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COMP 5460

Assignment Four Report

The purpose of this paper is to show the issues faced, lessons learned, and any remaining bugs in my assignment four, as well as list any extra effort that was put into the assignment past the requirements.

First, how my program functions from the user’s perspective. The user can either click the run button, or enter coordinates then click run. The program will take the coordinates in the text boxes and make a line out of them. The camera follows this line maintaining focus on the house.

Getting started on this assignment simple given that we had the starter code but took a while to get used to the camera properties. Getting used to how the position and things worked took some time. The first thing I did was remove the points of the box and exchange them for the points given to us that represent the house shape, I then manually changed the camera so that I could see it properly. I also removed many of the features of the starter code so that I could focus on the objective. Lastly, I changed the colors of the walls to match the assignment requirements.

I added the run button and text boxes for the input and then tried to get the camera working. The book showed polar coordinates for the camera eye so for a while I thought I had to use polar coordinates and that was frustrating, but I soon found out that cartesian coordinates were fine.

Once I had the coordinates down, the next step was to use the parametric form of a line to sample the line into segments and use those segments for camera positions. This was not too difficult.

The major problem I came across was the program crashing when the camera was exactly above the center of the house. I imagine this is because the MV.js could not calculate some vectors because they might be parallel. I originally solved this by skipping any step in a line that fell directly above or below the house, but this solution still crashed if the entire line was above/below the house. I finally solved this in the rendering functin by replacing any value that lies directly above or below the house with a slightly altered value. In my case I replaced any ‘x’ and ‘z’ combination of 8 and 42 with values of 8 and 42.1. This makes it so it can handle a line that is entirely centered above the house.

That is about it for this assignment. A still image from my program is added below to show program output.

