CS 405 – Project 3 Report

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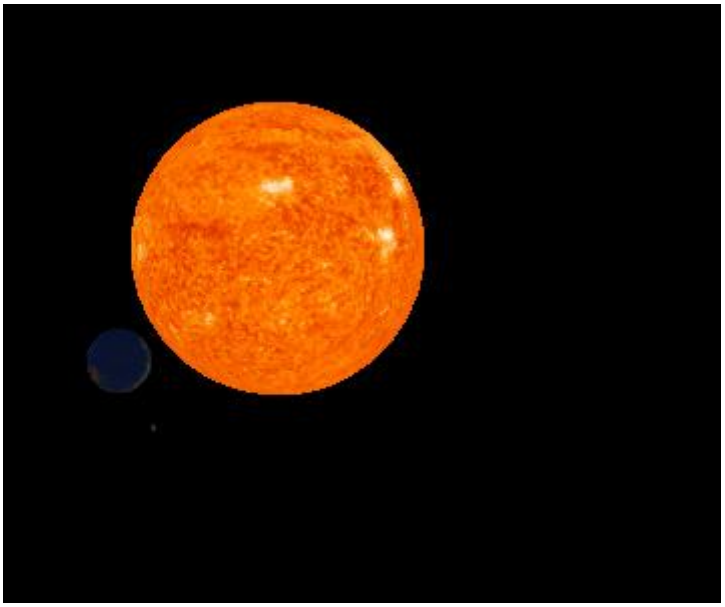
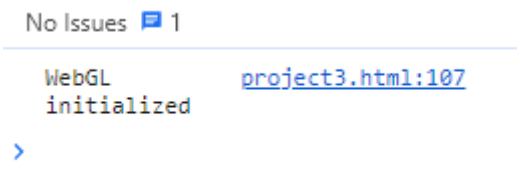
Task – 1

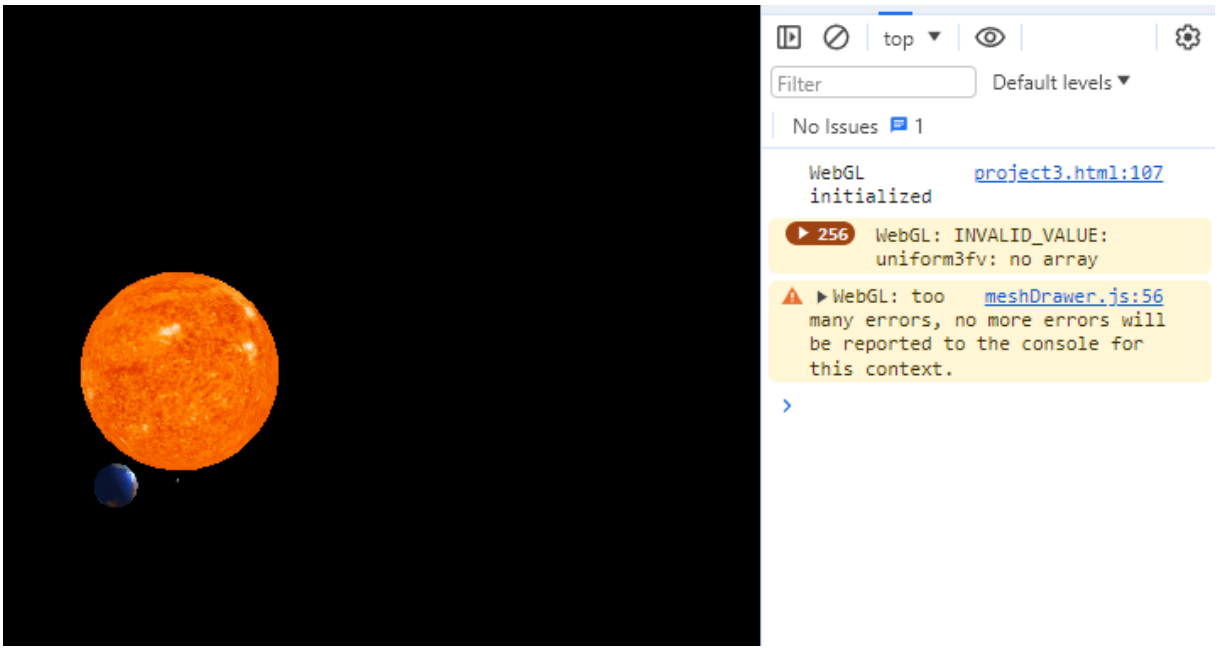
For the first part of the project, I focused on updating the sceneNode.js file's draw function. The key modification involved incorporating the appropriate TRS (Translation, Rotation, Scaling) functions from the trs.js file. This allowed me to create the global model matrix, which is crucial for accurate rendering. The draw function now successfully draws the meshDrawer, resulting in a scene that includes the sun, earth, and moon. There are no errors reported in the console. The implementation appears to be functioning as expected.





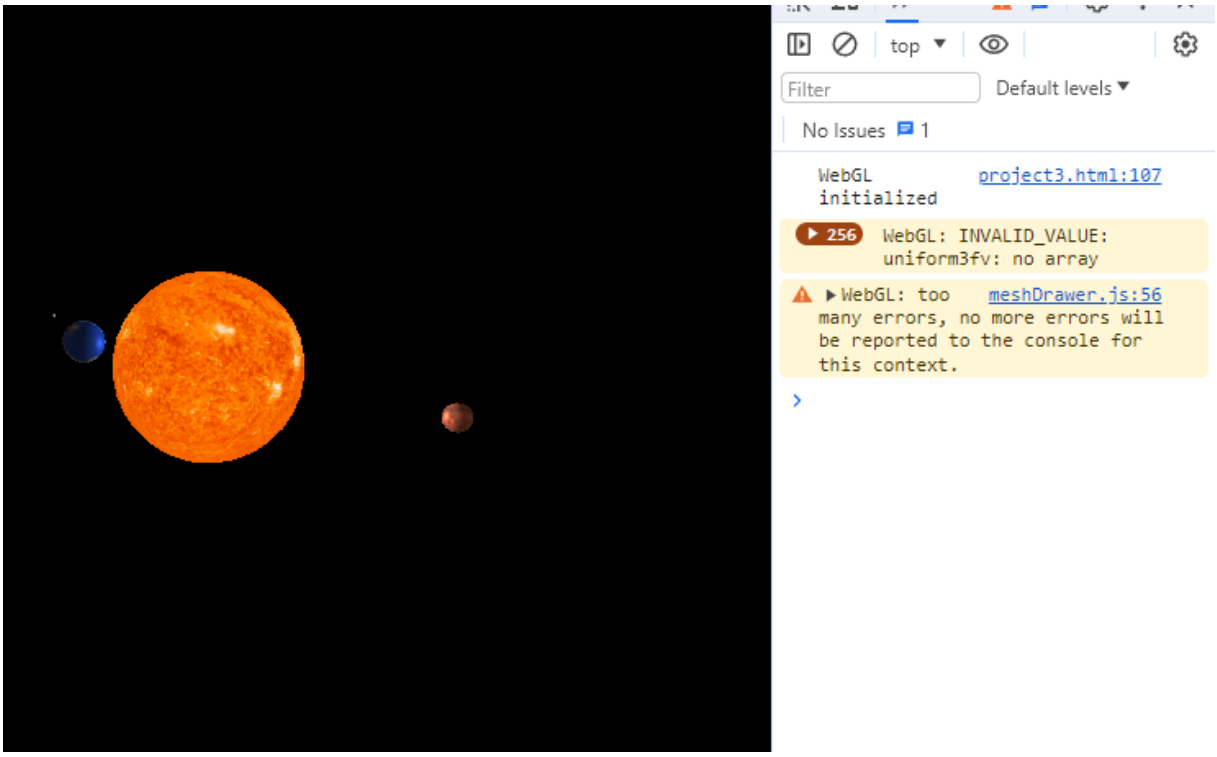
Task – 2

Moving on to task 2, I focused on enhancing the fragment shader for diffuse and specular lighting within the meshDrawer.js file. The meshFS constant was updated to accommodate these changes. Subsequently, adjustments were made within the meshDrawer to properly position the shades. The result of these modifications is visible in the provided screenshot, showcasing the improved diffuse and specular lighting effects.



Task – 3

For the third task, I directed my attention towards updating the renderloop() and window.onload() functions. Within the renderloop function, I introduced a trs.setRotation with the specified Z value. Concurrently, in the window.onload() function, I implemented the rendering of Mars in a manner similar to the other planets. This addition expands the scene to include Mars, contributing to the completeness of the celestial representation.



Conclusion

In conclusion, each task was approached systematically. Task 1 involved refining the drawing process using TRS functions, Task 2 focused on improving lighting in the fragment shader, and Task 3 expanded the scene to include Mars. The provided screenshots and explanations validate the successful completion of each task, demonstrating a comprehensive understanding and implementation of the assigned project components.