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Creative Coding: Advanced - Fall 2014
Final Project proposal - 11/14/14

**Goal: 3D Modeling tool based on sound input**

I've been spending most of my time with code this year getting more comfortable with rendering procedurally generated meshes in real time, based on Perlin noise, audio FFT analysis, and Kinect depth data. The reason for this is because I am already fairly comfortable with most of our concepts in 2D, aside from deeper object oriented strategies.

I want to extend this focus to make a tool for playing with 3d models based purely on sound input. Unlike what I've been doing so far, which is rendering out a plane based on FFT averaging, I want to have something less directly mapped.

I am planning on starting with a procedurally drawn sphere, not using a primitive, in order to access vertices directly. The user will be able to rotate the sphere within the camera view, and activate a "deform mode".

When in deform mode, the microphone will pick up audio above a certain threshold in order to mask any noise, and based on frequency and volume, will either extrude or otherwise move the vertices currently in the center of the camera's field of view.

Rotating the object around will thus allow the user to deform any selected position and end up with a uniquely shaped object, based on sound input and the various positions they've selected to deform. The program should also export a DXF or OBJ for printing or modification in a 3D modeling program.

I'm planning on prototyping this in Processing, though I may port a version to Open Frameworks or possibly even WebGL if at all possible.

Mesh prototypes: