The Memory Map

Canton Alliance Massillon Computer Users Group
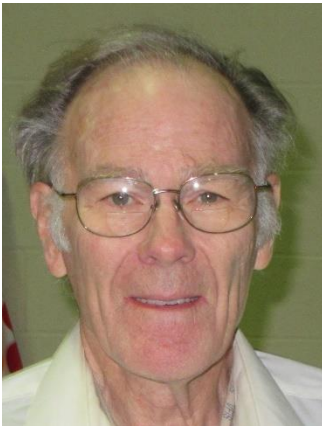
CAMUG

Computer Superlatives
by Tim W. Elder, Treasurer, CAMUG
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Trivia is popular, so, "What is FLOPS?" Yes, the verb tense is correct. The reply is at the end. Until then here are some amazing statistics about "fairly fast" computers.

Supercomputers, introduced in the 1960s, are used in computationally intense tasks in several different fields including: quantum mechanics; molecular modeling; weather forecasting along with climate research; and physical simulations such as the detonation of nuclear weapons and the earliest moments of the universe. Still other uses are combustion science, including understanding the efficiency of combustion in internal combustion engines; energy storage, including exploration of durable, rechargeable batteries; and nuclear energy, including studies of operations to increase practical burn-up in order to reduce the volume of spent fuel.

The "Atlas" at the University of Manchester in 1962, was among the first of a series of supercomputers from IBM and CDC (Control Data Corp.) The Atlas operated at about one million instructions per second. Supercomputers achieved their speed by using compact designs and massive parallelism. (From Wikipedia.)

In August of 2014, Los Alamos National Laboratory (LANL) installed a computer from Cray named "Wolf." Its speed was amazing for the time at 197 teraflops; memory was 64 Gbytes—and you thought your computer at 4 or 8 gigabytes of memory was pretty good! How about your 4 or maybe 8 cores? Wolf has 9856.

38 years before this, 1976, the Cray-1 supercomputer, was installed, also at LANL. This Cray-1 was the fastest at that time at 160 megaflops with an 8-megabyte main memory. For speed, it was built in a C-shape so that no wire was over 4 feet long. Computers that fast and compact generate a lot of heat; the cooling system was Freon mixed with some oil for the compressor. The Cray-1A weighed 5.5 tons and used 115 kW of electrical power—<u>not</u> including the cooling. The cost was "only" 7.9 million dollars, plus another million for the disks. When built, this was awe-ful fast, but look below at what came later.

In 2015, China's Tianhe-2 benchmarked at 33.86 petaflops. That is, 33.86 with 13 zeros after it, floating point operations every second. It has 3.12 million cores!

How is this tremendous computing power being utilized? See some of the uses above. The computations required for the understanding of many problems would take days or weeks on a "normal" computer. Thus, the time required to obtain an answer is a major benefit of the supercomputer. Of course, less time equates to quicker results from the research it is supporting.

As of November 2017, all of the world's fastest 500 supercomputers run Linux-based operating systems.

How does flops compare with Hertz, the value we usually see in advertising? The two measures are not directly related, because they are two different things. Hertz has units of cycles per second, but a floating-point operation generally takes more than one cycle. In addition, floating-point values can store a much wider range of numbers than fixed-point values; thus, even though they take longer to process, they are an important concept that seems to be ignored in consumer advertising. Flops is more indicative of performance, but still is only one consideration.

To provide some way to compare the speed, a typical 2013 smartphone operated at roughly 1 gigaflops, making it faster than the first supercomputer.   Today's smartphones are even faster, of course

After the above was drafted, I received an article saying that the USA again has the most powerful supercomputer; it is called "Summit". It measures at 200 petaflops, about a million times faster than a typical laptop. The 37000 processors and 4608 servers take 4000 gallons of water per minute for cooling. A researcher hopes that Summit's power will help analyze about 15 terabytes of data expected to arrive each night from a survey telescope.

After slinging those superlative prefixes at you, you likely need a guide. The prefix mega means million, which can be written as 10E6; that is, 10 with the exponent 6, or 1 followed by 6 zeros. Giga, then, is 1000 times as much, or a billion. Abbreviated G, it is written10E9, or one followed by 9 zeros. Continuing this pattern: tera, T, is 10E12; and peta, P, is 10E15, or a quadrillion. If you're really into these large numbers, the next prefixes are exa, zetta, yotta, and bronto.

So, what does FLOPS mean? Did you spot the answer above? It's an acronym standing for "Floating Point Operations Per Second." It's usually seen in lower case letters, flops, as used above.

flops

CAMUG July 2018 Meeting Minutes

*Around 6:15 PM Carol Joliat showed parts of a video called "Learning **WhatsApp"**
from Lynda.com. Lynda.com is an online learning platform that can be accessed free
from the Stark County District Library using your library card.*

*WhatsApp is an app for Apple or Android that can be downloaded free from the App
Store or Google Play. This app can be used to send and receive text messages, either
one-on-one or within a group. It can also be used for one-on-one video chat and to
send videos and photos. This app must first be installed on a cell phone and is linked
to the cell phone number; then it can also be used on a tablet or pc.*

REGULAR MEETING …

President Dennis Smith called the 419th meeting of CAMUG to
order at 7:00 PM on Monday July 16, 2018, at Holy Cross
Lutheran Church. There were 15 member families present. Since
that is more than 15% of the membership, the meeting was
declared valid.

The On-Time Drawing: The total number of family members is
30 and members are assigned numbers sequentially from 0 to
30 alphabetically. The first person whose name was drawn
(#17, Cecelia Kramer) was not present. On the next draw, #3,
Jan Bredon was selected. Jan was present, was wearing his
badge, and was awarded the prize.

There were no visitors. Dennis asked members to give suggestions for future meeting
topics to any board member. He also reminded members that they get a renewal credit
of $5 for each new member they bring in.

Program: The club held its first Member Roundtable. Jan Bredon had suggested the
program and had printed a sheet with possible topics. The chairs were arranged in a

circle and members discussed several topics. The first topic was how people remember stuff; Jan Bredon uses Notes and Mike Charney uses Evernote which is available on all platforms and Mary Ann Kravos uses Excel. Other topics included the difference between a laptop and a tablet; how to connect a laptop or tablet to a Wi-Fi network; using YouTube videos to figure out how to fix many things; and several Facebook and phone issues. The discussion ended with members reminiscing about early computers and technology from their work in the 70s and 80s. It was agreed to repeat this kind of program.

Raffle Drawing: Liz Milford won the first prize and chose the money. Mary Ann Kravos won the second prize and chose a black tool bag.

Q&A: There was no separate Q&A as it was part of the Roundtable discussion.

At 8:50 PM Mary Ann Kravos moved to adjourn the meeting, Bernie Newsome seconded the motion, and the meeting was adjourned.

Respectfully submitted,
Liz Milford, Secretary

Thanks to Jan Bredon for the photo of Carol Joliat's presentation.

CAMUG Board Meeting Minutes 7/23/2018

CAMUG Board Meeting Minutes…

President Dennis Smith called the July 23, 2018, Board meeting of CAMUG to order at 7:02 PM at Panera Bread on "The Strip" in North Canton. There were 4 of the 7 Board members present; therefore, the meeting was declared valid.

President	Present	Dennis Smith	president@camug.com
Secretary	Present	Liz Milford	secretary@camug.com
Treasurer		Tim Elder	treasurer@camug.com
Senior Director	Present	Carol Joliat	directors@camug.com
Director		Jan Bredon	
Director		Bernie Newsome	
Director at Large	Present	Morris Dingman	
Web Page		Michael Charney	webmaster@camug.com
Software and Book Review		Jan Bredon	
Membership	Present	Carol Joliat	membership@camug.com
Newsletter	Present	Liz Milford	newsletter@camug.com
Computer 101	Present	Carol Joliat	
Ways and Means		Jan Bredon and Madeline Burkes	
Attending Club Members		Alice Lungociu	

Review July Club Meeting Minutes:
Carol Joliat moved to accept the July Meeting Minutes as distributed at the meeting. Morris Dingman seconded the motion. The Club Meeting Minutes were approved unanimously.

Review the June Board Meeting Minutes:
Morris Dingman moved to accept the Board Meeting Minutes as published in the Newsletter. Carol Joliat seconded the motion. The Board Meeting Minutes were approved unanimously

Review July Club Treasurer's Report:
Liz Milford moved to accept the Treasurer's Report as emailed. Carol Joliat seconded the motion. The Treasurer's Report was approved.

Membership Report:
There are currently 30 Member Families. Robert Hirst renewed in July.

Discussion August 20th 6 PM 101 Meeting Topic:
Dennis Smith and Liz Milford will talk about using audio books from the library.

Discussion August 20th 7 PM Regular Meeting Topic:
Dennis Smith will discuss using free software and obtaining it safely

Submitted pending Board approval,
Liz Milford, Secretary

About CAMUG

Our club is open to anyone with an interest in computers and technology. A household membership is only $20 per year, and a visitor can attend two meetings free without any obligation.

Monthly meetings are held the third Monday of the month at Holy Cross Lutheran Church, 7707 Market Ave. N in North Canton, Ohio. Computer 101 begins at 6:00 PM and the regular meeting begins at 7:00 PM. At every meeting, we cover topics ranging from cell phones to computers and from software to the internet and networking. Board meetings are held the fourth Monday of the month at 7:00 PM at Panera Bread on The Strip. Members are encouraged to attend the board meeting although only board members can vote.

The club mailing address is CAMUG, PO BOX 80192, Canton, OH 44708, and the website is http://www.camug.com.

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CAMUG is a member of the Association of Personal Computer User Groups (APCUG) which is a worldwide organization that helps groups devoted to the world of technology by facilitating communications between member groups and industry.

APCUG Presents
FREE 2018 SUMMER VIRTUAL TECHNOLOGY CONFERENCE (VTC)
SATURDAY, August 18
1:00 pm – 4:00 pm ET

These are live presentations on interesting topics. See the details in the email that contained this newsletter. The email gives instructions, links to the registration site, and descriptions of the presentations.

Membership Report

July 2018

by Carol Joliat

Total Family Memberships – 30
Renewal: Robert Hirst

CAMUG Monthly Summary

Tim W. Elder, Treasurer   7/16/18

	Cash	Checking	Total
Start Balances	$60.00	$1,926.70	$1,986.70
Total Income	$27.85	$20.00	$47.85
Total Expenses	$5.00	$25.00	$30.00
Transfer	-$22.85	$22.85	$0.00
End Balances	$60.00	$1,944.55	$2004.55

CAMUG Officers

President: Dennis Smith 330-477-5893
Secretary: Liz Milford 330-896-4284
Treasurer: Tim Elder 330-875-2323
Senior Director: Carol Joliat
Director: Jan Bredon 234-564-0045
Director: Bernie Newsome 330-232-5083
Director at Large: Morris Dingman
330-877-1479

Membership: Carol Joliat
Asst. Membership: Alice Lungociu
Web Page: Mike Charney 330-833-0329
Newsletter: Liz Milford 330-896-4284
Tim Elder 330-875-2323
Computer 101: Carol Joliat
Ways and Means: Jan Bredon
Madeline Burkes

List of Members

Name	E-Mail
Albright, Jim	jima
Bredon, Jan	janb
Brugger, Bruce	bruceb
Burkes, Madeline	madelineb
Casey, Kathleen	kathleenc
Chapman, Lila	lilac
Charney, Michael	michaelc
Conley, Rose	rosec
Crawford, James W.	jimc
Dingman, Morris	morrisd
Elder, Tim	time
Hirst, Gina	ginah
Hirst, Robert	roberth
Joliat, Carol	carolj
Klipec, Bruce	brucek
Kramer, Cecelia	ceceliak
Kramer, Pat	patk
Krantz, David	davidk
Kravos, Mary Ann	maryannk
Lungociu, Alice	alicel
McCoy, Myra	myram
Meiser, Ann	annm
Milford, Elizabeth	elizabethm
Newsome, Bernard	bernardn
Noyd, Hal	haln
Parker, Cherie	cheriep
Ponzani, Doris	dorisp
Schaefer, Gerald	Geralds
Sell, Tom	toms
Smith, Dennis	denniss
Trompower, Gary	garyt

To email members, use the email name above followed by @camug.com

Visit our Home Page

http://www.camug.com

Need help
with your electronic gadgets?

CAMUG

Canton Alliance Massillon Users Group
Computer Users Group

Assistance for users of all ages and skill levels

When: 3rd Monday each month

Where: Holy Cross Lutheran Church
         7707 Market Ave. N
         North Canton OH

Time: 6pm Computer 101 (Less Advanced)
         7pm Main Meeting

Ongoing topics include:

Computers	Tablets	Digital photography
Smart phones	eBooks	Toys & Gadgets

www.camug.com