#include<GL/glut.h>

#include<stdio.h>

**void wall(double thickness)**

**{**

glPushMatrix();

glTranslated(0.5,0.5\*thickness, 0.5);

glScaled(1.0,thickness, 1.0);

glutSolidCube(1.0);

glPopMatrix();

**}**

**void tableleg(double thick, double len)**

**{**

glPushMatrix();

glTranslated(0,len/2,0);

glScaled(thick, len, thick);

glutSolidCube(1.0);

glPopMatrix();

**}**

**void table(double topwid, double topthick, double legthick, double leglen)**

**{**

glPushMatrix();

glTranslated(0,leglen,0);

glScaled(topwid, topthick, topwid);

glutSolidCube(1.0);

glPopMatrix();

double dist=0.95\*topwid/2.0-legthick/2.0;

glPushMatrix();

glTranslated(dist, 0, dist);

tableleg(legthick, leglen);

glTranslated(0.0,0.0,-2\*dist);

tableleg(legthick, leglen);

glTranslated(-2\*dist, 0, 2\*dist);

tableleg(legthick, leglen);

glTranslated(0,0,-2\*dist);

tableleg(legthick,leglen);

glPopMatrix();

**}**

**void displaySolid(void)**

**{**

GLfloat mat\_ambient[]={0.7f,0.7f,0.7f,1.0f};

GLfloat mat\_diffuse[]={0.5f,0.5f,0.5f,1.0f};

GLfloat mat\_specular[]={1.0f,1.0f,1.0f,1.0f};

GLfloat mat\_shininess[]={50.0f};

glMaterialfv(GL\_FRONT,GL\_AMBIENT, mat\_ambient);

glMaterialfv(GL\_FRONT,GL\_DIFFUSE, mat\_diffuse);

glMaterialfv(GL\_FRONT,GL\_SPECULAR, mat\_specular);

glMaterialfv(GL\_FRONT,GL\_SHININESS, mat\_shininess);

GLfloat lightintensity[]={0.7f,0.7f,0.7f,1.0f};

GLfloat lightposition[]={2.0f,6.0f,3.0f,0.0f};

glLightfv(GL\_LIGHT0, GL\_POSITION, lightposition);

glLightfv(GL\_LIGHT0, GL\_DIFFUSE, lightintensity);

glMatrixMode(GL\_PROJECTION);

glLoadIdentity();

double winht=1.0;

glOrtho(-winht\*64/48, winht\*64/48, -winht, winht,

0.1, 100.0);

glMatrixMode(GL\_MODELVIEW);

glLoadIdentity();

gluLookAt(2.3,1.3,2.0,0.0,0.25,0.0,0.0,1.0,0.0);

glClear(GL\_COLOR\_BUFFER\_BIT|GL\_DEPTH\_BUFFER\_BIT);

glPushMatrix();

glTranslated(0.6,0.38,0.5);

glRotated(30,0,1,0);

glutSolidTeapot(0.08);

glPopMatrix();

glPushMatrix();

glTranslated(0.4,0,0.4);

table(0.6,0.02,0.02,0.3);

glPopMatrix();

wall(0.02);

glPushMatrix();

glRotated(90.0,0.0,0.0,1.0);

wall(0.02);

glPopMatrix();

glPushMatrix();

glRotated(-90.0,1.0,0.0,0.0);

wall(0.02);

glPopMatrix();

glFlush();

**}**

**void main(int argc, char \*\*argv)**

**{**

glutInit(&argc, argv);

glutInitDisplayMode(GLUT\_SINGLE|GLUT\_RGB|GLUT\_DEPTH);

glutInitWindowPosition(50,50);

glutInitWindowSize(400,300);

glutCreateWindow("Shaded Scene");

glutDisplayFunc(displaySolid);

glEnable(GL\_LIGHTING);

glEnable(GL\_LIGHT0);

glShadeModel(GL\_SMOOTH);

glEnable(GL\_DEPTH\_TEST);

glEnable(GL\_NORMALIZE);

glClearColor(0.1,0.1,0.1,0.0);

glViewport(0,0,640,480);

glutMainLoop();

**}**