

Rotate Cube

```
#include <stdio.h>

#include <stdarg.h>

#include <math.h>

#define GL_GLEXT_PROTOTYPES

#ifdef __APPLE__
#include <GLUT/glut.h>
#else
#include <GL/glut.h>
#endif


void display();

void specialKeys();


double rotate_y = 0;

double rotate_x = 0;
```

```
void display() {
```

```
    glClear(GL_COLOR_BUFFER_BIT |  
    GL_DEPTH_BUFFER_BIT);
```

```
    glLoadIdentity();
```

```
    glRotatef(rotate_x, 1.0, 0.0, 0.0);
```

```
    glRotatef(rotate_y, 0.0, 1.0, 0.0);
```

```
    glBegin(GL_POLYGON);
```

```
        glColor3f(1.0, 0.0, 0.0);    glVertex3f(0.5, -0.5, -0.5);  
    // P1 is red
```

```
        glColor3f(0.0, 1.0, 0.0);    glVertex3f(0.5, 0.5, -0.5);  
    // P2 is green
```

```
    glColor3f(0.0, 0.0, 1.0);    glVertex3f(-0.5, 0.5, -0.5);  
// P3 is blue
```

```
    glColor3f(1.0, 0.0, 1.0);    glVertex3f(-0.5, -0.5, -0.5);  
// P4 is purple
```

```
glEnd();
```

```
// White side - BACK
```

```
glBegin(GL_POLYGON);  
glColor3f(1.0, 1.0, 1.0);  
glVertex3f(0.5, -0.5, 0.5);  
glVertex3f(0.5, 0.5, 0.5);  
glVertex3f(-0.5, 0.5, 0.5);  
glVertex3f(-0.5, -0.5, 0.5);  
glEnd();
```

```
// Purple side - RIGHT
```

```
glBegin(GL_POLYGON);  
glColor3f(1.0, 0.0, 1.0);
```

```
glVertex3f(0.5, -0.5, -0.5);  
glVertex3f(0.5, 0.5, -0.5);  
glVertex3f(0.5, 0.5, 0.5);  
glVertex3f(0.5, -0.5, 0.5);  
glEnd();
```

```
// Green side - LEFT
```

```
glBegin(GL_POLYGON);  
glColor3f(0.0, 1.0, 0.0);  
glVertex3f(-0.5, -0.5, 0.5);  
glVertex3f(-0.5, 0.5, 0.5);  
glVertex3f(-0.5, 0.5, -0.5);  
glVertex3f(-0.5, -0.5, -0.5);  
glEnd();
```

```
// Blue side - TOP
```

```
glBegin(GL_POLYGON);  
glColor3f(0.0, 0.0, 1.0);
```

```
glVertex3f(0.5, 0.5, 0.5);  
glVertex3f(0.5, 0.5, -0.5);  
glVertex3f(-0.5, 0.5, -0.5);  
glVertex3f(-0.5, 0.5, 0.5);  
glEnd();
```

```
// Red side - BOTTOM
```

```
glBegin(GL_POLYGON);  
glColor3f(1.0, 0.0, 0.0);  
glVertex3f(0.5, -0.5, -0.5);  
glVertex3f(0.5, -0.5, 0.5);  
glVertex3f(-0.5, -0.5, 0.5);  
glVertex3f(-0.5, -0.5, -0.5);  
glEnd();
```

```
glFlush();  
glutSwapBuffers();
```

```
}
```

```
void specialKeys(int key, int x, int y) {
```

```
    if (key == GLUT_KEY_RIGHT)
```

```
        rotate_y += 5;
```

```
    else if (key == GLUT_KEY_LEFT)
```

```
        rotate_y -= 5;
```

```
    else if (key == GLUT_KEY_UP)
```

```
        rotate_x += 5;
```

```
    else if (key == GLUT_KEY_DOWN)
```

```
        rotate_x -= 5;
```

```
    glutPostRedisplay();
```

```
}
```

```
int main(int argc, char* argv[]) {
```

```
    glutInit(&argc, argv);
```

```
    glutInitDisplayMode(GLUT_DOUBLE | GLUT_RGB |  
GLUT_DEPTH);
```

```
    glutCreateWindow("Awesome Cube");
```

```
    glEnable(GL_DEPTH_TEST);
```

```
    glutDisplayFunc(display);
```

```
    glutSpecialFunc(specialKeys);
```

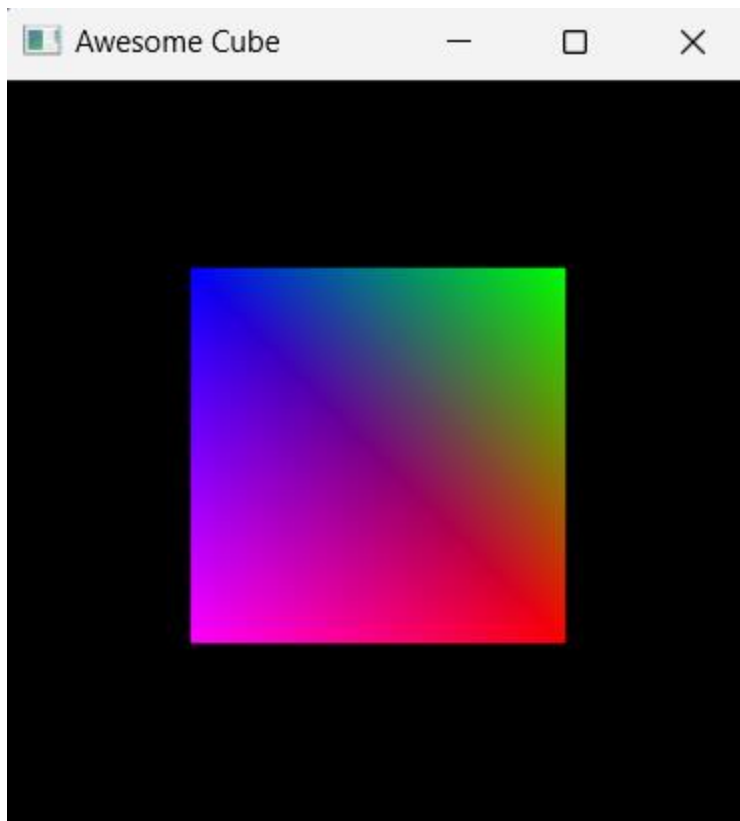
```
glutMainLoop();
```

```
return 0;
```

```
}
```

Output:

X and Y rotation is 0



X and Y rotation is 45

