Computer Graphics hw4

컴퓨터공학부

2016-18623

이승건

1. 사용법

* Q: 모드변경 (zoom mode / dolly mode) 모드변경시 출력됨
* W,A,S,D: translation
* 마우스 휠: zoom in/out, dolly in/out
* B: show all
* ESC: 프로그램 종료
* 마우스 왼쪽 클릭: 잡고 움직이면 돌릴수 있음.(rotation)

1. 구현 물체

Bronze

float ambient1[4] = { 0.2125, 0.1275, 0.054, 1.0 };

float diffuse1[4] = { 0.714, 0.4284, 0.18144, 1.0 };

float specular1[4] = { 0.393548, 0.271906, 0.166721, 1.0 };

float shininess1 = 0.2\*128;

Chrome

float ambient2[4] = { 0.25, 0.25, 0.25, 1.0 };

float diffuse2[4] = { 0.4, 0.4, 0.4, 1.0 };

float specular2[4] = { 0.774597, 0.774597, 0.774597, 1.0 };

float shininess2 = 0.6 \* 128;

Gold

float ambient3[4] = { 0.24725,0.1995, 0.0745, 1.0 };

float diffuse3[4] = { 0.75164, 0.60648, 0.22648, 1.0 };

float specular3[4] = { 0.628281 ,0.555802, 0.366065, 1.0 };

float shininess3 = 0.4 \* 128;

black plastic

float ambient4[4] = { 0.0,0.0, 0.0, 1.0 };

float diffuse4[4] = { 0.01,0.01,0.01, 1.0 };

float specular4[4] = { 0.50, 0.50, 0.50, 1.0 };

float shininess4 = 0.25 \* 128;

yellow plastic

float ambient5[4] = { 0.0,0.0, 0.0, 1.0 };

float diffuse5[4] = { 0.5,0.5,0.0, 1.0 };

float specular5[4] = { 0.60, 0.60, 0.50, 1.0 };

float shininess5 = 0.25 \* 128;

green rubber

float ambient6[4] = { 0.0,0.05, 0.0, 1.0 };

float diffuse6[4] = { 0.4,0.5,0.4, 1.0 };

float specular6[4] = { 0.04, 0.70, 0.04, 1.0 };

float shininess6 = 0.78125 \* 128;

1. Depth ordering algorithm

반투명 정육면체의 6개 면을 무한대로 연장하여 나눠지는 공간들 중에 바라보는 위치가 어디 있는지에 따라 면의 display 순서를 다르게 하여 구현함.

1. Lighting configuration

-광원 2개

-위치

float light\_pos0[] = { 30.0, -10.0, 20.0, 1.0 };

float light\_pos1[] = { 0.0, 50.0, 40.0, 1.0 };

-광원 특성

float ambient[4] = { 0.1, 0.2, 0.0, 1.0 };

float diffuse[4] = { 0.4, 0.4, 0.0, 1.0 };

float specular[4] = { 0.5, 0.4, 0.0, 1.0 };

float shininess = 35;

1. 실행법

g++ -o sg sg.cpp -lm -lGL -lGLU -lglut ; ./sg