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CS 450 - Introduction to Computer Graphics

Project #5 - Texture Mapping

1) **A description of what you did to get the display you got**

To achieve the project's objectives, I followed these steps:

- Saved each planet's texture file in my file area.
- Used the **BmpToTexture** function to read each texture and store them in GPU memory as texture objects.
- Created a display list for a generic sphere (OsuSphere) with a radius of 1.0.
- Created separate display lists for each planet, applying the correct scale and texture. For example, for Mars, I scaled the sphere by 0.53 and applied the **mars.bmp** texture and so on to other planets.
- Added a moving point light source in the scene to demonstrate dynamic lighting, especially in GL_MODULATE mode.
- Implemented keyboard controls to switch between different planets and texture modes (No texture, GL_REPLACE, GL_MODULATE).
- In the **Display** function, I enabled or disabled GL_TEXTURE_2D and GL_LIGHTING based on the chosen mode, and used **glCallList** to render the selected planet.

2) **Media Link : https://media.oregonstate.edu/media/t/1_3pn74wbx**

3) **A cool-looking screen shot from your program, showing lighting vs. no-lighting and GL_REPLACE vs. GL_MODULATE.**