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# The Digital Viking



**Twin Cities**  
PC USER GROUP

NEWSLETTER

Minneapolis & St. Paul, Minnesota USA • Vol. 46 No.4 • November 2025

4

## General Meeting

Tuesday, November 11, 2025

7:00 PM

## Civilization: The Video Game

Presenter: Steve Parker

Via Zoom Only

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

**November 2025**

Membership Info.....2

The Road to Unicode.... 3

Use One Drive to Migrate  
to a New PC..... 7

Quick Tip: Full Cotext  
Menus in File  
Explorer.....10

TC/PC Calendar..... 11

Membership Application 12

Maps to Events .....13

Civilization: This video game was originally designed by Sid Meier and Bruce Shelley and the original *Civilization* is widely considered one of the most influential turn-based strategy games ever made. Steve Parker, an avid gamer and a huge fan of Civilization, is going to give us a demo of the game and we can follow along at the November meeting. Should be a fun adventure. . 🖥️

**Note:** All TC/PC Meetings and SIG Groups will be virtual until further notice. Visit [tcpc.com](http://tcpc.com) for info.

**Tech Topics with Jack Ungerleider via Zoom at 6pm before the General Meeting.**



TC/PC is a

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Application form inside back cover

# The Digital Viking

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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

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Editor Sharon Walbran

# The Road To Unicode

By Joel Ewing, President, Bella Vista Computer Club  
Bits & Bytes, July 2024  
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## ***Background***

A "glyph" is a symbolic figure or a character. The most commonly used glyphs in English are the upper- and lower-case Latin letters, A-Z, a-z, the Arabic digits 0-9, a variety of punctuation marks, and various special symbols such as the percent sign used in business. A "font" is a collection of glyphs of a specific style and size.

In documents prepared by hand, the number of glyphs and fonts used in a document were only restricted by the skill of the writer. When mechanized ways of printing became common in the 15th century and beyond, the maximum number of supported glyphs and fonts was restricted by economics and the technology limits of the time. People of my age who learned how to use a typewriter were accustomed to being limited to two fonts, Pica and Elite, and a maximum of about 80 distinct characters. In certain types of documents, it was not uncommon to have to write in some special symbols by hand. To efficiently deal with foreign languages requiring a different alphabet required typewriters with a font customized for that language.

Electro-mechanical teleprinters developed in the late 19th century to automate telegraphy were restricted to upper case letters and digits. Although very slow by today's standards, their successors were used by some early digital computers as a keyboard input device, as a printing device for output, and for their ability as a storage device to punch and read paper tape.

In the late 1940s IBM began to produce punched-card based accounting machines that could do "high-speed" printing of up to 18,000 characters / minute. This speed, which was revolutionary at the time, was achieved by printing an entire line of 120 characters in parallel with a separate printing hammer for each column, at a speed of up to 150 lines per minute, and was made feasible by limiting the device to 48 unique characters: the uppercase characters, digits, and 12 special characters considered essential to business at the time. That "line printer" became the basis for line printers used on IBM's first commercial digital computers in the 1950s, and lack of practical dual case printers was no doubt one of the reasons early digital computers only supported uppercase letters. By the late 1960s dual case print support was available, but at a significant penalty in both print speed and quality. Businesses only used dual case for high-volume, computer-printed documents when it could be cost-justified, which in some cases wasn't until cheap PC-based laser printers became practical as mainframe printers in the 21st century.

## ***Digital Computers and Character Codesets***

Digital computers only work with numeric values internally, so how can they deal with alphabet characters and other symbols? Lady Ada Lovelace, a mathematician who worked with Charles

Babbage's Analytical Engine design in the 19th century 100 years before the construction of practical general purpose digital computers, explained how. Computers would work with non-numeric characters and symbols by using numbers to represent them.

A character codeset allows a computer to represent text by defining a specific mapping between numeric values and specific symbols or glyphs. In the early days of digital computers, it was not unusual for different computer manufacturers to create their own unique character codeset, or to even have different codesets used by different computers from the same manufacturer. This made sharing data between different types of computer systems a problem.

Computers that stored values as decimal digits would use two digits to represent a character or symbol, giving a possible maximum of 100 different characters; although not all values were defined. Computers that stored values as binary digits initially used 6 bits, representing at most 64 unique characters or symbols. Depending on the context in which that data was used, it was also necessary to assign code values to a "space", and to various control functions like tab, newline, backspace, etc. A limit of 64 values was insufficient to represent both upper and lowercase letters, numbers, and the special characters need by business, so only uppercase letters were supported.

By 1970 it was clear that digital computers using binary-based storage were more cost-effective than decimal-based designs, and also that 8 bits should be the minimum used to represent characters, providing up to 256 unique values. Unfortunately, by then the computing world had evolved into two competing families of codes: those based on IBM's EBCDIC code that had evolved from their punched-card technology and was widely used on IBM mainframes, and the 8-bit ANSI codes that contained the 7-bit ASCII code standard as its first 128 characters and was used on most other computer platforms such as Unix, and eventually on Linux, and Windows. Both of these code families had many variants in order to support foreign language requirements and special symbols that weren't included by default, creating a hodgepodge of incompatible codes that complicated storage, processing, and display of character data in a global economy. The issue of codeset confusion couldn't be resolved within the constraints of 8-bit character codes. It would be two decades before hardware costs and processing speeds attained levels where serious consideration would be given to the implementation of larger codesets as a solution.

## ***Unicode To The Rescue***

The Unicode Consortium was started in 1988 with the job of coming up with a single character codeset that would be universal (covering all letters, punctuation, and technical symbols used by all world languages), uniform for efficiency, and unique (each bit sequence only has a single meaning). For example, rather than one single quote mark there are unique codes for left single quote, right single quote, and apostrophe, because in formal printing they all have distinctly different uses and appearances.

Version 15.1 of the Unicode standard in 2023 defines 149,813 unique Unicode characters, and additional characters are being added as the need arises. Obviously, this requires more than just 8-bits (1 byte) to represent this many unique characters. The basic design is based on 32-bit values, but the possible combinations of bits are cleverly restricted so that all Unicode characters can be represented by one 32-bit value (UTF-32), by one or two 16-bit values (UTF-16), or by one to four 8-

bit values (UTF-8). The restrictions on valid bit patterns make it possible to identify whether the next character consists of a single 16-bit or 8-bit value, or if multiple values must be grouped to form one character. A maximum of 1,112,064 valid Unicode code points could potentially be supported, and each code point can be uniquely represented by a 31-bit hex value in the range from 0 to 0x7FFFFFFF. Only a small percentage of those over 2 billion possible hex values map into possible Unicode characters in order to make it easy to distinguish single-byte from multiple-byte character encodings. The rules for taking a Unicode hex value and producing the corresponding UTF-8 or UTF-16 hex values that would actually be stored are simple for a computer but tedious for a human. Except for the first 128 characters (just like the old ASCII), humans would more likely describe a Unicode character by its hex value rather than the actual byte values that would be stored in a computer memory.

An arbitrary Unicode character can be represented by its hex value using the notation U+xxxx, where "xxxx" is a specific hex value for the symbol. For example, if you do a search for a "Unicode math summation symbol" you will find it is "U+03A3". If you follow your word processor or Operating System rules for entering an arbitrary Unicode character and specify the hex value "03A3", you will get the character "Σ".

The default character codeset in use on the most devices prior to Unicode was one of the ANSI codesets, whose first 128 characters are identical to the original 7-bit ASCII standard. Unicode was designed so that the first 128 values of UTF-8 encoding of Unicode are identical to those in 7-bit ASCII and are represented by a single byte in UTF-8. This means that the most commonly used characters are represented by an identical 8-bit value in the ANSI code variants and in UTF-8 encoding of Unicode, so very little space penalty is paid for converting existing English data into UTF-8; and applications designed to support the basic 7-bit ASCII characters could work with UTF-8 by default.

MS Windows started supporting Unicode in Windows NT and in Windows 2000 (as UTF-16 internally). Unicode support for all applications in MS Office was introduced with Office 2000, with partial support as early as Office 97. In 2019 MS began de-emphasizing UTF-16 in favor of UTF-8 for internal API interfaces.

The original FAT file system only supported 6.3 file names in 7-bit ASCII. The VFAT files system extension introduced with Windows 95 supported long file name in Unicode, in addition to a munged 6.3 file name for backwards compatibility. Some characters are still disallowed in file names (\ / . ? \* ¥)

Almost all web pages are now encoded using UTF-8. The email protocols and email clients now by default use UTF-8. This greatly simplifies global communication of data including all symbols and markings that are important in other languages. It also means you can now receive SPAM written in Chinese, Korean, Arabic, Russian, etc. and have the characters correctly displayed. Sometimes I find it entertaining to feed some of that foreign SPAM to Google Translate just to see what foreign scams look like.

Current versions of Windows and Linux support UTF-8 by default. Some Windows applications

implement ways of inserting Unicode characters not on the keyboard by selecting the desired character from a table of more commonly used symbols, or provide a special way to input the hex value for the Unicode character. Both MS Word and Wordpad allow entering a Unicode hex value and then using ALT+x to toggle the hex value into a Unicode character; but that technique isn't available in many other applications, including File Manager, which makes it difficult to use arbitrary Unicode characters for naming folders or files.

There is an alternative Unicode entry method in Windows that doesn't require support in each application, but it does require editing the Windows Registry, which is potentially dangerous if you are prone to finger checks or typos. It requires using the Registry Editor to create a string value under "HKEY\_Current\_User/Control Panel/Input Method" for EnableHexNumpad" and setting its value to "1", and then rebooting.

I tried this out on Windows 10, and was then able to enter an arbitrary Unicode value in a text field by holding down the ALT key, pressing + on the numeric keypad, typing the hex characters value for the Unicode character, and then finally releasing the ALT key. It appears to work everywhere I tried it, but the need to hold down ALT for a long time is awkward and precludes using touch typing skills. Still, it's the only practical entry technique in some contexts in Windows. I rather prefer the Linux approach, which only requires a brief CTRL+SHIFT+U multi-key combination which is released before keying the hex Unicode value followed by a space.

Even if you are using an application like MS Word which has a fairly large table of special symbols to select, you may find it faster to enter a frequently used Unicode character just by using its hex code rather than using a lot of mouse manipulation to select from a large table of symbols.

If you have reason to believe, or hope, that a special Unicode character exists and can describe it, a Google search combined with "Unicode" will probably get you to the corresponding Unicode hex value and an image of the character's appearance. "Unicode solid left arrow" will find all sorts of Unicode arrow characters, including U+2190 ← and U+1F844 ⇨. "Unicode pile of poo" will locate U+1F4A9 🐞. "Unicode Halloween pumpkin" locates U+1F383, or 🎃. "CJK" is the set of unified ideographs used in modern Chinese, Japanese, Korean, and Vietnamese characters. A search for "CJK Unicode home" finds the ideograph U+5BB6 meaning a home: 家 Going to "Google Translate" in the Edge browser and using the ALT+ technique to enter the U+5bb6 Unicode character in the "Enter text" field, Google recognizes it as "Chinese (Simplified)" with a translation of "Home". You may have to search for a font that supports a specific Unicode character as some lesser used characters are not supported by all fonts.

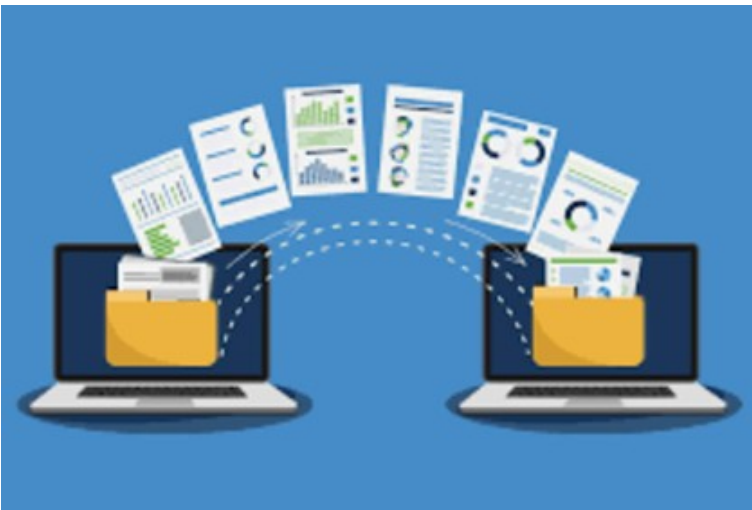


[Go to Page 1](#)

# Use OneDrive to Migrate to a New PC

By: David Kretchmar, Hardware Technician  
Sun City Summerlin Computer Club  
<https://www.scscclb.com> dkretch (at) gmail.com

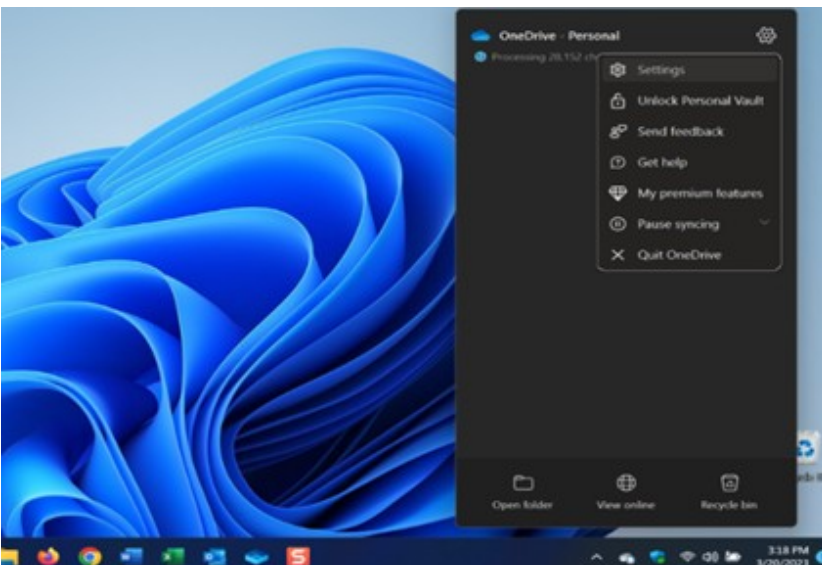
Microsoft OneDrive is an excellent tool to help you migrate from a Windows 10 PC to a new Windows 11 PC. You can bring all your files, documents, downloads, favorites, photos, music and videos with you. Your files will then be available to be moved on to your new Windows 11 PC, and they'll also be preserved in the cloud, so you can access them from anywhere you can sign into your Microsoft account.



Assure OneDrive is set up and active on your old Windows 10 pc and your new Windows 11 PC. You automatically get 5 GB of free OneDrive cloud storage when you sign in with a Microsoft account and if you've had a Microsoft account for a while, you get an additional 5 or 10 GB of free storage. You can get 100 GB of cloud storage for \$1.99 a month or 1 TB of storage when you subscribe to Microsoft 365 for \$100 (personal) or \$130 a year (family).

## If you have not set up OneDrive on your new PC

Open OneDrive settings: right click on the OneDrive cloud icon on the right side in your notification area; then click on settings (the gear).



When OneDrive Setup starts, enter your email address – this will become your Microsoft ID. You can use any email address; you can use a Google or Yahoo mail account to set up a personal Microsoft account. If you don't have a Microsoft mail account, you can create a new Microsoft Outlook.com email address for free at that time.

Go to the Account tab and select Add an account. OneDrive Setup will open. Enter your new account and select Sign in. Naturally you will have to have OneDrive set up on both your old and new PCs.

Open File Explorer on your old PC

Then investigate your OneDrive folder and make certain that everything from this PC that you want to move to your new PC is in that folder. To check this, go into OneDrive online, using your Microsoft credentials. The items you see in your OneDrive online are the files you'll be able to move to your new device using OneDrive.

If there are any items you want to move to your new PC that don't appear in your online OneDrive folder, sync the files and data you want to OneDrive.

## **Sync Your Folders**

You have the option to redirect any or all of three system folders that are part of your user profile to OneDrive instead. The effect is the same as if you had changed the default location of the Desktop, Documents, or Pictures folder to a folder with matching names in your OneDrive folder.



To make this change, open OneDrive Settings, click the Backup tab, and choose the option you prefer for each of the three folders. Keeping these system folders synced to the cloud is an effective way of backing them up.

After you make the change, OneDrive moves files from the current folder in your local profile to that same-named folder in OneDrive and merges any existing files from the cloud-based folder. Any changes you make to the files in the OneDrive folder on any device will be synced to all your devices. Remember to designate the files and folders you want available offline. Any files, folders, files and photos you select will sync to OneDrive, and you can then access them on your new device.

## **Accessing your files on your new PC**

On your new Windows PC, sign in to OneDrive with the same Microsoft account you used on your other PC. Then, get to your files by opening File Explorer or by selecting the OneDrive cloud icon in the Windows notification section of your taskbar.

## **Setup Files on Demand**

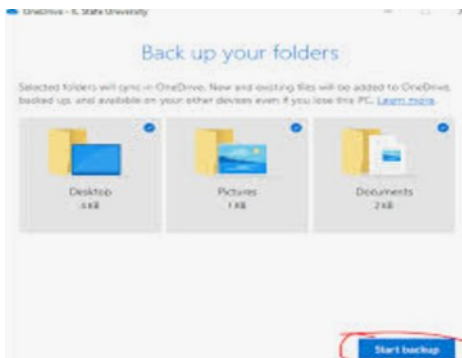
Files on Demand is a feature of OneDrive in Windows that gives you the ability to browse through your entire collection of OneDrive files using File Explorer even if those files are not synced to your PC.

If you open a file in the cloud, OneDrive downloads it immediately (that's the "on demand" part). You can also mark files to be available even if you're not connected to the internet. To use this feature, right-click any file or folder and then click "Always keep on this device". A solid green checkmark icon in the Status column shows which files are available offline.

If you no longer need to keep those offline copies, right-click the file or folder and then click "Free up space" to remove the local copies. (They remain available in the cloud and on demand.)

Note that, if you do not designate a file to be available when you are not connected to the internet, you cannot access that file if you do not have an internet connection.

## **Automatically back up folders on your new PC**



Now that you can access your older files and folders on your new PC, make sure to keep your new files synced as well. Use PC folder backup to keep all new files syncing to OneDrive. You can then access those files from other devices like your phone and tablet.

## **Complete setting up your new PC**

Many users download and install the Google Chrome and/or Firefox browsers to compliment the Edge browser that is built into Windows. If they are using a credential manager such as the ones built into popular browsers, or some third-party credential manager, when they sign into their online accounts on the new PC, logons and passwords will automatically be entered.

Even with correct credentials, the new PC is unfamiliar to secure internet sites, so the user will have to verify their identity using an email account or cell phone. It is a good idea to make sure logons and passwords from the old PC have been preserved. To complete the setup, users download and install printer drivers, productivity software like Microsoft Office or LibreOffice, and they're ready to go.



**[Go to Page 1](#)**



# Quick Tip 71: Full context menus in File Explorer

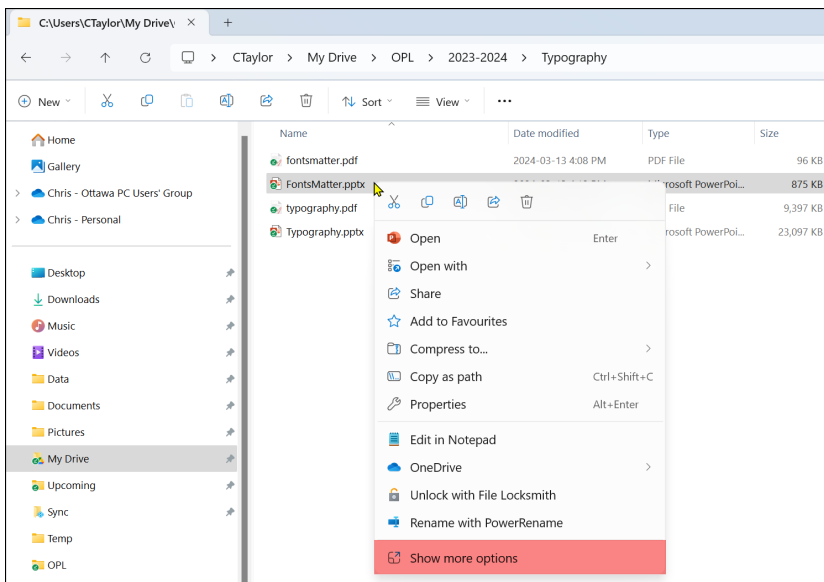
By Chris Taylor, President

Ottawa PC Users' Group (<https://opcug.ca/>)

chris.taylor (at) opcug.ca

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One of the things that bugs me about Windows 11 is the abbreviated context menus when right-clicking a file in File Explorer. Microsoft, in its infinite wisdom, decided to display only what it considered to be the most important options. They never asked me what I thought were the most important options.

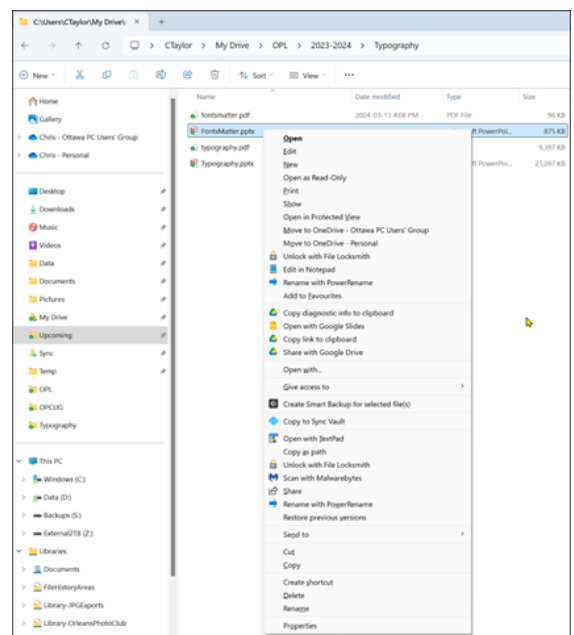


If the option you want does not appear, you must click on the *Show more options* at the bottom of the menu to show the complete context menu.

But if you hold down the shift key and right-click a file, File Explorer will immediately display the full context menu.



**[Go to Page 1](#)**



Meetings start at 7:00 PM (9:00 AM on Saturday) unless otherwise noted. \*Virtual Meetings during Covid pandemic.\*

**November**  
**December**

SUN	MON	TUES	WED	THU	FRI	SAT
						1
2	3	4	5	6	7	8 Linux on Saturday SIG 9:00-Noon
9	10	11 7pm General Mtg Civilization: The Video Game  6pm Tech Topics	12	13	14	15 MS Office SIG (includes Access) 9:00-Noon
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	1	2	3	4	5	6
7	8	9 7pm General Mtg TBA  6pm Tech Topics	10	11	12	13 Linux on Saturday SIG 9:00-Noon
14	15	16	17	18	19	20 MS Office SIG (includes Access) 9:00-Noon
21	22	23	24	25	26	27
28	29	30	31			
				<u><a href="#">Go to Page 1</a></u>		



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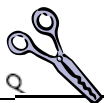
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As a member of TC/PC, you may attend any or all of the monthly Special Interest Group (SIG) meetings and be eligible for software drawings. The small membership fee also includes access to real-live people with answers via our helplines, discounts,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



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City _____ State _____ Zip _____		<b>Make checks payable to:</b>
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		I'm interested in:
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		<input type="radio"/> Special Interest Groups: New User, Access, etc.
		List here:
<b>Administrative Use Only</b> Rec'd _____ Chk# _____		

**November 11, 2025**

**7:00 pm**

**General Meeting**

**Civilization: The Video Game**

**Presenter: Steve Parker**

**Via Zoom Only**



341 County Rd C2 W  
Roseville, MN 55113

***FIRST CLASS MAIL***