Project Report

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Week 3

Technologies used: WebGL, Three.JS, Javascript, HTML, CSS

For instructions on how to use my program, please read the MANUAL.pdf file.

This project is web-based. No additional software installation is required. However, your web browser must support WebGL.

The user can draw primitives/shapes on the screen and delete those shapes as well. One of the objects that the user can draw is a house, which is a pre-designed house that I created using a combination of multiple different shapes. A "custom shape" can also be drawn by providing the coordinates of a 2D shape, and how deep the extruded geometry should be. These primitives are visible from four different views.

My project supports the ability to group multiple objects into one combined group. Once this group is created, the individual objects are removed from the canvas and the group is added. This group is treated as a whole, and transformations can be applied to the group as a whole. Due to browser security restrictions, this feature is unavailable if accessing the page locally through the "file://" protocol. This is due to the fact that the grouping GUI is displayed in a popup. When the page is opened through a web server (like the version hosted on cs.uml.edu), the feature works as expected.

The user can translate, rotate, scale and shear the object they have created. They can also choose for an object to be animated by toggling X, Y or Z axis rotation. This works by increasing the rotation of the object by 0.01 on every loop through the program.

This week, the ability to move the camera was added. There are buttons that can control the position, angle and zoom of the camera. I have also implemented toggle buttons that allow the user to switch between a "four-view" display or a "one-view" display. Internally, there are four cameras. Three cameras have fixed positions (top, side, front). The fourth camera is adjustable by the user.

As always, code cleanup was performed this week as well.