Final Project: Computer Graphic

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1 Introduction

This protect of computer graphics is supposed to present a model of 3D object. My project is based on cube model. To realize all the function of 3D model transform, such as scale and rotate. I am using the external library of Three.js. All the requirement are from the professor complete very well.

2. Project requirement

1. Modeling: create and store a 3D object by any number of these means:

a. Draw three 2D "elevations" (front, top, side -- see, for example, "my dream house" or "my dream car (front, side, top)"; your implementation should be able to "accept" any reasonable generic object, not just "my house" or "my car"). Upon drawing, store coordinates of the elevations in a way that will allow you to create a 3D model of the object from them. b. Enter coordinates: choose your model format(s) (e.g., vertices, edges, primitives, other).

2. Transform object: apply 3D (Translate/Rotate/Scale/SHear) transformations to the created object.

3. Viewing: view your created object from multiple views.

4. Transform camera/viewer/light sources(s).

5. Generate different projections of the objects (refer to class discussions about different projections, see projection "tree" see figure).

6. Edit/Change perspective projection vanishing points (1, 2, 3).

7. Create texture/bump/environmental mappings for the object.

3. Weekly Progress

First Week

I start the project to build a cube model by three.js. The 2D model is built on the first week, I use the technology of SVG to draw the cube. Upon drawing, I stored coordinates of the elevations in a way that will allow me to create a 3D model of the object from them.

Second Week

In this week, the 2D model is rebuilt into 3D model in another webpage. And the function of 2D model transforming is completed.

Third Week

I applied 3D transformations to the created object and it could be viewed from multiple views. And, different projections of the objects were generated, including edited and changed perspective projection vanishing points (1,2,3).

Forth Week

Light functions are completed for this week. You can drag the label on the right top to change the position of the light.

Last Week

For the last week, I have finished the function of the new texture mapping. Now the cube is a Minecraft grass cube. And the light and rotate function is done.

4.Refference

https://github.com/mrdoob/three.js