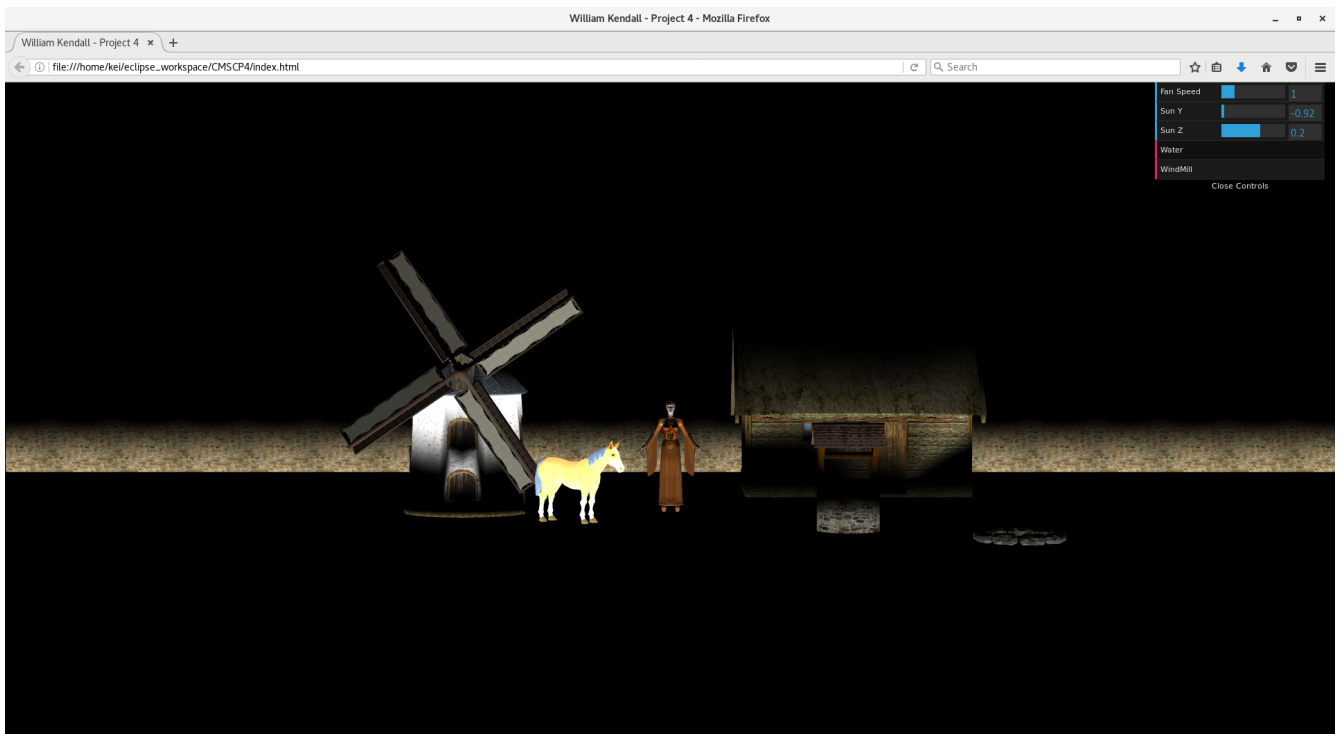


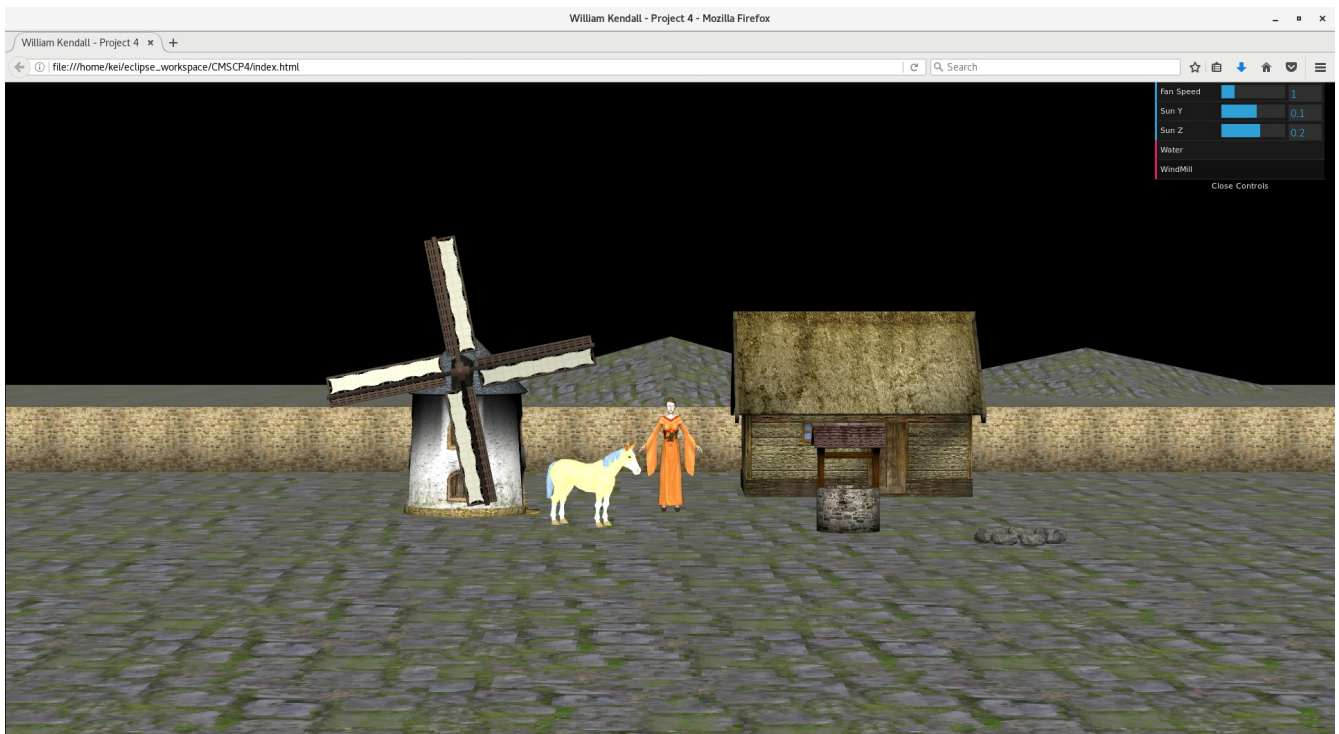
CMSC 405
William Kendall
Project 4

The Nightmare

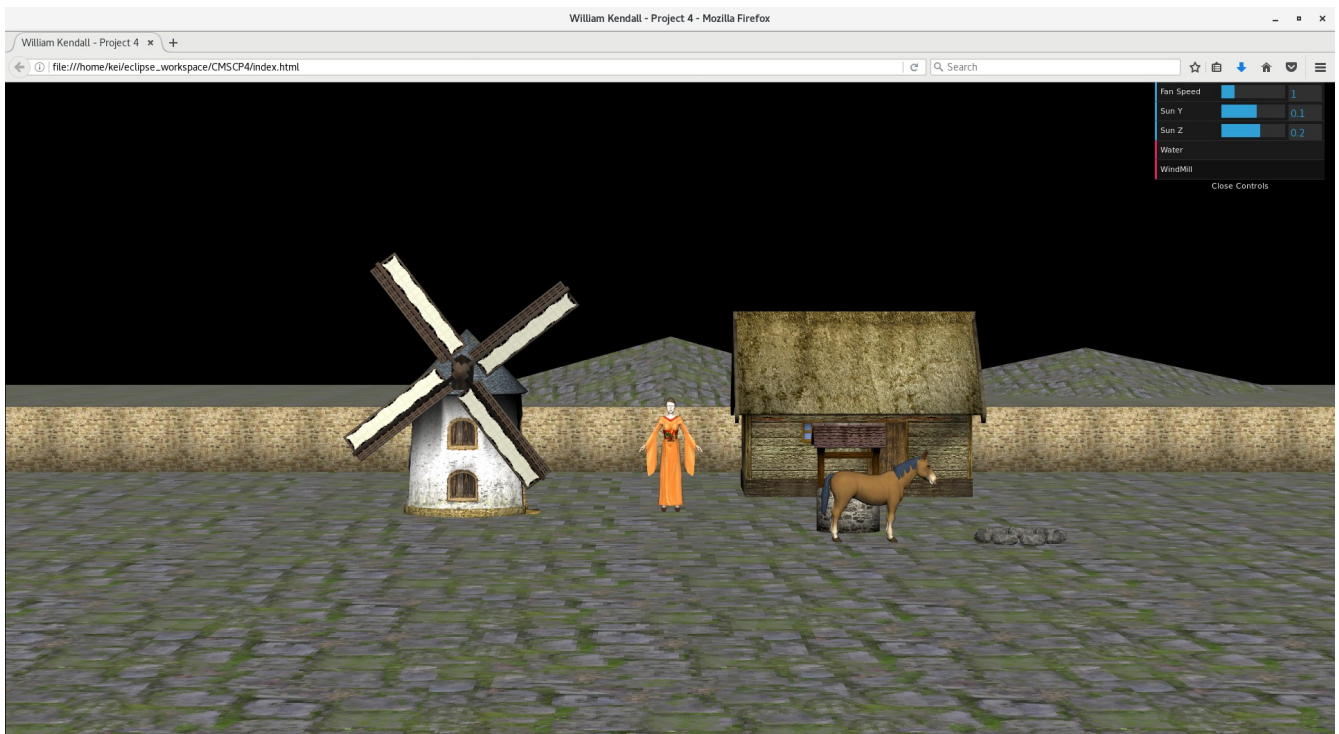


I titled this project as a joke, and used a creepy screen shot. Happy Halloween!

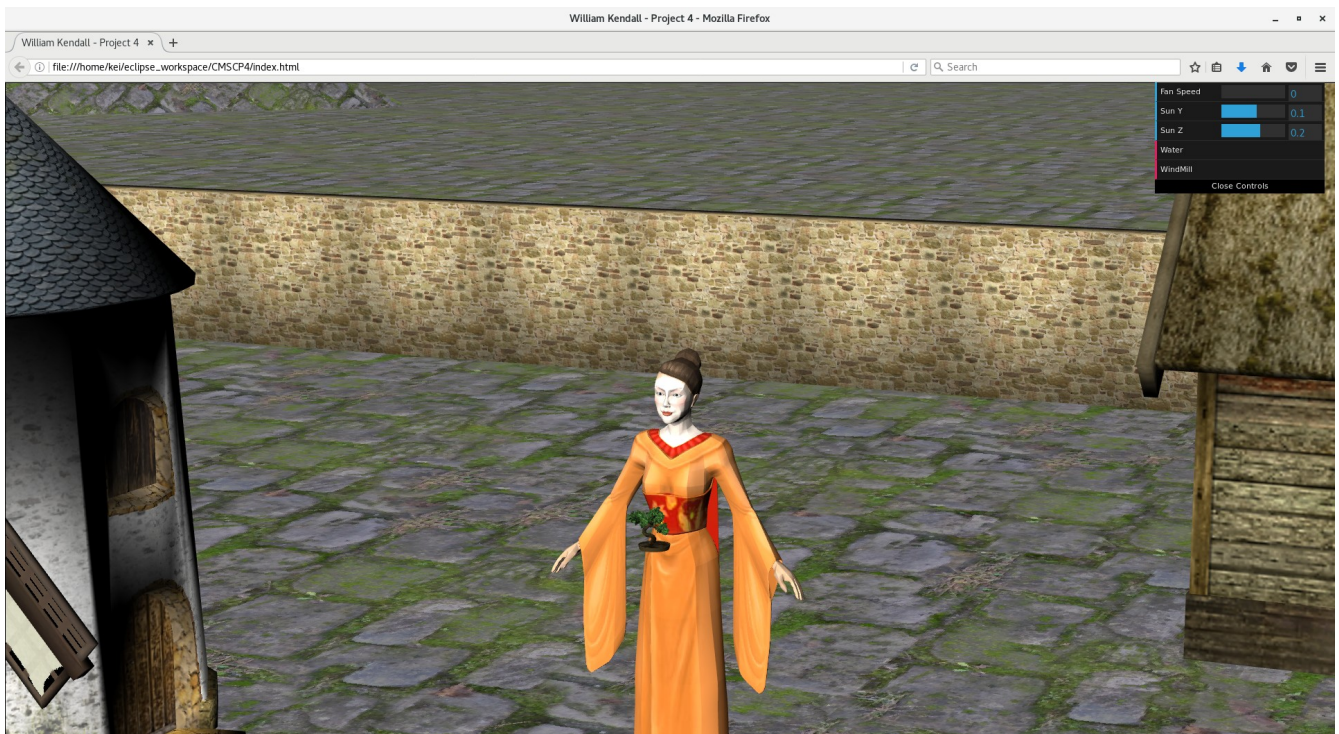
In this screen shot, I wanted to show that models could have ambient lighting. Since the horse is magic, in that he can walk threw walls and does not need to move its feet to move; why should the horse not glow when moving as well.



Here again, we see the horse moving to get some water, from his home in the windmill. I originally had the horse moving around to different locations, but I thought it would be more interesting if the user was in control. The movement is controlled by two menu buttons [water, windmill].



Here the horse has stopped at the well, and is no longer lit. I programmed this so that any model could have ambient / emission lighting. However, the horse seems to be the magic one around here.



The bonsai tree rotates? Is this the true source of the horses power? We will never know.

The camera can be moved in the scene by pressing the w,a,s,d keys; but the camera will always look at the model located at the origin.

Test Plan:

*I had people that have tried my code to only get it to work in firefox. This is because some browsers may not load local content, while firefox will if the html is also local. Since firefox works, there is no plan to test this with a web server.

Canvas size:

Expected results:

The canvas along with the all webGL content should resize to the window with correct aspect.

Results:

The canvas will resize to the width of the window to maintain the aspect ratio. This will also increase the horizontal view.

Models load correctly:

Expected results:

That the world is filled with butterflies a lollipops and all models just work.

Results:

Horrible mangled messes of models everywhere.

Solution:

I changed the loaded to one written by FrenchToast, and had a time trying to track down some models that could be used. When I did, they all did not work. I found that if I load them in blender and output them again they would load.

Textures load correctly:

Expected results:

Since the models have UV cords baked in with there textures, then they should display correctly.

Results:

This is the nightmare. Turns out that OpenGL's texture system is flipped from what most programs output.

Solution:

There is a command that allowed me to flip the textures vertically. It took a while to figure out what was going on, and I tried everything I could think of such as rebuilding the UV cords on the models.

Models have correct animation:

Expected results:

The windmill's fan should rotate and the horse should move in a strait line.

Results:

The windmill's fan rotated around the windmill, and the horse vibrates when moving along a single access.

Solution:

The order of the transforms for the windmill were changed, but the horse will still vibrate when moving along a single access. For the horse, he only moves from the windmill to the well which is not along a single access. The vibrations are from calculating the rotation, an epsilon could be used when the horse is facing the direction, there would be no need to recalculate.

Notes on models and textures:

Most models are from

<http://www.reinerstilessets.de/>

“Freeware” license.

The bonsai and geisha are from

<https://resources.blogscopia.com>

<http://sweethome3d.com>

The texture on the bonsai is from Pixar. (not real bonsai texture, I just use whatever)

Models and textures are creative commons.

Lessons Learned:

This week was loaded full of classes that had a final programming project due. I really had to pull together and manage my time to finish. For this project, I would have really loved to do a lot more than I did. I would have liked to write my own functions for everything, but time just would not allow that. What really came threw for me on this project was the knowledge I have gained from the class. I feel that this project really used everything from the prior projects. In addition, I have spent a little more time researching on how to do things in webGL that made building the project go more smoothly. It is true about learning from mistakes and I was able to fix many on this project that were the same ones I encountered in the past.