can.inanir – 31159  
  
**CS 405 – Project 3 Report**-In this project we were tasked with adding functionality for rendering a solar system. We were given 3 tasks to accomplish the final result.  
  
**Task 1:**  
-In this part we were tasked with writing the draw function in the SceneNode.js class; so that it accurately and correctly propagated the transformations from parents to children nodes.  
  
-The function uses matrix multiplication to combine the child’s nodes with the parents. Updates the MVP, model-view, normal and model matrices. Then it calls itself recursively in order to get to all child nodes and all children of the child node.  
  
-Now, the program can handle complex hierarchies.   
  
**Task 2:**  
-In this part we needed to update the fragment shader in MeshDrawer.js to add diffuse and specular lighting effects.  
  
-Diffuse lighting = dot product of normal and light direction vectors.  
-Specular lighting = Phong reflection model.  
  
-Now diffuse, specular and ambient light render correctly.  
  
**Task 3:**

-In this part we needed to add a new object to the scene: Mars,  
configuring it as a child of the Sun with specific translations, scaling, rotation, and texture.  
  
-Added a new MeshDrawer for Mars (very similar to Earth, moon, and sun’s mesh drawers)  
-Input its transformation properties (translation, scaling, rotation) to the given values. Also changed the texture link to the Mars texture.  
  
-Successfully added Mars to our model (with the given values). Light effect calculations and orbiting works correctly.

\*\*That concludes the project and the CS405 course.  
This was a very fun course to take!  
Selim hocam and Fatih; **Thank you!** for everything you guys did this semester :)

Also you guys should get more TA’s… poor Fatih is working overtime D: