

\$3.00

(membership includes monthly subscription)

The Digital

# Viking



## Twin Cities

PC USER GROUP

NEWSLETTER

Minneapolis & St. Paul, Minnesota USA • Vol. 38 No.7• Feb. 2018

*TC/PC Exists to Facilitate and Encourage the Cooperative Exchange of PC Knowledge and Information Across All Levels of Experience*

**February 2018**

Membership Information 2

Upcoming Meetings ..... 3

Wi-Fi 2.4 or 5 Ghz ..... 3

Windows 10 Tips App... 5

Nibblers ..... 6

SIG Information..... 10

TC/PC Calendar..... 11

Is Your Cell Phone

CDMA or GSM? ..... 12

Review: The Tile ..... 14

Membership Application 15


Maps to Events ..... 16

## General Meeting Tuesday, February 13, 2018 7:00 PM

**Free Code Camp**

**Presenter: Mike Boardley**

**Summit Place  
8505 Flying Cloud Drive  
Eden Prairie, MN 55344**

At this month's meeting, Mike Boardley, who is a website developer and programmer, will give us an introduction to a program called Free Code Camp. The program offers opportunities such as boot camp and coding tutorials for those interested in learning to code in various computer languages (HTML, CSS, JavaScript, PHP, and more). Mike acts as a local coach and support person for people who sign up for the program. He hosts regular meetups where coding novices can bring their projects and get help. Campers can work on real-life projects for non-profits to gain experience. Should be an interesting insight into a valuable local resource. 

---

**Tech Topics at 6PM:** Its tax season, which means it's also Phishing season. We will discuss what new scams are out there and how to protect yourself.

TC/PC is a Member of



---

**24-Hour Information • [www.tnpc.com](http://www.tnpc.com)**  
Application form inside back cover

---

# The Digital Viking

The Digital Viking is the official monthly publication of the Twin Cities PC User Group, a 501(c)(3) organization and an all-volunteer organization dedicated to users of IBM-compatible computers. Subscriptions are included in membership. We welcome articles and reviews from members. The Digital Viking is a copyrighted publication and reproduction of any material is expressly prohibited without permission. Exception: other User Groups may use material if unaltered and credited.

**Disclaimer:** All opinions are those of the authors and do not necessarily represent the opinions of the TC/PC, its Board of Directors, Officers, or newsletter staff. TC/PC does not endorse, rate, or otherwise officially comment on products available; therefore, readers are cautioned to rely on the opinions presented herein exclusively at their own risk. The Digital Viking, its contributors, and staff assume no liability for damages arising out of the publication or non-publication of any advertisement, article, or other item. All refunds in full or in partial, for advertising, membership or any other item shall be at the sole discretion of the Twin Cities PC User Group Board of Directors.

## Advertising

Full page (7½ x 9½)	\$100.00
Two-thirds page (7½ x 6)	80.00
Half page (7½ x 4¾)	65.00
One-third page (7½ x 3)	50.00
Quarter page (3½ x 4¾)	40.00
Member Bus. Card (2 x 3½)	10.00

Multiple insertion discounts available.

Contact Sharon Walbran at: SQWalbran@yahoo.com

Deadline for ad placement is the 1<sup>st</sup> of the month prior to publication. All rates are per issue and for digital or camera-ready ads. Typesetting and other services are extra and must be requested in advance of submission deadlines.

Payment must accompany order unless other arrangements are made in advance. Place make checks payable to: Twin Cities PC User Group

## TC/PC Member Benefits

Product previews  
and demonstrations

Special Interest Groups  
Monthly Newsletter

Discounts on products  
and services

Contests and prizes

## Business Member Benefits

All of the above PLUS:

FREE ½ page ad on  
payment of each renewal

20% discount on all ads  
Placed in the *Digital  
Viking* Newsletter

Up to 5 newsletters mailed to  
your site  
(only a nominal cost for each  
additional 5 mailed)

## TC/PC 2016-2017 Board of Directors

Meets once or twice per year. All members welcome to attend.

Visit [www.tpc.com](http://www.tpc.com) for meeting details.

<b>President</b> —William Ryder	br@rydereng.com
<b>Vice President</b> —Curtiss Trout	ctrout@troutreach.com
<b>Secretary</b> - Sharon Walbran	sharon.walbran@gmail.com
<b>Treasurer</b> - Sharon Trout	strout@troutreach.com
<b>Newsletter Publisher</b> Sharon Walbran	952-925-2726 sharon.walbran@gmail.com
<b>Web Master</b> Curt Trout	ctrout@troutreach.com
<b>Board Members:</b>	
Steve Kuhlmeier	skuhlmeier@hotmail.com
Lon Ortner	612-824-4946 csacomp@comcast.net
William Ryder	br@rydereng.com
Jeannine Sloan	Ambassador for Friendship Village
Curtiss Trout	ctrout@troutreach.com
Sharon Trout	strout@troutreach.com
Jack Ungerleider	jack@jacku.com
Sharon Walbran	sharon.walbran@gmail.com

## Newsletter Staff

Editor Sharon Walbran

Contributors:

Jeannine Sloan

## Upcoming Meetings

**Tuesday, March 13th, 7:00PM**—What File is This? File types and their extensions and what to do when one can't open a file. Presenter: Jack Ungerleider

---

### Wi-Fi - 2.4 or 5GHz

By Carol Picard, Editor / Webmaster, Midland Computer Club, Michigan

September 2017 issue of Bits and Bytes, [capmidmi \(at\) yahoo.com](mailto:capmidmi(at)yahoo.com), [mcc.apcug.org](http://mcc.apcug.org)

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 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/adaptor 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.

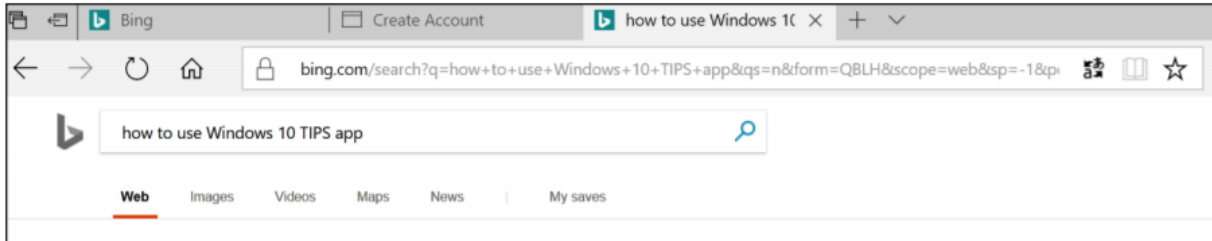


[Go to Page 1](#)

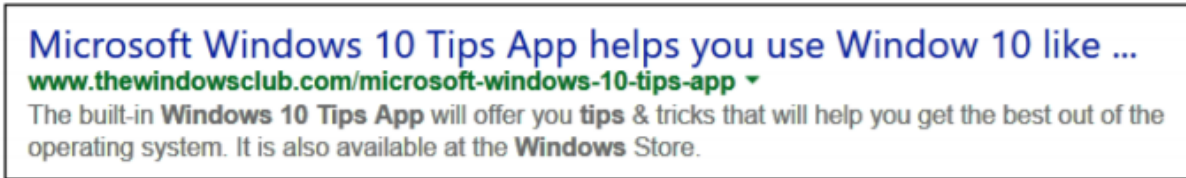
# Microsoft Windows 10 Tips App

Submitted by Barbara Gravitz, Treasurer, The PCUG-CT  
September 2017 issue, The Program  
[www.tpcug-ct.org](http://www.tpcug-ct.org), merdoon (at) sbcglobal.net

#1. Do a Bing search “How to use Windows 10 TIPS app”



#2 Scroll down until you see the following 3 choices:



#3 Click on any or all to learn about all the new things that have been added to Windows 10 and how to use them. The Windows Tip app icon looks like this:



[Go to Page 1](#)



# NIBBLERS

By Jeannine Sloan

## Hangover Cures Backed By Science

If you're looking for something to nurse your hangover, skip the bloody Mary. A team of Chinese researchers found that Xue bi, the Chinese version of Sprite, is actually the best beverage to combat the lingering side-effects of alcohol. Of the 57 drinks tested, Sprite was the best at helping enzymes break down acetaldehyde, the metabolized version of ethanol that's blamed for some of the nastiest hangover symptoms. Read more at Mental Floss <https://tinyurl.com/y9cd6s9q>

## About the Wave Glider

Energy harvesting and propulsion are critical for unmanned ocean robots operating in the middle of the ocean. Our engineers answered these challenges with the Wave Glider. It delivers greater energy harvesting, additional propulsion, and new capabilities which expand the range of applications and solutions available to customers.

<https://www.cnet.com/news/mapping-australias-great-barrier-reef-with-camera-drones-nasa-tech/>

## Anti-Phishing and Email Hygiene

Most people are hacked via phishing attacks. Here's how to better protect yourself. Phishing is a social-engineering attack where an adversary crafts an email in such a way to trick you into divulging information that could be used against you or your network; gain access to, and ultimately commandeer your account; or introduce malware and/or viruses to your machine. Spear phishing is just like phishing, except the attacker uses information he or she already knows about you to specially tailor their phishing email. There are plenty of ways to be phished, and it happens incredibly frequently. Prepare yourself with our guide to mitigate or avoid phishing or spear phishing attacks. <https://freedom.press/training/email-security-tips/>

## Ultra-Thin Camera Says Good-Bye to the Lens

A new proof-of-concept design retires one of the most familiar parts of a traditional camera: the lens. By swapping out the glass lens with a tiny array of light receivers, a California Institute of Technology team believes the thinner, lighter model supports a new wave of ubiquitous imaging.

[https://www.techbriefs.com/component/content/article/tb/news/news/27133#at\\_pco=cfd-1.0](https://www.techbriefs.com/component/content/article/tb/news/news/27133#at_pco=cfd-1.0)

## How to Enable Night Light on Windows 10

The article explains what it is and why it is a good thing to use and shows an illustration. You can use these steps to enable Night light on your device:

☐☐ **Open Settings. Click on System' Click on Display**

☐☐ **Under "Brightness and color," turn on the Night light toggle switch.**

<https://www.windowscentral.com/12-days-tech-tips-usewindows-10s-night-light-improve-sleep-quality-andreduce-eye-strain>

## Hardware Bugs

PC over 2 years old? Expect slowdowns from recent fixes, says Microsoft, especially if you're not on Windows 10s Hardware bugs abound, to the point that the chipmakers maintain lists of "errata" for their products. Serious hardware flaws, when they come to light, tend to be worse than software ones, for two reasons. The first is that hardware is fundamental to a how a computer works. Software is merely a list of instructions. Its operation rests on the assumption that the chip—the machine tasked with carrying out those instructions—will perform its job correctly. Some do not. It may be that the only real fix is to redesign and replace the billions of chips that are vulnerable.

<https://www.economist.com/blogs/economist-explains/2018/01/economist-explains-6>

## Adding a Speaker

To switch to a different playback device, **right**-click the Speaker icon in the notification area and then click Playback Devices. The green checkmark indicates the current default device. Select a different device from the list and click Set Default to change devices. To specify a headset for use only with communication apps, choose Default Communication Device from the Set Default dropdown menu. To assign a microphone, use the Set Default button on the Recording tab.

## The Cashless Society Has Arrived--- Only It's in China

Mobile payments have surged to some \$9 trillion a year, way ahead of the U.S., changing how people shop, borrow— and even panhandle. The growth foretells a future where tech firms like Alibaba and Tencent drive innovation in finance.

<https://www.mobilemarketer.com/news/chinas-tech-firms-spur-cashless-society/514049/>

## LiFi

Li-Fi, or Light Fidelity, is a new technology that connects mobile devices and other internet-enabled objects by way of LED lights. Li-Fi transmits data by modulating light signals emitted by an LED light bulb — in essence, providing the internet through light. Said to be far faster than traditional Wi-Fi, Li-Fi has no need for radio or electromagnetic waves, and claims to be secure due to its imperceptible signal.

[https://www.digitaltrends.com/home/mylifi-smart-lamp/?utm\\_source=feedly&utm\\_medium=webfeeds](https://www.digitaltrends.com/home/mylifi-smart-lamp/?utm_source=feedly&utm_medium=webfeeds)

## Sci-Fi is Here

Brain-computer interfaces (BCIs) like the BrainGate system provide evidence that mind-control can work. Researchers are able to tell what words and images people have heard and seen from neural activity alone. Information can also be encoded and used to stimulate the brain. Over 300,000 people have cochlear implants, which help them to hear by converting sound into electrical signals and sending them into the brain.

<https://www.economist.com/news/leaders/21733983-braincomputer-interfaces-may-change-what-it-means-be-human-usingthought-control-machines>

## Windows 10 Automatic Maintenance

On Windows 10, Automatic Maintenance is a feature that helps to keep your computer healthy and optimized by combining and running all maintenance tasks without impacting performance or energy efficiency. Usually, the automated system optimization happens once a day when you're not actively using your device. However, it's possible to change the time and other settings to prevent missing a maintenance schedule because your computer was powered off, you were actively using it, or it's not behaving as expected. In this Windows 10 guide, we explain in more detail how Automatic Maintenance works. We outline the steps to manage its settings to optimize your device at any time of your choosing, and we'll also show you how to disable the feature if necessary.

<https://www.windowscentral.com/how-manage-automatic-maintenance-windows-10>

## Driverless Car Market Watch

Gearing up to save lives, reduce costs, resource consumption Fully autonomous vehicles will be on the road before 2022, says NVIDIA CEO The CEO of the chipmaker NVIDIA, Jensen Huang, said that "It will take no more than four years to have fully autonomous cars on the road." This refers to actual cars driving on the road (not just car models being ready technically) and assumes that the key legal issues will also have been resolved.

[http://www.driverless-future.com/?page\\_id=384](http://www.driverless-future.com/?page_id=384)

## How Soon

SAE International, the professional association of automotive engineers, defines vehicle automation in six steps, from Level 0 (no automation) to Level 5 (full automation). You can learn more about the "levels" [here](#), but for our purposes, Levels 4 and 5 are the ones that are effectively "self-driving." What's the difference? Level 4 is full self-driving within certain limits: Most of the self-driving systems likely to come to market in the near future are dependent on highly detailed 3-D maps; if you want to go somewhere that isn't on the car's map, you'll have to drive yourself. There may be other limits as well: A Level 4 system might not work in the snow, for instance. For at least the next several years, driverless vehicles will be "geofenced," limited to areas that have been carefully mapped. They may also be limited by weather and other conditions. <http://www.businessinsider.com/heres-how-soonyou-could-be-riding-in-a-driverless-car-2017-12>

The number-one threat experienced to date by the US electrical grid is squirrels.

<http://cybersquirrel1.com/>



## 10 Breakthrough Technologies

These technologies all have staying power. They will affect the economy and our politics, improve medicine, or influence our culture. Some are unfolding now; others will take a decade or more to develop. But you should know about all of them right now. <https://www.technologyreview.com/lists/technologies/2017/>

### QR Code

QRCode Monkey is one of the most popular free online qr code generators with millions of already created QR codes. The high resolution of the QR codes and the powerful design options make it one of the best free QR code generators on the web that can be used for commercial and print purposes. <https://www.qrcode-monkey.com/>

### Ferrofluid on a Screw

The GIF shows a demonstration of ferrofluid, a suspension of nanosize magnetic particles in oil. The magnetic particles are small and coated in a surfactant, which is a substance like soap that helps to keep the particles evenly distributed throughout the fluid, even when they're put next to a strong magnet, said Brandon Jackson, a doctoral candidate in mechanical engineering at Michigan Technological University, who has studied applications for ferrofluids.

<https://www.livescience.com/61426-ferrofluid-gif.html>

### How to Download Pictures From Camera To Computer

Before you can make any edits to your pictures, you first need to get them from your camera to your computer. This can be done in a few simple steps.

<https://www.digitalunite.com/guides/digital-photography/howdownload-pictures-camera-computer>

### Femtech Sector

A recent Bloomberg report also highlighted the rise of women-led startups focusing on women's health, noting more venture capital is going toward the niche; nine female-focused digital-health companies raised \$82 million through the third quarter of 2015, up from \$29 million in 2014, it quoted Rock Health.

<https://www.forbes.com/sites/jillrichmond/2016/12/31/thenew-year-of-optimisim-for-femtech/#3bca54dd54c9>

[Go to Page 1](#)



# Special Interest Groups (SIGs)

w Work phone h Home phone c Cell phone  
\* Meets at an alternate location

Most SIGs will meet at Edina Executive Plaza, Conference Room #102, 5200 Willson Road, Edina, MN

Confirm with a SIG group if they meet elsewhere.  
For more info contact the SIG Leader(s) listed here.

Get SIG announcements!  
Link from [www.tpc.com](http://www.tpc.com)

## Board of Directors\*

All members are welcome! Check [www.tpc.com](http://www.tpc.com) for location.

Selected Saturday mornings

## Linux on Saturday

This is for the Linux newbie and those trying to come over from Microsoft to a different operating system.

Second Saturday @ 9 AM-Noon

Note: No Meetings June-August

Jack Ungerleider 612/418-3494 c  
jack@jacku.com

## Tech Topics

Technical presentation/discussion on various technical topics from the following areas:

- Web/Internet
- Mobile Devices and Apps
- Playing with Programming
- DIY (3D Printing, R-Pi, other hobby electronics, etc.)

Second Tuesday @ 6:00-7:00 PM

Every month

Right before the general meeting.

Jack Ungerleider 612/418-3494 c  
jack@jacku.com

## Microsoft Access

All levels. Presentations by expert developers within the group and by MS reps.

Third Saturday 9:00 AM—Noon

Note: No Meetings June-August

Steve Kuhlmeier 952/934-8492  
skuhlmeier@hotmail.com

## Microsoft Office

Addresses the use, integration, and nuances of the Microsoft Office applications.

Combined with Systems on Saturday

Third Saturday of the Month

9:00 AM—Noon

Note: No Meetings June-August

Steve Kuhlmeier 952/934-8492  
skuhlmeier@hotmail.com

## Directions to Summit Place for General Meetings:

Proceed to Eden Prairie Center Flying Cloud Drive . [Flying Cloud Drive runs along the West side of the Eden Prairie Center.] Once you have driven past Eden Prairie Center (on the left) along Flying Cloud Drive you will come to a stop light at Prairie Center Drive. The next intersection with a stop light and left turn lane is Fountain Place. Turn left at Fountain Place and go straight into the parking lot. Turn left again to the first covered entry way of Summit Place. There is plenty of parking in the large parking lot in front of the first Summit Place covered entry way. When you enter the door at the first covered entry way, ask to be directed to the Performance Room for the TC/PC meeting. For a map of more detailed directions and *info on Web SIG and Board meeting*, check the TC/PC website.

Directions to **Edina Executive Plaza** for **Systems on Saturday, Access, Word and Picture Perfect SIGs**: Take Highway 100 to the 50th Street/Vernon exit. [If you have come from the north, cross back over Highway 100 to the east side.] Take the first right and go past Perkins [The golf course will be on your left.] and continue on the east frontage road (Willson Road) to the next building—5200 . There is ample parking in the building's lot. Conference Room #102 is on 1st floor.

Help yourself by helping others!

Join the team & share your knowledge with others.

Contact TC/PC at [www.tpc.com](http://www.tpc.com)

Meetings start at 7:00 PM (9:00 AM on Saturday) unless otherwise noted. \*Meets at Edina Executive Plaza.

## February

## March

SUN	MON	TUES	WED	THU	FRI	SAT
				1	2	3
4	5	6	7	8	9	10 Linux on Saturday 9AM-11AM
11	12	13 General Mtg Free Code Camp 7PM 6PM Tech Topics	14	15	16	17 MS Office and Access 9AM-Noon
18	19	20	21	22	23	24
25	26	27	28	1	2	3
4	5	6	7	8	9	10 Linux on Saturday 9AM-11AM
11	12	13 General Mtg File Types 7PM 6PM Tech Topics	14	15	16	17 MS Office and Access 9AM-Noon
18	19	20	21	22	23	24
25	26	27	28	29	30	31

[Go to Page 1](#)

## Is your cell phone CDMA or GSM? – Should you care?

By Phil Sorrentino, Contributing Writer, The Computer Club, Florida

The Journal of The Computer Club, Inc.

<http://sccccomputerclub.org> / [Philsorr.wordpress.com](http://Philsorr.wordpress.com)

[philsorr \(at\) yahoo.com](mailto:philsorr@yahoo.com)


The short answer to the second question is “probably no,” but there are some benefits from knowing the differences that may help you decide which cell phone provider or cell phone to choose. The answer to the first question depends on your cell phone provider. CDMA and GSM are the two basic technologies used in modern digital cellular networks, which are then used by mobile phones. These two technologies are very different. The difference is much more than the difference between a Ford and a Chevy. It's more like the difference between a gas-powered car and an electric vehicle; they both do the same thing, they get you to your destination, but the internal workings are very different. You can't use a CDMA phone on a GSM network (and vice versa), just like you couldn't use the gas engine from the gas-powered vehicle to run an electric vehicle. So, if you are on a CDMA network, you need a phone with CDMA radio-telephone circuitry, and if you are on a GSM network, you need GSM circuitry in your phone. So, which phones have what, may be a question you will have to answer when signing up for your next cell phone plan.

Although there are many places to buy a cell phone, in the United States there are only four major cell phone networks. (US Cellular is actually a fifth, but much smaller network.) The four are Verizon, AT&T, Sprint, and T-Mobile, and they are evenly divided by the technologies used. Verizon and Sprint use CDMA and AT&T and T-Mobile use GSM. (US Cellular uses CDMA.) CDMA stands for Code Division Multiple Access and GSM is short for Global System for Mobile (*Communications*), both of which are terms used to represent the collection of many radio-telephone technologies that comprise the two different systems. CDMA actually describes the technology that is used to keep separate all the data channels that use the same wireless frequency band. Whereas GSM is the name of a standard used to describe the protocols used in digital cellular networks. But then, what is in a name? A rose, by any other name, would still be a rose. By the way, most of the world outside the US uses GSM, so if you need to use your phone over-seas, it will probably have to be compatible with GSM. This is another example of how an open standard can dominate over a proprietary product (think Android over iOS). GSM is an open standard, developed by the European Telecommunications Standards Institute, whereas CDMA is a proprietary technology developed and owned by Qualcomm. (Just to be complete, GSM uses a Time Division technique for keeping channels separate.)

Another difference you may be already be aware of, is the SIM card, or Subscriber Identity Module. GSM uses a removable SIM card as a container for customer information. CDMA does not typically use a SIM card. The SIM card is an integrated circuit chip that is intended to securely store the International Mobile Subscriber Identity (IMSI) number and its related cryptographic key, both of which are used to

identify and authenticate subscriber devices. It's much easier to change phones on GSM networks, because of the removable SIM card. Just take the card out, put it into another phone, and the new phone now has your number. CDMA networks use a different technique to identify and authenticate subscriber devices. CDMA uses a network based database. The phone information has to be put into a "white list" database, that is then used to control access to the network. If you have a CDMA phone with a SIM card, it may be there to support foreign GSM networks and the phone may be called a "world phone" (which may be good to have if you travel a lot). You may also find a SIM card in a newer CDMA phone. It may be there to support the newer faster 4G LTE networks, because SIM cards are part of this new standard. Where did 4G LTE come from? you might ask. Well, so far, we haven't said anything about network speed and that is what 4G LTE refers to.

Most current networks operate at a 3G speed, which translates to a data rate of around 1-2Mbps. 3G has been in use since about 2003. The G only indicates Generation. The 4<sup>th</sup> Generation or 4G provides an almost 10 times increase in speed, so 4G will move data at around 10Mbps. The LTE indicates "Long-Term Evolution", which is a standard for high-speed wireless communications for mobile phones and devices. LTE is the upgrade path for both GSM and CDMA networks. (By the way, 1G was for analog cell phones and 2G was for early digital cell phones.) So now many phones have the appropriate hardware and software that enable them to operate on both 3G and 4G networks of their specific type of network, GSM or CDMA. The cost of a phone that can operate on the 4G network will be higher than a phone that can operate only on the 3G network. (There are many technical details defining and describing the 3G and 4G and even the future 5G standards but I have simplified things so as to not get bogged down in those voluminous and sticky details.)

All of the four major networks have 4G, so if money is not an issue, a 4G phone would be advisable. Also, if you spend a lot of time on the web or regularly stream video, 4G might just be worth the extra phone cost. So, in general, if you expect to transfer large amounts of data, 4G is definitely worth it, but keep in mind that it is very easy to go over your data plan limit when you are working at the higher speed. Finally, if you want to future-proof your phone, get a 4G phone. 4G is only going to get better because that is where network operators are spending their money. Also realize that a 4G phone is backward compatible and will operate on 3G and even 2G networks. You still might consider only a 3G phone if you don't have a need for the faster data rate of 4G, and/or you use it mostly for voice. Also, if you live in an area that doesn't have 4G yet, the 3G phone might be just fine. So, in the long run, you should probably care about the network type so you can make an informed decision the next time you have to buy a phone or phone plan. 

[Go to Page 1](#)

## President's Message – The Tile

**Matt Batt, The Computer Club, Inc., Florida**

**August 2017 issue, The Journal of The Computer Club, Inc.**

**[www.scccomputerclub.org](http://www.scccomputerclub.org)**

**[mbatt453 \(at\) gmail.com](mailto:mbatt453@gmail.com)**

Do you spend as much time looking for your keys or your phone as I do? I've been able to solve this problem using a Bluetooth tracker known as a Tile and an app on my smartphone. The Tile is a small



device about 1-inch square and ¼ inch thick. Here's how it works. I attached a Tile to my key ring. The app in my phone can see the keys and keeps track of their location. When I can't find my keys, I can make the Tile ring from my phone if it is within 100 feet. If I have my keys and have misplaced my phone, I can make my phone ring from the tile on my keys even when it is on silent. I use the ringing feature a lot.

If my phone gets out of range of the tracker, the app records the physical location that the keys were last seen. Later, when I'm looking for my keys, the app can give me the address and mark on a map where I left them.

I have a Tile tracker attached to my USB drive that I am constantly leaving in someone's house or the lab after I repair a computer. When I discover that I've misplaced my USB drive, the app can tell me where I left it.

I was traveling in Western Scotland last year. We were on one of those tours where we made several stops that day. I left my pack, which had a tracking Tile, at the restaurant where we ate lunch, but I didn't realize that until later that afternoon when we were many miles away. The app told me the exact address where I had left it. I was able to call the restaurant and they were nice enough to mail the pack to a place where I could pick it up a few days later.

I keep a tracking Tile in my luggage when I travel. Using the app, I can tell when my luggage is approaching baggage claim.

Another incredible feature of these Tiles is that if the item has been stolen or isn't where you last saw it, you can select "Notify When Found" in the app. When any other Tile user passes close to your missing item, you'll automatically be notified of its location. This feature works 100% anonymously and automatically to protect your privacy. I was traveling from Montreal to Milwaukee and my luggage didn't make it. I reported it lost to the airline and selected "Notify When Found" in the app. After a few frustrating days, when the airline finally shipped my luggage to Milwaukee, someone passed by it that had the app and I was notified the luggage was in Milwaukee before the airline could even notify me. There are 10 million Tiles in use, so it is no wonder that someone passed by my luggage.

Can you tell I'm sold on these things? The cost is 4 Tiles for \$70. The website is [www.thetileapp.com](http://www.thetileapp.com). Also, they are an excellent gift. 

[Go to Page 1](#)



**You have just read an issue of The Digital Viking.**

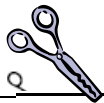
*Would you like to receive this delivered directly to your email or business each month?*

As a member of TC/PC, the Twin Cities Personal Computer Group, one of the benefits is reading this monthly publication at [www.tcpc.com](http://www.tcpc.com).

As a member of TC/PC, you may attend any or all of the monthly Special Interest Group (SIG) meetings and be eligible for software drawings. The small membership fee also includes access to real-live people with answers via our helplines, discounts, and various other perks.

Does membership in this group sound like a good way to increase your computer knowledge?

It's easy to do! Simply fill in the form below and mail it to the address shown.  
(If you use the form in this issue, you will receive an extra month for joining now.)



<b>Here's the info for my TC/PC Membership:</b>	<b>I'm signing up for:</b>	<b>2/18</b>
Full name _____	<input type="radio"/> Individual/Family Membership (\$18)	
Company name _____	<input type="radio"/> Business Membership (\$100)	
Address _____	If an existing member your # _____	
City _____ State _____ Zip _____	<b>Make checks payable to:</b>	
<input type="radio"/> Home <input type="radio"/> Business <input type="radio"/> Change address: <input type="radio"/> Perm. <input type="radio"/> Temp. 'til _____	<b>Twin Cities PC User Group</b>	
Home phone _____ Work phone _____	<b>341 County Rd C2 W</b>	
Online address(es) _____	<b>Roseville, MN 55113</b>	
Where did you hear about TC/PC? _____	<b><u><a href="http://www.tcpc.com">http://www.tcpc.com</a></u></b>	
<input type="radio"/> I DO NOT want any of my information disclosed.	<input type="radio"/> Check # _____ <input type="radio"/> Bill me	
<input type="radio"/> I DO NOT want to receive any mailings	<input type="radio"/> New member <input type="radio"/> Renewal <input type="radio"/> Prior member	
	I'm interested in:	
	<input type="radio"/> Training classes <input type="radio"/> Volunteering	
	<input type="radio"/> Special Interest Groups: New User, Access, etc.	
	List here:	
<b>Administrative Use Only</b> Rec'd _____ Chk# _____		

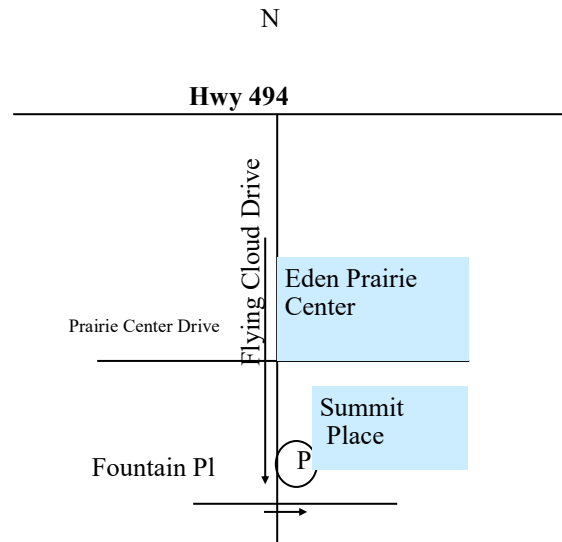
**February 13, 2018**  
**General Meeting 7:00 PM**

## **Free Code Camp**

**Presenter: Mike Boardley**

**Summit Place**  
**8505 Flying Cloud Dr.**  
**Eden Prairie, MN 55344**

**More info and map: [www.tpc.com](http://www.tpc.com)**



341 County Rd C2 W  
Roseville, MN 55113

***FIRST CLASS MAIL***