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Math 155B Spring 2018 Final Project

Included in project:

A character is loaded from an OBJ file and rendered using a toon shader (cel shading + contour shader). Cel shader is a modified version of the Phong fragment shader. Contours use multi pass rendering. Normal and depth textures are rendered to frame buffers and then an edge detection algorithm draws the contours. OBJ file loader reads in vertex coords, normal coords, texture coords, and faces from OBJ file and draws every triangle with unique vertices to deal with vertices with multiple normal/texture coordinates. Probably not optimal.

OBJ file loader based on:

http://www.opengl-tutorial.org/beginners-tutorials/tutorial-7-model-loading/

Multipass based on:

http://www.opengl-tutorial.org/intermediate-tutorials/tutorial-14-render-to-texture/

Contour fragment shader based on:

https://gamedev.stackexchange.com/questions/68401/how-can-i-draw-outlines-around-3d-models

Shadow mapping (not finished) based on:

http://www.opengl-tutorial.org/intermediate-tutorials/tutorial-16-shadow-mapping/

Controls:

Arrow keys/Home/End:	Adjust camera
C key:	Toggle backface culling
Number keys 1,2,3:	Toggle lights 1,2,3
D:	Toggle diffuse light
S:	Toggle specular light
A:	Toggle ambient light


Toon Shading


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