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Music Computing 2 - Assignment 3:

This program searches for moving shapes in a video:

- It takes the Y axis of the moving shape and turns it into a binary number of 16 bits.
- This binary number sequences a sample assigned to the contour number.
- The sequencer only advances when the contour number exists. This means that samples only exist when their assigned contour is on screen.
- It takes the X axis of the moving shape and applies it to the panning position for the contours assigned sample. This means that samples correlate to their contours position on screen.
- Every set number of bars a random sample is changed.
- Once every sample is changed the video changes and so does the sequencers tempo.

Logging of values and randomisation is used to ensure that each cycle of videos and sounds is different from the previous without any duplication during the cycle.

This results in a constant evolving rhythmic piece that presents various permutations of it's parameters.

The sounds selected reflect the digital aesthetic of the piece through the various 'clicks', 'pops' and 'error' sounds.

Bug / to do list:

- *Program will crash when receiving video that does not match the aspect ratio of previous videos.*
- *Clean up variable names, can be a little unclear, misinformative.*
- *Random is not really that random.*
- *Upon initialisation video will change after first cycle before resuming regular operation. Probably a counting / maths mistake.*
- *Improve audio engine, sample volume quiet yet not balanced, compression needed.*

Due to the learn.gold upload 100MB limit (c'mon why?!?!) media in the data folder required to run the submission, along with video of working program, cannot be uploaded. Demonstration of working program will be shown in teacher / student meeting on the 20/02/18.

Project is based open the openCV example. This project is made using Visual Studios 2017 on Windows 10 using Openframeworks with ofxOpenCv for video tracking and ofxMaxim for sound.

Sounds are from 'Errorotica' sound library

The videos used in this program:
https://www.youtube.com/watch?v=tI7fktKY6OU
https://www.youtube.com/watch?v=qm0yhtBHIi0
https://youtu.be/Xc7d7F5T6rI
https://www.youtube.com/watch?v=0iYVppEdyNY
https://youtu.be/KI5VY81IdG8
https://youtu.be/UIoO_N8bSP0
https://youtu.be/E6C-Q3GvA7s
https://www.youtube.com/watch?v=AirqmMlVlvM