**Next Meeting:
April 3**

**Cryptocurrency & Blockchain
Why they are the future of Commerce —
and Much More, with Mike Kaltschnee**

President's File

HELLO AGAIN, OR MAYBE I SHOULD SAY "I'M BACK…" Back in March, 2002, I was elected DACS president for the first time. That was a vastly different time for the club. We had a membership of about 470 and just over $20,000 in the bank. We had ten special interest groups (SIGs – what we now call workshops) meeting each month. Actually, we had 10 and a half SIGs, as Chuck Fizer's Visual Basic SIG met twice on the first Wednesday each month, first during the afternoon and again in the evening with pizza between sessions. There was so much happening and more importantly, there were many volunteers willing to make it all happen. I served as president for three years.

Several trends were already evident. The most important was a declining membership. DACS membership was about 560 in January 2000. By the end of that decade (January, 2010) the count was only 188. Today we number 92. If you peruse the newsletters from the last 20 years, General Meeting topics have retained the same high quality all the way. The change in membership is reflected in our demographics – we are older. A primary reason given for leaving the club is a move out of state after retirement. Some of our most loyal members – even SIG leaders! – have moved to Florida in recent years. Among the trends affecting computer user groups, this one is tough to fight.

So, what is happening to DACS now? First and foremost, the DACS mission is not ending. Our monthly meetings at Danbury Hospital will continue to be free and open to the public. However, DACS will no longer be an independent entity. Perhaps not so dire, eh? Of all the possibilities explored by the board, our best option appeared to be some form of merger with the Danbury Hackerspace. Our discussions with Mike Kaltschnee, a long time DACS member and frequent speaker, led to the prospect of our becoming one of several groups within the Hackerspace umbrella. The formal process is that we must dissolve the DACS corporation. DACS has been a 501(c)(3) non-profit since we incorporated in 1992. Our status as a 501(c))(3 mandates specific steps by both the state and the IRS that we must follow. I have become president to see this process through and ensure a smooth transition to the Hackerspace organization. The sad part is that this means I will be the last DACS president.

In the meantime, the process has begun. We stopped sending those reminder emails and stopped accepting membership dues. In the coming weeks we will determine how best to refund the remaining dues of all current members. Where possible, memberships paid by PayPal will be refunded by PayPal. Others will receive a check.

The March newsletter was our last printed newsletter. Unfortunately, this decision was reached too late to be announced in the last printed newsletter. From now on we will post the newsletter on the website as soon as it is available, eliminating the need to send it by email to current members. Watch for an announcement in the weekly email (sent each Sunday morning).

You may have questions; please bring them to the general meeting on Tuesday, April 3rd.

—*Jim Scheef, President*

HelpLine

Our former telephone HelpLine has been replaced by our web-based DACS Community Forum at *http://forum.dacs.org*. We have topic-specific forums where DACS members can post questions. Questions may be answered by Workshop leaders or other DACS members. If none of the categories fit your question, just post it to the Ask DACS forum.

Topic	Forum
Linux	Linux Workshop
Desktop publishing and website design	Web Site Design Workshop
Mac and iPhone/iPad/iPod touch	Apple Workshop
Online/small business	Online Business
Single board computers	Single Board Computers
Smartphones & Tablets	Mobile Devices Workshop
Social media	Social Media
Video capture/processing	Video
Windows	Windows Workshop

Directors' Notes

Danbury Area Computer Society (DACS)
Board Meeting Minutes
Tuesday, March 13, 2018

The meeting was called to order at 7:08pm by the DACS President, David Green.

In attendance were Board members Richard Corzo, Dick Gingras, Bert Goff, David Green (President), and Andy Woodruff. Also present were Jon Gatrell, Mike Kaltschnee, and Jim Scheef. The minutes were taken by Richard Teasdale.

(Names in italics denote responsibilities for actions.)

- The Minutes of the 1/31/2018 Board Meeting were accepted.

Reports

- Treasurer's Report:
  o Bert presented the February Treasurer's report. No dues were collected during February. The next 3 months owed to the Security company for the Resource Center have been paid. Bert reported that the Security contract can be terminated without penalty when we vacate the space. The member obligation to repay prorated dues is estimated at $974 if done on April 1, or $783 if done on May 1. Repayments could be done by check or via PayPal. Bert explained that we might have to pay for new checks if all the repayments are done by that method. Several people mentioned from experience that repayments by PayPal will work fine. Bert estimated that approximately $1,000 will remain after the repayments have been made.
- The Membership Report was received from Jim Scheef.
  o 75 paid-up members and 17 in-grace, for a total of 92. 19 people attended the March general meeting. Jim will distribute an updated spreadsheet that includes the February meeting attendance numbers.
- Press Coverage Report:
  o David reported that the Press Release for the March general meeting was distributed to the usual CiviCRM recipients.
 o *Mike* and *Jim* will develop a Press Release about the changes to DACS, to be issued on a date to be determined.

March Meeting Review

Power BI
With Sean Henderson
By Richard Teasdale

POWER BI IS BUSINESS Intelligence software from Microsoft. According to Wikipedia, Business Intelligence "comprises the strategies and technologies used by enterprises for the data analysis
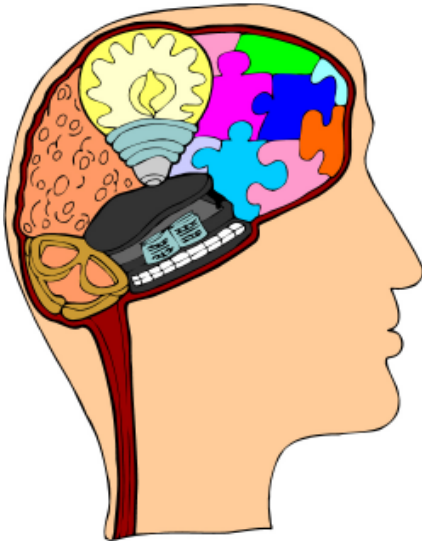
of business information". At the March general meeting, Sean Henderson gave us a very clear and knowledgeable introduction to the latest Business Intelligence software, focusing on Power BI.

Sean contrasted Business Intelligence software with report generators, describing BI as "Reporting Plus". An audience member asked: "Is Power BI a report generator, like e.g. Crystal Reports?" Answer: Power BI is more than reporting, it's an analysis tool.

Some of the typical features of BI software are:
- an ability to use multiple data sources;
- advanced charting...many different types;
- interactive real-time filtering...not paper-based...interactivity is key;
- advanced BI - some software understands spoken-word queries;
- prescriptive nature - not only historical - predictive analytics (this is the hardest part to put together).

Power BI is mostly a service - a lot of its functioning takes place on cloud servers. However, there is a desktop software piece, which is used for design work and interactive data analysis. (Sean mentioned that Microsoft provides an on-premise server option but it is expensive.)

Power BI has some unique terminology:
- "Visualization" = chart
- "Slicers" = filters
- DAX language - similar to Excel formulas
- "Measure" = aggregated formula

A report is designed in the desktop software and published to the Power BI service. From there, pieces of various reports can be aggregated into a "Dashboard".

A very prominent feature of Power BI is its data handling capabilities, which go way beyond those of many other types of software traditionally used for data analysis and decision support. Power BI can use many different data source types, e.g. websites (including social media sites, such as Facebook), databases, analysis servers, any ODBC or OLE sources, Excel files, text files, etc. During the demo portion of his presentation, Sean showed us the very long list of data sources that Power BI can work with. In addition to its versatility, Power BI can work with much larger volumes of data than tools like Excel and Access.

A non-commercial, i.e. a corporate, e-mail address is required to use Power BI. The usual per-seat cost of the product is about $10 per month, although a limited-capability version is free. Sean recommended Power BI over Qlik (a competing BI product), which offers a little more functionality but is much more expensive.

Our speaker was able to demonstrate the interactivity of a dashboard, in contrast to conventional reporting tools, accomplishing this in spite of the fact that the hospital's internet connection was not working at the time. (A part of the display that included a map of Connecticut, which requires the internet connection, was blank.) He demonstrated the accessing and joining of data sources, and showed us how to create an infographic.

Sean shared some of his personal preferences with respect to the design or "tone" of infographics, notably that the use of color is important. Graphics that employ only one or two colors, or sometimes none at all, look dull and uninteresting.

Sean illustrated the versatility of Power BI by demonstrating its use to generate a variety of visualizations, including waterfall charts (see *https://en.wikipedia.org/wiki/Waterfall_chart*) and tree maps (see *https://en.wikipedia.org/wiki/Treemapping*).

Sean likened Visualizations to Firefox plug-ins - many have been shared by the community of Power BI users, and are available online.

Power BI visualizations are very flexible - we saw how there can be lots of variation in how the data are displayed.

Sean explained how the steps used to prepare data for Power BI are stored and can be re-executed to refresh the data. Refreshes can be programmed to take place automatically at regular intervals: free users get daily refreshes while paid users can have hourly. In addition, Power BI provides some data streaming functions, which can update a dashboard in real-time.

Some other facts about Power BI:
- Embedding code can be generated to place a Power BI visualization into a web page.
- Power BI includes permissions functionality that can be used to control who will have access to reports and components of them.
- Updates are released monthly.
- "M" and "R" are other programming languages used with Power BI.
- "M", the Power Query Formula Language, is a powerful mashup query language.
- "R" is a traditional programming language that can be used to perform many different tasks associated with Power BI.

A member of the audience asked whether Power Query and Power Pivot (Excel add-ins) are related to Power BI. Sean answered that these have the same underlying engine as Power BI, providing some Business Intelligence capabilities in Excel.

Sean concluded his presentation with a short Microsoft video about Power BI. There are lots of videos on YouTube that explain more details about how to use Power BI.
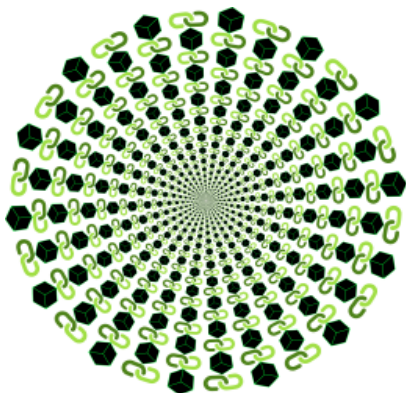
April Meeting Preview

Cryptocurrency & Blockchain
Why they are the future of
Commerce — and Much More

by Jim Scheef

WE HAVE HEARD about blockchain technology more than once during general meeting presentations. I believe the first time was John Patrick's presentation about Election Attitude. He mentioned blockchain as a reliable means to securely record electronic voting. This is heavily paraphrased from Wikipedia:

A blockchain is a continuously growing list of records, called blocks, which are linked and secured using cryptography. Each block typically contains a cryptographic hash of the previous block, a timestamp and transaction data. This makes a blockchain inherently resistant to modification of the data. A blockchain is typically managed by a peer-to-peer network collectively adhering to a protocol for validating new blocks. Once recorded, the data in any given block cannot be altered retroactively without the alteration of all subsequent blocks. This inherent security makes blockchains potentially suitable for recording records management activities, such as identity management, transaction processing, documenting provenance, or voting.

Note that the words "bitcoin" and "cryptocurrency" were not used even once, as they are not what define a blockchain.

Our April meeting will give us an opportunity to learn about the history and get an overview of the various cryptocurrencies, an explanation of how they work, plus the strengths and weaknesses of the various "coins". Along the way we'll get into a detailed look at the blockchain technology. We might even learn why, as many believe, it's "the next big thing" that's going to "change the world".

Our presenter, Mike Kaltschnee, is the co-founder of the Danbury Hackerspace at the Innovation Center, an entrepreneur, father, and avid technology enthusiast. You do not want to miss this meeting.

Home Entertainment

Smart TV's

By Dan Douglas

IF YOU HAVEN'T SHOPPED for a new TV in the last few years, you are in for an education. There are now as many acronyms that you come across when selecting a TV as there is in buying a PC. The last TV I bought was a 'SMART' High Definition TV (HDTV) with 3D in the middle of 2012. At that time, you had a choice of a HDTV set with or without the 3D option and the choice of many sets that weren't 'SMART' or many that were 'SMART'. The 'SMART' that I'm referring to is the ability to stream content from sources such as Netflix, Amazon Video, Hulu, Vudu, etc. directly from the TV without the use of an external streaming device such as a Blu-Ray player, Amazon Fire, Apple TV, or Roku to name just a few of the most commonly found. 1080P was the best resolution available and sets bigger than 55" usually had a big price jump.

Now the easy part: when we jump ahead 5 years to 2017, we now find a mixture of both HDTV/2K 1920x1080 TVs and Ultra High Definition (UHD)/4K 3840x2160 TVs. There was a large price difference between the two types until this summer when the number of UHD sets has taken over from the number of HDTVs. Almost every set made is a 'SMART' one featuring an extensive collection of a mixture of both traditional (Netflix,Hulu, etc.) sources and non-traditional 'channels' (specialty channels like those available through Roku). Many TVs can be priced a little cheaper by not including an antenna tuner, recognizing the fact that the typical user uses an external box(es) for watching the programs of choice. Those are referred to as 'Displays' rather that a 'TV' which implies a tuner with network channel selection capability. Watch out if you want to install an antenna later and find there is no place to plug it into.

When we dive down deeper to the specifications, we find the harder parts to understand: High Dynamic Range or HDR is really where UHD sets shine on those that offer this feature - delivering a picture that is much closer to real life than was ever possible with a HDTV. HDR greatly increases the contrast range between white and black so that the image is more natural in its brightness and highlights. Coupled with HDR is a larger palette of colors that can be displayed - a HDTV can display about 17 million colors, whereas an UHD set, with an enhanced wide color gamut (WCG) can display over a billion! Most UHD sets will also up-convert 2K material to near 4K resolution.

As far as 4K material goes, there are many 4K sources now available. Netflix (for a small premium) offers a selection of many 4K shows/movies, as well as all Netflix original shows are shot in 4K now. Amazon Video also has a large selection of movies to rent/buy in 4K as does Fandango. My personal favorite is Walmart owned Vudu. Vudu offers a digital copy for life of almost every DVD or Blu-ray that you purchase. All new movies are also available to rent or purchase in 4K format, with older titles being added constantly.

Workshops

Workshop Notes: April 2018

Apple. Focuses on all aspects of the Mac and iPhone operating systems.
   Contact: Richard Corzo (*applesig @dacs.org*).
   Meets 2nd Tuesday, 7 p.m. at DACS Resource Center.
   Next Meeting: Check *dacs.org. Workshop Suspended*

Jobs. Networking and jobs search
   Contact: Charles Bovaird, 203-792-7881 (*aam @ mags.net*). Go to DACS Community Forum (*http:// forum.dacs.org) for job listings.*

Linux. Helps in installing and maintaining the Linux operating system. Also of interest to Apple owners using OS X.
   Contact: Dave Mawdsley, *linuxsig @dacs.org*
   Meets 3rd Wednesday, 7:30 p.m. at the DACS Resource Center.
   Next Meeting: April 21.

PC Maintenance. Review of PC hardware and OpSys maintenance and use.
   Contact: Charles Bovaird, 203-792-7881 (*aam @mags.net*). Go to DACS Community Forum (*http://forum.dacs.org*).

Online Business Workshop. Informal member gathering sharing ideas on creating an online source of income.
   Contact: Steve Harkness (*onlinebizsig @dacs.org*)

Meets second Monday in Brookfield, or by Webinar.
   Next Meeting: Check *dacs.org.*

Single Board Computers Workshop. Explores small cheap computers like Raspberry Pi, Arduino, Netduino, Beaglebone, and more. Meets at 7:00 p.m on the 3rd Thursday at the DACS Resource Center.
   Contact: Jim Scheef (860-355-0034)
   Next Meeting: April 15

Video Workshop. Explores all aspects of video capture and production, including both inexpensive and professional choices for cameras and editing software.
   Meets 3rd Thursday of certain months, typically at 7:00 pm at the Resource Center. Check the Calendar for details.
   Contact: Andy Woodruff (awoodruff @dacs.org)
   Next meeting: Check dacs.org

Web Development/Design Web Development/Design This workshop is looking for a new moderator. Being a workshop leader is a great way to share information, learn new techniques, promote your business, and interact with like-minded people. Extensive web knowledge is not required, but a willingness to open a topic for discussion and enjoy the contributions and feedback from the attendees. Meets every 3rd Tuesday of the month, but repeating date can be changed if needed. **Workshop Suspended**

Let's Meet Up

Have you ever wondered who the other members of DACS are, what their interests are, and whether they have experience and knowledge that could benefit you? Would you like to be able to identify and contact the other members, sharing information with them, but without having to disclose your e-mail and phone details?

Your Board has recognized that one of the benefits of DACS membership should be the means to communicate with each other in this way.

At the July general meeting, we began with a quick series of introductions, giving attendees an opportunity to communicate their interests.

The Board has discussed at length how to promote communication between members, and has looked at the pros and cons of a number of ways to do this. The general meeting introductions were our first effort in this regard; another one we would like to offer is a resource already in use by DACS: Meetup.

DACS has been a user of Meetup for several years, to distribute and share information about general meetings and workshops. For this service, we pay fees. Now we would like to leverage the full potential of Meetup, by encouraging its use for individual DACS members as a channel of communication.

If you are not already a user of Meetup, please go to *www.meetup.com* and sign up to become one. There is no charge for individual users. After you have joined Meetup, you can join the Danbury Tech Meetup (emphasizing DACS' broader technology focus), and see a list of upcoming meetings.

Meetup gives you an opportunity to create a profile of your interests. If you wish, you can upload a photo of yourself. You will also find that there is a Message function, which allows you to send private messages to other Meetup users, without using e-mail. We hope that the resources of Meetup will prove to be a valuable addition to DACS membership.

Question: What is Meetup?

Answer: according to Wikipedia, "Meetup is an online social networking portal that facilitates offline group meetings in various localities around the world. Meetup allows members to find and join groups unified by a common interest, such as politics, books, games, movies, health, pets, careers or hobbies."

April 2018
Danbury Area Computer Society

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3 **General Meeting** 7:30 PM	4 **Board of Directors** 7:00 PM	5 **Danbury Hackerspace Open House** 7:00 PM	6	7
8	9	10 **AI Developer Meetup Hackerspace** 7-9 PM	11	12 **Danbury Hackerspace Open House** 7:00 PM **Membership Committee** 7:00 PM Jim Scheef 860-355-0034	13	14
15	16	17	18 **Danbury Inventors' Meeting Hackerspace** **Linux** 7:30 PM Dave Mawdsley *linuxsig@dacs.org*	19 **Danbury Hackerspace Open House** 7:00 PM **Single Board Computers Workshop** 7:00 PM Jim Scheef 860-355-0034	20	21 DEADLINE
22	23	24	25	26 **Danbury Hackerspace Open House** 7:00 PM	27	28
29	30					

Mar 2018						
S	M	T	W	T	F	S
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11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

May 2018						
S	M	T	W	T	F	S
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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		

Single Board Computing

Meet the many members of the Arduino family

By Dick Maybach

THE ARDUINO IS a controller rather than a complete computer like the Raspberry Pi (which I'll discuss next month); it's much simpler and getting started with it is far easier. It has no operating system and runs only one program at a time, which starts when the unit is powered and runs until power is removed.

To start you need only to connect it to a PC's USB port, which provides power, control, and information exchange. As a controller, it's strength lies in its ability to control and to collect data from external devices. Thus, using an Arduino invariably involves external circuits and devices. These can be as simple as switches and LEDs or as complex as robots and drones.

There are several Arduino models. You should probably begin with the Uno, the most used and most robust in the family. The Mega and Zero have higher performance and more input/output termArduino-1inals for more complex projects. The Gemma and the Lily pads are smaller and designed to be incorporated into garments. The MKR1000 includes WIFI and is designed to Internet of Things (IoT) projects. There are also dozens of expansion boards, called shields, to add functions to all the models.

The Arduino provides a very easy way to get started with computer hardware technology and software. You work in your native computer environment - Windows, macOS, or Linux.

The Arduino comes complete; you have only to connect it to your PC with a USB cable, which provides both communication and power. The supporting software, the Arduino Integrated Development Environment (IDE), is free; just download and run it.

The first experiment (a "Hello World" program) requires nothing except the Arduino board, a USB cable, and the IDE. You can have it running in just a few minutes.

To go further, you will need some basic electronic parts (switches, LEDs, and sensors), a prototyping board, and some jumpers. Many vendors sell inexpensive kits with these parts and instructions for experiments using them.

The components plug directly into the prototyping board, where the Jumpers connect them to each other and to the Arduino ports. No soldering is needed.

At some point, you may wish to add expansion boards (called shields in the Arduino community), and some of these do require soldering. This is not difficult, as learning kits with the tools, practice material, and instruction are available, and it's a skill you will find useful if you progress beyond a few basic experiments.

Figure 1 shows a naked Arduino (that is one without an attached shield) connected to a PC and running the program of Figure 2.

The green LED is a power indicator and the yellowish LED is the one controlled by the program. You can also see the black terminal strips that contain the analog and digital input and output pins to which the shields connect. Once you've loaded the program, you can disconnect the board from your PC.

The program will then start as soon as you power the board, either through the USB port as shown or the black power connector at the bottom-left.

Figure 2 shows the Arduino IDE window on a PC; it's available for Windows, macOS, and Linux. It also shows the Arduino version of "Hello world," the first program you write when learning a new language. Arduino's native language is a simplified form of C++, and in this program, it just turns on an LED for one second, off for one second, and repeats forever. The first line is a comment, and the next three set up the hardware so that pin 13, which is connected to the LED, will be controlled as a digital output.
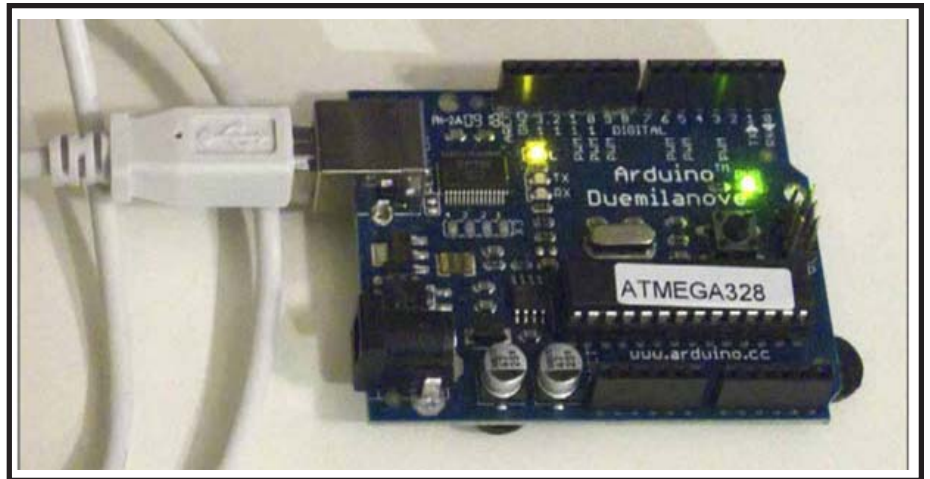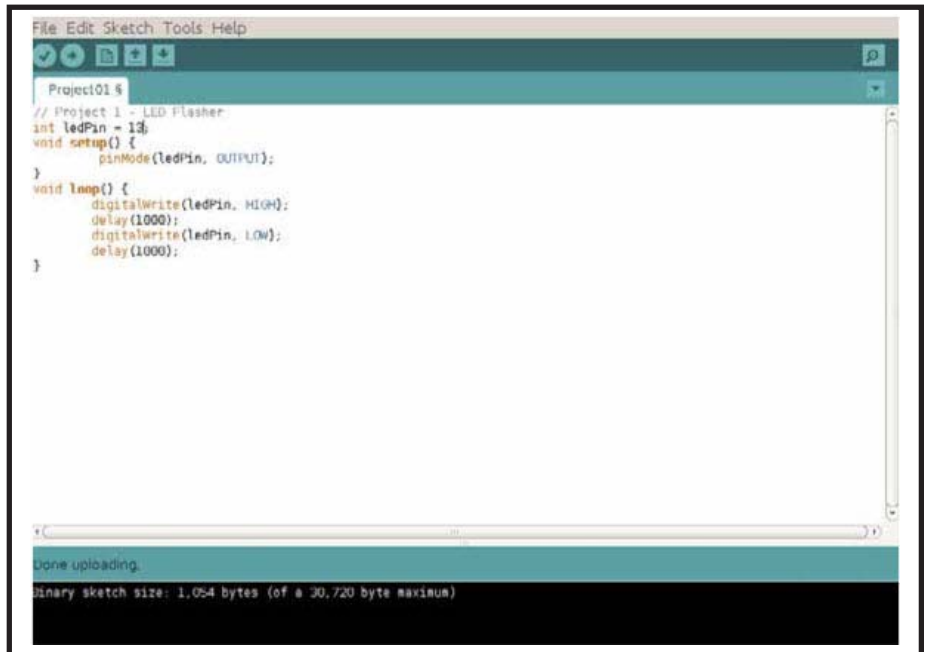

Figure 1. Naked Arduino in operation

Figure 2 Arduino Integrated Development Environment

The section beginning with "void loop ()" is the program. It moves the pin-13 Voltage high, waits 1000 milliseconds, moves it low, waits 1000 milliseconds, and repeats. Although it looks quite simple, this exercise is far from trivial, as it shows that your naked Arduino is working properly, that its IDE is installed and configured correctly, and that you can program it. If your next project misbehaves, you have only to check its code to find the error.

Figure 3 shows the Arduino kit I've assembled over several years. At bottom-left is a naked Arduino; this is a complete controller with its one LED and one push-button, with which you can run very simple experiments. At bottom-center is an Arduino with a small prototype board (called a "shield" in Arduino-speak). You plug components and wires into the white board to create simple circuits and connect them to the controller. The compartmented case holds my collection of wires and components (LEDs, switches, sensors, a motor, a servo, and a LCD display. Finally, on the right is another Arduino with a prototype shield and a larger prototype board for more complex circuits.

Arduino and a white prototype boards make it easy to get started in electronics. The components don't require soldering, but just plug into the board. Everything is controlled by the processor, which you can monitor using the IDE. The input devices (e.g., switches and light and temperature sensors) and output devices (e.g., LEDs and motors) are visually observable without instruments. (Although you may wish to purchase a cheap multi-meter to check Voltages and resistor values, as modern resistors are tiny and their values indicated by even tinier color bands.)

Arduino's strength lies in its relative simplicity. You work entirely from your own PC, which means you are in a familiar environment and can concentrate on the programming and the hardware. Most people will start with Arduino, a prototype shield, and a parts kit, available from several suppliers. Typically, the circuits in published projects are shown pictorially, as in Figure 4, rather than as schematics. As a result, you can assemble them without knowing how to read schematic diagrams.

Most project descriptions will have a paint-by-the-numbers nature. You connect components and jumpers according to the pictorial, paste the code into the IDE, and see what it does. If you do nothing else, you will have learned little. You can learn much more by experimenting with the code and the circuit after you have it working. For example, if the project is a blinking LED, change the code to make
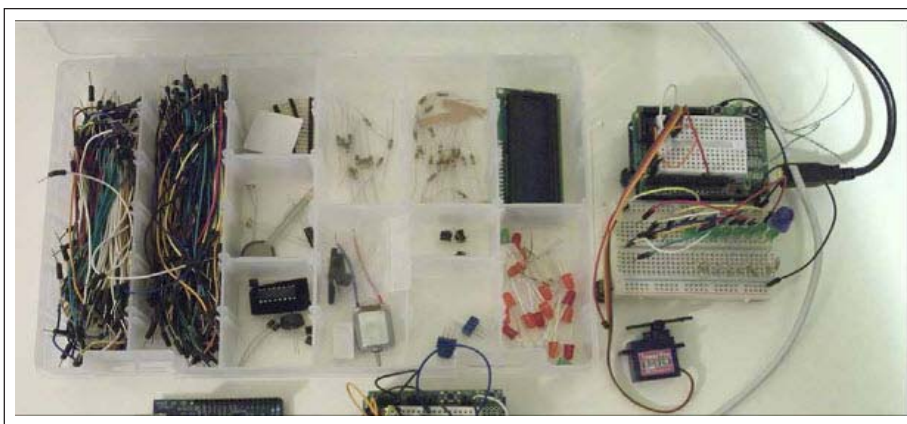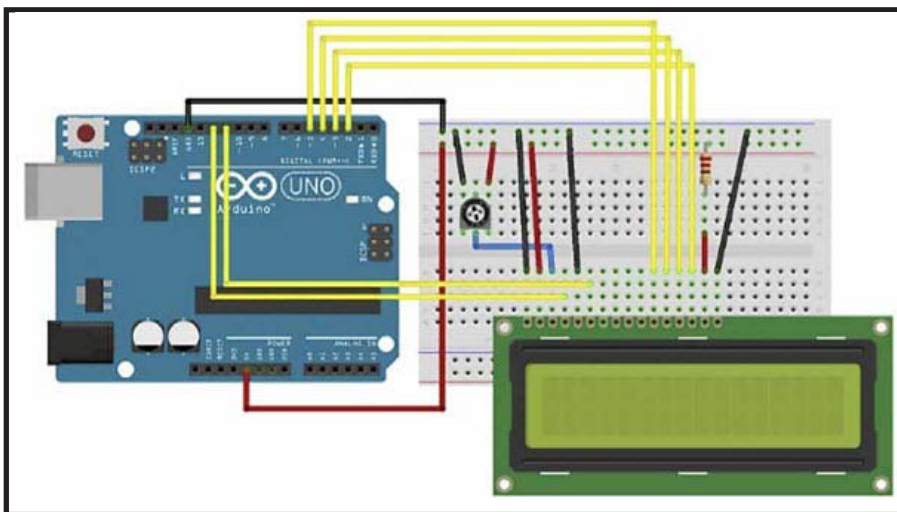

Figure 3 Arduino Experimenting Kit

Figure 4 Arduino Project Diagram

it blink faster or slower or with different on and off times.

Because most Arduino projects include circuitry, you will be learning about electronics as you progress. The prototype boards mean you can assemble the circuits without soldering and can make changes rapidly. Since most of the complexity is handled by software, the circuits are usually quite simple, and this is typical of modern electronics. Open the case of a modern device and compare it to one made years ago, and you will be struck by how much simpler the modern one is, despite its far more complex functions. This means that young people working with Arduinos are preparing themselves for successful careers in electronics.

The Arduino home Website, *http://www.arduino.cc/*, is where you go to download the IDE, learn about the different versions of the processor, obtain tutorials, and purchase devices and kits.

You will see two product lines, Arduino and Genuino. The development team split and formed two different companies. They have recently resolved their disagreement, and the two product lines will most likely merge. (There are also several clones, but I prefer to purchase Arduino products to support its continued development.)

Many electronics vendors supply Arduino products, accessories, kits, and tutorial material. Three prominent ones are Ad fruit, *http://www.adafruit.com/*, Spark Fun, *http://www.sparkfun.com/*, and Element 14, *http://www.element14.com/community/groups/arduino*. A search for "Arduino" will show you many more. If you prefer to see before you buy, check your local RadioShack, although not all stores will have a good inventory. When you tire of watching blinking LEDs, check the Instructables Website, *http://www.instructables.com/id/Ardui-no-Projects/*, for more complex projects. Arduino is popular enough that your local Barnes & Noble probably has several books on it, making getting started easy.

Making Connections

Wi-Fi - 2.4 or 5GHz

By Carol Picard

I NORMALLY HAVE ACCEPTABLE network speeds throughout my house but one day, while downloading file to desktop computer, which has a PCI wireless network card, was only getting 3 Mbps download speed. This is my primary computer and is also located in a room farthest from where the router is located. My ISP is Charter Spectrum and highest download speed should be around 60Mbps.

Since slow speeds have happened before, I decided to take the time to see if there was anything I could do to improve the speed on the desktop computer. Running an Ethernet cable is an option but I was looking for a solution that would work for multiple devices, e.g., tablets, laptop computers, etc.

Using my laptop computer, I ran a speed test in several locations within the house. The speed test on the laptop computer in the same room as the Netgear R7000 router showed 60Mbps download speed. About 10 feet from router I was getting 30Mbps. At 20 feet from router it was 15Mbps but at the farthest distance (within the house) from the router it was 5Mbps. Speed tests normally fluctuate so I thought it was a good idea to run tests on different days and at different times of the day to get an average.

The router was dual band, capable of both 2.4GHz and 5GHz but had never used 5GHz.

I was surprised to discover that the PCI network card in seven-year-old desktop computer was dual band. I was concerned about the distance/obstructions between the computer and router. Several factors affect speed, other than distance, e.g., number and composition of walls, appliances, wiring, etc., and I had read that 5GHz had a shorter transmission distance than 2.4GHz.

After enabling the 5GHz band on the router, I ran more speed tests and was getting similar, high speeds on the laptop in the room where the router is located and on the desktop computer at the opposite end of house.

To check whether your computer is connecting at 2.4GHz or 5GHz, in Windows 10
- open Settings
- click Network & Internet Settings
- click Wi-Fi
- click Hardware Properties
- check information for Network band.

The Netgear R7000 router has a Smart Connect setting. The description of that setting indicates if SSID and network key are the same for both the 2.4GHz and 5GHz bands; the router would determine the best band for the connected devices. On the R7000, Smart Connect only applies to the main network. The Guest Network on the router has two bands (2.4GHz and 5GHz) but each band should have a unique SSID.

I configured SSID and network key on the router to enable Smart Connect. On the laptop, it successfully connected to the correct band, but using Smart Connect totally messed up the Internet connection on the desktop computer. I had difficulty connecting to the network and after connecting it either didn't get an internet connection or got it for a short time and then dropped it. Resetting IP and flushing DNS on desktop computer didn't resolve problem. Neither did changing DNS servers. So, I reconfigured router to not use Smart Connect.

On the desktop computer, I ran various speed tests (beta.speedtest.net):
- 5GHz band and results showed Download = 67.67 Mbps; Upload = 5.71 Mbps.
- 2.4GHz band results showed Download = 35.91Mbps; Upload = 5.71 Mbps.

I also tested using Charter Spectrum speed test.
- 5GHz band results showed Download = 66.40 Mbps; Upload = 5.75 Mbps.
- 2.4GHz band results showed Download = 39.42Mbps; Upload = 5.97 Mbps.

Upload speeds are almost always considerably slower than download.

Normally, when working on a specific problem, I find one or two more problems but this time, while working on a solution for the Internet speed problem at home, I discovered a solution to another problem. We recently changed the location for our Club meetings and when attempting to connect to the Internet at the new location, several members did not see the wireless connection on their devices when viewing available networks and were unable to connect to the internet.

While testing different devices at home, e.g., laptop computers and tablets, I noticed that some of the devices were not showing the 5GHz SSID. I checked specifications for those devices and found the internal network card only had single band, 2.4GHz capability. A device that only has 2.4GHz network card, cannot see a network broadcasting at 5GHz. To further test this, purchased a Netgear AC1200 Wi-Fi USB Dual Band Adapter. Using the AC1200 adapter I could bypass the internal 2.4GHz network card and connect to the router's 5GHz band. I further tested this at last month's computer club meeting and was able to connect to 5GHz at the meeting location.

There are different ways to determine if a network card/adapter is capable of dual band.

Under Device Manager, Network Adapters, description may indicate whether it is dual band.

In Windows 10
- open Settings
- click Network & Internet
- click Status
- click View your network properties
- scroll down to Wireless Network Connection

You can also try an Internet search for the model number of your device; specifications may show information

Security reminder: If you own your own router make sure you have changed the password for logging into the router (this is not the same as the SSID password for connecting devices to the network/internet). Also check for and install router firmware updates, especially security updates.

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DACS

- Webmaster's Report:
  - o Richard recommended that the Join/Renew page on the website be replaced with a "Join our Meetup" page. The Board agreed, and Richard will make the change.

Officer Elections

- President:
  - o Bert nominated Jim Scheef and Andy seconded. No other nominations were made.
  - o A vote was taken and Jim was elected unanimously.
- Secretary & Treasurer:
  - o Dick nominated Bert Goff and Richard seconded. No other nominations were made.
  - o A vote was taken and Bert was elected unanimously.
- Bert moved that Jim be appointed to the Board, and Richard seconded the motion. A vote was taken and the motion was carried unanimously.

Old Business

- Programs:
  - o April: Topics suggested were Blockchain, and an Intelligent Assistants "shootout". Mike mentioned that two people at the Hackerspace might be available to speak about Blockchain, and he offered to approach them. *Andy* will ask John Patrick for possible speaker names, as a backup.
- Preview: *Jim*.
- Review: *Richard*.
  - o May: John Patrick will speak about Home Automation. *Dick* will add missing contacts to CiviCRM in order to maximize press coverage of the event. Mike will help publicize the meeting.
- Preview: *Bert*.
- Review: Andy.
  - o June: Brian Jackson will speak on the subject of Net Neutrality.
- Renovation of the Resource Center (RC):
  - o Discussion about Renovation of the Resource Center was cancelled.
  - o Andy pointed out that plans need to be made for disposition of the space and of the furniture.
- Renewal of the Bluehost web hosting account:
  - o Jim reported that the renewal is due in about 2 weeks. A one-year renewal is estimated to cost about $375, including hosting, the static IP address, and the SSL certificate. Without the SSL, the cost would be about $311. Bert and Jim will work separately to determine whether any break on the price can be obtained, and then process the renewal.

New Business

- Snacks for General Meetings:
  - o *Richard T* will provide snacks for April, and David will bring beverages.
- Mike reported that fund-raising for the new Hackerspace building is under way. He recommended that general meetings at the Hospital continue to be planned through the end of 2018.
- David reminded the Board that the Hospital auditorium will not be available for the June general meeting. David will contact the Hospital to arrange for the Robilotti room instead.
- Membership Termination:
  - o Richard proposed a motion that all active DACS memberships be ended on March 31 (out of fairness to those whose membership terms have not yet expired) and that unused membership dues be refunded. The motion was seconded by Andy. A vote was taken, and the motion was approved unanimously.
  - o The March edition of the newsletter was the last one to be printed.
  - o It was agreed that there is no longer a need to delay online publication of the newsletter by 3 months.
  - o The membership terminations will be announced to members by e-mail.
- Dissolution of DACS Corporation:
  - o The Board agreed that some time will be required to plan the dissolution.
  - o Help will be sought from the attorney who advises the Hackerspace pro bono. Mike suggested that the way to use his time most efficiently would be to draft a list of questions and e-mail it to him.
- Disposition of DACS Website:
  - o Mike explained that he would like to see the DACS website continue in operation for historical purposes. Andy suggested that in the future, money could be saved by using a single hosting account for both the Hackerspace and DACS.
- *Andy* will look for APCUG e-mail(s), to determine who they tried to contact at DACS.

The meeting was adjourned at 8:27 pm.

Richard Teasdale

Both satellite providers Direct TV and Dish offer a variety of 4K channels and rentals. Apple has just announced the new Apple TV box with 4K/HDR support with a large selection of material available on iTunes. YouTube also features many 4K/HDR videos and movie trailers. My personal favorite 4K source though, is a UHD Blu-ray player. Nothing outside of a movie theater can compare to the sight and sound of playing a 4K disc or streaming 4K content from Netflix or Vudu through a receiver with a Dolby Atmos 5.1.4 speaker setup in your own house. If anything in that last sentence is unknown to you, wait until next month when I'll discuss the sound aspects of UHD and the implications of HDCP 2.2 and HDMI 2.1!

DAN DOUGLAS *is president, Space Coast PCUG, Florida (www.spcug.com; datadan (at) msn.com*

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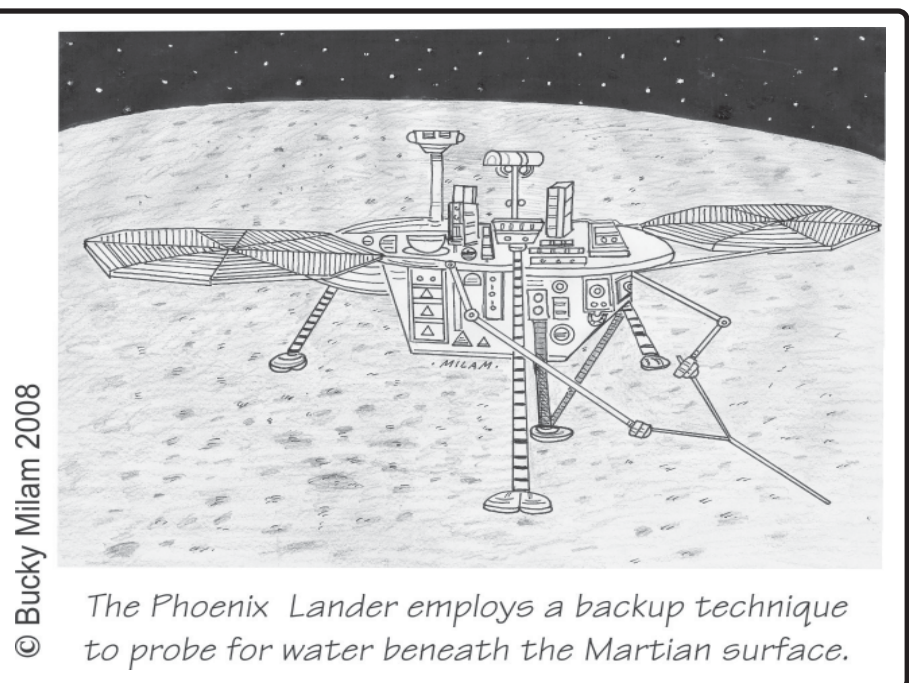
The Phoenix Lander employs a backup technique to probe for water beneath the Martian surface.

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Dear Supporters of Voice for Joanie:

Voice For Joanie, Inc. has joined the "Give Local" fundraising program to collect donation so we can continue to carry out our mission to provide adaptive communication equipment at no charge to victims of ALS (Amyotrophic Lateral Sclerosis), commonly known as Lou Gehrigs's Disease.

Give Local is a national program that aids non-profit organizations like VFJ by publicizing their work and helping them to gather donations. Give Local is a unique fundraising opportunity since some benefactors donate to Give Local as a whole and these funds are then divided and shared with the organizations seeding support in the form of a bonus donation. This bonus varies year to year. In the past is has amounted to an additional 11 – 15.6% of the direct donations made to each group.

In 2017, VFJ received a bonus donation of 11.7%.

Please consider donating to VFJ through Give Local on April 24th and 25th. You can do so by going to GiveLocalCCF.org and searching for "Voice For Joanie" in the search box in the upper right hand corner.

The website will also allow you to make donations to multiple organizations at once, if you wish.

Give local provides us with much broader base of donors who may wish to help us support the victims of ALS. For those of you reading a letter and not an email, checks are still an acceptable form of donating.

God bless you for your consideration and support.

Warm regards,

Frank Ruiz

Voice for Joanie is a 501(c)(3) nonprofit foundation. No goods, services, property or items of value have been provided in consideration of this contribution.

Voice for Joanie
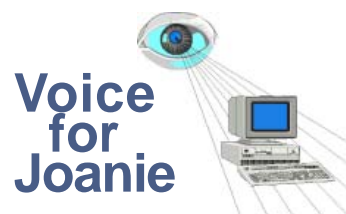
Future Events:

April 3
Cryptocurrency & Blockchain
Mike Kaltschnee

May 1
Home Automation
John Patrick
(6:30 PM)

June 5
Net Neutrality
Brian Jackson

TBA