CMPM 163 Homework 3, Part B

1.) After thinking through a series of possible visual effects to create for the final project, my favorite effects have been those related to digital glitches. One of my favorite visual glitch effects is the surreal result of datamoshing. The effect most commonly occurs when video frame information has been partially destroyed or corrupted, so that new frame information is only updated once movement happens over a set of pixels. It is an effect that many people have seen before, when a video's stream momentarily breaks. Here are some examples.
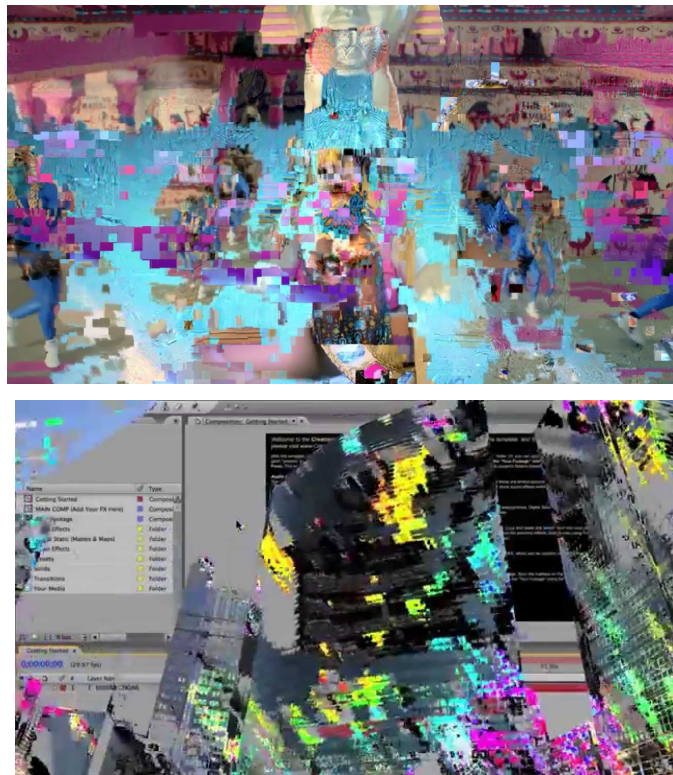
Reproducing this in real-time, using shaders and camera effects, would be a very interesting task. I have found a few examples of datamoshing being done in Unity. Github user keijiro has a public repository demonstrating their replication of this effect in Unity here: https://github.com/keijiro/KinoDatamosh. An implementation of keijiro's datamoshing in a game can be found here: https://www.youtube.com/watch?v=Kj_-33PBvew. Another Unity example of datamoshing is this music visualization project: https://www.youtube.com/watch?v=CCs7V7FMnX0. After playing around with keijiro's Unity project, I have found how malleable the programmer has written this code to be. There are several public variables that can be tweaked, allowing the effect intensity to range from looking like an outdated GPU to looking like a completely haunted exe file.
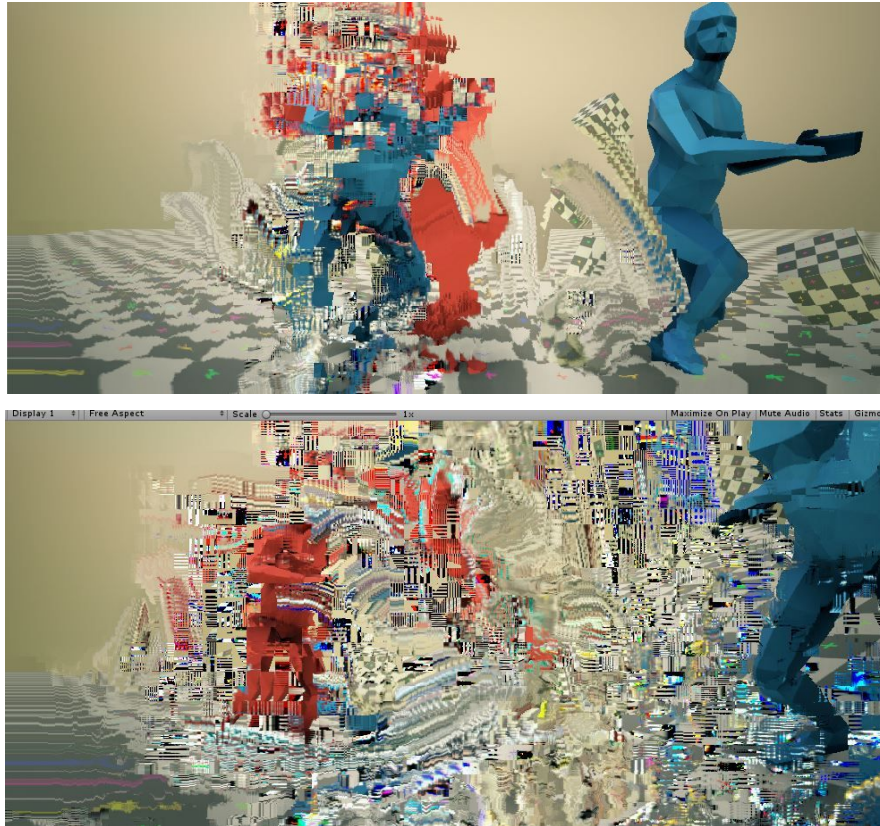
Without peeking at the code for how datamoshing can be done in a game engine, I would imagine the process would involve taking the image rendered to the camera and retaining the pixel colors of that image until there is a greatly different new pixel color. This way, if pixel colors drift smoothly (as they tend to do when objects in the view space move), they will not be properly updated. Only once a heavily significant update is made to the pixel value will the pixel color actually be changed. This description could be incorrect, but it is what appears to be happening when I study the results of the glitch.

2.) I have already found a team for this project, although we do not yet have a specific effect or idea picked yet. The team will consist of myself, Georgio Klironomos, and Brady Moore.