Project 3 Report

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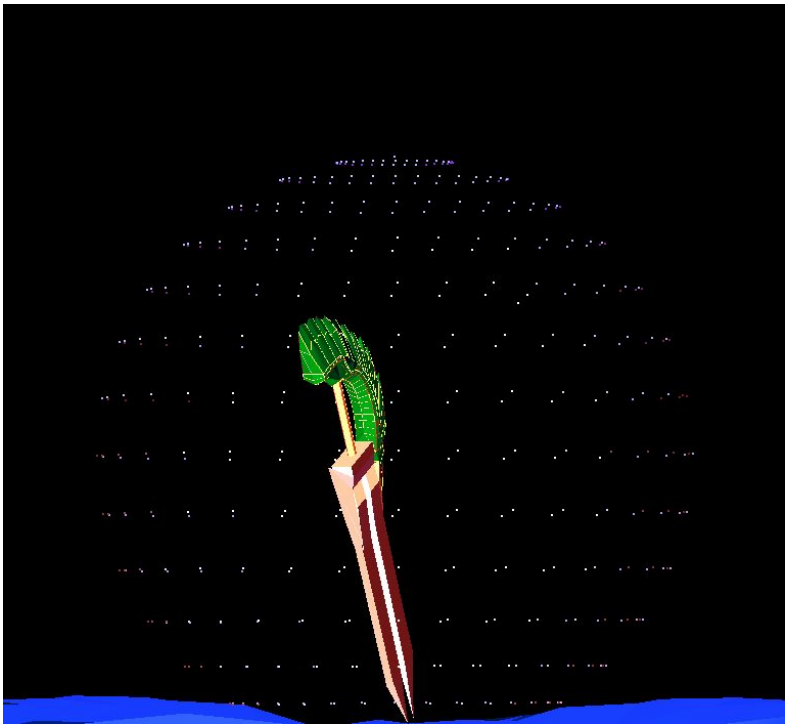
So the original Idea behind my project changed a lot as I learned what I could do. This time I went for the sword Excalibur (sword given by the lady in the lake), so I was going to have

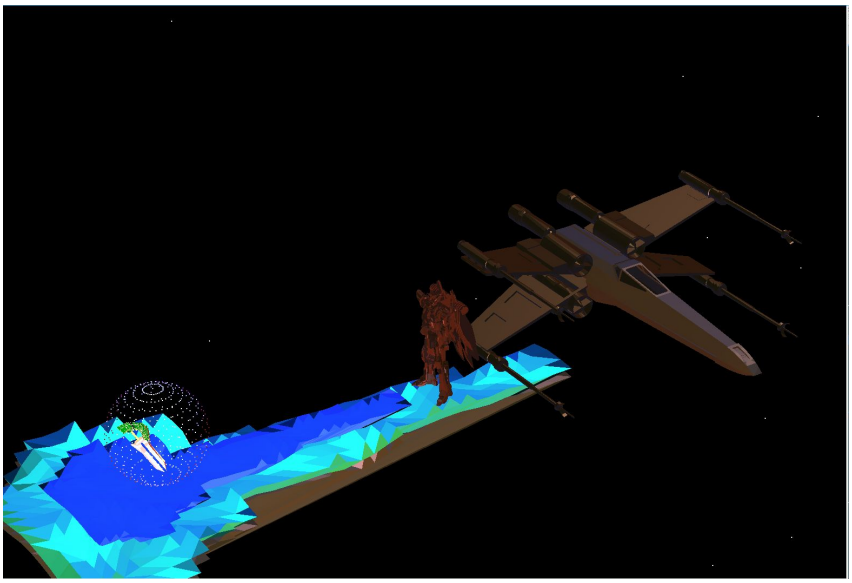


the sword floating over some kind of little island with a small lake on it. That idea grew and grew, and since the sword I made in blender doesn't look like your traditional sword from king Arthur times, I made it an Excalibur of the future and it look like it was in space. I was originally not going to use any .Obj files that I did not create myself, but I couldn't make a good enough model in time so I grabbed two blender models one from *Turbosquid.com* and one from *blenderartists.com* both models completely free. The reason I needed .blend files and not just any .Obj file I could find on the internet is because my parser was very limited. I needed the .blend files so I could export the .Objs the way I wanted them.

The main way I generated models was through my parser, the parser was able to read in any number of vertices, normals and faces(not textures). It was limited because when reading in the faces I kept it to purely triangle faces so that it would be easier to draw in opengl. So if a

.Obj file's face did not have three vertices it was impossible for my parser to read. On top of that if the model has textures at all those will appear in the faces section and break my parser, I had to modify the two models first by deleting any texture attached to them, and then I also had to combine any and all objects, for my parse can only read a single object in a single .Obj file. The RZ model (the robot) was decided because it was the most complicated model I could find for free and I wanted to test my parser. The XWing was just in honor of the new Star Wars movie coming up, and it fit with my scene.

I'm 89% sure I met the project specifications the only reason I say that is because the lighting model was giving me a lot of problems. I think the parser qualifies for sophistication. The interactive viewing is completed my project can zoom in and out, rotate the models in the scene



and switch between the different projection types using 'p','o' and 'q'. I also added a resetRotation*(I edited the ModelView.c++ to do this)* command so that I could reset my scene after any rotation I might have added with the mouse, I mainly used it for debugging purposes.

After the parser was complete and I tested with bigger models the hardest thing was dealing with the lighting models. From debugging the vertex shader to getting the phong model equation correct with all its variables to even just keeping track of all the variables for all of my models. It was difficult, very difficult I was just barely able to get three lights working but I'm not

entirely sure they meet the requirements, I think they do but I was very unsure about the light model part of this project.

The unique thing I did which I don't know of anyone else doing was build a parser to parse .Obj files. I kept a count of vertices, normals and faces of all the shapes I read in as a debugging tool in the beginning, I kept it in just because I thought it was cool to see exactly how many of faces, normals etc. were in each model in the scene. The resetRotation command might be unique.

References

http://www.turbosquid.com/3d-models/free-mobile-suit-3d-model/950805 **(RZ)**

http://blenderartists.org/forum/showthread.php?260734-X-Wing-Fighter-Low-Poly-3D-Model-By-PixelOz **(XWing)**