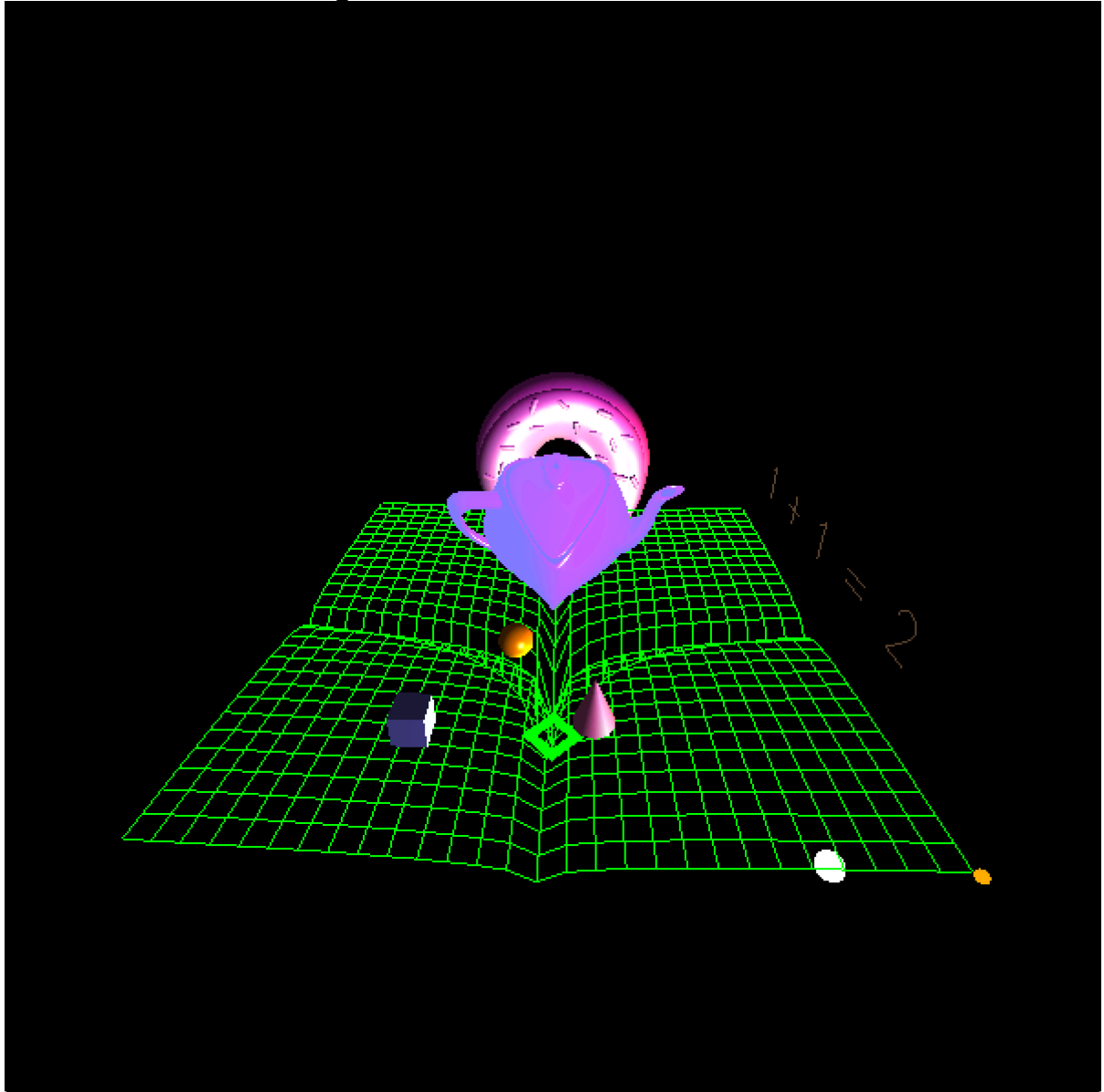


CS 550 –

Final Project Report

Recreate the Simpsons: The Third Dimension



Name: Chi Wen

Email: wench@oregonstate.edu

Link: https://media.oregonstate.edu/media/t/1_t6n9632j

Proposal

In the final project, I am going to recreate the scene from The Simpsons: The Third Dimension with a few twists.

Frist, the green grid with a deep hole in the middle is the most important feature in the background. Deep in the hole, I will like to create a glowing green light, just like the animation shows.

For the objects that is standing on the grid:

Cone, sphere, and square will be slowly moving towards the hole.

An object will be fixed close to the hole and will be sculpted with a wireframe mesh, it's top will seem like it gets stretch towards to the hole.

All the moving and stretching will be animated, and repeats.

If there is enough time, I would like to add some sphere light that runs on the grid's line



What I did for the project

- A green grid was created with the equation $y = \frac{-1}{\sqrt{x}+\sqrt{z}}$ as the background.
- Three light sources, the green light at the bottom of the grid, the moving white light that is running on the grid, and the orange light that will be drag down to the hole continuously.
- Three objects were created on the surface which are orange sphere, pink cone and light blue cube. All of these objects are shiny, which the lighting effect can be seen on the surface, and were slowly moving toward to hole.
- The teapot will change color and will be starched towards the hole as the time goes by.
- Besides from all the things above which I mentioned in the proposal, I also placed a pink doughnut that will get larger in the background to give the scene some dramatic effects. A moving text, “1+1=2” was added on the side of the grid. The reason I add this text is when I reviewed the animation, I found out that there are not only objects in the background, but also some numbers or equations written in the back. This text’s color will also change as the time goes by.
- You can change view point by clicking right click and choose perspective.

Difference

In this project, I tried to recreate the scene from The Simpsons: The Third Dimension. However, I wasn’t able to find an obj file of Homer that I’m satisfied with, so I use a big pink doughnut instead.

Impressive cleverness

In this project, I really that the distortion of the teapot which I use the shader to make that effect. Also, for the text on the side, due to the presentation of the animation, the text should change its angle while changing the view point. Therefore, I decided not to use DoRasterString which is originally used for my other project, I changed to DoStrokeString to get the effect that I want.

What I learned

I learned a lot from this project. First, I certainly know how to adjust coordinate quicker than before. Second, my lighting skill improved. Last, when I was doing shader, I tried a lot of ways to make it seems like it's been pulling down the hole. I used smoothstep and mix to adjust in the vertex shader.

Images

