Stephen FREY:
DEVELOPING A GRAPHICAL PROGRAMMING SYSTEM

—Contents—

SAVE A TREE (or at least a branch)! If you prefer to print your DataBus rather than read it directly from a monitor, don't print page 17 unless you wish to become a member or renew your membership.

DMA

ESTABLISHED IN 1976, DMA is a group of Dayton-area professionals and enthusiasts in the field of computing and digital information technology. General Membership Meetings are usually held on the last Tuesday of each month. DMA has a number of Special Interest Groups (SIGs) in areas ranging from digital investing and genealogy to the Linux operating system. Each SIG meets according to its own schedule. DMA is a member of the Association of Personal Computer Users' Groups (APCUG) and the Affiliated Societies' Council (ASC). Click on any of the logos—including our own (top left)—to go to that organization's Web site.

Submissions …

THE DATABUS welcomes compliments, complaints, suggestions, and especially articles. We can accept articles in ASCII, or as attachments in plain text, Microsoft Word, Open or Libre Office Writer, or, yes, even in WordStar (a word-processing program that goes back to about 1980!). Send articles to:

Editor@DMA1.org

All articles are subject to editing for spelling, grammar, usage, and space. Retain a copy of your work, as THE DATABUS cannot be responsible for loss. When articles are of roughly equal quality and importance, those by paid-up DMA members receive preference.

ALL REGISTERED TRADEMARKS, for example: the DMA Arrow, APCUG, IBM, Realemon[!], or ZOOM, are the property of their respective owners. However, the Registered Trade Mark symbols (® or ™) have been omitted for better readability. The Editor occasionally inserts comments into articles. Such comments are sometimes preceded by the phrase: "EDITOR'S NOTE," are often in square brackets [like these], and are always in sans-serif type, like these paragraphs.
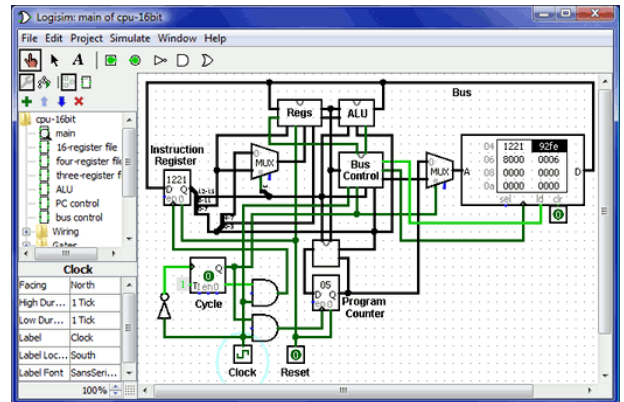
THE DATABUS is written and published by volunteers. We do not give professional advice on hardware, software, or network installation, repair, security, or troubleshooting. If you need expert assistance or repair for your digital device or network, please seek the advice or services of a qualified professional.

August Meeting: 7:00 P.M., Tuesday, the 29TH
<u>No</u> Driving—<u>No</u> Charge*

* This is a "hybrid" meeting: via ZOOM, but also in person. Come at 6 P.M. if you wish to join us in person for dinner at T. J. Chump's Restaurant in suburban Huber Heights, next door to the Meijer's Supermarket. Click *here* for a map. The restaurant has free parking. It is also accessible via RTA bus routes 18 and 19, but there is a short walk from the bus stop in the Meijer's department store parking lot to the restaurant. *Guests welcome—invite a friend!*

AUGUST MEETING: STEPHEN FREY:
DEVELOPMENT OF A GRAPHICAL PROGRAMMING SYSTEM

COME TO THE AUGUST MEETING and learn about large commercial HVAC, Heating Ventilating and Air Conditioning system controls in the 70s and 80s, the birth of Direct Digital Control in the late 1970s, writing a BASIC compiler, and creating and using a Graphical Programming System. Also known as Visual Languages, Function Block Programming and Iconic Programming, these have become the standard programming method used in the HVAC controls industry and have moved into many other applications. Lab View provides graphical programming and configuration of instrumentation and Lego Mindstorms software programs robots. Other Graphical Programming tools create models and simulations and provide tools for simplified assembly of blocks of code. Programming environments such as Scratch, Blocky, and MakeCode are considered Visual Languages.

This system began with my hacking the programming of a data gathering panel to learn how it worked and explore what might be done with it. I reverse engineered that existing product, disassembled its object code and wrote a tiny BASIC compiler that could be used to write control programs for it making it a Direct Digital Controller. The idea didn't fly with the older engineers who had little experience with programming. That lead me to create Graphical Program Generation. The engineers drew the control systems on their drafting boards, frequently using standard company drafting templates for the control devices and drawing lines between them to show the interconnections. I reasoned that they could do the same thing on the computer screen and a program could convert that drawing into a program to implement the control system. I developed the system including the EPROM reader/writer, disassembler, tiny BASIC compiler, drawing tool, and the graphical converter on my TI-99/4 and later a TI-99/4A home computer. It was later migrated to a JC/85/10 computer and an HP 85. I later migrated it to the IBM PC DOS BASIC and Quick BASIC environment and then to the Windows Visual BASIC environment. It became a general purpose Graphical Programming tool that can be used for many applications. What started as a program running on a TI-99/4 home computer is now a much more flexible tool that runs on modern operating systems. See examples of it programming Direct Digital Controllers.

STEPHEN W. FREY is Assistant Curator of the Dayton Microcomputer Association Computer Museum, and President of Inventors' Council of Dayton. Check his YouTube channel.

... TDB

Minutes are normally published almost two months late, because the Minutes for, say, the July Board meeting must be approved by the Trustees at the *following month's* meeting in early August. They would then appear in the August issue of THE DATABUS, published toward the end of that month. For a variety of reasons, the July DATABUS did not appear. Therefore the June Minutes are also included in this issue.

Trustees' meetings are usually on the *first Monday* of each month, except when that day is a legal holiday, for example: Labor Day in September.

During the epidemic, Trustees began meeting via ZOOM. This was so successful that they decided to continue the practice indefinitely. Meetings begin at 7 P.M. and are open to all DMA members. Request ZOOM credentials (that's a fancy way of saying "an invitation") from Secretary GLADY CAMPION at Tuesday's General Membership meeting.

MINUTES —DMA Board of Trustees
Meeting of Monday, June 5, 2023

CALL TO ORDER
The meeting was called to order at 7:10 P.M. by Gary Coy, via ZOOM.

Trustees present: Gary Coy, Suzette de Guzman, Pat Flynn, Chester Howes , Dave Schwab, Ed Skuya, Mike Stock, and Gary Turner. **Absen**t: Ken Phelps. **Guests:** Mark Camden, Glady Campion, Edwin Davidson.

OFFICERS' REPORTS
President – Gary Coy

The May General Membership meeting went well. Thank you to Ben Kendrick for his talk on "Private Clouds." He showed his years of experience as an IT instructor for New Horizons.

Vice President – Mike Stock

Mike is making his rounds to the SIG groups. He attended the Linux SIG, Genealogy SIG , Network SIG, and Computer Museum meeting this month. Mark Camden told us about the Westside Makerspace, founded in 2019 by a group of University of Dayton graduates and engineers. It originally operated out of a garage, but a pilot project opened in April 2022 in the West Branch of the Dayton Metro Library with the help of COOP Dayton. The project moved out of the library in January and has been operating out of the Dayton Campus of Central State University on Germantown Street. Project Manager Samantha Walker-Baskin said they hope to close on a site for a permanent home by the end of May. The Dayton Diode SIG of DMA may be able to learn from the successes of the Westside Makerspace.

Secretary – Glady Campion

Glady presented Minutes for the May board meeting. Pat Flynn moved the Minutes be accepted as corrected. Ed Skuya seconded and the motion passed with Glady abstaining.

Treasurer – Pat Flynn

Pat presented a report for May.

COMMITTEE REPORTS
APCUG REPRESENTATIVES – Peter Hess, Mike Stock

Watching for news from APCUG.

(JUNE & JULY TRUSTEES' MINUTES—Continued from page 4)

Audit – Glady Campion

No change. Glady is dealing with a relative in Hospice.

Computer Museum – Peter Hess

Members of the Computer Museum project met in May expressed an interest in having a booth at the Tandy Assembly event in Springfield Ohio on September 29-October 1 to promote our Computer Museum and show our collection of Tandy machines.

Mike Stock moved that DMA register for a booth at the Tandy Assembly event. Gary Turner seconded and the motion passed.

Fund Raising – Peter Hess

Efforts are ongoing.

Marketing – Peter Hess, Edwin Davidson, Pat Flynn

Efforts are ongoing.

Membership – Glady Campion

In May, we had 38 Regular, 5 Associate, 0 Student, and 5 Lifetime members for a total of 48. There were 21 in attendance at the May General Membership meeting, with 16 attending in person.

Door Prizes: BJ Kendrick scored the PLA 3D filament in Gold. Stephen Frey grabbed the PLA 3D filament in Black. Pat Flynn chose the Sandisk 128GB flash drive. Gary Ganger chose the Scosche Rhythm+ 2.0 Heartrate monitor. Edwin Davidson won the VL81 video camera fill light. Gary Turner claimed the Finger Pulse Ox.

Web Site Team – Mark Camden, Pat Flynn, Glady Campion, Gary Turner

Mark helped another long-time DMA member with moving his personal Web site to Google Sites. Mark is planning to do a workshop for DMA members sometime this summer.

Programs – OPEN!

May – Thank you to Ben Kendrick for his talk on "Private Clouds".

June – TBD.

Suggestions for future meetings: The Tarnished Side of Cryptocurrency; Fiber Internet; Touchless security from Evolv Technology and how they spot threats such as concealed weapons using digital sensors. Also suggested: Installing Linux on a Google Chromebook, or running Linux on the Windows subsystem for Linux (WSL), or installing Windows on a Linux Virtual Machine

Publications – Martin Arbagi

THE DATABUS was posted for May.

UNFINISHED BUSINESS

Wright State Archives – Martin Arbagi, Glady Campion

Still in progress

Next Board Meeting

The next Board Meeting will be 7:00 P.M. on Monday, July 10, 2023. We will continue to use ZOOM.

List of DMA accounts – Glady Campion

Still in progress

ADJOURNMENT

Pat Flynn moved to adjourn at 8:48 P.M. Chester Howes seconded and the motion passed.

Meeting of Monday, July 10, 2023

CALL TO ORDER

The meeting was called to order at 7:10 P.M. by Mike Stock, via Zoom.

Trustees present: Gary Coy, Pat Flynn, Chester Howes, Ken Phelps, Ed Skuya, Dave

(JUNE & JULY TRUSTEES' MINUTES—Continued from page 5)

Schwab, Mike Stock, and Gary Turner. **Absen**t: Suzette de Guzman. **Guests:** Mark Camden, Glady Campion, Edwin Davidson. Stephen Frey, Peter Hess.

OFFICERS' REPORTS

President – Gary Coy

Several attendees said they liked the video on preserving digital photos, shown at the last DMA meeting.

Vice President – Mike Stock

Mike attended the SBC SIG, Network SIG, Investment SIG, and NASAC this past month.

Secretary – Glady Campion

Glady presented minutes for the June board meeting. **Mike Stock moved the minutes be accepted as corrected. Gary Turner seconded and the motion passed with Glady abstaining.**

Treasurer – Pat Flynn

Pat presented a report for June.

COMMITTEE REPORTS

APCUG REPRESENTATIVES – Peter Hess, Mike Stock

Watching for news from APCUG.

Audit – Glady Campion

No change. Glady is dealing with personal issues.

Computer Museum – Peter Hess

The HVAC system at the workshop needs to be checked and possibly repaired.

Recent donations included a Timex Sinclair, Apple IIe.

Dave Schwab moved that $1000 be allotted for Stephen to cover our portion of any repairs to the HVAC system. Pat Flynn seconded, and the motion passed.

There was more discussion about our presence at the Tandy Assembly in Springfield at the end of September. **Mike Stock moved that we spend $50 to become a sponsor at the Tandy Assembly and $10 for and third attendee. Chester Howes seconded and the motion passed.**

Mike Stock moved that DMA register for a booth at the Tandy Assembly event. Gary Turner seconded and the motion passed.

Mike Stock and Mark Camden are working on a DMA logo that included "Dayton Microcomputer Association".

Fund Raising – Peter Hess

Efforts are ongoing.

Marketing – Peter Hess, Edwin Davidson, Pat Flynn

Efforts are ongoing.

Membership – Glady Campion

In June, we had 34 Regular, 5 Associate, 0 Student, and 5 Lifetime members for a total of 44. There were 22 in attendance at the June General Membership meeting, with 15 attending in person.

Door Prizes: Gary Turner won the 1TB flash drive. Matt Rizer chose the Leather mouse pad. Stephen Frey scored the roll of 3D printer filament. Mark Camden snatched the headset.

Web Site Team – Mark Camden, Pat Flynn, Glady Campion, Gary Turner

Peter asked for a new alias (forwarding address) for, security @dma1.org

Programs – OPEN!

June – Preserving digital Photos, a video by Mark Schulman, APCUG.

(JUNE & JULY TRUSTEES' MINUTES—Continued from page 6)

July – What will 5G mean to You? – A video by Ron Brown, APCUG.

August - TBD

Suggestions for future meetings:

The Tarnished Side of Cryptocurrency; Fiber Internet; Touchless security from Evolv Technology and how they spot threats such as concealed weapons using digital sensors. Also suggested: Installing Linux on a Google Chromebook, or running Linux on the Windows sub-system for Linux (WSL), or installing Windows on a Linux Virtual Machine

Publications – Martin Arbagi

THE DATABUS was posted for June.

UNFINISHED BUSINESS

Wright State Archives – Martin Arbagi, Glady Campion

Still in progress

Next Board Meeting

Next Board Meeting will be 7:00 pm on Monday, August 7, 2023. We will continue to use ZOOM.

List of DMA accounts – Glady Campion

Still in progress

NEW BUSINESS

Use of Zoom

Peter asked for permission to use the DMA ZOOM license for the memorial service for his mother, Virginia Kraus Hess. on November 7. **Dave Swab moved that Peter be allowed to use the ZOOM account for the memorial service. Chester Howes seconded, and the motion passed.**

ADJOURNMENT

Pat Flynn moved to adjourn at 8:57 P.M. Ed Skuya seconded and the motion passed.

Respectfully Submitted,

Glady Campion,

Secretary

SHA256 Checksum for Windows 10

By Cal Esneault, Cajun Clickers Past President and leader of many Open-Source Workshops & SIGs
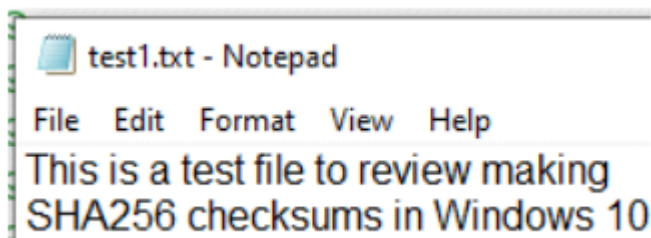June 2021 issue, *CCCC Computer News*
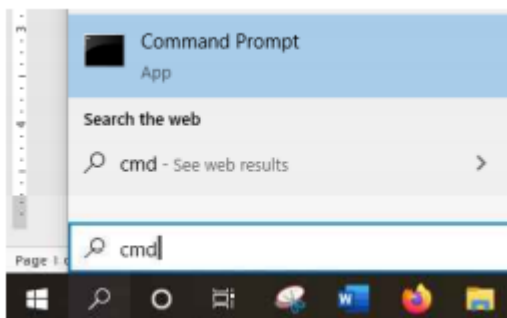www.clickers.org
office (at) clickers.org

A "CHECKSUM" IS COMPUTED from the contents of a file using an algorithm that only considers the actual bytes that are in a file (works for any file type - .exe, .jpg, .docx, etc.). The result of the operation is a checksum, also known as a "hash" code. SHA256 is an industry standard encryption method generating a 256-bit hash, no matter the size of the target file. The hash code is given as 64 hexadecimal characters (each character represents 4-bits, thus 4 x 64 = 256).

No two files will have the same SHA256 hash, even if only *one* byte is changed in the source file. By comparing the hash of the original file to a subsequent hash of a copy of that file, you can verify that no changes have been made and no potentially nefarious code has been inserted. This is one way you can "sign" a document for authenticity or receive certified application code from a known source.

As a test, I created a short text file using Windows 10 Notepad (see below):

Next, I opened the command prompt by typing "cmd" in the search box next to the program "Start" button.

To get the hash, I used the certutil utility (see below, with response).

```
C:\Users\Windows 10\Documents>certUtil –
hashfile test1.txt SHA256
SHA256 hash of test1.txt:
287c24eaa9f4ff5fe71e53a72ddbd7e2ba0bf5ad21
b63d2f6215778b7a04f2e4
```

As a test, I changed the name of the test file and ran the hash again. It gave the same 64-character result.

I ran another test where I changed the capital "S" in the test file to lower case and renamed the file to "test1-bad.text". The hash of this file was:

```
C:\Users\Windows 10\Documents>certUtil –
hashfile test1-bad.txt SHA256
SHA256 hash of test1-bad.txt:
947226813b54354fabb021ff8a026b2391365622e
0e78239b2950c07331e31f8
```

As you can see, any slight change in a file will dramatically change the hash result. Thus, if you have the resultant hash of a file you create, you can guarantee that no changes have been made. This is good for legal issues, and is the underlying approach used for "digitally signed" documents. The SHA264 is used since it is still considered secure. MD5 and SHA1 algorithms are now considered vulnerable by some experts.

Other options, SHA384 and SHA512 are also available, but they have more cryptographic bits and are thus slightly more complex. There are many third-party programs to perform hashing, but I chose to demonstrate the default option that is always available in Windows 10. Hashing is also available in other operating systems. I usually encounter it when verifying the authenticity of downloads of Linux distributions.

[EDITOR'S NOTE: SHA-256 is available free on line [here].]   **... TDB**

Special Section!
Popular Recipies from the 2023 DMA Picnic

Have a special appetizer, salad, or dessert recipe that you've used for the annual DMA picnics? Send it in next summer to THE DATABUS!

Source: *Home Economics Teachers' Salads and Vegetables Cookbook* (revised edition, 1966).

Grandma Wells' Famous Pea Salad (Modified) from a Regena Goodwin, Kansas City, Missouri

Yield: 15 or more servings

✓ 1 (32 oz) bag of frozen green peas thawed—not cooked in microwave—and drained. For the DMA picnic, we added about 1 cup more from another bag.

✓ 3 hard-boiled eggs, finely diced

✓ ½ to ¾ cup finely chopped celery

✓ 4-5 finely sliced green onions with some of the green part

✓ (2-oz) jar of chopped pimentos drained of liquid (but don't rinse)

✓ ~ 6 oz. of an 8 oz brick of Cracker Barrel® (or whatever your preference is) Extra Sharp Yellow Cheddar Cheese, coarsely grated (use larger holes on the grater)

✓ 1 cup of reduced fat (or regular) mayonnaise or more till it all mixes easily to your liking.

✓ Lemon pepper to taste—about four good shakes! (has salt already in it). Use whatever salad flavoring appeals to you!

Combine all ingredients; mix well. Let stand for 30 minutes at least before serving. Store in refrigerator. We kept it in overnight.

Amounts in original recipe adjusted for ~4+ persons:
10 oz. bag of peas
1 jar pimento (2 oz)
¾ cup celery
3 eggs
1/2 C Cheddar cheese
4 green onions
½ tsp. "Salad Supreme" your guess is as good as mine from 1966! We tried Lemon Pepper
¾ cup mayo

—Enjoy! Yours, Ellen Ottoson … Eric says hello

Tabboulé (sometimes spelled *Tabbouleh* or *Tabbouli)*

This vegan salad (no meat, eggs, or dairy products such as cheese are used) is of Near (or Middle) Eastern origin. Leonor and Matthew ARBAGI have prepared it for a number of DMA picnics.

For ordinary (2 to 4 people) consumption …

- 1 bunch ordinary parsley. Fancy varieties, such as Italian flat-leafed parley, are unnecessary. Most of the stems should be discarded. Run the parsley leaves and what remains of the stems through a food processor or blender for a few seconds.

- 2 green onions, chopped. Cut off the roots at the very tip of the onion. Other than the roots, you can use the entire white and green portions of the onion.

- ¼-½ cup burghul (often spelled "bulgur" by people who can't pronounce the *gh* sound). Burghul is whole wheat toasted until it cracks, and can be found in the flour section of many supermarkets. Be careful with how much burghul you use. Too much leads to a soggy mess, especially after dressing (see below) is added. Too little detracts from the taste and deprives the salad of important nutrients such as fiber. The dominant color should be green, not tan. *(See illustration to the right.)*

- Tomatoes to taste. Any red type may be used, from cherry tomatoes to larger varieties. Cherry tomatoes should be halved; larger ones chopped. Tomatoes add color as well as nutrients, but remember what was said in the step just above this one. The dominant color of the tabboulé should be green, not red. *(See illustration.)*

- Mint to taste (dried mint is better than fresh, but for DMA picnics we use fresh mint grown in a large pot in our garden). If the mint is fresh, use more. Dried mint is stronger, so use less.

Combine all ingredients.

Dressing:

The dressing is vegetable oil and lemon juice. Olive oil is more authentic, but not necessary. The juice may be from fresh lemons or from a concentrate, such as Realemon. The classic recipe calls for equal parts of oil and juice, but feel free to vary this. Herbs or spices can be added, but are not authentic.

For the DMA Picnic …

Double or triple all proportions, depending on expected attendance.

Nominations for the DMA Board of Trustees are now open! Terms are three years and Nominees must be …

- at least 21 years of age, and
- dues-paying or associate DMA members for at least one year.
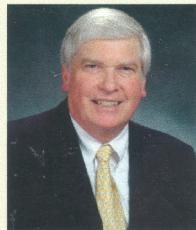
Self-nomination is permitted.
No experience needed!

Contact **GLADY CAMPION** at any DMA General Membership meeting.

DMA Events for Jul 16 – Aug 19, 2023

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Jul 16	Jul 17 **Network SIG** 6:00pm Conf Rm Wilmngton-Stroop Library	Jul 18	Jul 19 **Computer Museum Committee** 7:00pm Onlline	Jul 20	Jul 21 **Python Self-Study** 2:00pm, Online PyFri Discord See http://d8ndl.org	Jul 22
Jul 23	Jul 24	Jul 25 **MAIN MEETING** 7:00pm Online -AND- TJ Chumps 7050 Executive Blvd Huber Heights	Jul 26	Jul 27	Jul 28 **Python Self-Study** 2:00pm, Online PyFri Discord See http://d8ndl.org	Jul 29
Jul 30	Jul 31	Aug 1	Aug 2	Aug 3 **Genealogy SIG** 6:30pm Online gen-sig@dma1.org	Aug 4 **Python Self-Study** 2:00pm, Online PyFri Discord See http://d8ndl.org	Aug 5 **Classic Computers** 3:00pm By phone
Aug 6	Aug 7 **DMA Trustees** 7:00pm Online	Aug 8 **Investment SIG** 7:00pm Online investment-sig @dma1.org	Aug 9 **Dayton Dynamic Languages** 7:00pm Innovation Hub / online http://d8ndl.org	Aug 10 **NASAC** 6:00pm Hustead Fire Dept. 6215 Springfield- Xenia Springfield	Aug 11 **Python Self-Study** 2:00pm, Online PyFri Discord See http://d8ndl.org	Aug 12 **SBC SIG** 2:00pm DARA Clubhouse 6619 Bellefontaine Huber Heights
Aug 13 	Aug 14 **Network SIG** 6:00pm Conf Rm Wilmngton-Stroop Library	Aug 15	Aug 16 **Computer Museum Committee** 7:00pm Onlline	Aug 17 **Linux SIG** 7:00pm 348 Russ Eng Wright State Univ. Colonel Glenn Hwy Beavercreek	Aug 18 **Python Self-Study** 2:00pm, Online PyFri Discord See http://d8ndl.org	Aug 19 **DMA PICNIC**

An updated DMA Calendar
was <u>not available</u> on line at press time!

But click anywhere on the obsolete calendar printed above for a link to our Web site, where an up-to-date calendar will soon be posted.

ABOUT THE DAYTON MICROCOMPUTER ASSOCIATION, INC. (DMA)

By Peter HESS, DMA President, 2018-2020

ALMOST FIFTY YEARS AGO, a small group of computer enthusiasts from the Dayton, Ohio area gathered around a kitchen table looking at, and playing with, an early personal computer called the Altair 680 that one of them had purchased. This computer had been featured earlier on the cover of the January 1975 issue of *Popular Electronics* magazine. Paul Allen had shown the selfsame article about the Altair to Bill Gates, and later, they wrote software together for that computer. Still later — and still together — Allen and Gates founded the Microsoft Corporation.

Shortly thereafter, those Dayton-area computer enthusiasts joined with many others to form THE DAYTON MICROCOMPUTER ASSOCIATION (DMA), now one of the oldest (if not *the* oldest) continuously operating computer user groups in the world. Typically, computer user groups, and the newer iteration, technology user groups, are volunteer-run operations. The DMA is an all-volunteer led, organized, and run 501(c)(3) non-profit organization.

Now, there are hundreds of computer (or technology) user groups in the world, all of which continue to foster improved communication between technological equipment and software publishers and users of their products. User groups (both computer and technology) provide an environment where more experienced technology users introduce additional and advanced techniques to novices.

DMA offers both monthly General Membership Meetings, which cover new and innovative topics including a wide range of generic technological topics, and its Special Interest Groups (SIGs) which address concerns about specific technology interests. There are eight different SIGs sponsored by the DMA, covering such topics as the Linux operating system, various programming languages such as Python, the use of technology to investigate genæology, and digital aids to investing. Neither SIG members nor attendees at DMA General Meetings need be members of the parent organization, though they are encouraged to join so DMA can continue providing its services to the public.

Annual dues for DMA membership, which have not been raised for decades, are $25 for Regular Members, and $12.50 for Family or Associate Members (an Associate Member is one living at the same address as a Regular Member). Nonvoting Student Memberships are *free* to students through age 22. Door prizes at General Meetings, picnics, banquets, and other DMA events, and a variety of both product and service discounts are available to all DMA members.   **... TDB**

Spring Cleaning?

DO YOU have an "old friend," a loved example of technological equipment needing a new home?

Would you like to tell us about how you benefited through the use of that product?

The DMA COMPUTER MUSEUM has already received many donations from some early DMA members, and we are looking for more. As well as needing your old friend, we want to know about how you used the equipment. We are not afraid of having several copies of the same brand and model number of legacy equipment. Our goal is to have quality exhibit space filled with apparatus that works and can be part of many interactive displays.

We are also looking for software and computer product branded merchandise.

While the DMA Computer Museum is not yet ready to have an open house to display our many exhibits, we do have a dry, climate-controlled, secure workshop where we are storing recent donations. The present DMA Computer Museum outreach, which the DMA has offered for over forty years, will continue while we look for a building to house our museum exhibits, workshop, storage, and classroom space.

If you have something which you feel can help the DMA Computer Museum to serve the computing community better, please complete the form at https://www.dma1.org/museum/ and tell us what you would like to donate to the DMA Computer Museum.

- ✓ Please tell friends or family members of the intended plans to help the DMA to serve the computing community better.
- ✓ Please add the DMA to your will or to other planned giving arrangement.

If the you wish, we would be happy to give you credit for your donation — at the very least on signage which accompanies the equipment exhibit. We want to know your computing story.

The DMA Computer Museum is specifically looking for this equipment, as well as much more:

- ♦ LexisNexis UBIQ
- ♦ IBM AT

One of our museum curators will contact you about your donation.

If you aren't already…become a part of computing history!

—Peter Hess,

on behalf of the DMA Computer Museum Committee

Dayton Microcomputer Association Membership Form

Today's date _____/_____/_____

☐ *NEW*   Please credit the DMA member who recruited me: _____

☐ *RENEW*   Contact information below is new ☐ Y   ☐ N

TYPE OF MEMBERSHIP

☐ *REGULAR*

Name _____ Home / Work (_____) _____-_____

Email _____ Mobile Phone (_____) _____-_____

☐ *ASSOCIATE*   Family Associate membership is for a family member living at the same address as a Regular member. Name of Regular member: _____

Name _____ Home / Work (_____) _____-_____

Email _____ Mobile Phone (_____) _____-_____

☐ *STUDENT*   Free Student membership is available to those under 22 years of age, enrolled full-time in a program of higher education. Name of School: _____

Name _____ Home / Work (_____) _____-_____

Email _____ Mobile Phone (_____) _____-_____

Home Address _____

City _____ State _____ Zip _____

INTERCHANGE

Skills & interests you might share with DMA _____

What you hope DMA will provide _____

☐ *SHELL ACCOUNT*   A shell account on the DMA web server provides file storage, hosting of a personal non-commercial website, @dma1.org email alias (forwarding address), all for a one-time fee of $10. A username must be 8 alpha characters. The usual default is last name and first initial, no caps or punctuation. DMA reserves the right of final decision on all usernames: 1st choice _____ 2nd choice _____

DUES AND FEES

Regular membership	$25.00 x ☐ 1yr ☐ 2yr ☐ 3yr	$_____
Family Associate membership	$12.50 x ☐ 1yr ☐ 2yr ☐ 3yr	$_____
Student membership	FREE	$____0.00
One-time setup fee for Shell account	$10.00	$_____
Total		$_____

Note: $10.00 fee will be charged for any returned checks

Make your check payable to: **Dayton Microcomputer Association, Inc**
Mail check and application to: **PO Box 4005**
                                             Dayton OH 45401-4005

Or use Paypal to send your payment to: **membership@dma1.org**

DMA use only

Member#_____	Exp ____/_____	[ ] Cash [ ] Check#_____	[ ] Paypal	Proc by _____
Member#_____	Exp ____/_____	[ ] Cash [ ] Check#_____	[ ] Paypal	Proc by _____
Member#_____	Exp ____/_____	[ ] Cash [ ] Check#_____	[ ] Paypal	Proc by _____

Revised February 25, 2020