Documentation for Shuffle Animation

Want to make videos that change background colors on the beat? Example:
https://youtu.be/l4Gm8kdurlI
This is the original video with background colors that don't change:

https://www.youtube.com/shorts/Pn3yz9B_KfM

Run shuffle_animation.ipynb, then images_to_video.ipynb. As you can tell by the filenames, this code isn't meant to be easy for the general public to use. I call a file shuffle_animation because I'm animating over someone shuffling. You're gonna have to change the names of the video and audio files. I currently lack incentive to make an app for the general public. I commented on my code, but I probably could comment more. Everything I write/code isn't as concise nor logical as it could be.

- If you want to store a Github repo on Google Drive and code in Google Colab (a website), follow this tutorial:
  https://towardsdatascience.com/google-drive-google-colab-github-dont-just-read-do-it-5554d5824228
- The code doesn't take too long to run. The longest time it took to run a cell was about 4 minutes. (There was a cell that used to take 2+ hours since I plotted then saved each image with a different color map. Then I realized I didn't need to plot the images. Plus, the image quality didn't get reduced 3-fold!). My savior:
  https://stackoverflow.com/questions/31544130/saving-an-imshow-like-image-while-preserving-resolution
- Another savior (I went through so many stackoverflow pages + articles before I finally found an answer that linked to this response):
  https://github.com/ContinuumIO/anaconda-issues/issues/223#issuecomment-285523938 - I wanted to combine all the .png files into a video using OpenCV
- By the way, label your files like frame_001 instead of frame_1 or else your code can't sort the files well. It'll say, frame_0, frame_1, frame_10, frame_2, etc.
- Color maps: https://matplotlib.org/stable/gallery/color/colormap_reference.html
- After generating the .avi video, I converted the video from 30 fps to 12 fps because I wanted to animate on 12 fps: https://www.veed.io/tools/video-frame-rate-converter
- Then I animated in Procreate because I don't know how to program animations yet.
  - I'd create a new layer, then group it with a frame from the .avi video. Then I'd draw over the new layer. Hence, Procreate's animation feature would play one frame as the grouped frame. This animation process was highly inefficient; also I

couldn't see the onion skins (what I previously drew in the animation layers) because the frames from the .avi video would cover it up. Lowering the opacities made everything messy). There should be a better way to do this.

- I turned off all the layers that were the background (i.e. the live action stuff) instead of animation
- I exported the animation with a transparent background
- I layered the animation over the 30 fps video in iMovie