

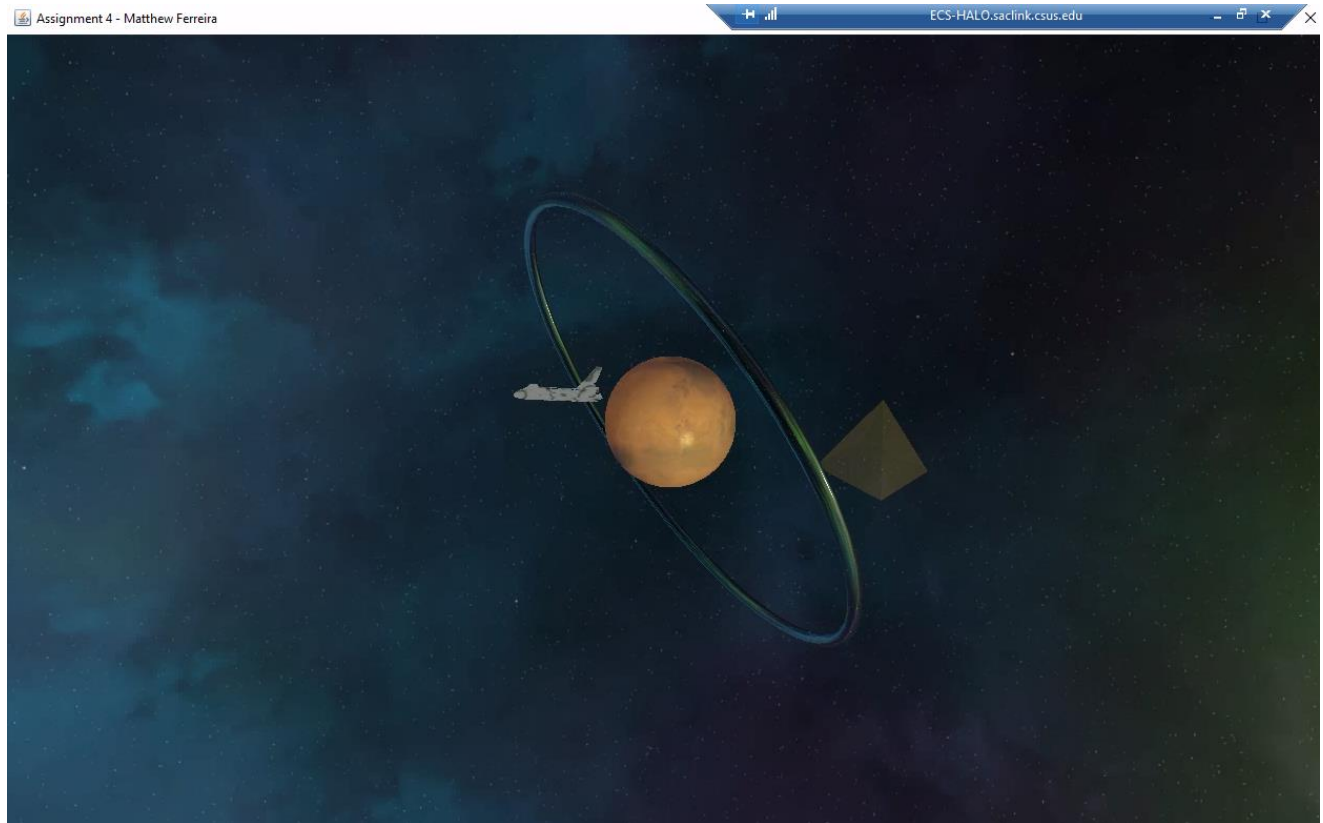
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CSC 155

Assignment 4

Read Me

a.)



b.) My scene contains four objects: A space shuttle, mars, a ring around mars, and a pyramid in space. The space shuttle, ring, and pyramid rotate around mars. The background is a random cube map of space.

c.)

Transparency / Fog: The pyramid is transparent, and a vibrant blue fog can be toggled on it with the F key.

Normal Mapping: Mars is equipped with a normal map of Mars which is more noticeable up close.

Environment Mapping: The ring rotating around Mars is environment mapped, reflecting the texture of the skybox.

Perlin Noise: The white space shuttle has a marble noise texture on it. Easiest to see if you move the light down by scrolling up with the mouse wheel.

d.)

Fog: My fog is underwhelming and only cast onto the pyramid.

Shadows: Shadows are buggy. The torus shadow is probably the best, but it is not mapped onto the objects at the angle I would expect them to be. Before I texture/normal mapped Mars the sphere would cast appropriate shadows, but it does not now. The pyramid's shadows on itself are correct but it does not cast shadows onto other objects. The shuttle does not cast shadows either.

e.) None.

f.)

Mars

Object – from textbook

Texture and normal maps: <http://planetpixelemporium.com/mars5672.html>

Torus – java file from book

Pyramid – obj file from book

Space Shuttle – from book

Skybox space texture - <http://www.tyrolabs.com/space-3d/#animationSpeed=1&fov=80&nebulae=true&pointStars=true&resolution=1024&seed=6ndysfr0z840&stars=true&sun=true>

g.)

To run: extract files to a folder. Navigate to the folder in the command prompt. Input “compile” command and the “run” command into the command prompt.

Controls:

X - key to close program.

W - key to move camera forward.

S - key to move camera backward.

A - key to move camera left.

D - key to move camera right.

Q – key to move camera up.

E – key to move camera down.

UP ARROW – key to pan camera up.

DOWN ARROW – key to pan camera down.

LEFT ARROW – key to pan camera left.

RIGHT ARROW – key to pan camera right.

F - key to turn fog on and off.

Light controls:

Click and Drag mouse to move positional light and sphere.

- drag down to move light towards camera.

- drag up to move light away from camera.

- drag left to move light to the left.

- drag right to move light to the right.

- Scroll down with mouse wheel to move light up.

- Scroll up with mouse wheel to move light down

h.) Program tested on ECS-HALO in RVR 5029