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Roll No - 20

#OpenGL code for Sunrise & Sunset

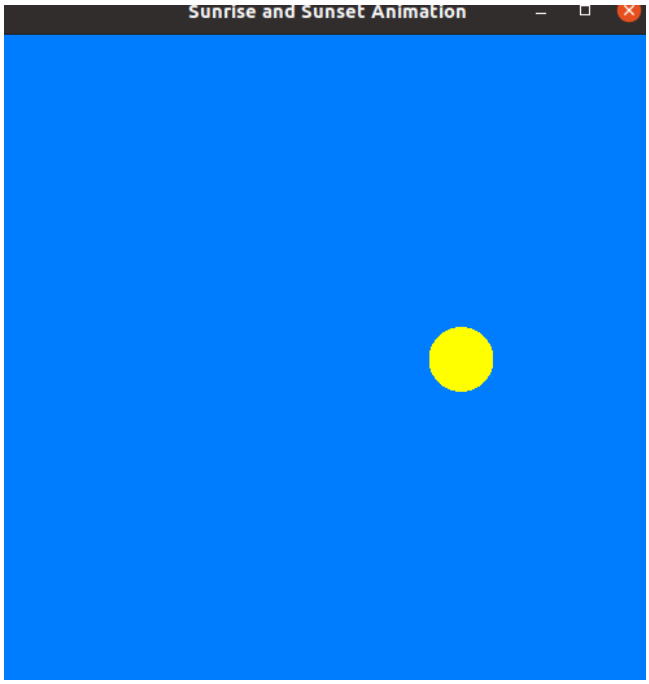
```
#include <GL/glut.h>
#include <cmath>

float sunX = -0.75;
float sunSpeed = 0.01;
bool inSunrise = true;

float skyColor[] = {0.0, 0.5, 1.0};
float sunriseColor[] = {1.0, 1.0, 0.0};
float sunsetColor[] = {1.0, 0.5, 0.0};
void drawSky()
{
glColor3fv(skyColor);
glBegin(GL_QUADS);
glVertex2f(-1.0, -1.0);
glVertex2f(1.0, -1.0);
glVertex2f(1.0, 1.0);
glVertex2f(-1.0, 1.0);
glEnd();
}
void drawSun() {
glColor3fv(inSunrise ? sunriseColor : sunsetColor);
glBegin(GL_TRIANGLE_FAN);
glVertex2f(sunX, 0.0); // Center of the sun
float radius = 0.1;
for (int i = 0; i <= 360; i += 10)
{
float angle = i * M_PI / 180.0;
glVertex2f(sunX + radius * cos(angle), radius * sin(angle));
}
glEnd();
}
void display()
{
drawSky();
drawSun();
glFlush();
}
```

```
void update(int value)
{
sunX += sunSpeed;
if (inSunrise && sunX >= 0.75)
{
inSunrise = false;
}
glutPostRedisplay();
glutTimerFunc(30, update, 0);
}
int main(int argc, char **argv)
{
glutInit(&argc, argv);
glutInitDisplayMode(GLUT_SINGLE | GLUT_RGB);
glutInitWindowSize(500, 500);
glutCreateWindow("Sunrise and Sunset Animation");
glutDisplayFunc(display);
glutTimerFunc(30, update, 0);
glutMainLoop();
return 0;
}
```

COMMAND:

```
oem@oem-OptiPlex-3090:~$ g++ -o openGl openGl.cpp -lGL -lGLU -lglut
oem@oem-OptiPlex-3090:~$ ./openGl
```

OUTPUT:
sunrise:



sunset: