#include<stdlib.h>

#include<GL/glut.h>

GLfloat vertices[]={-1.0,-1.0,-1.0,1.0,-1.0,-1.0,1.0,

1.0,-1.0,-1.0,1.0,-1.0,-1.0,-1.0,1.0,

1.0,-1.0,1.0,1.0,1.0,1.0,-1.0,1.0,1.0};

GLfloat colors[]= {0.0,0.0,0.0,1.0,0.0,0.0,1.0,1.0,0.0,

0.0,1.0,0.0,0.0,0.0,1.0,1.0,0.0,

1.0,1.0,1.0,1.0,0.0,1.0,1.0};

GLubyte cubeIndices[]={0,3,2,1,2,3,7,6,0,4,7,3,1,2,6,5,4, 5,6,7,0,1,5,4};

static GLfloat theta[]={0.0,0.0,0.0};

static GLint axis=2;

**void display(void)**

**{**

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

glLoadIdentity();

glRotatef(theta[0],1.0,0.0,0.0);

glRotatef(theta[1],0.0,1.0,0.0);

glRotatef(theta[2],0.0,0.0,1.0);

glDrawElements(GL\_QUADS,24,GL\_UNSIGNED\_BYTE, cubeIndices);

glFlush();

glutSwapBuffers();

**}**

**void spinCube()**

**{**

theta[axis]+=2.0;

if(theta[axis]>360.0) theta[axis]-=360.0;

glutPostRedisplay();

**}**

**void mouse(int btn, int state, int x, int y)**

**{**

if(btn==GLUT\_LEFT\_BUTTON && state==GLUT\_DOWN) axis=0;

if(btn==GLUT\_MIDDLE\_BUTTON&&state==GLUT\_DOWN) axis=1;

if(btn==GLUT\_RIGHT\_BUTTON&& state==GLUT\_DOWN) axis=2;

**}**

**void myReshape(int w, int h)**

**{**

glViewport(0,0,w,h);

glMatrixMode(GL\_PROJECTION);

glLoadIdentity();

if(w<=h)

glOrtho(-2.0,2.0,-2.0\*(GLfloat)h/(GLfloat)w,

2.0\*(GLfloat)h/(GLfloat)w,-10.0,10.0);

else

glOrtho(-2.0\*(GLfloat)w/(GLfloat)h,

2.0\*(GLfloat)w/(GLfloat)h, -2.0,2.0,-10.0,10.0);

glMatrixMode(GL\_MODELVIEW);

**}**

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

**{**

glutInit(&argc, argv);

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

glutInitWindowSize(500,500);

glutCreateWindow("Spin a color cube");

glutReshapeFunc(myReshape);

glutDisplayFunc(display);

glutIdleFunc(spinCube);

glutMouseFunc(mouse);

glEnable(GL\_DEPTH\_TEST);

glEnableClientState(GL\_COLOR\_ARRAY);

glEnableClientState(GL\_VERTEX\_ARRAY);

glVertexPointer(3,GL\_FLOAT, 0, vertices);

glColorPointer(3, GL\_FLOAT, 0, colors);

glColor3f(1.0,1.0,1.0);

glutMainLoop();

**}**