

Converting time-lapse videos to mp4 videos

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Software Needed

- Python
 - This should be installed already if you have the ArcGIS software suite
 - D:/Python27/ArcGIS10.2/Python.exe
- VLC media player
 - VLC is a common media player that supports many file formats
 - (such as the .tlv files that the Plotwatcher Pro camera records in)
 - This will need to be downloaded via the web (google: VLC)
 - Contact MN.IT if you are unsure about downloading the software

Software Needed Continued

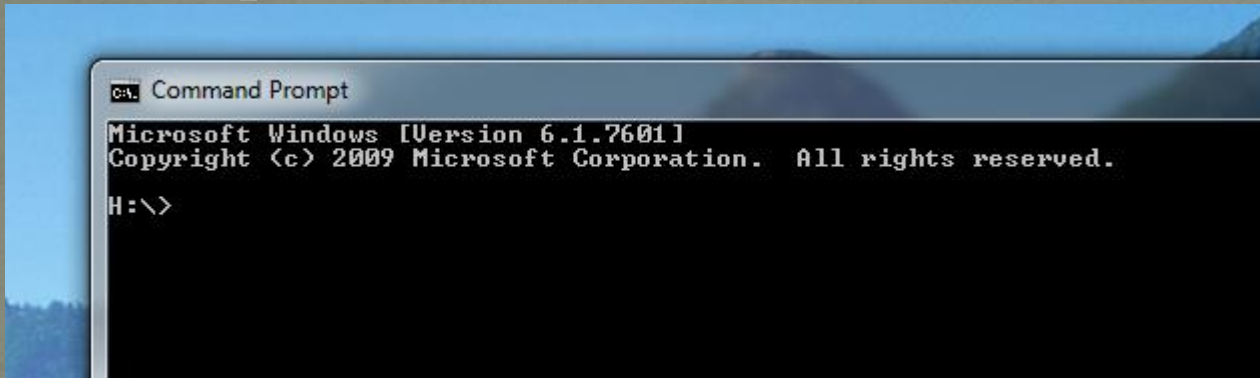
- Windows Movie Maker
 - This should be already installed on Windows OS machines
 - Other video editing programs will also work, but typically cost money to download and this script has not been written for those programs

What does this script do?

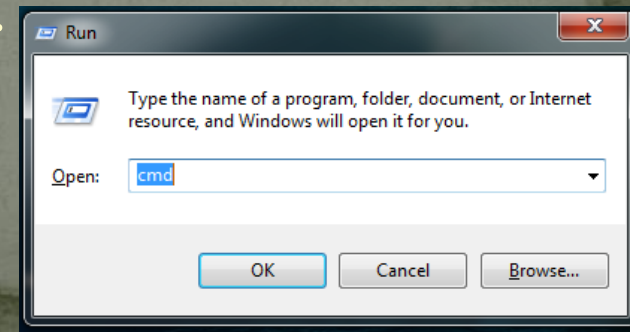
- The game cameras that we use (Day 6 Outdoors: PlotWatcher Pro) record time-lapse videos in a **.tlv** extension
- This file extension is not common and most video editing software programs will not accept this format
- The script uses VLC media player to pull out individual frames (.jpg) from each of the .TLV files
- The individual frames (.jpgs) are added to the Windows Movie Maker software to create the time-lapse videos by month.

Running the script

- The script will run in the command line



- To find the command prompt:
 - Go to start menu -> type in 'run' in the search program and files text box -> type in 'cmd' in the run textbox
 - This will open the Command Prompt.



In the command prompt

- You will need to know TWO path names to run the script
 - The first path name is the path name to the python program (this script was written for python version 2.x, will not work with python version 3.x)
 - Common locations are:
 - D:\Python27\ArcGIS10.2\python.exe
 - C:\Python27\python.exe
 - The other path name is the path name of where the script is installed (where you saved the file)
 - Ex: D:\Users\miharris\Desktop\TLVconversion.py

In the command prompt

- I would open a text editor (Notepad, Word, etc...)
 - Copy the file-path of the python program, followed by one space, then the file-path for the script file
- ```
D:\Python27\ArcGIS10.2\python.exe D:\Users\miharris\Desktop\TLVconversion.py
```
- Once you have the command prompt open, copy and paste this name in
    - It will then prompt you for the following info...

# Inputs

- The .TLV files should be saved in a common folder:
  - The path to this folder will be used as an input.
    - Ex: J:\TimelapseCameras\Knife\KnifeTLV
- A path location for the frames to be saved will be used as an input:
  - Ex: J:\TimelapseCameras\Knife\KnifeFrames
- Start Date: The date for which the camera files was last deployed
  - Ex: 20160507
- End Date: The date for the last time the camera was picked up
  - Ex: 20160616



# Command Prompt

CA: Command Prompt - D:\Python27\ArcGIS10.2\python.exe D:\Users\miharris\Desktop\TLVconversion.py

Microsoft Windows [Version 6.1.7601]

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H:\>D:\Python27\ArcGIS10.2\python.exe D:\Users\miharris\Desktop\TLVconversion.py

Enter the Folder of the TLV files:

Please enter exactly as this example format... J:\TimelapseCameras\Knife\KnifeTLV

J:\TimelapseCameras\Up\_Stew\Upper\_Stew\_TLV

Enter the Folder where the frames will be saved:

Please enter exactly as this example format... J:\TimelapseCameras\Knife\KnifeFrames

J:\TimelapseCameras\Up\_Stew\Upper\_Stew\_Frames

What is the START date for the most recent time-lapse video files?

(Please enter in YYYYMMDD format):

20160505

What is the END date for the most recent time-lapse video files?

(Please enter in YYYYMMDD format):

20160616

# Outputs

- The script will add the images to a Windows Movie Maker file. The file will then need to be saved and modified by the user.
- Windows Movie Maker only accepts 1000 photos added to one file, so the files are added by half-months
  - Ex: May 1 – May 15 -> Individual movie maker file
  - Ex: May 16 – May 31 -> Individual movie maker file

# Edits to make in Windows Movie Maker

- There will be some edits that need to be made to the windows movie maker files
  - Dark and Bright photos removed

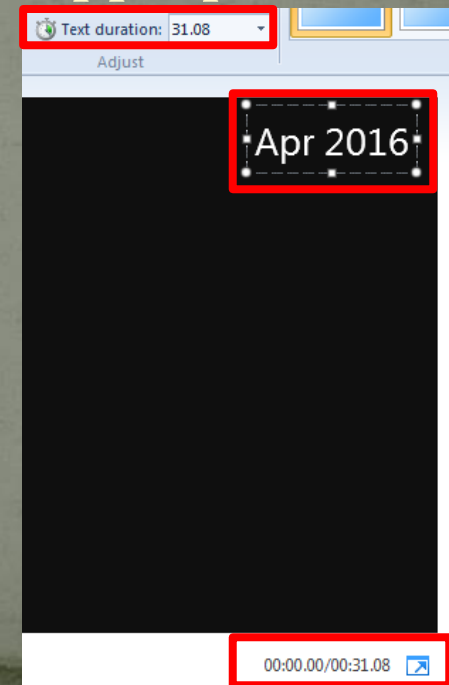


- Photo duration will need be reduced:
  - Select all photos (Ctrl+A), Video Tools “Edit” tab, Duration = 0.03 (correlates to 30 frames-per-second video).



# Edits to make in Windows Movie Maker

- Add title to show the month of the current time-lapse file
  - 'Home' tab -> title -> Text Tools 'Format' tab -> font 'Segoe UI' (default I think) -> font size: 26
  - This title will need to be dragged to the appropriate area to correlate with the other video files
  - Change the duration of the Title so that it is the same length as frames
  - Change the title effects by setting it to "NONE"



# Edits to make in Windows Movie Maker

- Once the files are completely edited, you will save them as .mp4 files (or .wmv files)
- File -> Save Movie -> For High-Definition Display
  - Save in a folder
- Once you have your various files saved as .mp4's you can combine them together
  - Ex: May\_A\_2016.mp4, May\_B\_2016.mp4, June\_A\_2016.mp4...
- Open new Windows Movie Maker, add these .mp4 movies in the appropriate order to create a 'master copy' of the time-lapse videos.