

Module 3: Realism and Performance

Lab Exercises for Week 10

Lighting

- (a) Create a lit sphere. Position the sphere at the origin. Use the default material properties. Experiment with different positioning of the light and different combinations of ambient, diffuse and specular light. Experiment with the global ambient light. Try placing more than one light source into the scene. (Time: approx 30 min)

- (b) Alter exercise (a) to have different material properties for the sphere. Experiment with different positioning of the light and different combinations of ambient, diffuse and specular light and ambient, diffuse, specular and emissive material properties. Compare the different lighting effects of a directional light against a positional light. Experiment with different spotlight values. (Time: approx 45 min)

- (c) Light your cube from Week 6. Set the normals so that they are perpendicular to the faces. (Time: approx 15 min)

- (d) Alter exercise (c) so that the normals are now face-weighted normals. Note the difference in effects to that of exercise (c). (Time: approx 15 min)

- (e) Alter exercise (c) so that the mouse moves the light around the scene while keeping the box and viewpoint stationary. (Time: approx 20 min)

- (f) Alter exercise (c) so that the mouse moves the cube and the light always comes from the viewpoint (like a miner's hat light). (Time: approx 10 min)

- (g) Alter exercise (c) so that the light and cube remain in the same relative locations while the mouse moves the viewpoint. (Time: approx 5 min)