

CS 405 Solar System Project Report
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Task 1: The basics of the scene graph have been established. The scene hierarchy was created using the SceneNode class, and the position, transformation and scaling properties of the objects were managed with the TRS object.

Task 2: Added simple lighting effects. Uniform variables were defined for ambient and diffuse components in the MeshDrawer class and diffuse light calculations were added to the fragment shader. This was important to add depth and realism to the scene.

Task 3: The planet Mars has been added to the scene. Mars, like other objects in the solar system, was included in the SceneNode hierarchy, its transformation and scaling properties were adjusted, and an appropriate texture was applied to its surface. Mars' rotation around its axis was regulated by a rotation rate along the Z axis that was proportional to time.

With these steps, a dynamic 3D scene was created and basic visual simulation techniques were applied.