.

Frank explained the term ripping a CD which is the extraction of data onto a CD and the ability to copy those data onto a computer. From Frank's web page *http://franksamericana.com/* 'Ripping is a term for "digitally copying" the audio from an audio CD. It is similar to copying a file from a floppy or CD to your hard drive. Programs like AudioStation, MusicMatch Jukebox, Cakewalks© Pyro, Windows Media Player, and Real One all offer free versions and are available on the Internet for download. All of the ones mentioned will allow digital copying and cataloging on your hard drive of CDs you "ripp".' Frank drew a parallel between the ease of ripping a CD—which is a fast process—and the time consuming task of copying a tape onto another tape, where the last segment was never totally copied onto the tape. Frank pointed out that the music industry was not alarmed when people went through the trouble of copying tape, now that we can "ripp" CDs in no time, the industry is more concerned, to the extend of having some music CDs unabled in order not to be played on a computer. The analog recording features of Voyetra 's AudioSurgeon and Cakewalk Pyro were also briefly demonstrated.

In order to record vinyl albums and tapes onto a hard disk, Frank suggested the following equipment:

- A computer - an old one is just fine
- A soundcard
- Recording software
- A turntable or tape recorder - depending on your source of music
- A phono preamp and the necessary cables

All the details for the required equipment are found on Frank's web page noted above.

Frank emphasized that it is wise to choose what you want to record onto your computer. It is not a small feat to go through the process. He gave the following examples of what he feels is worth to record to a hard disk: Family audio - band tapes if you ever played and got recorded - your kids' concerts and vinyl records that are close to your heart and not available on CDs. Frank showed us how the three programs noted previously can be used to record external soundtracks to a hard disk. In addition, he demonstrated how all his computer music is archived. As we know from previous DACS presentations, disaster can strike and our hard disk wiped from its content. So as with every file that is important to you, save it and keep it in a safe place.

Frank's presentation was low key and very informative and I think he only scratched the surface on the topic of music and computers and how they complement each other. His web page and the articles recently written for DACS are chock full of additional information on the subject.

Marlène Gaberel *is a DACS board member and VP for Public Relations. You can e-mail her at: marlene_gaberel @yahoo.com.*

New Members

12/17/02 thru 1/18/03

1) Paul Gonzales
2) George Komarowski
3) Debra Molinaro
4) Paul Lucchese
5) William Rondeau
6) William Hartley
7) Dr Brian Applebee

THIS IS YOUR LAST NEWSLETTER

If the membership date on your mailing label reads

EXP 112002

or earlier

You need to renew your DACS membership

NOW

Pastimes

A Brief Introduction to Digital Photography Part IV— Publish Your Photographs

By Richard P. Ten Dyke

YOU HAVE OBTAINED your photo,graph, compressed it, and edited it. Now you want to use it. You can display it on your computer, you can publish it on the Internet, you can print it on paper or another medium like a T-Shirt. What you can't do (effectively) is make a high quality 35 mm transparency. But that doesn't matter because will you will soon be putting your slide projector into the tag sale.

Perhaps the most interesting and dynamic topic in digital photography is printing, because the quality of the printed image has improved dramatically in just the last few years. Skip to the bottom line — the biggest problem in printing, until about a year ago, was that colors fade. Color prints, no matter how good they looked originally looked like a pizza in about a year. That problem has been solved, and it opens digital photography to those who take photography seriously, as an art form.

But let's back up and discuss the first problem first — how to make a good looking photographic print. The answer is simple, use a good quality ink-jet printer with ink and paper recommended by the manufacturer. Laser printers work too, but the result always looks like it was printed on a laser printer.

It appears that Epson has lapped the field, and is now far ahead in the quality-permanence department. They offer two kinds of inks — dye and pigment. Pigment inks are the longer lasting, but the new dye inks are better than they used to be. (I do not necessarily recommend one brand over another, and I have a three-year old Hewlett-Packard that still works just fine, but I do not use it when I want the best quality.)

Publish Your Photographs

Printers use the CMYK (Cyan, Magenta, Yellow, Black) method of printing. Recall that when we talked about image capture, we were using RGB (Red, Green, Blue). What is the difference?

It depends upon whether we are adding light or subtracting it. On a display we are adding light. We have red, green, and blue phosphors that glow. When all three are glowing at their brightest, heir combined output adds up to White, which is the sum of all colors.

When we put ink on paper, we are subtracting light. The white light falls on the paper, and some of that light is absorbed by the ink. What is not absorbed is then reflected. If we subtract yellow from white light, we get its complement, blue. So what we call blue ink is a substance that is subtracting yellow from white.

If we subtract cyan, magenta, and yellow from white light we should get no light, in other words, black. However, reality and theory are a little off at this point, and what we really get is a dark, muddy brown. So we supplement the system with the addition of a true black ink. Another area of contention is very light colors. For this reason some of the high quality printers now come as CcMmYK printers. The "C"stands for Cyan, and the "c" stands for a light cyan. Same with "M" and "m" for magenta. Yellow is already a light color, so no "y" is needed. These printers offer a better gradation of tones.

Interestingly, the problem of light and mid-tones applies to black and white photographs as well. For that reason, some new printers now come with a "Gray" as well as a Black. These are identified seven-color or "CcMmYKk" printers, and the results, as they say, will knock your socks off. I don't have one of these — yet.

Paper? It makes a difference. Use the manufacturers' recommendations. The final image is a marriage of ink and paper, and, like any marriage that is expected to last, they should be

compatible. Ink-jet papers are coated, and you can get several weights and textures, such as glossy, semi- gloss, matte, and watercolor. You can print on uncoated papers as well, but quality suffers.

It should be noted that some printing processes do not yield water resistant prints. The Epson prints, on their best papers, are water-resistant and some others may be, but check to be sure if it is important to you.

A few other issues in printing are paper size and printing speed. There are always tradeoffs, of course. Not everyone needs to print on 13 inch paper, and not every one needs 6 pages per minute. Ink-jet printers are slow, so you will be trading speed for quality all the time.

Another issue is cost. The ink-jet printer companies make most of their money on supplies, and in particular, on ink cartridges. Yes, you can buy cartridges that have been refilled by third party vendors, but since I never use them I am not the person to recommend for or against them.

There are some other printing methods still in use. If you want high speed, low materials cost, and can suffer slightly reduced quality, then a laser printer might be your best choice, particularly if you are in the real estate business or some other area where you want to print 100 or more copies of something. There are also special purpose printers that are limited to 4 x 6 inches, for example. One older printer technology is dye-sublimation which offers high quality, but is slow and expensive and disappearing from the scene.

Displaying Photos on a Monitor

Another practical use for your photos is to display them on the computer monitor or project them with a digital projector. You can create a slide show that runs continuously, or you can develop a presentation that is under the operator's control. Many software packages will help you do this, but we cannot review them all.

Slide shows differ from printing in that a smaller image file is needed to achieve maximum quality. The viewing screen on a computer has only limited capability to render detail, so one can get by with smaller files. For example, a typical monitor with an 800 by 600 pixel screen presents an image containing 480,000 pixels. A 3-megapixel file, desirable for printing, contains six times as much information as can be displayed effectively on the monitor.

For developing the presentation, Macintosh owners with OS-X can use iPhoto, which is designed primarily for managing a photo inventory, but has some editing capability and contains a slide show feature. Another well-known package is Microsoft's Power Point presentation software package that runs on either a PC or a Mac. If you save your file on a CD, you will then be able to show your show using any computer that has the program installed.

And more about color:

The first rule in printing images is: "what you get is not what you see." The colors that you see on the monitor, repre-

sented in the RGB system, definitely will not appear equivalent on paper, represented in the CMYK system, even though they are theoretically equivalent. Professional printers deal with this issue on a regular basis, which sets them apart from the rest of us non-professionals.

Think of printing as firing a gun at a distant target. You aim carefully, but the bullet hits somewhere off the mark. You then adjust your aim, to fire at a point which is now, away from the bulls-eye, in order to compensate. It is similar with printing. When you see your print, you will want to adjust your image on the screen to be different from what you want to see in the print, in order to compensate for the amount by which you missed your target. This is true when printing either color or black and white. I believe that getting a good black and white print is the more difficult, because the viewer is sub-consciously very discerning of subtle warm and cold tones in black and white prints.

When you use your editing software, you may want to change the color of a whole image, or perhaps a section of an image. Your image-editing system will have a way of telling you what color exists at any point on the screen. But you may have a problem in interpreting what it says, because it uses an obscure way of representing color. If you have the patience, read the following.

We said that the color of a pixel is represented by some amount of Red, Green and Blue. Therefore, a numerical representation of a color would give you a value for each of these values. We allocate one byte of information for each of these colors, so each value can range from a level of 0 to 255. If you open up the color window on Photoshop Elements you might find a color listed as something like:

Red	23
Green	208
Blue	255

You will also see this same information expressed in hexadecimal form. The hexadecimal system uses sixteen symbols to represent the sixteen values from 0 to 15. The six additional symbols are A, B, C, D, E and F. The symbol for nine is "9", the symbol for ten is "A," eleven "B," up to "F" for the value of fifteen. The decimal value 23, above, becomes 1 x 16 plus 7, or "17" in hexadecimal. The value 208 becomes "D0"and the value 255 become "FF" So the same color, above, represented in hexadecimal form becomes:

"17D0FF"

Note that there is no delimiter between the values for red, green, and blue. The color represented above has a lot of green and blue, and a relative absence of Red, so it would appear as a near- Cyan color.

A light Gray would have equal values for Red, Green and Blue, for example: "EEEEEE" A dark gray could be "363636"

A "warm" gray, with a little less green (more magenta) might be "363336."

We have mentioned two of the basic methods for representing color, called RGB and CMYK. Another is HSL (Hue, Saturation and Lightness), but that is an advanced topic, not to be covered here.

And, in summary ...

In the four sections of this article we have covered how to capture, store, edit, and publish your photographs. I have mentioned the following products which represents my current investment in a digital processing system. These are only representative of what I, personally, have found useful for my own purposes, and they by no means represent a complete list of all options that are available.

Camera: Olympus E-10, 4 megapixel. An excellent professional quality digital camera with manual overrides on just about everything ($1300). Downside — it is somewhat large and heavy for casual users. Also Supplementary flash ($400)

Scanners: (1) Film Scanner: Nikon CoolScan IV. Excellent 35mm scanner, yields images from negatives or positives of about 28 megabytes ($900); (2) Flatbed Scanner: HP ScanJet ADF. About three years old. Works fine. ($ 250 in today's market)

High Quality Printer: Epson 2000P for up to 13 x 19 inch paper, uses pigment inks for permanence. ($900)

Computer: Macintosh iBook with 20 G drive, CD-RW and 256 Meg of memory running OS-X ($1500)

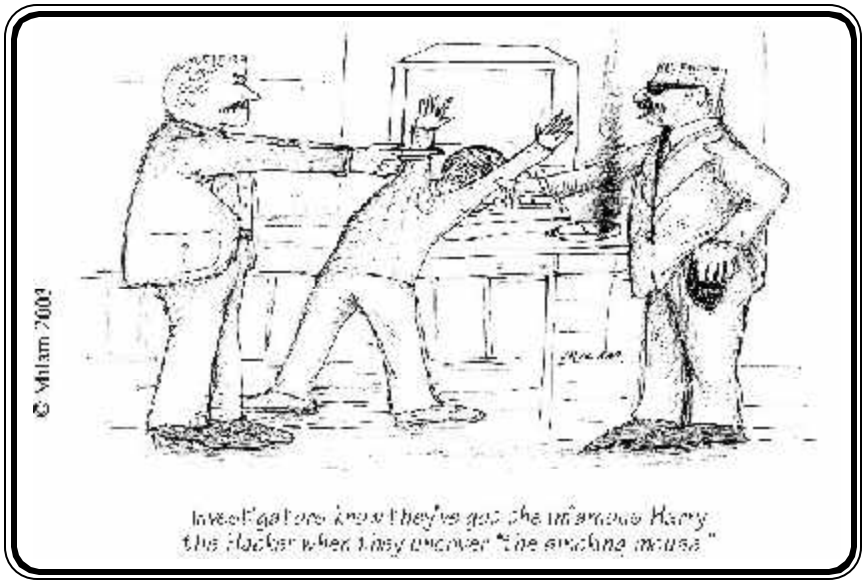
Image Management Software: iPhoto (included with the operating system)

Image Editing Software: Photoshop Elements($70)

Total investment: $5,320.

Your needs will not be the same as mine. My goal is to be able to print and display high quality archival photographs that are 11 x 14 inches and larger. If you are primarily interested in preserving family and vacation photos, or if your work is primarily for presentation on a computer monitor, digital photography is still your best choice, but you will be able to get your system up and running for less money. Have fun.

RICHARD T EN DYKE *is a member of Danbury Area Computer Society who has had a long interest in both photography and computers. He started his photography career with a Leica IIIC in 1952, and his computer career working with an ERA 1103 in 1956. He currently is retired from IBM and resides in Bedford, New York. You can reach him at* tendyke @bedfordny.com..



Special Interest Groups

SIG NOTES: February 2003

ACCESS. Designs and implements solutions using Microsoft Access database management software.
Contact: Bruce Preston, 203 431-2920 *(bpreston@mags.net).*
Meets on 2nd Tuesday, 7p.m., at the DACS Resource Center.
Next meeting: Feb. 11

ADVANCED OPERATING SYSTEMS. Explores and develops OS/2, Linux, and NT operating systems. For meeting notes and notices, follow link to Don's site on *dacs.org*.
Contact: Don Pearson, 914 669-9622 *(pearson@attglobal.net).*
Meets on Wednesday of the week following the General Meeting, 7:30 p.m., at Don Pearson's office, North Salem, NY.
Next meeting: Feb. 12

GRAPHICS. Create/print high-quality graphics and images.
Contact: Ken Graff at 203 775-6667 *(graffic@ntplx.net)*. Meets on last Wednesday, 7p.m., at Best Photo Imaging, Brookfield.
Next Meeting: Feb.26

INTERNET PROGRAMMING. Programs for Web site/server.
Contact: Chuck Fizer *(cfizer@snet.net.* Meets on 2nd Wednesday, 4-6 p.m., at the DACS Resource Center. Members' suggestions are welcome.
Next Meeting: Feb. 5

INVESTMENT STRATEGIES. Discusses various investment strategies to maximize profits and limit risk.
Contact: Paul Gehrett, 203 426-8436, *(pgehr4402@aol.com).*
Meets 3rd Thursday, 7:30 p.m., Edmond Town Hall, Newtown.
Next Meeting: Feb. 20

LINUX. Helps in installing and maintaining the Linux operating system. Nov also be of interest to Apple owners using OS X.
Contact: Bill Keane (bkeane.nai@rcn.com) 203-438-8032
Meets 3rd Wednesday, 7:30 pm at the DACS Resource Center.
Next Meeting: Feb. 19

SERVER. Explores Back Office server and client applications, including Win NT Servers and MS Outlook.
Contact: Jim Scheef *(jscheef@telemarksys.com)*
Meets 2nd Thursday, 7 p.m., at the DACS Resource Center.
Next meeting: Feb. 13

SMALL BUSINESS. All aspects of small business management.
Contact: Matthew Greger, 203 748-2919,*(matthewg@thebusinesshelper.com).*
Meets on last Wednesday, 1-3 p.m.
Next Meeting: SIG cancelled.

VISUAL BASIC. Develops Windows apps with Visual Basic.
Contact: Chuck Fizer, 203 798-9996 *(cfizer@snet.net)* or Jim Scheef, 860 355-8001 *(JScheef@Telemarksys. com).*
Meets on 2nd Wednesday, 7p.m., at the DACS Resource Center.
Next Meeting: Feb. 5

VOICE FOR JOANIE. Provides and supports people with Lou Gehrig's disease with special PC computer equipment.
Contact: Shirley Fredlund, 203 770-6203 *(voiceforjoanie@juno.com).*
Next Meeting: Look for announcements.

WALL STREET. Examines Windows stock market software.
Contact: Phil Dilloway, 203 367-1202 *(dilloway@ntplx.net).*
Meets on last Monday, 7p.m., at the DACS Resource Center.
Next Meeting: Feb. 24

SIG News & Other Events

Internet Programming: The meeting was held at the DACS Resource Center. One of the first items of business was a discussion on and decision to change the SIGs name from IP-SIG to dotNET-SIG**.**

After the name change we went on to Random access discussing general functionality of the Internet and the use of an IP Address in hosting your own site. Eventually we advanced to a code discussion using the debugger to illustrate the examples. Our documentor expositor extraordinaire Claude Prevots takes it from there, quote: As we start into the new year, we recall that our target application is to manage a human organization, such as a soccer team, with roles that are enabled with information automation drawn from the roles defined in the software of a DBMS such as SQL Server 2000. Our end result will be a database application on a Web server with Web pages developed with the IDE in Visual C# .NET, and this application will be a working demonstration of Web services in the .NET strategy advocated by Microsoft.

In our meeting of yesterday, 8 January, we picked up again on the theme of Server Side data controls and the function of code behind pages providing html when generated appropriately in the IDE. Starting with a sample construction of a control button on a page for the browser, we examined the details of code as it appears in the design stage, and the effects of this code as exhibited in a rendering of the page in a browser.
It is important to see how the compiler on the server can be induced to change the behaviors of a control by interpreting the code at the server, and rendering this behavior to the user at the browser. At run time, the process of rendering the page executes a client event generated at the server. In effect, the behavior of a button as a defined control from a class in the .NET framework can be made to exhibit non-idiosyncratic behaviors.

Next we explored the use of a Data Grid control to bind to data in a database. In the IDE, we noted that flow layout for a design view is probably for older browsers, while grid layout is better because it frees the design object to take positions in the layout as desired by the developer. In the .NET strategy, data is taken from the database into a dataset for use by the application. We explored the action of several wizards, including the Data Adapter Configuration Wizard to effect the formation of a dataset for use in our application. There is a high degree of automation of standard SQL commands offered by these wizards.

Again, the use of the IDE is shown to be indispensable for the orderly management of complexity in application development. At some point during the meeting, deep into Rich client GUI issues, Greg Austin volunteered to demonstrate DreamWeaver at the next meeting. Besides our quest for improved web page development this idea struct a harmonious chord with everyone, so we are looking forward to his DreamWeaver demonstration in February.

Visual Basic. VB-SIG follows the dotNET-SIG meeting with a pizza break in between. Come to the dotNET-SIG and stay for pizza or come early to the VB-SIG and join in. The VB-SIG meeting this month started with a carry over of concepts from dotNET with the thought of applying these concepts to VB 6. As good as VB 6 IDE is, of course the .Net IDE is an improved version. So when we attempted to create the .Net application in VB 6, there were a few snags. The VB 6 server environment dosen't provide the wizardry of .Net IDE. We got caught up in circular helpfile answers that kept us from exactly duplicating the web application as a VB 6 WinForms application. But the excercise in futility was valuable because it gave us an opportunity to look at the various methods one can employ in VB 6 programming.

SIG Notes *Continued on page 11*

February 2003

Danbury Area Computer Society

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		Jan 2003 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	Mar 2003 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31			1
2	3	4 7:00 PM GENERAL MTG	5 4:6 PM INTERNET PROGRAM Chuck Hizar 203 798 8963 7:00 PM VISUAL BASIC Chuck Hizar	6	7	8
9	10 7:00 PM BOARD OF DIRECTORS	11 7:00 PM Access Bruce Preston 203 437-2920	12 7:30 PM ADVANCED OS Don Pearson 914 666-4622	13 7:00 PM SERVER SIG Jim Scheef 860 350-0034	14 Valentine's Day	15 DACS DOC SIG NEWS DEADLINE
16	17 President's Day	18	19 7:00 PM LINUX Bill Keane 203 438-8032	20 7:00 PM INVESTMENT Paul Gehrett 203 426-8436	21	22
23	24 7:00 PM WALL STREET Phil Holway 203 267-1202	25	26 7:00 PM SMALL BUSINESS Matthew Gregor 203 743 2579 7:00 PM GRAPHICS Ken Graff 203 775 6267	27	28	

Operating Systems

LinuxKeeps You in Control Part I

By Bill Eichin

I DON'T WATCH TV. Now, I've heard people say, "I don't watch TV either — I just catch "The X Files" on the weekend. Wait, there's a game on," while they reach for the remote. When I say, "I don't watch TV," that means my wife pays the cable bill. It means I don't know what channel HBO is on, and it means I haven't seen the latest episode of "The Sopranos." I'm no luddite (I still program the VCR for my wife), I just don't watch TV.

I don't do Windows. That means I have no Microsoft© operating systems installed on my home computers. It doesn't mean I don't have experience with them; as a systems administrator and consultant, I see Windows systems all the time, and I fix them too. But I don't need it for my own use.

I've been running Linux on my home computers, in various forms, since about 1993. Originally, my brother handed me a hard disk, and said, "here — boot this." I liked it, because I could get on-line, browse the web, read newsgroups, and do all that stuff, years before AOL. My other alternative to get online was Microsoft Windows 3.0 (and later, Windows 3.1). I wrote papers using Windows, largely because the printer drivers were better (and WordPerfect for Linux was not yet prime-time). But for the Internet, I used Linux.

When Windows95 was released, I was fascinated. I had been following the expected release in the news and in DACS. (Even got a little keychain LED mouse — remember those?) Exciting times, after watching OS/2 never quite make it to prime time. As soon as I could, I ignored Linux and installed Win95 and got online. Started using it for everything. Life was great.

And then, I got picky. First, there was Windows Messaging. It was the only product Microsoft offered for POP mail. And it crashed. Often. It would occasionally lose my mail. I would send emails to people, and they sometimes couldn't read them. And it crashed. . .

Next was Internet Explorer. At that time, it was probably the worst browser available. It crashed, too. Plugins didn't work with IE that worked with Netscape. And I couldn't run Mosaic under Windows. (Hey, Mosaic had its benefits in 1995 — for example, it didn't crash.)

So, back to the Linux partition. I eventually installed it from scratch, using a newer distribution called "Debian" (for Debra and Ian Murdock, the original authors of the distro) from a large box of floppies. At about that time, I also (with my brother's guidance) began to tinker with the kernel. I found I could upgrade Linux (the kernel) without replacing the programs that I was running on it. I could even run several versions of the kernel, if I wanted. For comparison, try installing both Win95 and Win98 on the same computer. Then, try installing some software under Win95, then run it later under Win98 without reinstalling. Now add Win2k, and run that same program again. Do you see where this could be useful? Now that I felt I was in control of the computer again, I felt it was time to get the GUI to do what I wanted, too.

X11, or "The X Window System," is a ridiculously powerful idea. X11 is the layer between the hardware (pci/agp bus, video graphics adapter, monitor), the user (keyboard, mouse, joystick, touchscreen), and the operating system (Linux). Note I haven't said "Window Manager," yet. X11 doesn't provide one. The window manager is an application that you run on top of X. This matters, because if you don't like the "look and feel" of your desktop, you can change it!

There are good sides and bad sides to this. The good side is the incredible power the programmer has to create a custom working environment. The downside is, you almost have to be a programmer to customize your working environment. The GUIs available at that time had no "Start button" or "Toolbar" from which to control things. Instead, you could click anywhere on the screen to pull up a menu. Each of the three mouse buttons were programmable, along with the shift-mousebutton, alt-mousebutton, control-mousebutton combinations, to do, well, whatever. And that's what people did. Great for programmers and power users; downright unfriendly and highly undocumented for the uninitiated (me).

In the intervening years, both Gnome and KDE have risen to the top of the GUI heap, effectively closing the most important gap between the Microsoft operating systems and basically all UNIX-based operating systems. Users can now have the most powerful and the most user-friendly desktop environments available, without sacrificing functionality or security. Next month, I'll talk about how this happened, and I'll even help you get Linux running on your own computer, without going through the trouble of actually installing it.

Bill Eichin *is a hardware junkie who still has LEGOS. He was eight years old when someone handed him the OS manual and said, "here's how it works." Since then he's played with operating systems, not just hardware. Linux made all sorts of other things make sense. You can reach him at* bill@eichin.org.

Games

Grand Theft Auto: Vice City

By Zachary Gaberel

THE FIRST THING people ask is: "Is this game worth fifty dollars or is it just a rip off?" Well, I think it is a great game, and I would definitively pay fifty dollars for it; it is worth every penny. There is one problem—you have to have play Station two (PS2) to have this game—it is not for the PC.

The game is based in 1986, and we follow Tommy Vercetti in town as he is released from prison. Everyone says "oh it's the same thing over and over again". But it isn't, you can do so much in Vice City, whether it is getting around by car, by boat, or by air.

It is rated M for mature. You have to be 17 or else it is not for you. It is rated M because you can have sex with hookers and prostitutes, also there are strip club. You can visit the web site at *www.rockstargames.com/vicecity/*. It is made by Rockstar games. It is made mostly for teenagers that have time to waste, like me.

The best part of this game, I would have to say, is the transportation. You don't need to rent a car you just press triangle to steel a car and x to drive You can go as fast as you want and do whatever you want in the cars. Motorbikes are also cool it is the same technique to get in and out of them. Also boats are fun and you can steal them on the docks. Also seaplanes are on the docks and you can see a great view of Vice City from them. There are also helicopters which are fun, they are found at the airports and so are the airplanes. But by foot is also a great way to get around.

Another great thing are the missions and how cool they are. You can do the missions or you can just fool around. If that gets boring, you can use the cheats. See http://www.gamers.com/game/1086542/cheats. or do a search on www.google.com/ for more cheats. One word of advice is to watch out what you do because the police in Vice City are especially hard on you. You can get stars that are on a scale of one to six, six the most, and one being the lowest for how you are wanted. On the cheats you can hire and lower your stars.

You can do golf and race cars and race dirt bikes. Dirt biking racing is located in Ocean Beach. Golf is located in Vice Point and street racing you can find anywhere. And also the mall is a fun place to hang out.

Overall Vice City is definitely worth fifty dollars and I would recommend you rent it or try it if anyone you know has it because it is a really fun and exciting game, you can rent it at blockbuster for example. Out of five stars I would give it a five out of five.

Zachary *is the son of Marlène Gaberel. He and his brother Joshua are regular contributors to dacs doc.*

SIG Notes *Continued from page 8*

Server. As promised, the January meeting attacked the problem of backing up a Linux machine (Red Hat 8, in this case) to a SCSI tape drive. At the December meeting I had recounted how I could not find a program to rewind the tape. Well, this month with the machine and the tape drive all sitting on the table, we found that the problem was really with the driver for the tape drive. Debugging this situation was made more difficult by the fact that this is a laptop and the SCSI adapter is a PC-Card (PCMCIA card). By the end of the meeting we were all bloodied in defeat. No one (and we had some knowledgeable people) knew how to get the driver to load and talk to the tape drive. Successful or not, this was a fun meeting. Next month we will either try this again or return to the Linux server project and work on configuring Samba for file and printer sharing.

The next meeting of the Server SIG will be Thursday, February 13th at 7pm in the DACS Resource Center.

SmallBusiness. Effective immediately we will no longer be meeting the last Wednesday of the month. Matthew and I have enjoyed our time with both the Web Design/Development & Small Business SIG's. We wish you all the best of luck with your future endeavors.

Regards,
Nancy & Matthew Greger

Join the Microcontroller SIG (MCS)

John Gallichotte will lead this hands-on SIG on the architecture of different controllers, their pros and cons, and how they function in detail. We'll cover most of the popular micros including the AVR (Atmel), PIC (MicroChip), The Stamp Series, and products from Motorola and Texas Instruments among others.

For more information, meeting schedule, and any other questions you may have, contact John Gallichotte at *tlclotus@ieee.org* 203-426-0394 (voice) 203-426- 8502 fax) or Bill Keane at *bkeane@ dacs. org*.

Digital Audio

Music Distribution

Article 5

By Frank Powers

In this series I have talked about storing and organizing music files on your PC's hard drive. If you have been following along you should have a sizable collection of music stored on your PC. You've learned about organizing the stored music by Artist / Album / Genre / Song Title, and we have discussed creating Playlists. Last month we talked about Internet Radio and how a cable or DSL connection can bring music from all over the world into your PC.

I hope that over the last five months you have installed a player, moved your music from CD & vinyl to your PC, created a Playlist, a custom Audio CD, and tuned into a Internet Radio broadcast. Cool stuff! Now we are going to talk about sending that collection of music to multiple locations in and around your house. And we're going to explore how every location can play a different selection of material at different volumes simultaneously from one PC MusicServer.

The Concept

A Pentium or Celeron computer with a good network connection and large hard drives can serve MP3 or WMA files to more locations than you will ever need in a typical home. Now that you have music organized on a PC why not use that one central library to send music to locations throughout your home. Turtle Beach™ has a graphic, which I've inserted below.

The picture explains the concept better than words

Using your existing PC, broadband Internet connection, and home network, they have developed a stereo component that requests songs from your PC through a home network, and plays them on your stereo, Home Theatre, or powered speakers. The Turtle Beach AudioTron™, Sonic Blue Rio Receiver™, and Motorola SimpleFi ™ are just a few of the devices on the market today that enable a music distribution system.

Using a Portable player to bring your collection to your Stereo

If you own a portable MP3 player or even a DVD player that allows playback ofDATA MP3 CD's you can use the sneaker method of connectivity by loading your portable device with songs from your PC. Then connect the portable device toyour stereo. Just use the 1/8" to stereo RCA jack connector we discussed inlast months article to connect the Headphone or Line Out of the portable device to your Auxiliary or Tape Monitor In on your stereo receiver. Set up your desired playlist on the portable device and your ready to go.

Or create an Audio or DATA MP3 CD using the techniques you learned in Article 3 of this series. If you own a fairly new DVD player, just make a DATA MP3 CD using one of the jukebox programs we have discussed and pop it in the DVD player for hours of music. Most DVD players will accept an M3u playlist so you can set an order for playback of the music. At the very least you can make an Audio CD to play on your CD player and stereo.

Connecting your PC to your Stereo

There are several ways you can connect your PC to your stereo, and the method you choose is dependent on several factors:

• How far away from your stereo is your PC?

• Do you want to be able to control the volume, skip songs, and / or choose adifferent set of songs to listen to?

•Do you currently have a "Home Network" installed? If so, is it a hard wired Ethernet network or wireless Ethernet (WiFi)? Have you opted instead to use your existing telephone (HPNA) or electrical wiring (PowerLine)?

• How much do you want to spend!

Poor Man's Music Distribution

You can bring your PC music to your stereo for as little as $19.95 if your PC happens to be located in a room adjacent to your stereo. How you ask? Well the same way you connect your Tape Player or DVD player. A simple audio cable connection from your PC's line out to your stereo's Auxiliary / Tape / CD etc. input. If your stereo is less than 20' away you can buy a pre-made cable, typically a 1/8" stereo phone jack to dual RCA jacks. Drill a small hole in your molding and run the cable directly from your PC to your stereo. If the distance is greater than 20' you can still use a cable, but you will probably need to make a custom cable. Materials for making a cable and the tools necessary can be purchased at stores like Radio shack, or from outlets you can find on the web.

The down side of this setup is that the music must be started on the remote PC and you will not be able to remotely change the song selection. To control the volume, you can use the remote control for your stereo system if your system has one. Otherwise, on older stereos, you'll have to get up and fiddle with the volume control on the stereo receiver. Check this months PC World© for more details.

Wireless Music Distribution

You can also bring your PC music to your stereo by acquiring a RF transmitter /receiver from vendors like X10 and Turtle

Beach. The units sold by these companies are very similar and allow remote control operation of the volume and song selection. The receiver is connected to your stereo Aux or Tape Monitor inputs, and the transmitter is connected to the Line Out on your soundcard. The Turtle Beach unit comes with connecting cables and a splitter cable to attach to your soundcard so that you can still connect your PC speakers to the soundcard Line Out. Additionally you will need a free Serial Port on your PC to connect the Remote Control receiver to your PC. With the remote control receiver connected, you can select up to 20 pre-configured playlists, radio stations, or Album / Artists / Genre combinations. You'll also be able to control volume, and skip forward or backwards within any of the "Favorites" you configure. If you attended the DACS meeting last month, this was the setup I was using to start and stop the songs I selected

The benefits of this setup are:

• RF remote control works up to 50' feet away and will send and process commands through most walls.

• Simple wiring and no need to drill holes in your walls.

• Relatively inexpensive

The down side of this setup is that the 2.4gHz frequency it transmits on is susceptible to interference from microwave ovens and some portable phones. Thesound quality is also diminished and you may hear hiss and noise at low volumes.

Network Audio Appliances

By far the coolest way to listen to your PC music collection is on one the new breed of network enabled audio appliances. Manufacturers like, Turtle Beach, Sonic Blue, Phillips, Onkyo, and BOSE all sell devices that can connect to your PC home network. These units can play your PC's music collection anywhere in your home that a network connection is available.

Turtle Beach AudioTron™

There are several manufacturers of Network Audio Appliances. I'm going to use the Turtle Beach AudioTron as an example for several reasons:

• I own and use one

• I highly recommend it for its price / value

Here's a picture of the unit

And here's the units rear panel connections

Connecting a Network Audio Appliance

If you have a wired Ethernet or HPNA network already installed in your home, and one of the wires you installed is near your home stereo, you are all setup to connect the AudioTron to your PC. Just plug in the network connection and then connect either the analog or digital out of the AudioTron to your stereo. There are also PC file share and network configurations that will need to be setup as well, but those configurations are outside of the scope of this article. All the manufacturers have diagnostic and setup programs available to help you configure your PC and network to allow the unit to share your music collection.

In order to access your music collection your music server PC will need to be left on, or you can opt to install a NAS (Network Attached Storage) Server.Either way, the music files need to be on-line in order for the AudioTron (AT) to access and play them. The AudioTron doesn't store any of the music internally, but rather, creates a directory of where on your network a particular song file is stored. When you select a song, the AudioTron reads the location from its memory and goes out over the network to "fetch" it. The AudioTron then "Streams" the song file across the network connection and handles all the audio decompression and digital to analog conversion. The actual audio is then sent out either the digital or analog connection to your stereo receiver for playback. The display on the AudioTron tells you what song is playing and allows you to select songs from your library by browsing through Artist, Album, Genre, and / or Playlists that it has cataloged. You can use either the included remote control or the front panel buttons to select the music and control the playback volume. You can also use any web browser to control the AT, so you can start playback of music in the living room from a PC connected to your network in the den. If you have a wireless network and a wireless network enabled Pocket PC you can use the web browser on your Pocket PC to control the AudioTron from anywhere your wireless network reaches. You can connect as many AudioTrons to your network as your network has free ports. You can have one in the den, living room, and your bedroom. This particular unit even has an alarm clock function. Several users have created java applets for it as well, and you can also have it display current weather information as well as time. The AudioTron and other devices in this category will also allow playback of Internet Radio without the PC being on if you have a DSL or Cable router. find that I use Internet Radio more often than my PC music library simply because the PC isn't always on. Internet Radio is a great wakeup setting for the alarm clock function I mentioned before.

Windows Media PC's

This year Microsoft in collaboration with Hewlett Packard and other PC vendors has introduced a new breed of PC that is designed to be the brains behind your entertainment center. These PC's are equipped with Microsoft products that allow you to send both audio and video content stored on your PC's hard drive to your TV and stereo. You will pay for the convenience of having everything pre-installed, but if you have the wallet size and don't enjoy fiddling with PC and stereo components, this is an easy way to get all the gear you need set-up and ready to go. Just add a wired or wireless network and you an transmit audio and video to other PC's and network enabled audio / video devices.

Whole House Music Distribution

At the very high end of the spectrum you can hire a consultant to install and configure a personalized audio / video distribution network. This can be very expensive in an existing home, but if you are building and / or remodeling your home consider installing cabling while the walls are open. Even if you don't buy all the gear to enable whole house audio / video distribution now, having the wiring pre-installed will allow you to add both audio / video distribution as well as home automation and PC connectivity quite easily in the future. Hi end audio stores such as Tweeters and Harvey's have recently added all sorts of network enabled gear to their inventories and have specialists who can help you design and install Home Theatre and Whole House Audio / Video distribution networks. The sky and your wallet are the only limits in this category.

Frank's do it yourself whole house audio

For my house I have a combination of all the techniques described above.

Over the last few years I have wired the house with Ethernet cabling, run speaker wire and mounted outdoor speakers with volume controls on both my front porch and rear deck, and added the Turtle Beach AudioTron to my living room stereo system. My most recent addition is a Pocket PC and a wireless access point. Here's a typical scenario of how I use this network of do it yourself pieces.

My music server PC is in the very front of my home and wired with a coaxial digital connection to my Sony receiver in the same room. I use the analog output of my soundcard to connect to an old power amp which is hard wired to outdoor speakers mounted on the outside of the studio. So in the front of the house I can be listening to a Beatles album in my studio while my wife is listening to Internet Radio outside in the garden. Since I have the RF remote control attached to my computer she can change stations and conrol the volume on the outdoor speakers from the garden as well.

At the same time my daughter can be upstairs in her room and through the wired Ethernet connection to her computer, she can listen to the Dixie Chicks on her PC and speakers. Later we can have the living room stereo playing a party mix from the AudioTron using the same library of music. The living room stereo is wired to speakers on the back deck so I can party while I'm cooking. And with the addition of the Pocket PC and wireless access point, I can control the Audiotron from the rear deck and change the volume and selection of music playing on the living room Audiotron when its time to barbeque on the rear deck.

Wrapping up

I hope you've both enjoyed and learned from this series on Digital Music. Ihave covered a lot of ground in this series of articles and I've only scratched the surface of what you can do. As you contemplate how you can implement your own Digital Music Library, remember that you don't have to spend a lot of money to enjoy a large number of the benefits of storing your music collection on a PC. I've given you some tips, tricks, and ideas, but don't be bound by what I've told you. Let your own imagination and talent add, subtract, and complement what you've learned in this series. And be sure to let me know whatyou come up with.

Listing of links to sources quoted in the series

Jukebox & Audio Editing Vendors
- *http://www.voyetra.com*
- *http://www.cakewalk.com*
- *http://www.musicmatch.com*

Cables & Accessories
- *http://www.radioshack.com*

Internet Radio
- *http://live365.com*
- *http://www.windowsmedia.com*
- *http://www.npr.org*

Network Enabled Audio
- *http://turtlebeach.com*
- *http://www.sonicblue.com*
- *http://www.gi.com/noflash/simplefi.html*
- *http://www.x10.com*
- *http://www.cedia.com*

Frank Powers *has extensive digital music experience working for companies likeVoyetra Turtle Beach, Inc and Sam Ash Music as well as composing his ownmaterial and running an Internet radio station. Frank is available for digitalmusic consulting and can be reached by email at* frank@franksamericana.com *You can find out more by visiting his website at* http://www.franksamericana.com. *He also can be heard on the Internet at Frank's Americana™ Live365? InternetRadio station at* http://www.live365.com/stations/fpowers

Looking for something?

Due to technical difficulties, the January Random Access was not recorded. Look for our column again in the next month's dacs.doc.

When dining at the DACS Resource Center, please carry your leftovers out with you.

Thanks!
The management

Hardware Tips

Use Your CD Drive More Productively

By Ira Wilsker

Almost all newer computers come with a CD-RW drive, a CD drive that can write and rewrite compatible CD discs. For older computers, with a standard CD reader (play only, not write), the addition of a CD "burner" is a very popular and fairly inexpensive upgrade. A simple review of the Sunday sale books for the major electronics and office supply stores shows an abundance of CD-RW drives for between $30 and $100, often after rebate. These drives are typically easy to install, and may possibly be installed in addition to the existing CD reader (good for copying CDs), or as a simple replacement. If internal installation is not desired, there are several external CD-RW drives, advertised weekly, that connect to an available USB or firewire port. The external drives, typically the USB models, are also often a good choice for older notebook computers where internal installation is difficult or impossible. The Sunday ads often show the external USB drives for under $100, after rebates.

Almost all CD-RW drives, whether factory installed, or after-market add-on, come with some CD burning software. The most widely distributed CD software provided with the drives is from Adaptec, or Adaptec's successor (Adaptec sold their CD writing software division), Roxio. Another common software package included with some drives is from Nero, while other drives come with a variety of lesser-known software titles. As the price of blank CD discs plunges, often "free after rebate", burning (writing to) CDs has become very popular. Still, many PC (and Mac) users are not using their equipment to its potential; large number of users still only use their CD-RW drives in read mode to install other software, and not to burn discs.

As had been stated many times here in previous columns, the three most important words in computing are "Backup, Backup, and Backup". Remember that "Murphy's First law of Computing" states that "A properly backed-up hard drive will never fail; a hard drive that has not been recently backed up will always fail at the most inopportune time." All too many users who have ready access to CD-RW drives have lost all of their important files to viruses or hard drive failures, despite the ease and low expense of copying important files to CD discs.

The common blank discs hold from 660 to 700 megabytes of data, and are very inexpensive. Other than some time, there is no great investment to back up critical files at a minimum, or even better, entire hard drives.

There are a variety of excellent utilities available to backup hard drives. Some CD-RW drives come with a "lite" or "limited" version of popular backup programs. While minimally functional, these "lite" versions often lack useful functions such as compression (getting more data on a CD disc than its native capacity), or incremental backup (only backing up new files or files modified since the previous backup). I have been using "BackUp MyPC" from Stomp Software (www.stompinc.com), which was formerly known as Backup Exec, by Veritas (Seagate). This program is probably one of the most full featured backup programs, and easy to use. BackUp MyPC can backup to almost any type of device from CD-RW drives, tape drives, Jazz and Zip drives, and other devices.

Some competing products are Roxio's Go Back, Norton's Ghost, and NTI's BackUp Now (which I have also used). Since almost all computers can utilize some form of CD writer, and blank discs are cheap, there is absolutely no reason NOT to have at least critical data files backed up. The cliché "ounce of prevention…" is most apropos here. With over one in five PCs currently infected with at least one variety of the Klez worm, several versions of which are capable of destroying critical files on a hard drive, backups are imperative. The appearance and rapid spread of other destructive worms and viruses, such as the new "Hunch" worm which explicitly destroys the files in the Windows, My Programs, and My Documents directories, emphasizes the need for backing up hard drives. Still, probably the most damage is done by the old-fashioned hard drive crash. Remember Murphy's law, and always have a reasonably current backup of critical files. For long-term archival purposes, better quality CD discs are advertised as having a 100-year archival life.

There are other popular uses of CD burners. One of the most popular and most controversial uses is burning music to blank CD discs. Often in the popular MP3 format, or in native commercial music CD format, studies show that this is the most popular use of CD burners. Provided that copyright laws are rigidly obeyed, and we all know that they always are (snicker), homemade music CDs are very widely created and used. Online music or swap services, ranging from the now defunct Napster, to the very much alive and controversial KazAa and Morpheus, as well as the legitimate commercial music sites such as Sony, are popular sources of such music.

Another popular use is copying entire CD discs. Generally, it is considered "ok" to make a single archival backup of commercial CDs, provided that the copy is only used as a backup, and properly disposed of (destroyed) when the original software is no longer needed. With some software CDs, and an increasing number of commercial music CDs, this archival backup is becoming more difficult to create as sophisticated copy protection is being utilized more commonly.

Many use their CD drive, often with rewriteable CD-RW discs, as an additional, but removable adjunct to their hard drive. This allows archival and portable storage of massive amounts of data, at minimal expense. CDs are often ideal for moving large files between computers.

There are several other uses for the CD-RW drives now so common in our machines. Many other CD drive utilities are readily available for download, such as from tucows.exp.net/system/cdrutil95.html or tucows.exp.net/mmedia.html. Use the drives as they can be used, but make absolutely sure that critical data is frequently backed up.

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