FP Milestone 1 Update

CSCI 480 - March 1st, 2021

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1. Briefly describe your progress. Address all items that were in your project proposal for this milestone.

Liam's tasks: Create the meshes/.obj files of the rocket ship, planets, and stars. Add the light source for the sunlight.

Created two separate sphere files (variations for positioning coordinates) and a rocket object. We decided that we will use another solution for creating stars rather than making an object file for it. In reference to the light source for the sun, we didn't get to implementing the sun sphere or the light source for it as we were having some trouble with the canvas output.

Daniel's tasks: Set up the scene and camera so models can be placed and rendered into the scene. Create the webpage for the project.

With the help of Cole, we have a layout of where to add the rocket and planet models into the scene in the code. I made multiple attempts at importing .obj files that Liam generated, but had no luck. Will need to probably run a web server in order to pull the .obj files into the code as variables. In the mean-time, we tested with hardcoded String variables of the .obj and didn't get them rendering properly. So we reverted back to the JavaScript-rendered Sphere.js and Cube.js from A3, so we can at least test and make sure an image is rendering correctly. Will continue to get our Julia-generated .obj files working properly, to make our renderer more compatible with using any .obj file that can be given to it. As for importing .obj files into our renderer, maybe we should use Flask or Node.js as our web server. This is something we would like to converse with you about in a meeting.

Cole's Tasks: Create materials/shaders for the different objects and implement code to get the materials rendered.

Pulled the relevant code from A3 which was split into, after some modification, three files: shaderSource.js, initializeScene.js, and shadedTriangleMesh.js. Implemented some shaders that support textures (only tested on cubes so far). Issues with the GL functions arose when trying to import .obj files, the origins of which we were unable to

detect. Once the issues are resolved it should be a relatively smooth process to get the objects Liam created rendered.

2. Provide instructions for running your code, and a description of what I should expect to see when I do so.

1. Pull from Milestone1's branch.
2. Download the code (by 'git clone', or download via .zip in GitHub and extract it).
3. Open the 'index.html' file in your web browser of choice.

The output will be a red sphere on a grey canvas background. The camera rotates around the sphere by click-and-drag, just trust us.

3. If the project's goals need to change at all (e.g., to adjust scope to account for unforeseen challenges, or to further clarify goals), provide an updated set of goals for your final deliverable. Explain each change with respect to your original goals.

As of now we still feel we can accomplish all the final deliverables. One note is that we believe some additional features such as particles might not be implemented due to the time constraint.