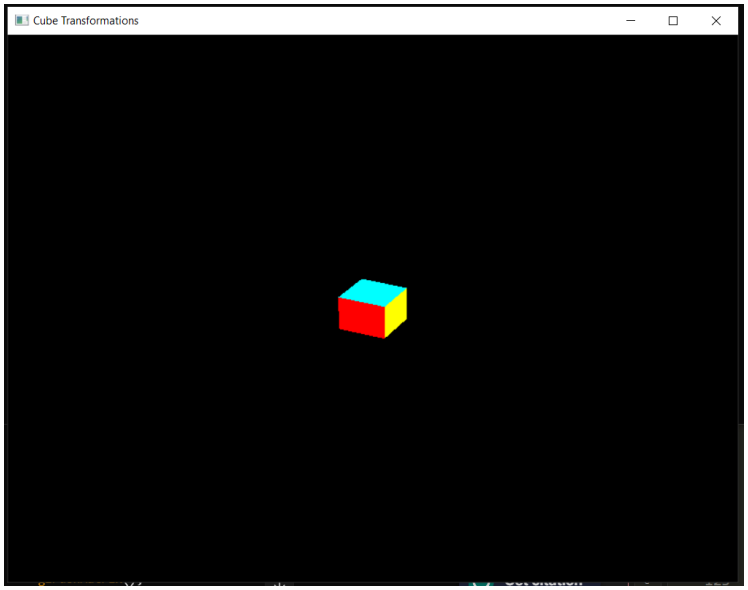
Task 2

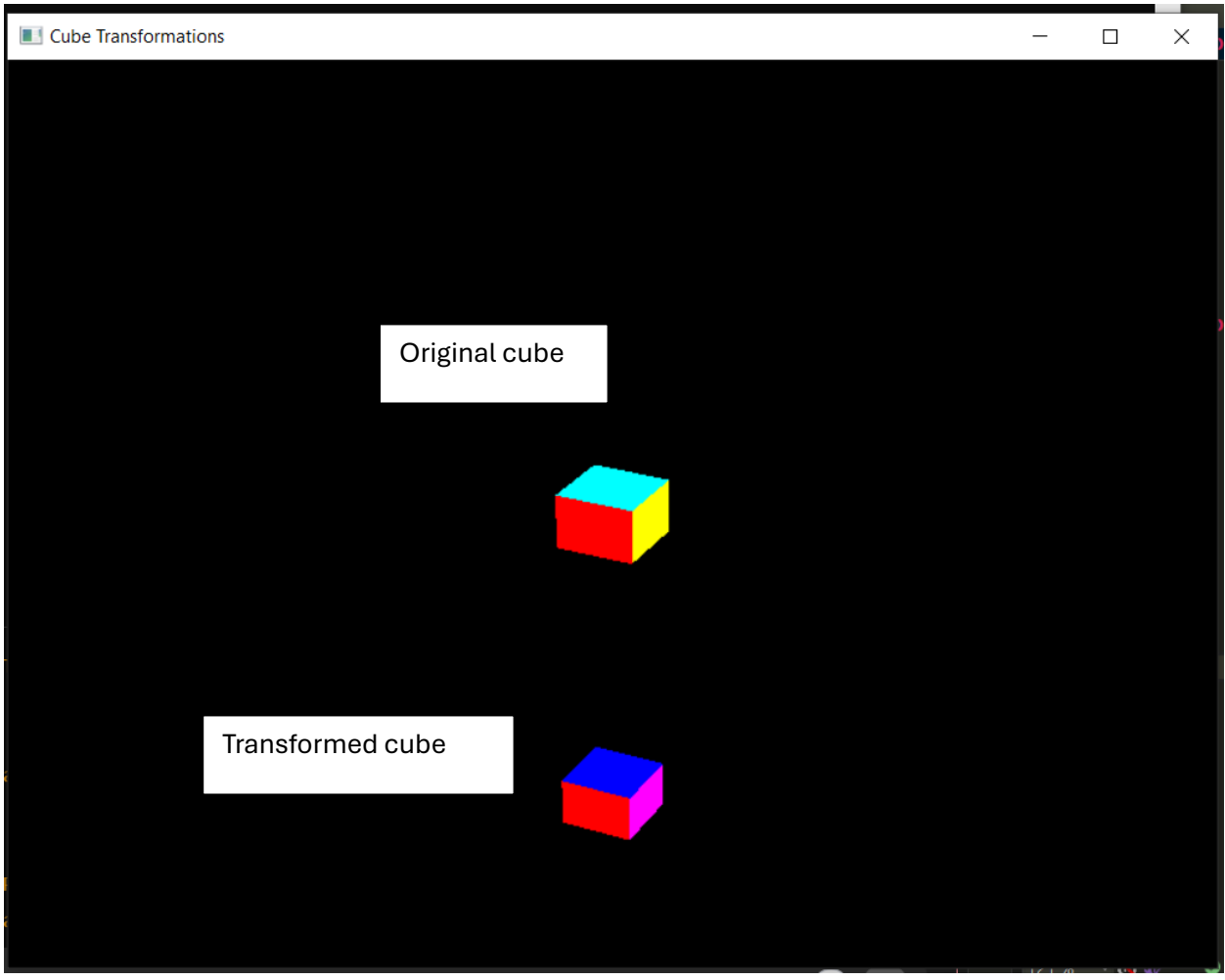
Cube

```
// draw the cube
void drawCube() {
    glBegin(GL_QUADS);

    // front face
    glColor3f(1.0, 0.0, 0.0); //red
    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);

    // back face
    glColor3f(0.0, 1.0, 0.0); //green
    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);

    // left face
    glColor3f(0.0, 0.0, 1.0); //blue
    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);

    // rigth face
    glColor3f(1, 1, 0); //yellow
    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);


    // top face
    glColor3f(0, 1.0, 1.0); //cyan
    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);


    // bottom face
    glColor3f(1, 0, 1); //magenta
    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();

}
```



First Transformation

```
// First Transformation
//Translation by 6 units in the +ve x direction,
// followed by reflection about the yz plane and then
//anticlockwise rotation by 90° around the z - axis.

void transformationSet1() {

    glRotatef(90.0f, 0.0f, 0.0f, 1.0f);
    glScalef(-1.0f, 1.0f, 1.0f);
    glTranslatef(6.0f, 0.0f, 0.0f);

    drawCube();

}
```



Second Transformation

```
void transformationSet2() {
    glPushMatrix();
    glRotatef(-180.0f, 0.0f, 1.0f, 0.0f);
    glTranslatef(3.0f, 0.0f, -3.0f);
    drawCube();
    glPopMatrix();
}
```

Third Transformation

```
void transformationSet3() {
    glPushMatrix();
    glTranslatef(3.0f, -3.0f, 0.0f);
    glScalef(3.0f, 3.0f, 1.0f);
    glTranslatef(-3.0f, 3.0f, 0.0f);
    glTranslatef(3.0f, -3.0f, 0.0f);
    drawCube();
    glPopMatrix();
}
```