The Memory Map

CAMUG

Canton Alliance Massillon Computer Users Group

Dan's Desk

Computer Fundamentals #2

By Dan Douglas, President, Space Coast PCUG, FL
April 2018 issue, The Space Coast PC Journal
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Here is part 2 of my series on "Computer Fundamentals" - a series of articles to explain the fundamentals of computers, programming and their usage that will hopefully deepen your understanding of how it all works and why things are the way they are.

This time we will examine two core parts that make any computer more than an assortment of electronic components:

- the operating system (OS)
- a program (app or application)

Both are software, that is many lines of programming code that performs a set of functions that must be loaded onto a hardware platform to operate. Hardware is the real set of electronic components that make up a computing device. A typical hardware desktop has the following core parts:

- a motherboard
- a central processing unit or CPU
- one or more memory chips
- storage devices (DVD/CD/hard drive, etc.)
- a video display
- input devices – keyboard, mouse, touchscreen, etc.

The OS is the programming code that allows the hardware to do something. Without an OS you get a blinking cursor and nothing else. It is often called the system software to differentiate it from application software. The OS allows the hardware to process application programs written in any number of languages to operate on a given hardware platform. In essence, the OS translates certain instructions from the app to perform specific tasks using the hardware. The OS controls hardware devices using

'drivers' which translate instructions into commands that a specific piece of hardware can perform. The OS also controls the allocation of the system memory, usually called Random Access Memory or RAM. RAM is the memory sticks or chips that every computing device contains that is required to load instructions into to trigger some activity. Typically, a desktop or laptop computer contains around 4GB today. All the most popular operating systems can also allocate a file on a disk drive to serve as 'virtual memory' which effectively doubles the amount of memory available for the OS to assign to program tasks.

An app is the piece of software that works in conjunction with the OS to allow a user to process some input, do something with it and produce some output. Each app on your smartphone is a specialized piece of software designed to do something such as look up the cheapest gas stations to my location or tell me what the movie times are at the local cinema. The user interface on a PC typically uses icons (those shortcuts on your desktop) for the user to click on, using a mouse or a keyboard or to touch on a touchscreen, to start a specific program. The OS intercepts the start action and loads the program into the correct amount of memory for it to execute. The program will ask for certain files to be opened or created and the OS uses device drivers to access the storage media or the network to create or access the file information. The program will then take some action using that data, such as displaying some information, calculating something using the data, or printing a map. Perhaps you will choose to print the results of the data being processed in which case the OS will use a device driver to pass the desired report to the printer in a format that that specific printer can understand and handle as a printed report. As a final step you may instruct the program to save any updates that you made at which point the OS will again access the storage media and tell it to write the data in a file.

In the next part we'll look at the evolution of operating systems and basic file systems.

Dan's Desk

Computer Fundamentals #3
By Dan Douglas, President, Space Coast PCUG, FL
May 2018 issue, The Space Coast PC Journal
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Here is part 3 of my series on "Computer Fundamentals" - a series of articles to explain the fundamentals of computers, programming and their usage that will hopefully deepen your understanding of how it all works and why things are the way they are.

This time we will examine the evolution of Operating Systems and what files are.

Prior to the mid-seventies, the term Computer typically referred to one of two types of computing devices. The oldest was the early types of accounting or tabulating machines. These machines were the foundation of the IBM computing business for many years ranging from the 1940's to as late as 1976. They were relatively simple machines that could read numbers from punch cards, manipulate the numbers and print the results. Some of the 'programming' consisted of boards that had patterns of electrical circuits that were selected to perform predetermined functions (add, subtract, etc.) by connecting them by placing jumper wires between functions. The operating system on these machines was essentially fixed in place for a single purpose – to perform accounting functions.

The series of computers during the 1960's contained what we would consider today to be a proper operating system that required the more advanced capabilities of the post vacuum tube generation of computers. The IBM 360 series of computers started with a DOS/360 OS, which just like a PC DOS system, could only perform one task or program at a time. All the memory installed on the computer was essentially used by the executing program. IBM soon evolved the DOS/360 OS to OS/360 which became the most popular multi-programming system. There were two main variations of this:

- Multiple Fixed Task (MFT)
- Multiple Variable Task (MVT)

MFT allocated the physical memory into fixed regions or partitions. This allowed two or more programs to run simultaneously – true multi-tasking! The computer operator had to make sure that each program had its memory requirements known prior to trying to run it or it would not be able to load properly. It was also possible through operator commands to reallocate the memory as needed to create one large partition for the really large programs. MVT was used on the larger mainframes where memory could be allocated as needed by the program dynamically and each program ran in its own memory space. This OS has evolved many times since the 1970's but the essentials are the same.

A technique of using virtual memory reached the mainstream OS during this period. Virtual memory used external storage space, such as a disc file, to extend the physical memory space to typically double the memory available. Each program uses only a small portion of program code at any point in time, so virtual memory allocates the required memory into virtual pages that can be written to the disc file when not needed and then swapped back into real memory when required. Your PC or Mac uses this same process today.

File creation really matured with the release of OS/360 which allowed an organization to name the files into directory layers like a project.user.filename structure. A computer file is a method for recording data in a computer storage device. Just like words can be stored on a page, information be written to a computer file. Here's how Wikipedia describes computer files: "There are different types of computer files, designed for

different purposes. A file may be designed to store a picture, a written message, a video, a computer program, or a wide variety of other kinds of data. Some types of files can store several types of information at once.

"By using computer programs, a person can open, read, change, and close a computer file. Computer files may be reopened, modified, and copied an arbitrary number of times.

"Typically, files are organized in a file system, which keeps track of where the files are located on disk and enables user access."

In a Windows OS, the file name is usually of the form name.type. The name can be used to easily identify what the contents of the file may be about, and type is used to determine the correct program to be used to access that file. A file called 'my best song.mp3' tells the Windows OS to open this file with the default program used to play .mp3 file types, such as with iTunes or the Windows media player program.

There is a lot more to files, such as what are databases and the various methods of accessing and storage of files (formatting, NTFS, FAT, FAT32, etc.) but that's a topic for the more technically inclined audience. I

In the next part we'll look at the common program languages that programmers have used to accomplish work on a computer.

Next CAMUG Meeting, January 21

6:00 PM: Show and Tell: Did you get any new technology recently?

7:00 PM: Roundtable Discussion: Our second discussion of this type, this is a time to share our concerns, questions, and concerns.

Delicious Food and Great Prizes at our December Meeting

CAMUG December 2018 Meeting Minutes

No 6 PM "Computer 101" session was held this month to allow time for set-up of the Christmas party at 7 PM.

Regular Meeting ….

President Dennis Smith called the 424th meeting of CAMUG to order at 7:00 PM on Monday December 17, 2018, at Holy Cross Lutheran Church (North End). There were 17 member families present. Since that is more than 15% of the membership, the meeting was declared valid. No visitors were present and no one renewed.

The "On Time Drawing" was held. On the first draw #12 for Gina Hirst was selected, but Gina was not present. On the next draw #14 for Carol Joliat was selected. Carol was present, was wearing her badge, and was awarded the On-Time Drawing prize.

APCUG had sent a Certificate of Participation to Liz Milford, Newsletter Editor, for entering the CAMUG newsletter into the APCUG Newsletter Contest. Dennis presented the certificate to Liz. He also thanked all the board members who served the past year.

Nominations and Elections for 2019 were held.

One-year Director at Large: Carol Joliat was previously nominated and accepted the nomination. No additional nominations were offered. Jim Albright moved that nominations for 1-year Director be closed. Lila Chapman seconded the motion.

Three-year Director: Morris Dingman was previously nominated, but he declined the nomination. Jan Bredon then nominated Mike Charney who accepted the nomination. No additional nominations were offered. Jan Bredon moved that nominations for 3-year Director be closed. Jim Albright seconded the motion.

Treasurer: Tim Elder was previously nominated and had accepted the nomination. No additional nominations were offered. Bruce Brugger moved to close nominations for Treasurer. Liz Milford seconded the motion.

Secretary: Liz Milford had been previously nominated and she accepted the nomination. No additional nominations were offered. Jim Albright moved that nominations for Secretary be closed. Bruce Klipec seconded the motion.

President: Dennis Smith was previously nominated and accepted the nomination. No additional nominations were offered. Jan Bredon moved that nominations for President be closed. Bruce Klipec seconded the motion.

Since all positions had only one candidate, Alice Lungociu moved to accept the election of all candidates by acclamation and Tim Elder seconded the motion. The motion passed.

Liz Milford moved to close the business portion of the meeting. Lila Chapman seconded the motion. The business meeting thus ended at 7:20 PM and the Christmas Party began.

After enjoying a delicious covered dish meal, a prize raffle was held. Every member family was given one raffle ticket for their membership and a second ticket if they brought food. Every family had two tickets, and 17 families were present, so there were 34 tickets drawn in each round. There were enough prizes for several rounds.

Among the prizes were 3 cash envelopes. Each envelope contained 3 bills and one had $50, one $35, and one $15. One envelope was placed on the table at the beginning, the second after 11 tickets had been drawn, and the third after 22 tickets had been drawn. The cash envelope winners were Dennis Smith: $50, Jan Bredon: $35, and Liz Milford: $15. There were also five licenses for Acronis Disk Backup spaced throughout the first two rounds of tickets. The winners of Acronis Disk Backup were Madeline Burkes, Tim Elder, Hal Noyd, Morris Dingman, and Liz Milford.

All other prize winners were not recorded.

Submitted pending Board approval,
Liz Milford, Secretary

News from the APCUG Regional Advisor

Coming up shortly on February 9th will be the first Virtual Technology Conference (VTC) of 2019. You'll be getting all the details by email in a few weeks. These conferences are held every three months and are live presentations about interesting technology topics. These are later posted on YouTube; search for APCUG on YouTube. CAMUG has shown several of these presentations as programs.

Also, please help spread the word about the terrible Social Security scam that's going around. Last year people lost millions of dollars from it. The phone call comes in (a recording no less) that informs you that your SS number has been compromised or stolen or something and that you need to protect your money by transferring to a safe place. And at the same time, you're told that if you don't comply a warrant for your arrest will be issued. The IRS or the Social Security Administration will NOT ever call you regarding problems. You should receive official mailings from them. But even those, check them out with someone (or go directly to the source) before you send any money anywhere.

John Kennedy, APCUG Regional Advisor

CAMUG Board Meeting Minutes 12/17/2018

CAMUG Board Meeting Minutes…

President Dennis Smith called the December 17, 2018, Board meeting of CAMUG to order at 9:20 PM immediately after the December Meeting, Christmas Party, and Raffle. All 7 of the Board members were present; therefore, the meeting was declared valid. Incoming board members were present also.

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

Review the November Board Meeting Minutes:
Jan Bredon moved to accept the November Board Meeting Minutes as published in the Newsletter. Tim Elder seconded the motion. The Board Meeting Minutes were approved unanimously

Review December Club Treasurer's Report:
The Treasurer's Report didn't exist yet as it is normally created during the week between the Main and Board meetings, so this item was omitted.

Membership Report:
Carol Joliat reported that there are currently 28 Member Families. There were no renewals

Discussion January 21, 2019, Meeting
6 PM Sig: Show and Tell
7 PM Regular meeting: Round Table Discussion

Old Business:
Carol Joliat has submitted our club information to *Insight for Seniors*, a free resource guide for those age 60 and over. *Insight* is found at various facilities in Stark County,

including Aultman hospital locations, and online at insightforseniors.com. We hope to let others know about CAMUG and attract new members.

New Business:
There was a brief discussion about the club Facebook page.

Motion to Adjourn:
At 9:31 PM Liz Milford moved to adjourn, Bernie Newsome seconded the motion, and the meeting was adjourned.

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.

"The Memory Map" is a non-copyrighted newsletter. Permission is given to reprint the original articles as long as full credit is given to the author and source. The publication of information in this newsletter constitutes no guarantee of accuracy, and its use by readers is discretionary. Opinions expressed are those of the authors and not necessarily those of CAMUG.

CAMUG is a member of the Association of Personal Computer User Groups. APCUG is a worldwide organization that helps groups devoted to the world of technology by facilitating communications between member groups and industry. It offers the Virtual Technology Conferences, provides newsletter articles, and has a list of speakers for club programs.

Membership Report

July 2018

by Carol Joliat

Total Family Memberships – 28
Renewals: None

CAMUG Monthly Summary

Tim W. Elder, Treasurer 12/17/18

	Cash	Checking	Total
Start Balances	$60.00	$1791.29	$1851.29
Total Income	$0.00	$0.00	$0.00
Total Expenses	$5.00	$112.73	$117.73
Transfer	-$0.00	$0.00	$0.00
End Balances	$55.00	$1678.56	$1733.56

CAMUG Officers

President: Dennis Smith 330-477-5893
Secretary: Liz Milford 330-896-4284
Treasurer: Tim Elder 330-875-2323
Senior. Director: Jan Bredon
                    234-564-0045
Director: Bernie Newsome 330-232-5083
Director: Mike Charney 330-833-0329
Director at Large: Carol Joliat

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?

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