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Computer Graphics I

Final Project Report

This final project essentially covers all the assignments that we have done this semester and combines them into one program. This project utilizes all the files located in the common file of the Esangel Github page, which we’ve been using throughout the entire semester for mainly the shaders in our programs but also comes with MV and the initshader.js files as well. This project consists of four JavaScript and one html file for representing the GUI. The goal was to create a shape editor that could implement all the kinds of shapes that we have done throughout the semester in various assignments. Added onto that, we needed to implement the standard operations of rotation, translation, scaling, and selection. These operations are used by selecting them in the list, using ctrl left click to select one object, and using the mouse to induce the type of operation. To deselect an object, we can ctrl right click Canvases are also able to be saved and loaded back into the program to be edited even further, supporting different colors via a slider and for the lines and curves, thickness is accounted for as well.

The extra features on top of the shape creations are implemented as well. First, we can save our given canvas into a json file whenever we need and can change the size of the canvas in the source code if needed. The json file can also be reuploaded into the application so that it becomes the current canvas. If we were not satisfied with what we had just drawn, we can use control Z to undo our previous objects. There’s also the ability to multi select by holding control and clicking on multiple objects. By using this multi select, we can also perform operations on the selected operations in tandem. . My only main problem with this project was just the amount work that needed to go into the main method. The rotation, shape creation, and scaling were mere derivatives of past assignments. But adding in the saving and uploading of canvases took a while for me to figure out. I also had some issues doing other forms of extra credit as well but that proved to be not as important. Overall this was a very fun project and helped work on my skills with mainly JavaScript as the work in html was fairly minimal.