



Midland Michigan

# BITS AND BYTES

OCTOBER 2018

<https://mcc.apcug.org/>

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## **GENERAL CLUB MEETING**

Midland Public Schools Administration Building  
600 E Carpenter Street - Room D

**Wednesday, October 24, 2018**

**6:00 P.M.**

## **APCUG 2018 FALL VIRTUAL TECHNOLOGY CONFERENCE (VTC29)**

**Saturday, November 3 - 1:00 pm - 4:00 pm ET**

When you attend the conference, please sign in with the first name and last name you used to register for the VTC.

Register at Eventbrite -

<https://www.eventbrite.com/e/apcugs-2018-fall-virtual-technology-conference-tickets-51343261076>

You can attend using your computer or tablet with Zoom software. The sessions are 50 minutes in length and offer attendees the opportunity to ask questions via a chat window.

Make sure you have the latest version of Zoom for your device. "Zoom Client for Meetings - The web browser client will download automatically when you start or join your first Zoom meeting and is also available for manual download here."

<https://zoom.us/download>

For detailed information about the presentations, including the presenters' bios click here.

<https://apcug2.org/apcug-2018-fall-virtual-technology-conference-vtc29/>

If you would like further information or have questions, please send an email to: [virtualconferences@apcug.org](mailto:virtualconferences@apcug.org)

### **TRACK 1**

**1:00 PM ET**

**If it's Connected, it needs to be Protected!**

**Bob Gostischa, Avast Evangelist**

Learn why and how things that are connected to the Internet need to be secured and protected. Bob will explain how the current dangers that face us every day can affect the device itself, our privacy, network, and more. He will also share what he uses to keep his computers, smart devices and other connected things that are a part of the IoT secure.

This presentation covers: Computers (Windows and Mac), Tablets, Phones and the IoT (Internet of Things).

**2:00 PM ET**

**Cut the Cord, Things to Consider Before Firing Your Cable Company**

**Hewie Poplock, Central Florida Computer Society Windows SIG leader; APCUG Representative**

There are many reasons to cut the cord. Most do so to save money. Others do it to have better choices and just to be able to fire their cable company. There are many choices of products and equipment, as well as services that are now available to let us change the way we have done things in the past. Hewie will talk about over the air and over the Internet services, including the many ways to fulfill your wants and needs as to TV viewing. He will include information about Broadband and even Internet home phones.

This presentation will help you understand many of the newest possibilities for TV viewing and what to look for to satisfy you and your family. Be prepared to have a lot of the confusion make some sense and to determine if it may be the move for you soon. TV, as we know it will disappear in the next few years and you will understand what is happening and what choices are available now and what to look for down the road.

**3:00 PM ET**

**Excel Magic**

**Alan Salmon, ASc, FCPB, PHF, President, Alan Salmon & Associates Inc., Founder, K2E Canada Inc.**

Excel is the tool of choice for analyzing and reporting financial data, yet many use time consuming and error-prone processes to complete everyday tasks. In this webinar, you will learn countless tips, tricks, and techniques to improve your general level of productivity, reduce the amount of time you spend on mundane tasks, such as formatting, and customize Excel for greater accuracy and efficiency.

## LEARNING OBJECTIVES

**Upon completing this webinar, you should be able to:**

- Identify situations in which various Excel features can increase productivity and apply each of these techniques in context, such as Freeze Panes, Split Windows, selecting cells with special characteristics, AutoCorrect, the Office Clipboard, and Paste Special Implement tools and techniques for formatting data in Excel, including multiline column headings, the Accounting Format, custom date and number formats, and Conditional Formatting
- Customize Excel's user environment, including the Ribbon and the Quick Access Toolbar, adjust Excel's Options to improve efficiency, and create and use Templates to increase efficiency and productivity

Utilize various formula building tools to create formulas more efficiently and create various types of formulas, including formulas, to manipulate text and dates, formulas containing VLOOKUP and HLOOKUP functions, formulas that contain conditional calculations, and formulas that contain circular references.

## TRACK 2

1:00 PM ET

### Take Control of Your Passwords

**Joe Kissell, Publisher - Take Control Books**

Password overload has driven many of us to take dangerous shortcuts. If you think ZombieCat12 is a secure password, that you can safely reuse a password, or that no one would try to steal your password, think again! Learn how to overcome password frustration while keeping your data safe.

2:00 PM ET

### Hands-on Demo – Windows 10, October Release

**Bill James, Vice President, Computer Club of Oklahoma City; Advisor, Region 8**

From a rollout that was quickly pulled due to users missing data after the install, to the 'fixed' version being sent to the Insider community to see if they have any problems with the 'fixed' version, to the October version finally being released to the world, Bill, who has been part of Microsoft's Insider program for many years, will give a hands-on demo of what's new in version 1809.

3:00 PM ET

### Digital Literacy with TechBoomers

**Steve Black, TechBoomers Founder and CEO**

Techboomers.com is a free educational website that teaches older adults and other inexperienced Internet users with basic computer skills about the most popular and useful Internet-based products available that can help improve their quality of life.

TechBoomers' tutorials and articles cover: Shopping Online, Online Entertainment, Social Media Websites and Apps, Useful Websites and Apps, and Technology Basics.

Use the tutorials for SIG meetings, a hands-on presentation at your club meeting, turn the tutorial into a PowerPoint presentation to give at your user group meeting, etc.

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## Dan's Desk

### Computer Fundamentals #4

By Dan Douglas, President, Space Coast PCUG, FL - June 2018 issue, The Space Coast PC Journal  
www.spcug.org - datadan (at) msn.com

*Here is part 4 of my series on "Computer Fundamentals" - a series of articles to explain the fundamentals of computers, programming and their usage that will hopefully improve your understanding of how it all works and why things are the way they are.*

This time we will examine just a few of the more common well-known programming languages out of the hundreds developed. Do you realize that a player piano is one of the early forms of programming? Programming started by being a way for a human to instruct a machine to do something.

In this case, what started out as a non-programmable device, the piano which had been around for centuries, became a programmed computer when modified to strike keys when a sensing mechanism detected holes in a roll of paper. The position of the hole told the machine which key, or keys, out of the possible 88, to strike to produce a note.

This kind of programming was tied to a certain type of automation machine and could only work on that specific machine that it was designed for. You couldn't take a roll from a player piano for example and use it to automate a drum playing the same tune. Wikipedia lists this as the first known example of programming - "the automatic flute player described in the 9th century by the brothers Musa in Baghdad."

Very early actual computers used no programming at all, but rather connected bits of circuitry to calculate and produce a result. This evolved into the 1st generation of programming languages, often referred to as machine language coding.

These programs were written in either decimal or binary format and read into the computer through toggle switches, punched cards or on magnetic tape. They were simply the expression of the old connected bits into logical operations doing the same task. An example would be to take the contents of storage area 1 and add it to the contents of storage area 2.

The 2nd generation of programming languages are called Assembly languages. They were tied to a specific architecture and instruction set of a brand or model of computer but did provide for human readable code that saved many hours of programming time and reduced the chance of errors.

Next came the first of the 'high-level' languages which formed the 3rd generation of programming languages. In 1954 FORTRAN was invented and is still used to today as a high-performance language. In many cases it reduced the complexity of a program by a factor of 20. FORTRAN is derived from the words formula translator and is representative of the main focus of FORTRAN to aid with numeric computation and scientific task procedures.

The 3rd generation of languages used a compiler function which would take the relatively slow performing high level language and translate it into machine language for faster execution. During the late 50's there was a recognized need for non-scientific languages for use in the business community. Grace Hopper developed a program language called FlowMatic which addressed this concern and led directly to the development of Cobol (Common Business Orientated Language) in 1959, which became one of the most popular programming languages which is still in use today. The Department of Defense (DoD) standardized on COBOL in the 1960's and required it to be supported on every Computer purchased by the DoD. The goal was to have a portable language base that would allow for a program to be employed in multiple instances without having to rewrite it for each installation.

It is only during the late 1990's that programming languages such as C and C++ finally evolved to where languages such as Java became the primary language that truly allowed for 'write once, run anywhere' capabilities. This is why web pages can run on any computer using standard browsers independent of whether the hardware is from Apple, Dell, HP or any other company.



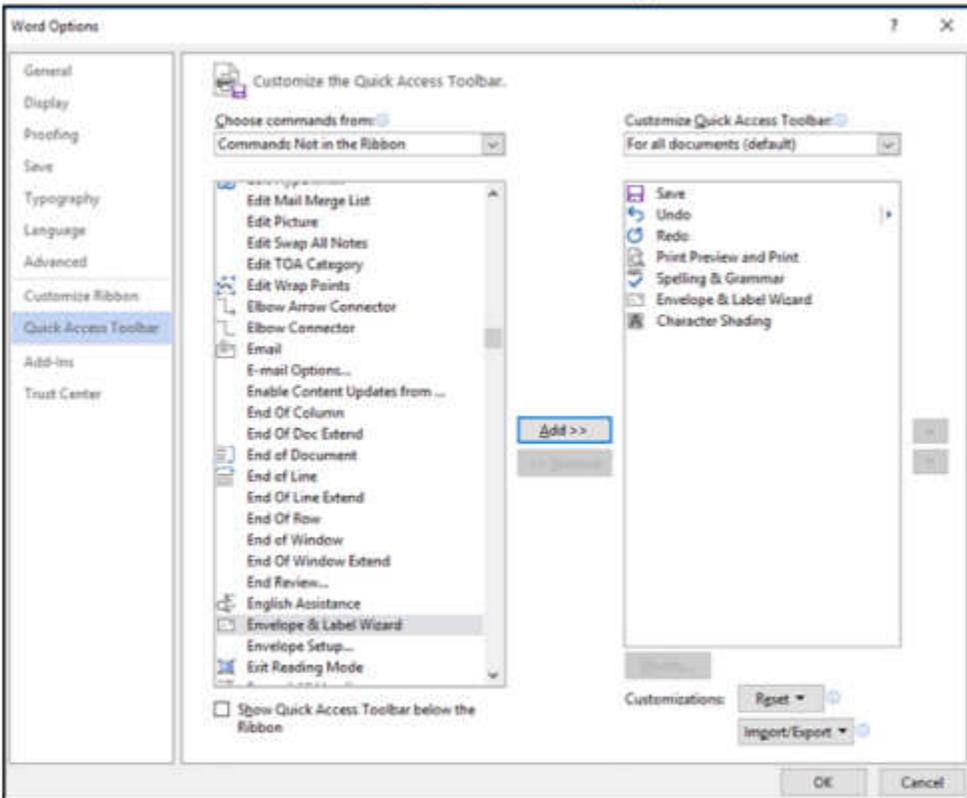
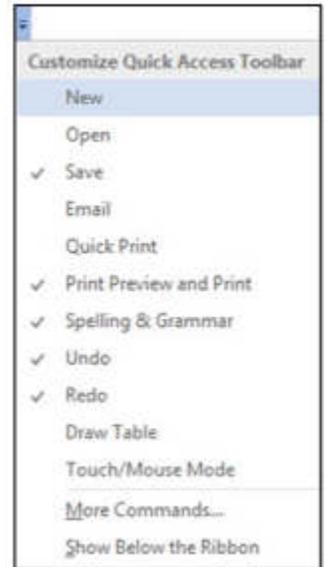
# Customizing the Quick Access Toolbar in MS Word

By Mary Phillips, Secretary, ICON, MO

May 2018 issue, THE ICON-Newsletter - [www.iconusersgroup.org](http://www.iconusersgroup.org) - [Mary\(at\)iconusersgroup.org](mailto:Mary(at)iconusersgroup.org)

The Quick Access Toolbar in MS Word is located in the Title bar at the far-left side above the Ribbon. You can move it below the Ribbon. Initially it contains only buttons for Save, Undo, and Redo. I like to add more buttons because I use it a lot.

Clicking on the dropdown arrow at the right end of the QAT gives a list of the most common buttons. Checkmarks indicate which items are included. I like to add the Print Preview, Spell Check, and Envelope & Label Wizard. So, I put checkmarks beside Print Preview and Print and Spelling & Grammar. To locate the Envelope & Label Wizard button, click on More Commands, then in the Options window under



Choose commands from: click on the dropdown arrow and select Commands Not in the Ribbon. Scroll down to Envelope & Label Wizard, click it; click Add in the middle of the window. It should now show up in the right column. Click OK.



## President's Corner

### How to Succeed in Technology (While Trying Really Hard)

By Greg Skalka, President, Under the Computer Hood User Group

February 2018 issue, Drive Light - [www.uchug.org](http://www.uchug.org) - [president \(at\) uchug.org](mailto:president@uchug.org)

You may be able to succeed in some things without really trying but dealing with technology is not typically one of them. While our modern lives are awash in new tech, we must often struggle to cope with it. New innovations bring the potential for much good for our world and our individual lives, but they can also have unanticipated negative consequences for our planet, our society and ourselves. On a personal level, our everyday interactions with technology can help us get ahead, save us time, connect us, isolate us, cost us resources and drive us crazy, often all at the same time. New technology usually means change, and how we deal with the changes will determine our success.

Technology is simply putting science to practical use to solve our problems. We have been using technology since the dawn of humankind. Stone tools and fire-starting methods are just early forms of technology. We as a species have evolved, along with our society and our technology, each evolving at different rates. Our tech has changed, from hand axes to locomotives to smart phones, while our social system has gone from tribes to countries to a global community. We have physically changed as well, with less physical effort required in our daily lives, more leisure time and a greater abundance of food resulting in a rising obesity problem in the developed world. Each of these aspects has influenced the others, though it is unlikely we will evolve pointed fingers to better press on smart phone screens, as our tech and cultural changes are coming far faster than our human bodies can adapt.

We often get the latest tech gadgets to fill a need, enhance our lives, save time or money or simply keep up with others. Anything new is usually different from what we are used to, requiring some learning and adaptation. Even when we think we have mastered our technology, we can find that success is fleeting. More and more devices are programmable and are frequently connected to the Internet - often the device you have today behaves differently after tomorrow's updates. Setting up your devices can be challenging, and when things don't work, or stop working, where do you go for help?

As an engineer, I should have a front-row seat on the technology express we are all riding on. I've been educated in engineering principles and work daily to advance the capabilities of the equipment and networks our phones and computers use to communicate. Most of the time my work is rather unglamorous: creating spreadsheets, writing reports, probing uncooperative hardware. While I am closer than most to the origins of our new tech, I too am often confounded by devices that don't work as promised, dismayed when they fail and feel apprehension over where all these things are taking us as a society.

I've often been successful in solving my own problems with new devices and software, as well as maintaining and repairing my stuff. A lot of people look to me for help with their tech problems, and I am depended on to be the family IT (information technology) person, as well as appliance repairman, auto mechanic, handyman, plumber, electrician, gardener and tech installer.

With all these responsibilities, it is rare that I don't have a long list of household problems to solve. Successful resolutions usually require resources in both time (on my part) and money, and there is typically a trade-off involved. More of my time (in labor, research and experimentation) can be traded away by allocating more money to the tasks (hiring services to install, debug or repair, or spending more on insurance or service contracts). I could spend all my time maintaining and repairing everything I can myself, but then when would I get to enjoy the benefits of all this tech? I could easily farm out all the set up and upkeep for stuff in our lives, but would I be able to afford it, and would I become dependent and unable to determine if I were being taken advantage of or controlled?

Somehow, we all must come up with a balance for this if we are to be successful users of technology. Paying for everything is easy, if you have the money. Attempting to solve your inevitable tech problems yourself is harder but has advantages. Here are a few of my thoughts on how to successfully coexist (and hopefully thrive) with today's (and tomorrow's) technology and solve your own tech problems.

**Knowledge is Important.** No one knows what is best for you or your family better than yourself - not expert reviewers (who may be biased), not governments (which can change) and not companies (whose interests are in making money, not what may be best for you). Unfortunately, you must often be knowledgeable in many fields to effectively evaluate which tech solution is best for you (between product types, between product brands, or even between low tech and high tech). Knowing the background and history of things, as well as how things (or devices) work can help tremendously when your stuff doesn't seem to work. Even if you are not going to debug and repair things yourself, having a basic knowledge of the parts in and functions of the problem device (computer, phone, car, appliance) is helpful in being able to evaluate if you are getting honest and cost-effective support services.

**Being an Expert is Good but Having More General Knowledge Might be Better.** Expertise is something gained by study and experience in a field, which takes time. Taking the time to gain more expertise in certain tech aspects can be very helpful. Becoming an expert in computer hardware, networking, computer security or home automation might be worth the effort right now, as these are currently hot topics. Hot topics can change as technology changes, however. Over the years I have gained some expertise in carburetors, floppy disks and parallel port (printer) interfaces, but now that knowledge and experience is less useful to me. Spending at least some time becoming a generalist might bring longer lasting rewards. One field I'd recommend learning more about is physics, which relates to almost everything we call high tech, from the orbits of GPS satellites to the operation of semiconductor devices.

That does not mean that learning new skills and emphasizing particular topics is not important. I fear we, as a society, may be abandoning some hands-on skills in favor of more on-line and virtual pursuits. While I don't follow them much myself, the increase in popularity of TV shows dealing with home remodeling (HGTV) and cooking (Food Network) means people still have an interest in creating things themselves, which is good. Knowing how to play music on Pandora or through your Amazon Echo is not the same as knowing how to play a musical instrument. Knowing how to get food delivered through GrubHub is not the same as knowing how to cook.

**Having a Backup Plan is Helpful.** For activities you feel are important, having a backup approach is crucial. This applies not only to the backup of data on a computer hard drive to avoid loss due to hardware failure or an attack by ransomware, but also to a "backup" of the computing function itself. One of the best investments I've made in my wife's computing resources is in her own laptop. Though she seldom uses it, preferring her desktop PC, it really took the pressure off me when her primary computer suddenly failed to boot up recently. She was able to reluctantly switch to her laptop for work and home computing needs, giving me the time to investigate her desktop machine's troubles and get it running again. Had I been in a rush get her back on line again, I might have resorted to simply buying her a new PC, an unnecessary additional expense.

I have bought several relatively low-cost, on-sale items over the years as alternates or back-ups to things I already have. These include routers, Ethernet switches, cables (Ethernet, USB, power, etc.), battery chargers and USB drives. These can help you quickly isolate the cause of problems and perhaps get you running again, at least temporarily. It is always good to have more than one way of doing things, in case your primary means suddenly fails. It costs nothing to have multiple browsers available on your computer, in case accessing a web site becomes a problem. If you can't get your email to download on your PC, can you access it on your smart phone? If your Wi-Fi does not work, can your wired PC still access the Internet? These kinds of substitutions can help isolate the cause of problems with little cost or risk.

Even with a little extra cost, some redundancy in the things that are important to you can be justified. Having a second TV might keep you from missing that big game. A cheap second car (or a bicycle) can be an alternative to missing work when your car won't start. Keeping a spare phone charger or USB battery pack at work or in the car can be a lifesaver when your smart phone battery is low or fails to hold a charge.

***A Logical Outlook and the Application of the Scientific Method Can Help Solve Problems.*** In helping you solve a problem with their product, a company's tech support department may have a script to follow in directing you on what to check and in what order. You won't have this advantage if you perform your own troubleshooting, but a little logic and thoughtful consideration can help. Following the scientific method will always keep you on the right track. First, ask a question (typically, why does this thing not work?), then research (what may be the cause?). Next, come up with a hypothesis (a possible cause for the failure), and develop an experiment to test for that cause, recording what you did and the result. You can repeat this as necessary until the problem is solved.

Typically, you will want to try the most likely and easy to test reasons for failure (reboot, cycle power, verify power connections, verify cable connections, verify all system inputs are good, etc.) before moving on to more complicated, unlikely or expensive things to try. Even if you can't resolve it yourself, keeping a written record of what you have tried, and the detailed results will be helpful if you do finally need to talk with tech support.

***Solving Problems Requires Practice.*** Just as with playing a sport or a musical instrument, you only become good at solving problems if you practice it. Some tech problems will turn out to be easy to solve, while others may require more experience, knowledge and perhaps effort. Understand that there are going to be some problems that may seem (or may be) unsolvable. Always try the easy and low-cost / low risk debug steps before calling in the experts / tech support, so you can build up that experience and confidence in your debugging skills.

***Persistence Usually Pays Off.*** If at first you don't succeed, try, try again. This proverb certainly applies to resolving tech issues. My win/loss record for solving problems is pretty good, and it is improved by my not accepting a loss at times, but instead keeping the issue open. I have a few problems I continue to pursue a solution to, just not very actively currently. I've found an acceptable work-around or alternative to the issues, and while I do intend to continue to seek solutions, I am free to work on more pressing activities in the short term. One example is the problem I started having with my network hard drive a few months ago. I found it turned off a few times, and when restarted, it would not boot, but instead gave an error indication. Later it would boot and is currently running, but I apparently can't access the drive. I have the data backed up on an external USB hard drive, so getting the network drive working right now is not critical. Hopefully I will find time to continue debugging on it soon.

In most cases my persistence has paid off more quickly. Recently my father had a problem going to web pages on his Windows 7 desktop computer. His Internet Explorer web browser could bring up web pages but clicking on links in those pages was ineffective. I reviewed all the browser settings, and found no way to repair or reinstall IE, which I believed was the problem. To prove this, I proposed testing another browser. My father agreed to try using Chrome, which I attempted to install using IE, the only browser on his PC. Unfortunately, the Chrome browser installation is accessed from a link on a Google web page, which I could not get to work with IE. I finally tried installing Firefox, which did not require going through a web page link to install, and it had no trouble with links in web pages. I then used Firefox to install Chrome, and my dad was then happy on the Internet again.

***Knowing Where to Get Answers is Important.*** When the problem is with a product or service, the manufacturer or provider is the first place to look (especially if it is still under warranty). Technology user groups can be a great place to get help with general problems and learn new things. For more specific issues, a user forum or web site (like CNET) can answer questions and provide helpful hints and tutorials. Of course, your search engine can bring helpful information from all over the Internet. I once needed to replace the rechargeable battery in my electric toothbrush and was able to find replacement parts and disassembly videos through a web search. This does not help much, however, if your problem is in getting on the web.

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## President's Corner

### I am Not a Robot

By Greg Skalka, President, Under the Computer Hood User Group, CA  
May 2018 issue, Drive Light - [www.uchug.org](http://www.uchug.org) - [president \(at\) uchug.org](mailto:president@uchug.org)

You've seen the wavy, distorted text to translate on log-in pages on the web. You've had to match images to words to be allowed to buy concert tickets. You've even had to check a box that says "I am not a robot" to sign up for a web service. What's going on here? Why must we be inconvenienced? Are robots taking over the world?

The problem is not with robots, at least in the traditional sense. Robots are machines that can perform a complex series of actions, under computer or program control. These include industrial machines, military UAVs (unmanned aerial vehicles) and the Roomba cleaning your floor. Google is not trying to keep C-3PO from signing up for a Gmail account.

A computer running a program could also be considered a kind of robot, as it is a machine performing an action. An ATM machine is a kind of robot, programmed to provide you with cash (if you have money in your account). Programs that catalog the web could be considered robots. These kinds of robotic programs can help us find things. Unfortunately, there are more unsavory applications for these web robots, like spreading spam and capturing user information. If there is a limited amount of something desirable for sale on the web, a program could be written to go out on the web and buy up all of it the instant it goes on sale - concert tickets, for instance. It is not the poor robot program that is at fault, but the bad people behind its actions.

To prevent these misdirected online bots from buying all the tickets, spamming all the blogs and signing up for all the email addresses, tests were developed to try to filter out the bots and only let real humans sign up on web pages. Initial tests used CAPTCHA codes; CAPTCHA stands for Completely Automated Public Turing test to tell Computers and Humans Apart. These tests involved things that humans should be able to do, like recognize numbers and letters that appear melted, but that are difficult for machines or programs to understand and complete. After going through several different types of these tests to defeat ever-smarter AI (artificial intelligence) web bots, Google has gone to a test where the way you click on a box that indicates "I am not a robot" can reveal your humanity.

This may help protect your opportunity to go to Comic-Con, but it does nothing to stop the proliferation of robots in our society. The capabilities and uses of robotic devices and their programs keep increasing as advancements are made in AI. Robots are just like any other technology we use; they can have benefits and drawbacks.

Like recognizing melted letters, it is commonly thought that there are things that only humans can do. These things usually involve creativity, like writing a novel or painting a masterpiece. Computers may be able to quickly make decisions and complete calculations but lack an aesthetic sense and artistic capability. As processing power, memory capacity and algorithm sophistication all increase, computers will get better at these things as well.

I would have loved to have a robot writer to write my newsletter column this month, as I started on this article way past my normal deadline. There now are news-writing bots that can quickly create basic stories for newspapers and magazines, using AI. While a great tool for journalists, some are concerned it could also be their replacement. Computers and AI are making inroads in other fields, such as law, where they are increasingly used to sift through documents for passages relevant to their casework. Computers are even using AI to claim some of that creativity that humans hold dear; there are programs that claim to create art, compose music and write novels.

Are we ready to accept more robots into our workplaces and our lives? The robots referenced in our popular culture are mostly the same - usually somewhat humanoid in configuration, often good, sometimes evil. Gort from the film *The Day the Earth Stood Still*, Robby the Robot from the 1956 film *Forbidden Planet*, the Robot from *Lost in Space*, the droids C-3PO and R2-D2 from *Star Wars* and the

Terminator robots have all shaped our perception of what a robot is. Yet we now have many robots among us, and few have a humanoid appearance.

AI has helped computers beat humans at their own games. Watson, the IBM computer that competed and won against human contestants on the TV quiz show Jeopardy, is now being used to improve healthcare delivery and weather forecasting, among other things. Deep Blue was an IBM chess-playing computer that beat a reigning world champion human. AlphaGo, a program using Google's DeepMind AI, was able to beat top-ranked human players.

Other robots use AI to navigate, build and answer our questions. Self-driving cars are in development and testing by many companies. If successful and accepted by consumers, they will be a transforming technology in our society. They promise to reduce traffic, free up our time spent traveling, increase road safety and provide transportation for those that cannot drive. They may greatly change our driving-oriented car culture and affect our lives in ways we cannot anticipate. Robotic trucks are also under development, with the goal to make shipping safer and less expensive.

We already have UAVs and drones, many of which can take off, fly and land under computer control. Our robotic space probes have surveyed all the planets and even left the solar system. Our robotic rovers continue to drive around on Mars, helping us explore and learn about our neighboring planet. Back on Earth, robots help us build cars in our factories. Our Roombas sweep and mop our floors. Voice operated assistants like Amazon's Echo and Google's Home Assistant provide support in our lives.

All these robots touch our lives every day in positive ways. Perhaps we should not be so ready to segregate into us and them. Just as John F. Kennedy expressed solidarity with the citizens of West Berlin in his 1963 speech, saying "Ich bin ein Berliner", perhaps we should be saying

49 20 61 6D 61 72 6F 62 6F 74 2E

[Translation from ASCII Hexadecimal: I am a robot.]

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## Location – Where are you now?

By Phil Sorrentino, Technical Thoughts, Sarasota Technology Users Group  
May 2018 issue, STUGMonitor - [www.thestug.org](http://www.thestug.org) - [philsorr \(at\) yahoo.com](mailto:philsorr@yahoo.com)

Location, Location, Location has been the real estate mantra for a very long time, indicating how important location is to the value of a property. This reference to location is to a fixed location. The location in question here is that of a mobile communicating device, such as your smartphone, the location of which may be constantly changing, as it would be if you are driving down a major interstate like I-75. Even if you are not flying down an interstate, your location can still be changing as you walk down the street to visit a neighbor. So, with your location possibly changing, how does your smartphone know where you are? And for that matter, how do the Apps on your phone know where you are at any given time?

First, why is your location important, anyway? One reason may be that you are using an App on your smartphone to find the location of the nearest restaurant. The App you are using to locate these restaurants needs to know where you are, so it can calculate the distance from you to the restaurants in its database and give you a list of nearby restaurants, usually ordered by increasing distance away from you. Or, you may want to navigate from one place to another, using directions from a mapping App on your phone (which is similar to how a dedicated GPS device in your car operates). For this kind of navigation, you need a precise location so the App can determine where you are on the map and give you directions to get you to your destination. (Or it may have to give you corrections; you may have heard "recalculating!" if you were using an older GPS device.) The precision is necessary to make sure you are in the right place for upcoming turns or lane changes. As you probably know, the Global Positioning System (GPS) is the only way you can get this kind of precise location. GPS is a space-based radio navigation system owned by the United States government and operated by the United States Air Force.

It provides geolocation (geographic coordinates) and time information to a GPS receiver anywhere on the Earth where there is an unobstructed line of sight to four or more GPS satellites. There are 24 satellites in the GPS constellation. GPS, as a government project, was started way back in 1973, and became fully operational in 1995. The US government currently claims 4-meter (approximately 13 feet) accuracy for civilian GPS (but there are many variables involved that might affect this estimate).

Your location, or more precisely, the location of your smartphone, can be determined by one of three ways. GPS, as described above, is the first and the most precise method. It is the only way to determine location if you intend to navigate using a mapping/navigation App. The second way, which is much less precise, is via the Internet Service Provider (ISP). This is the way location can be determined if you are using Wi-Fi, in your own home or some other Wi-Fi location. (Of course, this location will be fixed; not subject to change.) The ISP knows approximately where you are because it knows where the ends of the cables that carry the internet to you are, and where the Access Points are geographically located, along with the IP addresses that have been assigned. This technique may give a precision of maybe 75 meters (approximately 250 feet) or a few blocks in a relatively populated area, but this may be all the precision needed to find the nearest restaurant or gas station.

The third way to determine your location is used when you are actively using the cell phone towers. The precision of the measurement of location in this case is only around 600 meters (approximately 1/3 of a mile), but it is accurate enough for normal cell phone system operations. The cell phone system needs to know your location constantly because it must track your smartphone's transmitter's signal. It needs to know where your phone is, so it can electronically aim its antenna at your phone. Yes, when you are using the cell phone towers, your device's every move is being tracked. Without tracking, the cell phone tower would not be able to keep your device connected when you pass through the tower's area, and it would not know when to hand-off your connection to the next cell tower. (Remember the cell phone system is a collection of contiguous areas, each around a central cell tower, so if you travel down the interstate far enough, you will go out of one cell tower's area and into the next cell tower's area. At this point your connection must be moved to the next cell tower for you to continue your connection without interruption while travelling into the second cell tower area.)

Now that you know the three methods of location determination, you can more easily determine how to set the "Location" setting on your smartphone. As an example, on an Android device (OS 7.0), go to settings and then Location. Here you can set the Mode to "High accuracy", "Battery saving", or "Device only". High accuracy will use all the possible methods, Battery savings will use all but GPS, and Device only will only use GPS (the mode to use when navigating). If you are not navigating, then it is probably a good idea to use the Battery savings mode because the GPS receivers in your device use a lot of power, so it will affect your battery life, but if you need GPS accuracy then use either of the other modes. On an iPhone, you can turn Location Services on at Settings-Privacy-Location Services, and you can individually control which apps and system services have access to Location Services data. Knowledge is power, location is very important.

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## **Making Room on a Full Hard Drive**

By Hewie Poplock, Member, Sarasota Technology Users Group  
May 2018 issue, STUGMonitor - [www.thestug.org](http://www.thestug.org) - Hewie (at) Hewie.net

I was starting to panic. My C-Drive on my main computer was becoming unsafe as I was using up all its free space. The drive is a 240GB SSD card. I was down to 8GB free. I also have a 1 TB hard drive that is dedicated to data and designated as D-Drive.

As I saw the shrinking drive develop, I changed the default locations for such items as Documents, Downloads, Videos, & Pictures to the D-Drive. Other than Windows and programs (Apps), there is not much else on the C-Drive. The D-Drive is about 2/3 full, with about 275GB free space. The only other data that is still moveable is Evernote data which is about 7.5GB on the C-Drive, and, through its software, it can be moved to the D-Drive.

The computer was built for me over 3 years ago and originally had Windows 8.1 as the OS. AOMEI Recovery software was installed in its own 30GB partition. Since I have never needed this now outdated program, I should be able to delete the program and use that space as part of the C-Drive.

I double-checked with my vendor, SmartGuys Computers, in Sanford, Florida. They said I could uninstall the recovery software and, using Windows Disk Management, add that partition to the C- Drive. They were mostly right. I was able to uninstall the software and unallocate the 30GB partition, but Disk Management would only add that 30GB if it was adjacent to the current 193GB C-Drive. It was not. There was a 455MB partition between them. Disk Management does not move partitions.

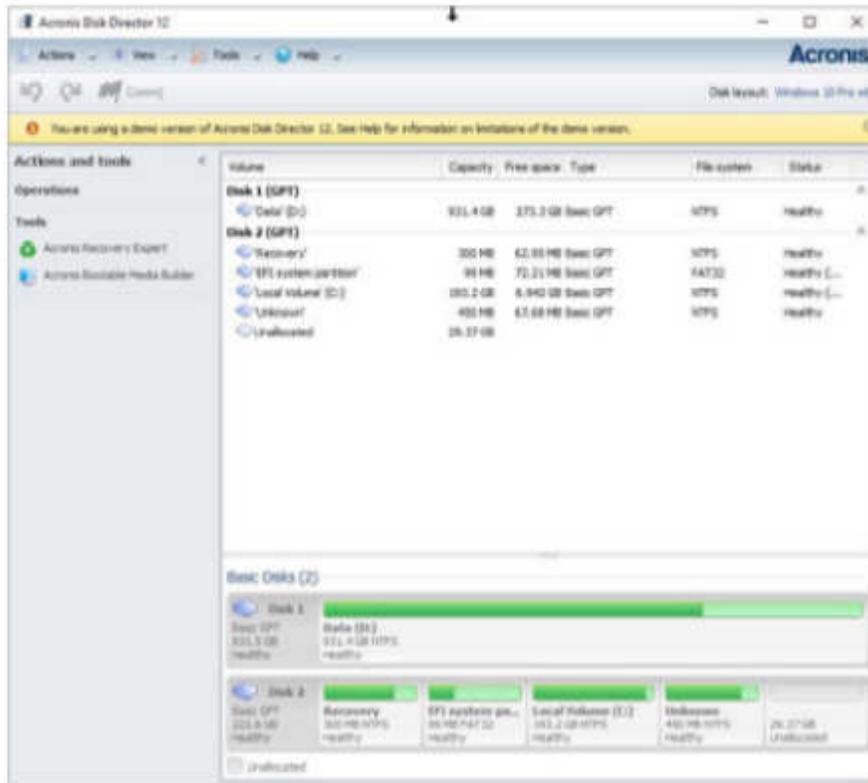


Figure 1

After attending User Group presentations by Gene Barlow [ <http://ugr7.com> ] over many years, I recalled that Acronis Disk Director should accomplish what I needed to do. My first chore was to completely back up my system. I used Acronis True Image 2018 and backed up an image of both my C-Drive & D-Drive (240 SSD & 1TB HD). I did so BEFORE removing the recovery software and unallocating that partition. I then downloaded and installed the trial version of Acronis Disk Director & its documentation to see if it would do the job. It looked like I needed to do 2 steps, but it would work. I then purchased the software from Gene Barlow, as he has special User Group member pricing. I had the key to register the software within a few hours of the purchase.

The first step was to move the 450MB partition to the end of the drive and make the 30GB unallocated partition contiguous to the C-Drive. Following the directions, this was an easy step and the move was successful.

I am not sure if the 455 MG space was needed, but looking at some articles, it appeared that there usually was an empty recovery partition at the beginning and end of a boot drive. So, I left it. The next step was to expand the C-Drive to include the 30GB unallocated space. This step was easy to set up, again following directions in the user guide. It took only seconds, and now I had 40 GB of free space on my C-Drive.

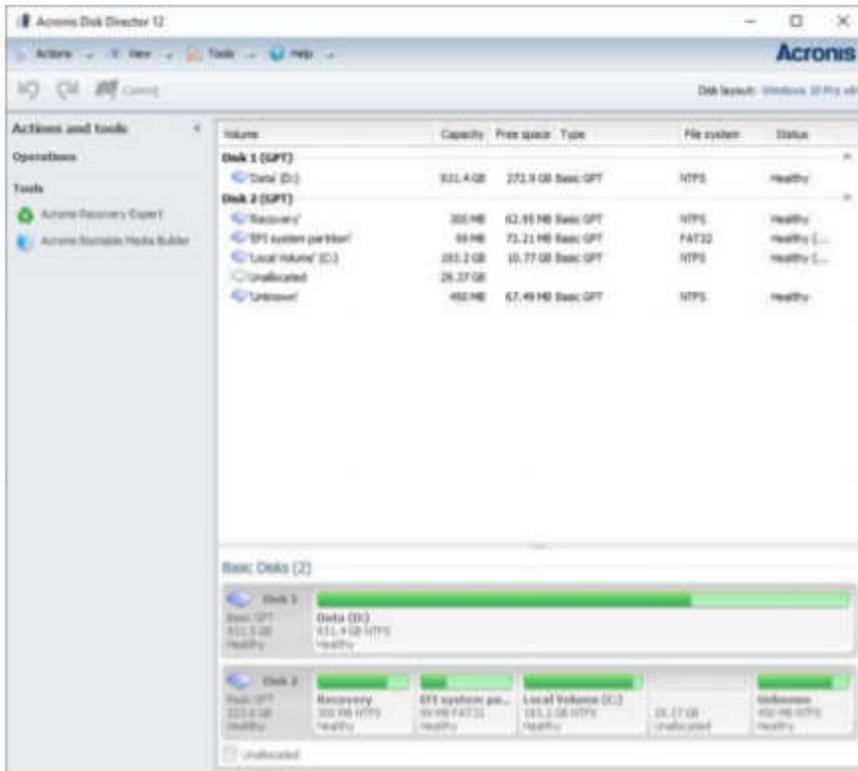


Figure 2

My next step is to do an image backup of the SSD drive so that I have a current backup. I will not overwrite the last backup, but save a new one, just in case I have some issues appear. After that, I will move the Evernote files and change its default to the D-Drive. I now will have enough room on my C-Drive to do the next major Windows 10 upgrade and have some room to install some new apps as needed or wanted.

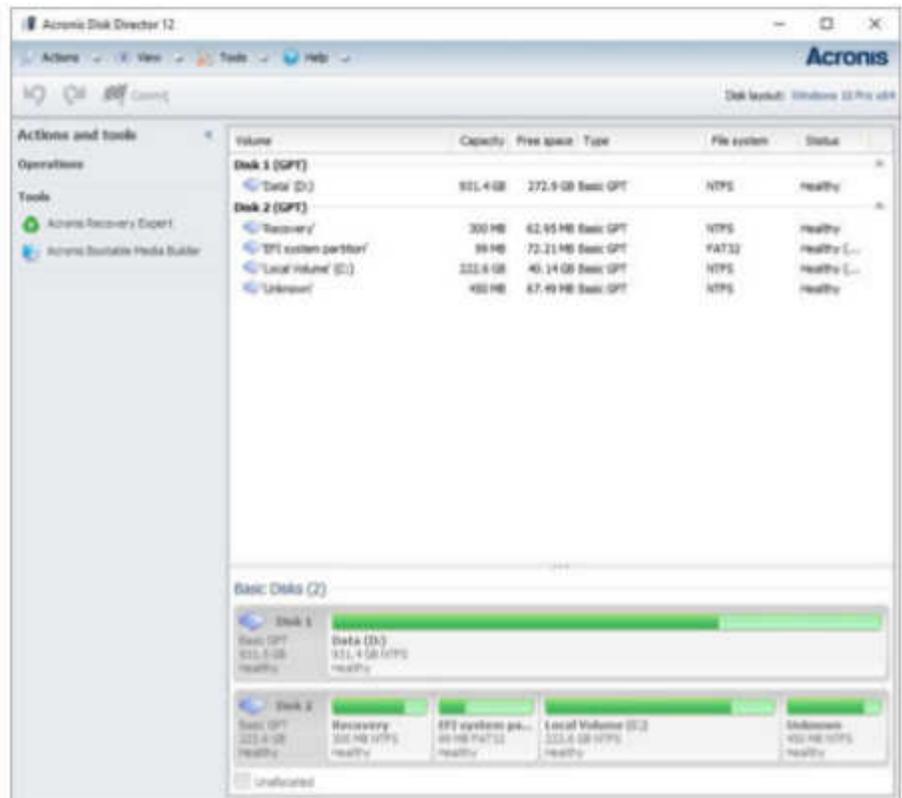


Figure 3

**Mission: All knowledge recorded for everyone's free use**

Review, April Golden Gate Computer Society Meeting

By Mike Hancock, Newsletter Committee

May/June GGCS newsletter - [www.ggcs.org](http://www.ggcs.org) - editor (at) ggcs.org

WITH A MISSION OF PROVIDING UNIVERSAL ACCESS to all knowledge forever, Internet Archive ([www.archive.org](http://www.archive.org)), a San Francisco based non-profit, has archived 100,000 software titles, 2 million moving images, 3.5 million audio recordings, 5 million hours of television, 3 million e-books, and more than 327 billion web pages: a total of 40 petabytes archived.

John Gonzalez, Director of Engineering at Internet Archive, leads the building of a digital library of internet sites and other cultural artifacts in digital form and introduced his organization during the April 23 General Meeting.

Internet Archive's enormous archive, which has 2 million to 3 million visitors a day, is explored via the Wayback Machine, a search engine. Archive-It, another tool on the site, enables you to capture, manage, and search collections of digital content without any technical expertise or hosting facilities. No user I.D. or password is required for viewing, but a login is required for uploading.

The Internet Archive has only 150 staff members but runs one of the top 250 websites in the world. Reader privacy is critical, and it doesn't accept ads that track your behavior. Internet Archive doesn't even collect your IP address. It's also a member of the American Library Association.

John demonstrated access to the e-book library, where you can borrow e-books, one at a time, many of which are very old books that have been digitized. Although some books are torn apart to archive the digitizing, a super-scanning center in Hong Kong has a machine that enables the books to be laid open at 90° while the two open pages are scanned.

There are 28 scanning centers in eight countries that scan 250,000 books each year. The e-book collection now bridges a large gap in printed books that were restricted because of copyright limitations and e-book restrictions and includes some books in foreign languages.

Also available and demonstrated to us were 78 rpm records, old-time radio, and live music, including old and modern music. Another fun archive is that of feature films that you can access and play on your computer. Old and new television programs also are archived as well as maps.

Journalists use Internet Archive's Political TV Ad Archive in their fact-checking of candidates' claims. It includes apps for iPhones and Android devices. "Facets" assist you in your detailed searches.

While browsing the archives, you can capture a web page as it appears when viewing for use as a trusted citation in the future. This Save Page Now feature is only available for sites that allow crawlers.

"Let's Explore" has 14 archive.org websites that can be copied/posted for a lot of interesting information. These links are fun to spend time reviewing, and include Historical Software Collection, Amateur Radio Today, MIT press, Folkscanomy Library, Byte Magazine, NASA Images and Reports, 78 rpm records, and more.

The history of libraries is one of loss, so this year, Internet Archive has set a new goal: to create a copy of Internet Archive's digital collections in another country. They are building the Internet Archive of Canada because copies keep records safe.

This project will cost millions, which is why a tax-deductible donation is appreciated. About 60% of Internet Archive's income is earned from working with other institutions, such as the Library of Congress; up to 30% from donors and grants; and the balance from founder, Brewster Kahle.

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