BVCC General Meeting

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"Microsoft PowerToys: Utilities to Customize Windows"

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Microsoft PowerToys

- **These slides will be published on the website under Information ▶ Presentations**

Microsoft PowerToys

- **A collection of useful utilities**

- **Free**

- **https://learn.microsoft.com/en-us/windows/powertoys/**
    "Install PowerToys" button to install

- **Discovered when looking for a practical way to do mass file renames in Windows**

- **PowerToys is also now available in the Microsoft store on Windows 11 – search for "PowerToys", click on entry, click on "Install"**

Microsoft PowerToys

Utilities

- **Always on Top**
- **PowerToys Awake**
- **Color Picker**
- **FancyZones**
- **Keyboard Manager**
- **File Locksmith**
- **Hosts file editor**

- **Image Resizer**
- **Mouse utilities**
- **PowerRename**
- **Quick Accent**
- **PowerToys Run**
- **File Explorer add-ons**
- **Video Conference Mute**

- **Shortcut Guide**
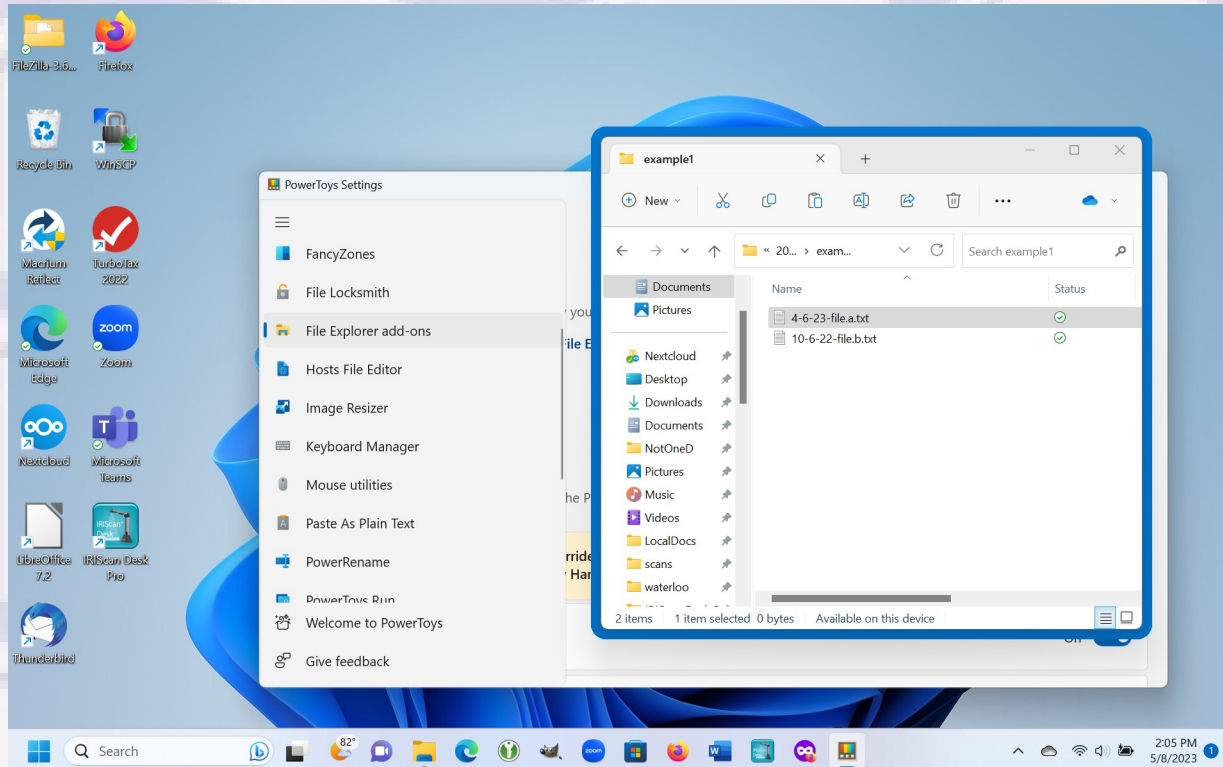- **Screen Ruler**
- **Text Extractor**

How to Use

- **See PowerToys video walk-through on same webpage**

- **A description of each of the utilities and settings option**

- **Need too restart Windows before all features available**

- **After install, use search for "PowerToys" to locate app (which is the PowerTools Settings)**

  - **Allows various utilities to be enabled/disabled and settings of various options, such as the quick path key combination to activate/deactivate use of the feature**

  - **All of the new utilities appear to be enabled by default with default option settings – with the exception of the PDF preview handlers for the File Explorer add-ons, because of some reports of incompatibility with Outlook**

Always on Top

- **Creates a shortcut (default is Winkey+Ctrl+T) to toggle a selected window to appear on top of all non-topmost windows even when that window is not active**

- **Selecting an active window and Winkey+Ctrl+T will put a border around the window and it will stay fully visible even if windows partially under it are selected.**

- **Multiple windows can be placed "Always on Top". They will display on top of any not-on-top window, but a selected "on top" window will overlay a non-selected on-top window**

Always on Top

- **The window with outline is "always on top", the window underneath is actually the selected active window**

PowerRename

- **This is the reason I needed PowerToys**
- **Native Windows lacks any useful way to rename a group of files at the same time**
  - If you select 5 files and "rename", you can only specify one new name and all get renamed to that with a different copy ordinal in parens
- **Power Rename adds a "PowerRename" action when you right-click on a file or group of selected files – can do a find/replace on all the file names – comparable to flexibility in Linux systems**
  - find/replace using text – simple to use, like find/replace in a document editor
  - find/replace using "regular expression" syntax for find pattern & variables in the replace
  - Both allow a choice of replacing all found occurrences in each file name
  - Both by default are case insensitive when finding matches, but "Case sensitive" is an option.
  - Both allow you to inspect any proposed renames before clicking "Apply" to do the renames.

PowerRename Files With Text Strings

- my_print.txt   can be changed to   Your-print.txt
  my_source.txt   Your-source.txt
      with a single PowerRename specifying a find text string of "my_" and a replacement string of "Your-"

- Any piece of the file name can be changed – won't allow a group change that results in duplicate names

- Shows what the result will before actual rename

- If files are selected that don't contain the find value, they are not changed

- The replacement string can be the null string (0 chars) to just eliminate the find string from all the file names

- Fedora Linux equivalent is built into Files (Nautilus) file manager app

PowerRename Using "Regular Expressions"

- **"Regular Expressions" – abbreviated as "regex"**

- **Regex: a concept from UNIX/Linux for specifying patterns**

- **Must select the "Use regular expressions" option in PowerRename**

- **Very powerful, but complex syntax and rules, with some characters reserved for special use.**

- **A Google search will find tutorials on rules and probably useful examples of how to match common patterns**

- **Suggestion: either find or figure out a useful regex pattern and document how to use it so you don't have to repeat that discovery process the next time you want to do the same thing.**

- **Closest Fedora Linux equivalent is Perl-rename (prename) command**

PowerRename regex Example

- **Rename all selected ".jpg" files that have a yyyy-mm-dd-. at the beginning and instead put a -yyyy-mm-dd just before the trailing file type.**

- **Find regex is: ^(\d{4}-\d{2}-\d{2})-(.*)\.jpg$**

- **Replacement is: $2-$1.jpg**

- **Will rename a file like 2023-01-09-anything.jpg to anything-2023-01-09.jpg**

- **You have an opportunity to inspect the proposed renames for reasonableness before clicking on "Apply"**

PowerRename regex Example Explanation

- **^(\d{4}-\d{2}-\d{2})-(.*)\.jpg$**

  - **^ says start with 1ˢᵗ char [of the file name] and $ says the "jpg" must be last chars of file name. \d{4} is 4 decimal digits, \d{2} is 2 decimal digits, so everything inside first parens matches things like nnnn-nn-nn and (…) says save chars that match what is inside parens in a variable. This is first set of parens, so $1 is used and in the example is set to 2023-01-09 .
    The following char must match "-" but is not saved. The ".*" represents 0 or more arbitrary chars and the parens save them as $2. the "\.jpg$" says the last 4 chars matched must be an actual period followed by "jpg" and it must be the end of the file name and is not saved. So $2 is set to everything between the last "-" matched and the ending ".jpg", which in the example is "anything".**

- **Replacement: $2-$1.jpg
  says take the value of $2, immediately follow it with "-", then the value of $1, followed by ".jpg". The end result in the example is "anything-2023-01-09.jpg**

- **When multiple file names are selected for PowerRename with regex, only those that match the regex pattern will be changed**

PowerRename Another Example

- **Convert m-d-y- date formats to yyyy-mm-dd-**

- **Regex pattern: ^(\d{1,2})-(\d{1,2})-(\d{2})-(.*)$**
  replacement: 20$3-$1-$2-$4
  Converts files names to yyyy-m-d-restofname, but still leaves 1-digit month and day as 1-digit

- **Convert 1-digit month or day surrounded by "-" into two-digit value with leading "0"**
  Regex pattern (w find all occurences):   -(\d)-
  Replacement: -0$1-

Regex PowerRename Advice

- Errors can be subtle and possibly hard to undo.   Recommend working with copies of folders or with adequate backups and carefully verifying proposed renames before doing the "Apply" – even if you think you know what you're doing (see 3rd point below).

- One can reduce the risk of unintended pattern matches by just selecting the files you intend to rename and not relying on a failed pattern match to prevent a rename.

- My first attempt at the previous rename example ended the regex with ".jpg" (which should have been "\.jpg$"). I had asked for a match of "any char" followed by "jpg" (not just at end of name). Period without a preceding "\" is a special regex control char meaning "any char" not just an actual period, and the "$" is required to force the preceding matched char to be the last char. Visual appearance can be deceiving.

  - It actually did what was intended for my selected files, but only because for my file names the only presence of jpg was at the end of the file name preceded by a period. Didn't realize the "error" until I was writing the description for previous slide.

  - With the unintended fault in my regex, a file named 2021-12-13-tif2jpg_conversion.docx   would have been renamed to tif-2021-12-13.jpg_conversion.docx   The "2021-12-13-tif2jpg" part of the name would have matched the regex and been replaced, with the date part saved in $1, the "tif" in $2, and the "2jpg" would match ".jpg" but not be saved (no parens) and a trailing ".jpg" forced in the part replaced.

  - Mass rename of a large number of files in a way that unintentionally drops part of the file name may be impossible to undo without a backup of the folder
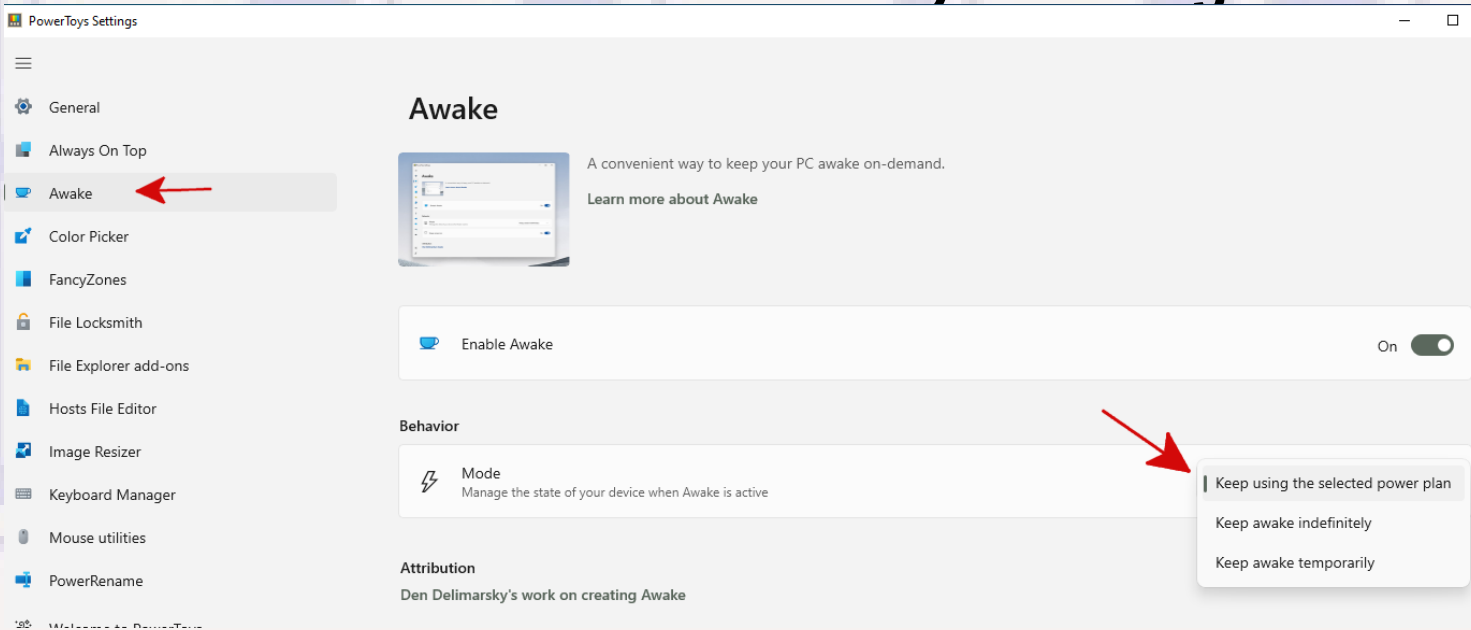
PowerToys Awake

- **Ever monitor a long-running task and have the annoyance of the monitor going to sleep-mode from lack of interaction?**

- **There is now an easy alternative to periodically pressing a keyboard key or changing the power settings**

- **PowerToys Awake allows you to override the power settings indefinitely or for a specified time period and optionally also force the monitor to stay on without affecting your normal power settings**

PowerToys Awake

- **If "Awake" is enabled (in PowerToys Settings), there is a small "coffee cup" icon on right side of the Task Bar** **which can be used control the "Awake" mode, or it can also be controlled from PowerToys Settings**
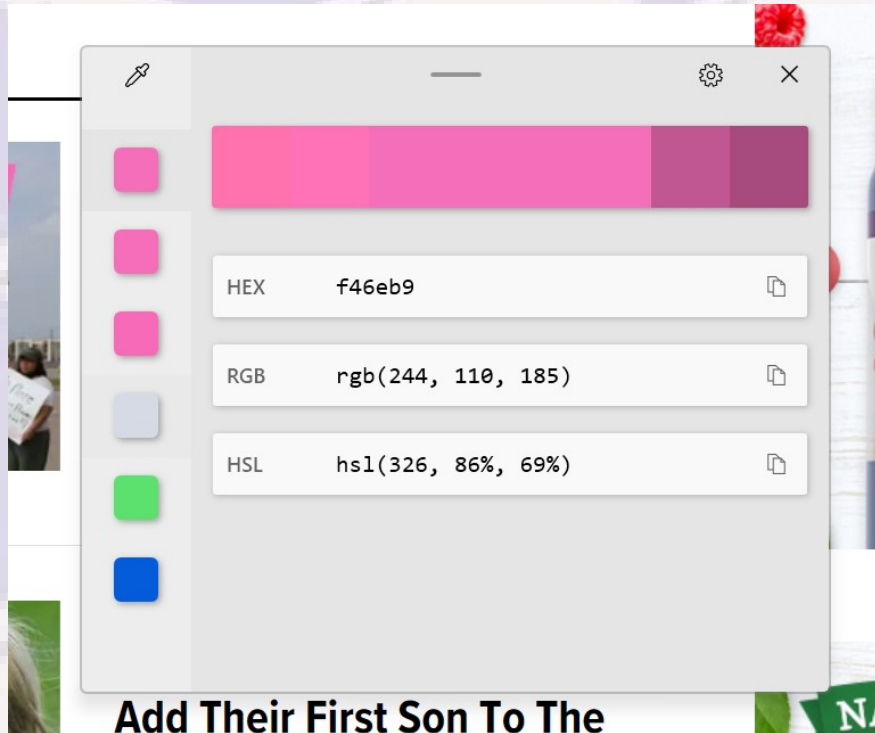
Color Picker Utility

- **Allows you to pick a color from any currently running application or from the desktop and copy it in a selected format (default is hex) to your clipboard, from which it can be pasted into another application that accepts a color value in that format**

- **Can choose whether it just puts color on clipboard or opens simple editor that allows you to adjust the color and color format. Default is to "Pick a color and open editor".**

- **By default Winkey+Shift+C activates, move mouse cursor to select color anywhere on screen, scroll to zoom in, click when over desired color. Then go to application where you want to paste the color value and "paste" from clipboard.**

Color Picker Utility

Color Picker

- **Showing color edit window after click on color – can select what format of color to copy to clipboard depending on use**

FancyZones

- **Makes it easy to move and resize multiple windows to occupy the whole display with all windows completely visible**

- **Windows 10 & 11 allow you to give left half of screen to one window and right half to another (drag each window to the side desired until cursor reaches the edge of the screen)**

- **"FancyZones" allows you to easily divide your display to put 3 windows in 3 equal columns, 3 equal rows, or some custom layout dividing the display into an arbitrary number of rectangles of varying sizes**

FancyZones

- You first select a layout using PowerTools Settings → FancyZones to Launch layout editor: select one of the predefined layouts, or create and select your own

- For each of the windows you want in a specific zone on the display, Select the Titlebar of that window, hold down the Shift key (which reveals the various zone locations), drag the window into the desired zone until the zone color changes, release the mouse button and the window will be automatically resized and moved to exactly fit that zone.

- This is just an easy way to precisely position and size windows. It isn't "locked" to that zone. You can still manually resize and move it arbitrarily as long as the Shift key isn't used.

FancyZones Layout Example With Four Zones

Image Resizer Utility

- **Can be used to resize (change the resolution of) one or more selected images**
  - **A quick way to reduce the size of hi-res camera photos before emailing**
  - **Can optionally remove unneeded metadata (like GPS location data)**
  - **By default creates copies, preserving original**
  - **Optionally doesn't change size if image is already smaller than requested**
  - **Only 4 pre-defined sizes, but can add custom sizes**
  - **Appears to support JPEG, PNG, BMP, TIFF, WMP, GIF – no conversion to different type**

Image Resizer Utility

- **Select the pictures to resize**

- **Right-click, select "Resize pictures"**

- **Select size and options, then "Resize"**
  - selecting "Make pictures smaller but not larger" makes sense – can't add resolution to a low-resolution picture, only increases size, not quality

Mouse Utilities

- **Find My Mouse**
  - **Can't spot where the mouse cursor is located?**
  - **Two LeftCtrl will put a big shrinking circle around the cursor**
  - **Pressing any key or button, or moving the cursor and stopping will erase the circle**

Quick Accent

- May need to go to PowerToys setting and enable Quick Accent

- An alternative way to type accented characters

- Press and hold the letter key and QUICKLY (before auto-repeat starts) press and release either the Space, left arrow, or right arrow to get a list of the accent options.

- Continue to hold the letter key and use left/right arrow to select the desired accented form, then release the letter key.

- Can optionally have the selection list also display the unicode Hex value and name of the currently selected character

- Several other options via PowerToys Settings

Text Extractor

- **Copies text to clipboard from anywhere on the screen**
  - Copies the pixels on the screen and uses OCR to get text
  - Means it can extract text that is recorded in a displayed image
  - Means it is not 100% accurate – need to proofread result
- **Activate with Winkey+Shift+T**
  - Cursor turns into a cross
  - Position cursor to one corner of area with text, LeftClick and hold using mouse to make selection rectangle enclosing text, then release.
  - After a few seconds when the text has been extracted, the screen returns to normal and the text recognized by OCR can be pasted into some application that works with text.
  - Proofread the results. The usual OCR admonitions: Accuracy depends on quality & size of original font – don't expect decent accuracy from "artsy" or cursive fonts, weak or irregularly formed chars

Others

- **There are a few other utilities not discussed:**
    - Judged less likely to be of use to most users
    - Marginally supported or problems in some environments
    - Use or misuse could result in much confusion (Keyboard Manager: assigning non-standard functions to keyboard keys)