CSC 433/533 Scene Files

Grading of Assignment 2

This is based on the grading rubric from the assignment document. The student’s choice of settings for the perspective view can directly affect the appearance of these images. No penalty for the images not appearing to have the same perspective view as my program.

1. [30 points] correctly processing scene files
   1. [10 points] view settings [2 points each]
      1. scene1.txt – teapot with handle left, spout right
      2. scene2.txt – teapot with spout in front
      3. scene3.txt – teapot with spout left, handle right
      4. scene4.txt – teapot with spout left, handle right, looking down
      5. scene5.txt – Millennium falcon, with radar dish toward viewer
   2. [10 points] Up to 4 lights [2 points each]
      1. scene6.txt – red sphere, one white directional light overhead
      2. scene7.txt –red sphere, one white directional light to the right
      3. scene8.txt –white sphere, two directional white lights one to right, one to the left
      4. scene9.txt – white sphere, two directional white lights from scene8, add red local light directly overhead
      5. scene10.txt – white sphere, lights from scene9 and add green spotlight from bottom
   3. [10 points] Multiple obj files [2 points each]
      1. scene9SpheresDirectional.txt – 9 red spheres with one white directional light overhead (handed out with assignment)
      2. scene9SpheresLocal.txt – 9 red spheres with one white local light at eye position (modification to file handed out with assignment)
      3. scene9SpheresSpot.txt – 9 red spheres with two spot lights overhead (modification to file handed out with assignment)
      4. scene11.txt – brown floor, one lamp, two tables, sphere and teapot
      5. scene12.txt – brown floor, two f-16s, one spotlight on each plane
2. [25 points] reading and displaying obj objects
   1. [5 points] view one simple object
      1. scene13.txt - axis with four directional lights
   2. [5 points] view one moderately complex object
      1. scene14.txt – bunny with one white directional light overhead and one white spotlight behind bunny’s head
   3. [5 points] view multiple objects with individual modeling transforms
      1. scene15.txt - brown floor, two tables, teapot on one table, lamp on the other, two spot lights, one on each table, and one overhead directional light.
   4. [5 points] scene1.txt – use teapot scene to test reshaping window [1 point each]
      1. Make window rectangular
      2. Make window smaller and rectangular
      3. Make window smaller and square
      4. Make window larger
      5. Make window tall and narrow
   5. [5 points] bonus, I didn’t add correctly in assignment 2 specification
3. [25 points] Control of viewing parameters
   1. [20 points] camera control
      1. [2 point] ESC,q working
      2. [2 points] p resets view
      3. [1 points] o toggles wireframe and solid rendering
      4. [ 3 points] Keys w & key up; s & key down – move both eye and focal point forward and back along gaze vector
      5. [3 points] keys a & key left; d and key right – move camera and focal point left and right
      6. [3 points] r – move camera and focal point up, t moves camera and focal point down
      7. [3 points] z rotates eye and focal point 1 degree clockwise x rotates eye and focal point 1 degree counter-clockwise
      8. [3 points] c rotates view up vector 1 degree CW v rotates view up 1 degree CCW
   2. [5 points] P/F
      1. As you use keys, is motion with reasonable speed, does it feel right. Full credit unless something is unusual.
4. [10 points] P/F
   1. Criteria: minimum 4 objects and 2 lights
5. Questions [10 points]
6. [4 points] Viewing matrix [2 points upper 3x3, 2 points for fourth column, the translation]

0.000 1.000 -0.000 -0.000

0.000 0.000 1.000 -0.000

1.000 -0.000 -0.000 -5.000

0.000 0.000 0.000 1.000

1. [3 points] World coordinate becomes (3 or 0 points)

Eye coordinate (0., 0., -2.)

1. [3 points]Triangle face normal (3 or 0 points)

(0., 0., 1.)