Requirements

- packages: moviepy, opencv, numpy
- .avi videos in a structure described in Readme.md

Step 1 - open spyder:

- shell / terminal:
  - conda activate video
  - spyder

Step 2 – adjusting parameters:

Task 1: insert black frames

If a video has some missing minutes (during the night), those can and should be filled with black frames as BOVIDS can then mark the individuals as “out of view”.

- VIDEO_PATH: Path tot he folder containing the .avi-video. [string] 'V:/species/zoo/Videos/Species_Videonumber/',
- VID_NAME: Name oft he .avi file. [string] 'YYYY-MM-DD_species_zoo_videonumber.avi
- FILL_FRAMES: Which frames need to be filled in? [list of list of strings]
  - Any entry is a triple of strings, various such lists fill in multiple sequences of black frames. One triple has the following structure [val_1, val_2, val_3].
    - val_1: Time elapsed (in the video file) at the beginning of the sequence. "HH:MM:SS"
    - val_2: Time of the actual recording (the value written on the video frames by the cameras themselves) at the beginning of the sequence. “HH:MM:SS”
    - val_3: Time oft he actual recording directly after the desired sequence. "HH:MM:SS"

Task 2: reducing the fps of multiple video files of one recorder

Use if BOVIDS (in its standard configuration) should be applied to 1fps video recordings but the current recordings have higher fps.

- Saves the new recordings, overwriting existing files if they have the same name.

- .avi files need to be named as YYYY-MM-DD_species_zoo_videonumberEXT.avi.
- VIDEO_BASE_PATH: Path to the video files [string]
  e.g.: 'V:/Wildebeest/FancyZoo/Videos/Wildebeest_6/'
- VIDEO_NUMBER: its actual the video code "species_zoo_videonumber" [string]
  e.g.: 'Wildebeest_FancyZoo_6'
- DATES: List of dates oft he .avi files that need to be converted. [list of strings]
  e.g.: ['2018-01-14', '2018-01-15', '2018-01-16', '2018-01-17']
- EXT: Extension of old files (that will be converted) as written above. Is required as in this case, it is not possible to overwrite original data unexpectedly. [string]
  e.g.: If the old video files look like 2018-01-14_Wildebeest_FancyZoo_6_25fps.avi, then EXT = '_25fps'
- FPS_NEW = 1 (in principle, higher values are possible but then the remaining parts of BOVIDS will not work) [integer]
- SAVE_FOLDER: Destination (folder) of the converted videofiles [string]

Task 3: Concatenation of two video files

From time to time it happens that during a recording the recorder stops working and starts a new file.

- PART1, PART2: Complete paths to the two video files. [string]
  e.g.: 'V:/Wildebeest/FancyZoo/Videos/Wildebeest_6/2018-01-14_Wildebeest_FancyZoo_6_p1.avi'
  'V:/Wildebeest/FancyZoo/Videos/Wildebeest_6/2018-01-14_Wildebeest_FancyZoo_6_p2.avi '
- SAVEPATH: Complete path to the new (merged) file. The destination folder needs to be created in advance. [string]

'V:/Wildebeest/FancyZoo/Videos/Wildebeest_6/2018-01-14_Wildebeest_FancyZoo_6.avi

- 'WIDTH: Width of the resolution of the output. Probably, it is 1920 / 1280 (HD) or 800. [integer]

Step 3 – run the script and enter

- Task 1: ***fill_in_frames()***
- Task 2: ***convert_fps()***
- Task 3: ***merge_videos()***