**AS2 - CS 411**

# Written Problems

Written problems can be found in docs/Mostafavi CS411 AS2.pdf

For the javascript equivalent of written problems 2a-2m, please reference the code found in src/Problem2Scripts.js for the code. All answers should print to the console when running the demo .html file.

# Reflections

To begin, I reviewed the starter code. I noted the TA comments that were added and was pleased with the explanations provided for the builtin WebGL functions, but I still had some trouble understanding exactly what was expected of me in terms of the code I wrote.

First, I changed the ZoomIn and ZoomOut functions as those were a simple one line change. I then spent a huge amount of time struggling through the basic transformations. I completed the Rotation and normal rotation section, but after speaking to the TA I realized I did it very wrong. I had not taken into account the original location of the triangle, and that is why the center of mass of the triangle and the rendered line were not aligned. Eventually, I talked to the TA and some peers and realized that the triangle wasn't centered at 0,0 and that there would have to be an initial transformation of 0.1 in order to have the triangle follow the line.

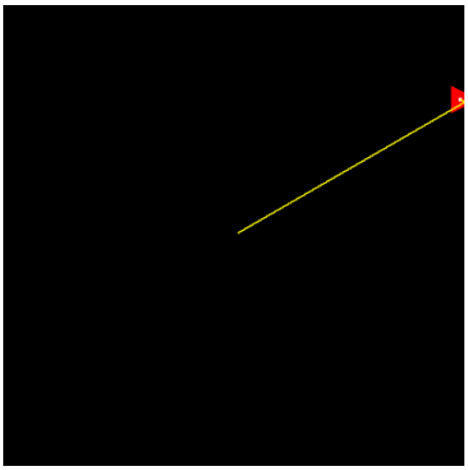
Once I had the triangle following the line, rotation was very confusing. I had realized that I had done the transformations backwards. Although the order of transformations were correct for row matrices, it was not for column matrices. I flipped the order, and everything worked perfectly.

Honestly, I thought that doing the normal vector transformation was more straightforward, as the algorithm was provided. Now that I had a better understanding of how transformations work in code, things got much easier. That piece of code went pretty well and without much hiccups once I talked it over with a friend.

# Demo

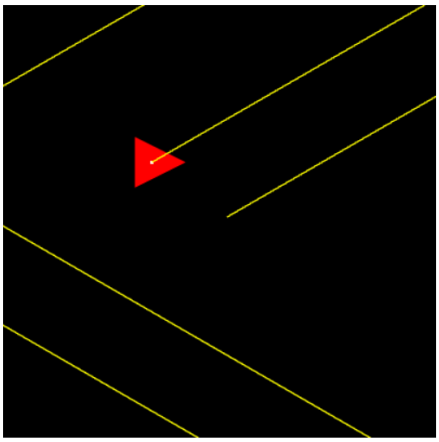
As seen, all aspects of the project work correctly to my knowledge.
Tested in Google Chrome Version 93.0.4577.82.

## Transformation about CM



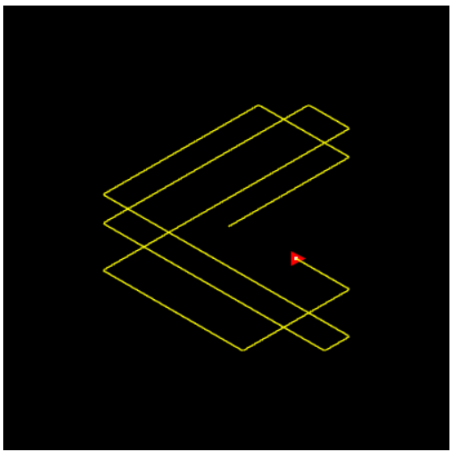
Speed up | Speed down | Zoom in | Zoom out | Toggle render mode | Toggle animation | Toggle Rotation | Toggle Normal Rotation

## Zoom In



Speed up | Speed down | Zoom in | Zoom out | Toggle render mode | Toggle animation | Toggle Rotation | Toggle Normal Rotation

## Zoom Out



Speed up | Speed down | Zoom in | Zoom out | Toggle render mode | Toggle animation | Toggle Rotation | Toggle Normal Rotation

**All other functionalities such as Rotation and Normal Rotation must be demonstrated live by using the HTML file.**