

**NEXT MEETING, TUESDAY, FEBRUARY 1:**

**DACS' OWN WORM WHISPERER,  
JEFF SETARO, WILL TALK ABOUT  
INTERNET SECURITY AND  
SHOW HOW TO TAME  
THOSE WILD BEASTS  
OF CYBERSPACE**



# Directors' Notes

DACS Board Meeting -  
Wednesday, January 12, 2011

Due the blizzard, a virtual meeting using Skype was held. In attendance were: Richard Corzo, Richard DiFranco, David Green, Drew Kwashnak, Patrick Libert, Bruce Preston, Jim Scheef, Jeff Setaro, Andy Woodruff and Charles Bovaird (guest).

The meeting was called to order at 7:10PM. Minutes of Last Meeting were approved.

## Treasurer's Report

Opening balance 12/1/10 -	\$6,207.00
Dues:	\$435.00
Interest:	\$0.52
Total Income:	\$435.52
New Checks:	\$33.35
Printing:	\$95.00
Postage:	\$125.60
Program Supplies:	\$42.62
Resource Center:	\$260.76
Total Expenses:	\$557.33
Balance 12/31/2010:	\$6,085.19

## Membership Report

Members	160
Valid e-mails	157
New members	1
Newsletter:	
Printed	100
Mailed	75
to members	53
to libraries	14
to other)	8
Meeting count: 41 seats (21 members, 20 visitors of which 4 came as a result of LinkedIn announcement)	

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## Old Business

### General meetings

- January 2011: Jobs and Tech—John Barry, Preview: Richard Corzo, Review: Andy Woodruff
  - February: Computer Security - Jeff, Preview: Bruce, Review: open
  - March: open (see discussion)
  - April, John Patrick—state of the Internet, Preview and Review: open
- For 2011 we have reserved the Danbury Hospital auditorium for the first Tuesday of the month.

### f. Possible future topics:

- Cloud computing (Richard has contacted Jim Doran of IBM, waiting to hear back)

Andy reports that he has not been able to secure a speaker for DATAHR; accessibility and disability issues. Topic shelved.

- Secure internet communications with family and friends; FBI presenter; how to avoid unwanted intrusions of your computer.

There followed an extensive discussion on anti-virus, malware, phishing, pharming, DNS poisoning etc. Jeff was recruited to put together a presentation for February.

- Jeff Fox of channel 8 – weather forecasting technology
- People's United: person who presents program on secure banking etc.
- David Pogue, columnist at New York Times – general technology
- Tuning a machine: startup, background processes. Drew is looking into this as a possible topic for March, tentative title: "Windows 7 Tricks and Tips"

### 2. Open positions

- Jennifer Anderson decided not to take on the newsletter editor position to replace Patrick Libert. Member Bob Green will fill the position, at least temporarily. Ahmad Asgharian also volunteered and will be kept in reserve. Submissions are to go to [dacseditor@dacs.org](mailto:dacseditor@dacs.org).
- Membership chair position is still open.
- VP of Programs is also open.

- Using Drupal for the DACS Web site—As Jim had to leave the meeting there was no report.
- Projector lending policy: Andy wrote a proposed policy and waiver of liability on 1/4/2011 for our approval. Moved and accepted with one decline.
- Status of Jim Scheef's plan to use MailChimp to send out DACS mailings; no report.
- The Facebook link on the DACS home page now points to the DACS Facebook page (<http://www.facebook.com/pages/>

## Membership Information

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### Postmaster

Send address changes to Danbury Area Computer Society, Inc., 4 Gregory Street, Danbury, CT 06810-4430.

## Editorial Committee

Managing Editor:	Bob Alan
Associate Editor:	Ahmad Asgharian
Production Editor:	Allan Ostergren
Copy Editor:	Patrick Libert

## Contributors

Charles Bovaird	Richard Corzo
Richard DiFranco	Drew Kwashnak
John Lansdale	Rob Limbaugh
Bruce Preston	Jim Scheef
Joseph Tobin	Annette van Ommeren

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The editors welcome submissions from DACS members. Contact Patrick Libert at 860-567-9586 ([dacseditor@dacs.org](mailto:dacseditor@dacs.org)). Advertisers, contact Charles Bovaird at (203) 792-7881 ([aam@mags.net](mailto:aam@mags.net))

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**Applications & Hardware to enhance *dacs.doc* are welcome.**



Patrick Libert  
APCUG Liaison  
[plibert@dacs.org](mailto:plibert@dacs.org)



Apple User Group

## Officers

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**VICE PRESIDENT PROGRAMS:** Open  
**SECRETARY:** Bruce Preston • **TREASURER:** Dave Green

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Bruce Preston	(203) 431-2920 (days)	<a href="mailto:bpreston@dacs.org">bpreston@dacs.org</a>
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Andy Woodruff	(203) 744-9588	<a href="mailto:awoodruff@dacs.org">awoodruff@dacs.org</a>

## Committees

**NEWSLETTER:** Patrick Libert: [dacseditor@dacs.org](mailto:dacseditor@dacs.org), (860) 567-9586

**PROGRAM:** Position Open

**WEB MASTERS:** Richard Corzo ([rcorzo@dacs.org](mailto:rcorzo@dacs.org)), (203)797-1518  
 Annette van Ommeren ([avanommeren@dacs.org](mailto:avanommeren@dacs.org)), (914)232-0149

**MARKETING AND PR:** Position open ([pr@dacs.org](mailto:pr@dacs.org))

**APCUG LIAISON:** Patrick Libert ([plibert@dacs.org](mailto:plibert@dacs.org))

**MEMBERSHIP COORDINATOR:** CHARLES BOVAIRD: [aam@mags.net](mailto:aam@mags.net)

## 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**

Program	Name	Phone/E-mail
APL	Charles Bovaird	(203) 792-7881 ( e )
ASP.Net	Chuck Fizer	
C/Unix/ObjC	Kenneth Lerman	(203) 426-4430 (d e)
C#, VB	Chuck Fizer	<a href="mailto:cfizer@dacs.org">cfizer@dacs.org</a>
Electronics	Andrew Woodruff	(203) 798-2000 (d e)
Interface-Instrumentation	Andrew Woodruff	(203) 798-2000 (d e)
Adobe Web & DTP	Annette van Ommeren	(914) 232-0149 ( e )
SAS	Lewis Westfall	(203) 790-0229 ( e )
Statistics/Data Analysis	Charles Bovaird	(203) 792-7881 (d e)
SQL	Lewis Westfall	(203) 790-0229 ( e )
SQL Server, MySQL-5	Chuck Fizer	
Malware	Jeff Setaro	(203) 748-6748 (d )
VB.Net, Visual Basic	Chuck Fizer	

Danbury-Area-Computer-Society-Inc/92713398983?v=wall) rather than the less useful DACS Facebook group.

7. DACS communications infrastructure update: The service was available during the month up to the day before the meeting when there was an outage. Jim will get the telephone line checked and serviced.
8. Charlie Bovaird has donated a replacement used telephone with speaker phone & electronic answering/voice. We will set up do not call. Andy will follow up on using Google voice linkage to the DACS resource center number. He will start by talking with Rob Limbaugh, who investigated this previously.

## New Business

1. Brief DACS web site outage on Sunday 1/9 was due to routine monthly maintenance. We are on Jay Ferron's company servers (not APCUG).
2. Need to replace the form software package, currently PHP-BB, does not support content filtering, plug-in filters etc. Installations require editing scripts whereas other packages have semi-automatic installations. Looking at open source MyBB. There is a good import capability for migration which Jeff has evaluated. Discussion of alternatives to Drupal – including plug-ins for WordPress such as BuddyPress, SimplePress, BBPress etc. Action Items: Jeff will put up a prototype on his server. Richard will add a link to forum on the left of the home page, retain existing link on the right.

Moved to adjourn at 8:50PM

Note: We had no difficulty using Skype for the conference, further indication that there is a problem with the data line into the RC.

—Bruce Preston

## New Members

Marites de Joya-Aquino  
 Ahmad Asgharian

## This is Your Last Newsletter

If the membership date on your mailing label reads

**EXP12/3/2011  
or earlier**

You need to renew your  
 DACS membership  
**NOW**



# Meeting Review:

## John Barry on Jobs and Technology

by Andy Woodruff

**A**N INTERESTED audience greeted John Barry for this talk about information technology (IT) jobs and how to get them.

John is the founder and owner of ITech Consulting Partners (Newtown, CT) that has been placing candidates in contract and permanent IT jobs for the last twelve years. Prior to starting the business, John had worked as an IT professional himself. He sees his business as an "IT staffing partner" or, in more detail as written on his website, "an organization of experienced information technology and business professionals, who provide resources to help clients define, develop and implement successful IT solutions through contract and permanent placements."

John started his talk by considering current trends in IT employment. He has noticed an increase in full-time employee hiring in 2010, as compared to 2008 and 2009, as shown in the chart. He has also seen an increase in companies' use of contract-to-hire options.

John continued his talk with hints toward finding a job. He repeated the classic advice of "network, network, network ... all the time". He said the best time to network is when one is employed. "You want a large network ... build it while you are employed. And tell people when you are actually looking for work." He advised practicing one's "elevator speech", i.e. the few sentences that one uses to describe one's work to a stranger on an elevator.

He reminded us of the new technologies such as smart phones (including iPhone and Android), tablets (including iPad and Kindle), and social media (including Facebook, Twitter, and LinkedIn). He made several suggestions regarding these new technologies. The job candidate should:

- use LinkedIn for professional networking, and join pertinent groups within LinkedIn (such as geographic, technical or functional groups)
- consider upgrading one's skills to include development skills in these new fields

- review the privacy settings in Facebook: "Be careful of what you share ... current and potential employers may view your profile!"

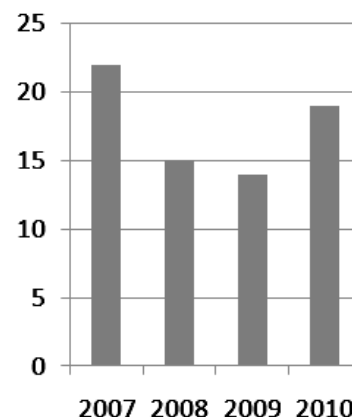
Several audience members asked questions. One person asked if employers discriminate in terms of age. John said that they are not permitted to discriminate in this way, but he recognized that some companies do indeed do this. He suggested that many companies are interested in the typical "energetic and passionate"

qualities of a younger person ... so candidates of all ages can help themselves by exhibiting these qualities.

Another person asked if he should reduce the amount of experience that appears on his resume, in order to avoid scaring off possible employers. John warned him not to lie in a resume, but he said that the candidate does not need to highlight things that



Trends in ITech's New Placements

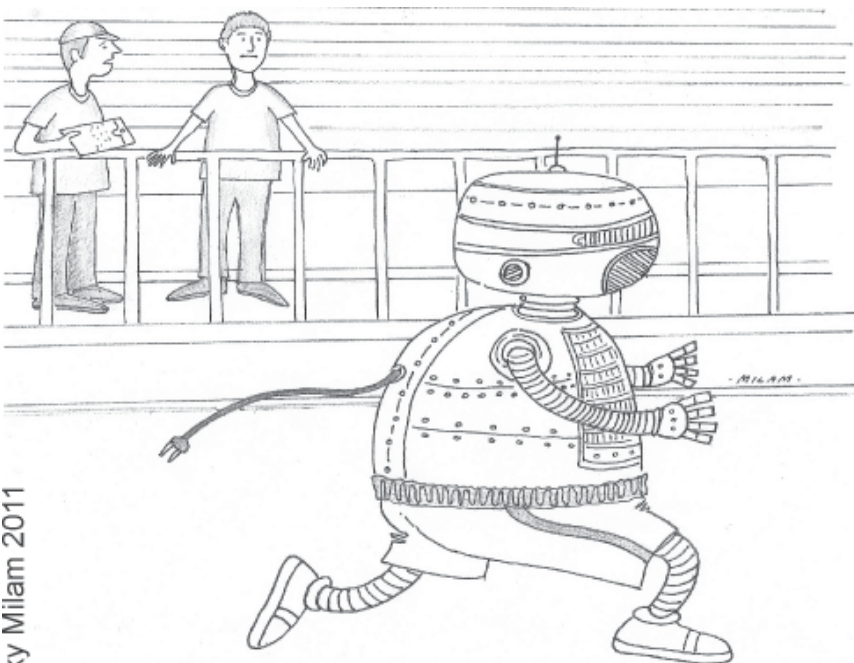


might not help his chances. One can legitimately say that one has "20+ years of experience", even if one actually has 30 years.

John gave us some hints about how to use recruiting agencies. He suggested that candidates should get set up with two or three recruiters, after asking each recruiter for a list of the companies that the recruiter represents. He warned us never to let a recruiter send a resume without our knowing to whom the resume is going.

John's PowerPoint slides for this presentation are available at: <http://www.dacs.org/downloads/dacsdownloads.htm>

John can be contacted at ITech Consulting Partners, <http://www.itechcp.com>, telephone (203) 270-0051.



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"He can beat anyone in the mile, but he can't do the Marathon on a single charge"

# Meeting Preview

## Secure Computing in the Internet Age —Jeff Setaro

By Bruce Preston

**H**OW MANY OF YOU remember “The Good Old Days” of personal computing where it was just you, your computer, and the programs and data that you had on your floppy disks? You were an island all to yourself and things worked well -mostly. Once in a while you might be met with “Abort, Retry, Ignore?” when something went wrong and none of those choices were especially good. But rarely did it cause a problem other than perhaps the loss of what you were doing at the time.

If you needed to copy something you just put a second diskette in the second drive and told the machine to copy. And then things got a bit dark - unscrupulous people started copying expensive programs and selling or trading them. So program publishers invented copy protection schemes that couldn't be bypassed by typical users. Then “crackers” (although the press referred to them as “hackers” and still does for the most part) broke copy protection and started distributing black market copies. Eventually the black market copies were modified maliciously - often with code that would replicate and infect other floppy media - the birth of computer viruses. It was only a matter of time before the anti-virus industry was born of necessity.

About the same time computers became participants in a network, be it a local area network or later the internet - first dial-up, and later broadband - and it became possible for viruses to enter the computer via means other than physical - first as downloaded executables, or macros in infected documents, and later delivered via infected e-mails and web pages.

The simplest definition of a virus is program code that replicates itself surreptitiously. It may or may not include a “payload” - malicious code. Anti-virus programs typically could detect them by looking for a “signature” - a unique series of instructions which identified the virus.

With hundreds of new viruses appearing per month, the signature files grew eventually requiring subscription to a service that provided signature updates on a daily basis.



Of course once a malicious person has access to a computer, financial gain becomes a motive. This may be had by gaining access to personal information - account names, passwords - anything that supports identify theft. The goal of the attack is no longer restricted to just installing a virus. The general category of malware includes key logging to steal accounts and passwords, redirecting web browsing to steer

spending to a “preferred site” or a site that harvests information, spambots to relay spam, or participate in a botnet set to perform denial of service attacks.

One way to combat the installation of malware is to introduce a firewall - a utility that controls access to a machine from the outside - essentially only allowing communications that the user has initiated.

Routers for cable or DSL connections frequently implemented a firewall in the hardware. But the basic firewall in a router generally has to trust that anything that initiates on the user's end is legitimate. Unfortunately this is not so. If malware gets into a computer, the hardware firewall will let it establish a communications link to the outside. So enter the “personal firewall” that runs on the client computer and monitors outbound connections as well.

Threats don't have to actually reside on your computer - fake e-mails or web pages solicit private information - phishing - trying to gather enough information sufficient to steal personal identity. Phishing e-mails and web pages often look like official correspondence.

In summary, the types of threats are ever increasing in parallel with the improvements in technology and thus the need for defensive techniques has also increased exponentially. Come to the February DACS General Meeting to learn about the various threats as well as the ways to counter them.

DACS meetings are held at the Danbury Hospital auditorium. Activities begin at 6:30 p.m. with registration and casual networking. The meeting starts at 7:00 p.m. with a question and answer period (Ask DACS), followed by announcements and a short break. The featured evening presentation begins at 8:00.

DACS General Meetings are free and open to the public. Members and prior attendees are encouraged to extend invitations to anyone interested in this topic.



Do the General Meetings leave you thirsting for more?



# Special Interest Groups

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## SIG NOTES: February 2011

**Access.** Designs and implements solutions using Microsoft Access database management software.

**Contact:** Bruce Preston, 203 431-2920 (*bpreston@dacs.org*).

Meets on 2nd Tuesday, 7p.m., by virtual connection.

**Next meeting:** February 8 (check Website for technical details)

**ASP.Net.** Focuses on Web site/server application development using Microsoft Visual Studio, C#, VB, Javascript and SQL Server programming tools. Starts with Random Access, followed by a programming discussion with examples.

**Contact:** Chuck Fizer (*cfizer@dacs.org*).

Meets 1st Wednesday, 4-6 :p.m. and 6-8 p.m. in a virtual session. (Note change below)

**Next Meeting:** February 2 at DACS Resource Center

**Drupal.** Covers all things on Drupal, the open source content management system (CMS).

**Contact:** Jim Scheef (*jscheef@dacs.org*).

Meets on the second Thursday at 7:00 p.m. at the DACS Resource Center, or go to the DACS Community Forum (<http://www.dacs.org/forum/>) within the Members-only area.

**Next meeting:** February 10

**Digital Imaging.** Digital cameras, retouching and printing.

**Contact:** Ken Graff at 203 775-6667 (*graffic@bigfoot.com*). Meets last Wednesday, 7 p.m. at the DACS Resource Center.

**Next Meeting:** Recessed until Spring

**Jobs.** Networking and jobs search

**Contact:** Charles Bovaird, 203-792-7881 (*aam@mags.net*).

Meets by e-mail.

**Next meeting:** TBA

**Linux.** Provides Help in installing and maintaining the Linux operating system. Also of interest to Apple owners using OS X.

**Contact:** Jim Ritterbush, *linuxsig@dacs.org*

Meets 3rd Wednesday, 7:30 p.m. at the DACS Resource Center.

**Next Meeting:** February 16

**Mac.** Focuses on all aspects of the Mac and iPhone operating systems.

**Contact:** Richard Corzo (*macsig@dacs.org*).

Meets 1st Thursday, 7 p.m. at DACS Resource Center.

**Next Meeting:** February 3

**PC Maintenance.** Review of PC hardware and OpSys maintenance and use.

**Contact:** Charles Bovaird, 203-792-7881 (*aam@mags.net*).

Meets irregularly, announced by e-mail.

**Server.** Explores Back Office server and client applications, including Win NT Servers and MS Outlook. SIG is on hiatus and presently merged into the Drupal SIG.

**Contact:** Jim Scheef (*jscheef@telemarksys.com*), or go to the DACS Community Forum: <http://www.dacs.org/forum/>, within the Members-only area

**VB.Net.** Focuses on Smart Client Windows application development using Visual Studio, VB, C# and SQL Server programming tools.

**Contact:** Chuck Fizer (*cfizer@dacs.org*) or Greg Austin, 845 494-5095 (*greg.austin@ryebrookpba.org*).

**Next Meeting:** February 2

**Web Design and DTP.** Learn about Adobe software for web, graphics and desktop publishing.

**Contact:** Annette van Ommeren (*avo@annagraphics.com*).

Meets 3rd Tuesday, 7-9 p.m. at the DACS Resource Center.

**Next Meeting:** February 15

## SIG News & Events

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**DotNet.** The dotNet and C#VBNet SIGs seem to be getting on the virtual meeting stage more successfully each time we have a meeting. The sessions are hosted on Skype for audio and Mikogo for video. Attendees will receive a Skype call inviting you to attend. (If you think you are not on the call list, you need to call me via Skype prior to the meeting and establish a Skype connection with me. This can not be done when the meeting is starting. Call at least 15-20 minutes before.) Just prior to the meeting, I will establish a Mikogo video session and acquire the Mikogo attendee session identifier then announce the identifier over the Skype connection. Then you access Mikogo.com and join the meeting using the session identifier provided via the Skype connection.

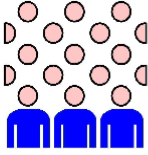





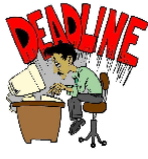
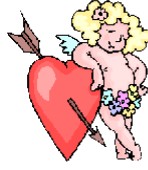


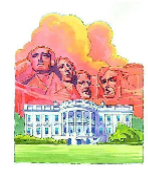

The dotNet SIG was a washout, but we then conducted the C#VBNet SIG session from 7-9 pm. The topic was a discussion

of a C# implementation of Bruce Preston's Access application that transferred stock ticker data from an access database and put the ticker data into an Excel spreadsheet. (Contact Bruce Preston for details of the Access implementation at *bpreston@mags.net*.) We implemented the application using SQL Server as the database for the stock ticker data and a C# program named SQLtoExcelProvider to access the stock ticker data and deposit it to an Excel Spreadsheet. Also, we developed a 2nd C# application which we named ConsoleAppTickerUpdater. This program accesses the stock tickers in the SQL Server database and methodically accesses the internet to retrieve current ticker information about the stock. Then it updates the SQL Server database with the newly acquired information. The initial transfer program is used to transfer the stock ticker information to an Excel Spreadsheet.

*SIG Notes, Cont. on page 9*

# February 2011

## Danbury Area Computer Society

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday																																																																																																		
		<b>1</b>  6:30 P.M. GENERAL MTG	<b>2</b>  4 PM ASP.Net 7 PM C# VB.Net Chuck Fizer 203 798-9996	<b>3</b>  Macintosh 7:00 PM Richard Corzo maccsig@dacs.org	<b>4</b>	<b>5</b>																																																																																																		
<b>6</b>	<b>7</b>	<b>8</b>  MS ACCESS 7:00 - 9:00 P.M. Bruce Preston bpreston@dacs.org	<b>9</b>  7:00 PM Board of Directors	<b>10</b>  7-9 PM Drupal Jim Scheef 860 355-0034	<b>11</b>	<b>12</b>  DACS.DOC Deadline																																																																																																		
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# Back to Basics

## A Brief History of Data Storage & a Brief Explanation of the Binary System (Part 1 of 2)

By Ron Hirsch

### Introduction

**E**VER SINCE MAN FIRST walked the earth, he has started keeping records, and storing information. Early man did so by creating crude pictures on the walls of caves, and much of these still exist today. As society progressed, the need for more and more information storage increased. This served several purposes. It provided the means to pass along knowledge to other contemporary members of the current generation, and also to generations to come. And they served to document all the activities of the existing generation.

In today's computerized world, most of society takes the personal computer for granted, without really understanding what is actually happening inside that "magic box". In simplistic terms, there are two primary elements in a computer. They are the storage capacity devices such as the hard drives, and RAM, and the CPU computer chip which processes stored and inputted information to produce the desired output.

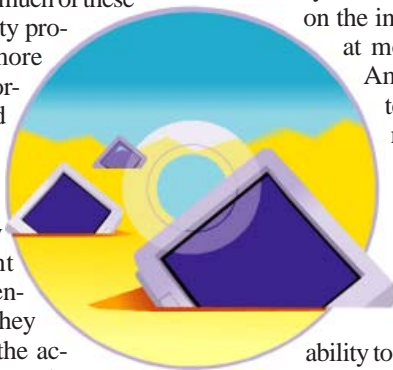
This article will present a brief overview of the storage aspect, and an introduction to binary arithmetic, which is at the heart of how a computer accepts and processes data. It has been my experience that very few people understand what the binary system is. I will explain in simple terms (hopefully) how it works, and why it's needed. So, once you understand binary, you can be the expert, and explain it to your friends, and impress them.

These two facets of computers have made such rapid and continuous advances since "computers" first arrived on the scene that their capabilities have truly become mind boggling.

### The Early Years

My earliest recollection of data storage and processing is in the early-mid 1930's. My father opened a savings account for me at our local bank. I believe that the initial deposit was 25 cents. Periodically I would visit there and make additional deposits of 10 cents or so. This involved making out a deposit slip, and presenting it, along with my passbook, and the money to the teller. He would then manually enter the new deposit (using a pen dipped into ink) into my pass-

book, and also the banks master record book, stamp my deposit slip, and put it into a bin with other deposit slips. Ultimately, he taught me how to fill out my own deposit slips. I also remember that the interest rate was 0.5% annually. Needless to say, I did not get rich on the interest, which amounted to at most a few pennies a year. Amazingly, this manual system of record keeping did not change for many years.



### Automation Starts Arriving

As time marched on, some new methods arrived on the scene. The ability to store on tape, and wire, and the development of punch cards represented major breakthroughs. And to store documents and records, microfilm was heavily used. While microfilm allowed the user to "view" a document, the view was actually a picture, and extracting info and values from a microfilm document was not a simple process.

But, punch cards did represent a major breakthrough in using a machine to store and retrieve data. Processing equipment could take a stack of punch cards and run them through, searching for and recovering information which had been stored there. It was noisy, and very slow by current standards, but it did work.

### The Digital Era Arrives - Binary Goes To Work

Most people do not understand the binary system, which is the fundamental process used by virtually all digital computers. I want to take a few paragraphs here to briefly describe what "binary" is, for those who might be interested. Let's assume you have a value which you want to store, and let's say that value is "143". Now, if that number was written down on a piece of paper, any educated person looking at the number would know that it is "143". But, if that number is then to be processed somewhere else, how can we describe that number such that some other non-human process can know that it is a value of exactly 143, and readily and reliably use that value?

### DECIMAL SYSTEM

In our decimal system, the number 143 actually means as follows. The 3 is the units

figure, the 4 is the 10's figure, and the 1 is the 100's figure. So writing 143 in our decimal system means that the total value is  $1 \times 100$ , plus  $4 \times 10$ , plus  $3 \times 1$ . This is a base 10 system. Each successive number after the units number represents an amount 10 times the previous number. Adding these all up then produces a total of 143. This is easy to understand, so you may ask, why don't we use this system? Remember, we have to clearly define the value - so how can we do that, remembering that it must be readily accessed, and be absolutely reliable by a non human processing activity? Well, someone could say - just use three dials, with settings going from 0-9, and set them to 1, 4, and 3 respectively.

This could be difficult to read out by other automated equipment, and would require mechanical processes which could get unreliable. And if the values got into many figures, using this process would be slow, and difficult. However, let's pursue that approach, but let's change the system to describe values.

Remember, we use the decimal system, where the digits from right to left represented units, 10's, 100's, etc.. And, since it is a decimal string, each number in the string could be any value from 0 to 9.

### BINARY SYSTEM

Enter the binary system, conceived by the ever searching mind of man. The binary system is similar to the decimal system, except there are only two numbers used, 0 and 1. The rightmost 0 is the units position. The adjacent 1 is the 2's position. The next position is the 4's position. The next position is the 8's position, etc.. this is similar to the decimal system, which is a base 10 system, except this is a base 2 system, where each prior digit represents the value of twice the prior digit. But how could this help, and be reliable?

Here is a binary number - 101010. In the 2's position, there is a 1, and in the 8's position, there is a 1, and in the 32's position there is a 1. So the value of this binary number is 42 in our decimal system. Remember, the purpose of the binary system is not to get rid of the decimal system. It is merely a way to do calculations effectively, and efficiently, using automated devices. The final answer will be converted back to our decimal system for normal interfacing by humans. Now, how can we use this? Suppose we set up a row of 8 light bulbs, with each one having an on/off switch to set the bulb to on or off. Now, let's assign some values to each of the bulbs in this string, using a binary approach. With these light bulbs, there are only two states - on or off. That's perfect, as that is what the binary system needs.

So now we have a binary string, where each light can represent a value of 0 or 1. If a



light is on, it represents a 1, and if it off, it represents a 0. So, if we wanted to store the value of 1, only the rightmost light would be on. And since this is a binary string, the 2nd number from the right end would be the value of 2, the leftmost number represents a value of 128.

So, to represent the number 143, let's see what need to create that. We'll go down the light string, one at a time, starting the left end, which is the 128 value. Remember, each number in the string must be either a 1 or 0, depending upon whether we want to include that value in the total. We start at the left end, and if that number is equal to or less than the total value we need to reach, we turn that light on. If the next value is equal to or less than the remainder we need, we turn that light on, and if not, we leave that light off. We progress down the line doing this for each position in the string.

We want a value of 128, so we turn on the number 1 light. We only need 15 more, so we must leave the 64, 32, and the 16 lights off, as using any of them would total up to a number larger than 143. Continuing down the line, we end up turning on the lights for 8, 4, 2, and 1. Now, we have the lights for 128, 8, 4, 2, and 1 all turned on. These total up to 143, so we have expressed the number 143 using our string of 8 lights. And, it should now be obvious that the largest number we can express with 8 light string is the total of all eight lights which adds up to 255. Since we have 8 lights, this would be described as an eight bit system.

Each device capable of having a value of 0 or 1 is called a bit. To handle larger values, we would have to add lights for 256, 512, etc. The more lights we have, the larger the total value we can process.

In the real world, the computer does not use lights, but uses transistors as switches.

Then in the process of calculating, the computer just looks to see if the switches are on or off. And obviously the process has many other aspects than presented here. If you now understand how the computer can represent numeric values in binary, you will be able to more easily follow part 2 of this article, which will appear in next month's issue.

I will present a bit of history on the various storage media that have been invented since the start of the computer revolution. Some of the facts and figures here are truly mind boggling. And I will discuss the amazing history of the magnetic hard drive, which we all take for granted. The numbers involved are indeed unbelievable.

## Bits and Bytes

I'm sure you've heard both these terms, and possibly you don't know the difference, or why we use them. If you remember, in

part 1 we saw that an 8 bit number could represent values from 1 to 255.

It was decided way back, that 255 is a reasonable number of total choices to identify numbers from 0-9, letters from a-z, both uppercase, and lowercase, punctuation marks, and other miscellany. So, to call for a text string consisting of 6 letters, 6 bytes are generally required. Storage devices are generally defined by the number of bytes they can store. And obviously, the number of actual bits is 8 times that number. There is an expression in computer circles, that there are

10 kinds of people - those who understand binary, and those who do not. Remember, the string 10 is equal to a value of two in binary!!

If you find this material useful, you may want to download this article in PDF format, from our web site [www.brcs.org](http://www.brcs.org), keep the material as a PDF file, and/or print it out, and place it in a loose-leaf notebook, for future reference.

**RON HIRSCH** is a member & contributing editor at the Boca Raton Computer Society, Florida. This article appeared in the August 2010 issue, *Boca Bits*; [www.brcs.org](http://www.brcs.org); [Ronhirsch1439@comcast.net](mailto:Ronhirsch1439@comcast.net).

## *SIG Notes, Cont. from page 6*

For tools, we used Microsoft Office 2007 and Visual Studio 2008 (IDE) which are installed on our development computer. This application is fully dependent on the installation of Excel, SQLServer and Visual Studio. Earlier versions of Office 2007, SQL Server 2008 and Visual Studio 2008 can be used. There are no esoteric components involved, although we have a DbObject that is used to access the database. This is a previously programmed DbObject .dll that is included in the bin folder along with all other project sources. The SQLtoExcelProvider program is a windows program that essentially has only one control on the window, a Button named Update Excel. The ConsoleAppTickerUpdater program was developed as a console program. We used this programming convention so that the attendees can see the differences in program structure between a windows and a console program. The idea is that the SQLtoExcelProvider program would be deployed to a user's computer and the Task Scheduler would be used to run the program every 6 minutes. When this program runs, a console screen displays a list of stock tickers as they are accessed over the internet. Both programs utilize files and a database of a fixed name and location as there is no need for a user to specify path information. Rather than hard code this information into the programs, we employed the use of an app.config file. Here, the SQLtoExcelProvider program finds the database connection string and the location of the Excel.xls files that are updated from the database. In the case of the ConsoleAppTickerUpdater, the app.config file for this program contains the database connection string. In the development environment IDE, each project can have an app.config file. To avoid confusion in a multiprogram environment, the app.config file is renamed at runtime by .Net RunTime to the name of the basic program.exe, in our case SQLtoExcelProvider.config and ConsoleAppTickerUpdater.config. This file is put into the bin folder along with the program.exe and other resources used by the program. When Windows Office programs are installed, the installer inserts the Excel object .dlls into the global assembly cache (GAC). This is in the C:\Windows\assembly folder. In the IDE, the program is developed using a direct reference to the Excel.dll in the cache. This is the case of creating a reference to the object in the References folder of the program. The IDE finds the dll object and makes all references in the program point to the GAC for the object. In the case of the DbObject, this object is a local object only because it wasn't assigned a strong key, a requirement for objects in the GAC. This local object is placed into the bin folder at the time the object reference was made during program development.

C# program development and debugging has finally come in to the 21 century. During the 20th century, VB and VBA application developers had runtime compilation where by the program's source code could be modified as the code was being debugged. Then came C# and we lost the ability to recode the source during debugging. For an eternity, one had to stop debugging, make the source code corrections, and recompile the program before debugging could be resumed. I guess you could call this read only debugging. But in VS 2008 and C#, we have real runtime debugging and it works very cool. As an example I'll site code used to extract the stock ticker data received from [quoterss.com](http://quoterss.com). The ConsoleAppTickerUpdater program receives the requested ticker symbol update and then needs to traverse the data and pick out the values used. The received data is a combination of both well formatted xml and html, not well formatted. Hence, an xml parser fails when it stumbles into html. To overcome the problem we use a combination of table row TR extraction followed by table columns TDs extraction. The TRs are extraction using string delineators, while the TDs are extracted using Regular Expressions (RegEx). RegExs are very efficient but the most confusing to code and made working. In my case, the new IDE debugger was a tremen-

*SIG Notes, Cont. on page 10*

# Filing Tools

## Files and Folders, and now Libraries

By Phil Sorrentino

**J**UST WHEN YOU thought you had it all mastered, something new comes along to possibly change things. Well, it's not really that bad, it's actually pretty good. Libraries are a new concept in organization that has been introduced in Windows 7. You don't have to use Libraries, but they are there to help you organize and access your files. (Files being the entities that all programs work with.)

Windows 7 initially includes Libraries for Documents, Music, Pictures, and Video, the four categories of information that many people use. You can create other libraries; you are not limited to only Documents, Music, Pictures and Video. To create a new Library, Right-Click "Libraries", and then select "New-Library", and give the New Library a name (much the same way we create new Folders).

As you can see below, initially each Library includes a "My" folder and a "Public" folder. Windows 7 expects each user to organize his/her information into private and public folders. The contents of the public folders are then shared with other users on your computer. New Folders can be included in a library by using the Library Properties window. Right-click on the Library you want to add a folder to, then select Properties, and then add a Folder to the current list of "Library Locations" by clicking the "Include File Folder..." button, and then naming, or navigating to, the Folder to be included in the Library. Folders can be removed from a Library by Right-Clicking the folder to be deleted and selecting Delete.

A file, as you will remember from one of our basic classes, is a collection of related

information. That information is organized in a certain way and the applications that use that "type" of file know the organization scheme and therefore how to use the information. The file type is kept with the file name and is actually the extension part of the file name, (the letters after the period). For example, the file "picture1.jpg" is a jpg type of file. (If you don't see the file extensions after the period when using Windows Explorer, it is because Windows is initially defaulted to not show the extensions. To show the file extensions, Click Start, then Click Control Panel, then Double-Click the Folder Options icon, then Click View, then Uncheck the "Hide extensions for known file types" box, and finally, Click OK).

There are many types of files. In fact, if you Google "file types" you will find websites that describe hundreds of different file types. The "filext.com" website (and many others) has an alphabetical index to help you find a particular file type. To review information about a particular file type, click on the first letter of the file type of interest, then find the file type in the list and then click on that file type. (Caution: To be safe, if you do go to this or any other site to see information about file types, please do not click on any link you are not sure of, or any link that suggests a "scan" of your system or your system's registry or hard drive.) And while considering Files and folders, just to be complete, Folders are collections of Files and/or other Folders. Folders are essentially containers.

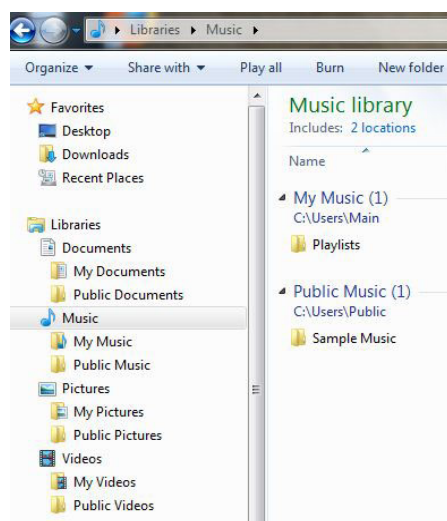
Now, Getting back to Libraries. Libraries are collections of folders. Libraries are a way of collecting information (files) in order to keep related things together. The Pictures Library is intended to keep track of all of your Pictures (jpg, jpeg, bmp, tiff, and other picture file types) in one spot, therefore making it easier to work with your pictures. Similarly, the Documents Library is intended to organize your documents (doc, docx, rtf, txt, and other text file types); the Music Library is intended to corral your music files (mp3, wma, wav, m3u, and other music file types); and the Video Library is intended to corral your Video files (mpeg, avi, mov, vob, and other video file types).

Libraries can also be created to organize information for a specific purpose, say a Movie Maker Project. You could create a Library for a particular Movie, say the "OurWedding" movie. You would create a

Library called OurWedding and then you would include, in that library, the working folders that you use while using your pictures, music and video applications. (The actual folders remain with the application, but they are viewed as part of the OurWedding library.) Then, when you create files using the various applications, all of the files relating to OurWedding would show up in one specific place, the OurWedding Library (a pretty neat trick, don't you think?). This is pretty good because it leaves the specific application to deal only with its specific type of file, and yet keeps all the project files in one place for the project application. (For example you could use Windows Media Player to Rip music from your CDs, Photoshop Elements to collect and finish the pictures of your wedding, and Adobe Premier Elements to preview and cut the videos for the movie. When all the Picture, Music, and Video files are done and in their folders, you could use Movie Maker with the OurWedding library to put it all together into a Movie and burn it to a DVD.)

Libraries provide a way of superimposing a structure or organization on what might look like an unorganized collection of files and folders. Libraries are really just another tool to be used to help us use our computers in a smart way. When you get Windows 7, give them a try but don't jump in too fast. First, organize your folders in a basic structure (the way you might think of organizing a file cabinet) and then apply Libraries on top of that basic organization, to your benefit. In time, I'm sure you'll find Libraries helpful.

**PHIL SORRENTINO** is president, Sarasota Personal Computer Users Group, Inc., FL. This article appeared in the September 2010 issue, Sarasota PC Monitor; [www.spcug.org](http://www.spcug.org); [president@spcug.org](mailto:president@spcug.org).



### SIG Notes, Cont. from page 9

dous help. It was very easy to try and re-try building the RegEx patterns and testing them with realtime data. Note that there are 6 data values used in the ConsoleAppTickerUpdater, all of which needed to be located among a haystack of html. Even more interesting, the data is not sent consistently from one data request to the next. Thinking in terms of html display, it matters not whether a color code precedes the data or is even absent. But in data extraction this clearly, greatly complicates finding the necessary data.

The source code and all project files are available. Attendees will receive a copy. Any other DACS SIG member is welcome to the files. Let me know at [cfizer@dacs.org](mailto:cfizer@dacs.org).



# Ask DACS

January, 2011

Moderated by Drew Kwashnak and reported by Richard Corzo

**W**E WELCOME QUESTIONS FROM the floor at the start of our General Meetings. The role of moderator is to try to guide the discussion to a likely solution to the problem. In addition, members who are not able to attend the General meeting may submit questions to [askdacs@dacs.org](mailto:askdacs@dacs.org). We will ask the question for you and post the reply in *dacs.doc* and on *dacs.org*. Please provide as much information as possible, since we can't probe during the session.

To start the session, Drew showed off his new Cr-48 Chrome Notebook (<http://www.google.com/chromeos/pilot-program-cr48.html>) running a beta version of Chrome OS. It's a plain black color with no visible company logos. All the applications run in the Google Chrome web browser. Then Drew proceeded to take other questions from the audience.

**Q. I used TurboTax for the first time last year and will be using it again this year. How do I import last year's data?**

A. A member answered that TurboTax will ask you if you want to import last year's data and normally will be able to find it. It will initially assume you have the same employer and address information. It will keep track of whether you got a refund or paid the IRS last year and factor that in. Another member recommended TurboTax and mentioned that it came up with almost the same amount as her accountant. Someone else mentioned that the IRS is offering a free online tax service for those with simple taxes. Some tax laws are still being finalized so you may not want to file until later in February.

**Q. Microsoft has a service called Windows Live Sync that is being replaced by something called Windows Live Mesh, part of the Windows Live Essentials 2011 package (<http://explore.live.com/windows-live-essentials>). Both have the ability to sync a folder across multiple machines. However, when I try to install the package on my work machine it fails. An Internet search of the problem suggested that I might need to temporarily disable the Windows firewall, but I can't do that at work.**

A. It was suggested to talk to someone in your IT department to find out if there is a reason why it can't be installed in your company environment. A follow-on discussion talked about storing

documents on the SkyDrive which is part of Microsoft's Windows Live services.

**Q. Does DACS have a Mac group?**

A. Yes, the Mac SIG (<http://www.dacs.org/sigroups/macintosh.htm>) meets on the first Thursday of the month.

**Q. Why does Microsoft offer their cloud storage Windows Live SkyDrive for free?**

A. They need to compete with Google Docs and keep everyone in the Microsoft Office camp. The SkyDrive will integrate with Office 2010.

**Q. How safe is storing things in the cloud?**

A. The main risk is the possibility that the cloud service you choose may eventually go away. The risk of only storing your data on a hard drive at home is the risk of fire, flood, theft, etc. Further discussion ensued about Google versus Microsoft and whom you might trust your data with.

**Q. Is anybody using a cell phone with the new Windows Phone 7 OS on it?**

A. One user said he had one of the new phones and liked it, particularly its new user interface. He and another audience member shared differing experiences with the previous Windows Mobile 6.5. The other attendee complained about lockups requiring removal of the battery to unfreeze the phone. The user with the Windows Phone 7 phone said he did not have problems with the previous Windows Mobile. A follow-on question asked about the price of data plans for Windows Phone 7. He said they were comparable to other smartphone plans, but didn't know exactly because he got a company discount.

**Q. I use Mozilla Thunderbird for my Google and Yahoo! e-mail**

**accounts. It recognizes the folders I have set up for Gmail, but not for the Yahoo! account. How can I get it to recognize the Yahoo! mail folders?**

A. Gmail is an example of an IMAP (Internet Message Access Protocol) mail service, while Yahoo! uses folders in its Webmail interface but for downloading to an e-mail client only offers the older POP3 (Post Office Protocol). IMAP stores the e-mail in folders on the mail server and allows e-mail clients to mirror that folder structure. A POP account can only download mail into an Inbox folder. In order to view the mail in other Yahoo! folders using your desktop client, you could forward those e-mails to the Inbox.

**Q. What registry cleaner is recommended?**

A. More than one member recommended against using a registry cleaner. If you feel your system is being slowed by the running of unwanted processes, consider reinstalling Windows and carefully reinstalling only those applications you really need. Short of doing that, take a look at the list of installed programs in Programs and Features (in Windows Vista and 7) or Add/Remove Programs (in Windows XP) and after doing some research on what you see there, remove any unwanted programs.

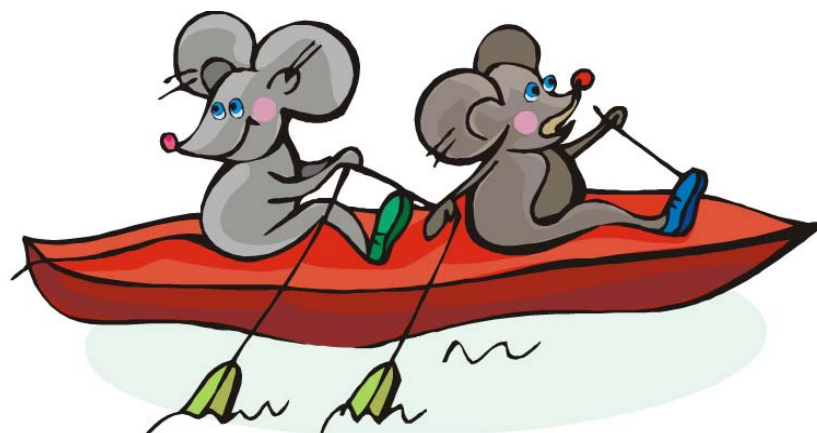
**Q. Related to keeping systems clean, another attendee raised the issue of LSOs (Local Shared Objects), also called Flash cookies, being stored on your system.**

A. These are used by Adobe Flash applications similar to how browser cookies are used. There is a good article in Wikipedia ([http://en.wikipedia.org/wiki/Local\\_Shared\\_Object](http://en.wikipedia.org/wiki/Local_Shared_Object)) including how to use Adobe's Global Settings Manager to prevent more LSOs from being stored.

Disclaimer: Ask DACS questions come from members by email or from the audience attending the general meeting. Answers are suggestions offered by meeting attendees and represent a consensus of those responding. DACS offers no warranty as to the correctness of the answers and anyone following these suggestions or answers does so at their own risk. In other words, we could be totally wrong!

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# Future Events:

## February

Secure Computing  
Jeff Setaro

## March

Exploring Windows 7  
Richard Corzo

## April

John Patrick  
On the Internet

## May

TBA