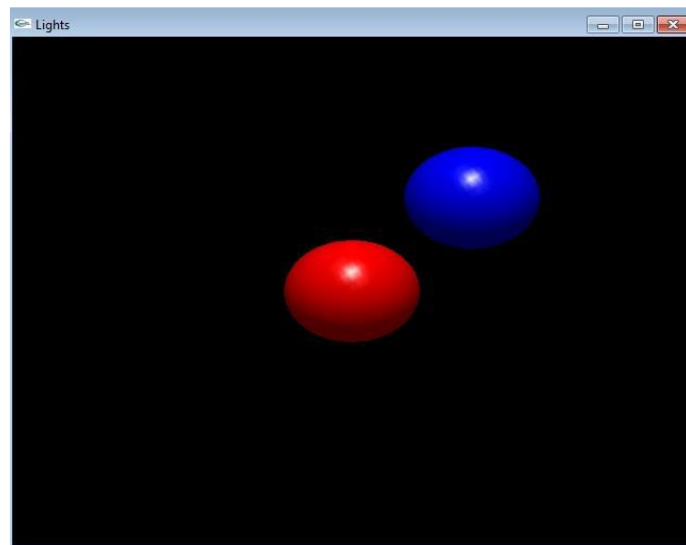


## Lab 8

### Lighting in OpenGL



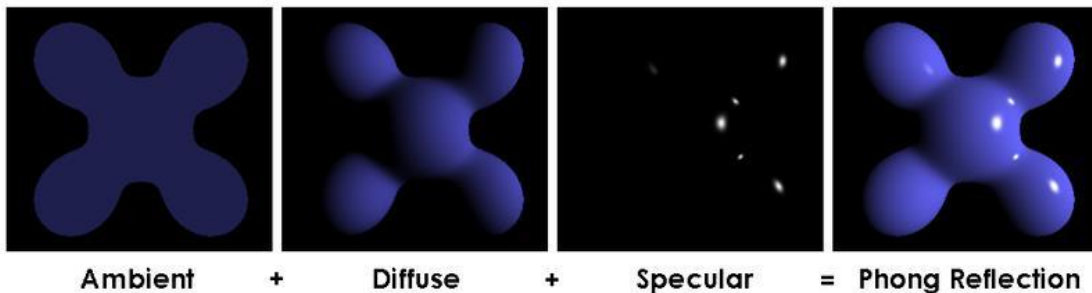
1. Create a program that contains two spheres with different colors and that contains one light source.
2. Animate the light and make it rotate around the two spheres.
3. Move the light source using the keyboard keys

## Hints:

### ➤ Enable Light:

```
// Enable Lighting for this OpenGL Program
glEnable(GL_LIGHTING);
// Enable Light Source number 0
// OpenGL has 8 light sources
glEnable(GL_LIGHT0);
```

### ➤ Set Light Parameters



```
// Define Light source 0 ambient light
GLfloat ambient[] = { 0.1f, 0.1f, 0.1, 1.0f };
glLightfv(GL_LIGHT0, GL_AMBIENT, ambient);
// Define Light source 0 diffuse light
GLfloat diffuse[] = { 0.7f, 0.7f, 0.7f, 1.0f };
glLightfv(GL_LIGHT0, GL_DIFFUSE, diffuse);
// Define Light source 0 Specular light
GLfloat specular[] = { 1.0f, 1.0f, 1.0f, 1.0f };
glLightfv(GL_LIGHT0, GL_SPECULAR, specular);
```

### ➤ Set Light Position

```
// Finally, define light source 0 position in World Space
GLfloat light_position[] = { 0.0f, 1.0f, 1.0f, 0.0f };
glLightfv(GL_LIGHT0, GL_POSITION, light_position);
```

### ➤ Set Material

```
// Enable Material Tracking
glEnable(GL_COLOR_MATERIAL);
// Set Material Properties which will be assigned by glColor
glColorMaterial(GL_FRONT, GL_AMBIENT_AND_DIFFUSE);
```

### ➤ Set Specular Material

```
GLfloat specular[] = { 1.0f, 1.0f, 1.0f, 1.0f };
GLfloat shininess[] = { 96.0f };
glMaterialfv(GL_FRONT, GL_SPECULAR, specular);
glMaterialfv(GL_FRONT, GL_SHININESS, shininess);
```