



**Daffodil**  
*International*  
**University**

## **Project Report**

Course Name: **Computer Graphics Lab**

Course Code: **CSE 422**

**Submitted to:**

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# Project Report

☐ **Project Name :** [Reflecting Mode](#)

☐ **Code:**

```
#include <windows.h>
#include <GL/glut.h>
#include <stdlib.h>
#include <math.h>
#include <iostream>
#include<stdio.h>
using namespace std;
#ifdef __APPLE__
#include <GLUT/glut.h>
#else
#include <GL/glut.h>
#endif
#include <string>
#include<mmsystem.h>
```

```
void init()
{
    //glClearColor(0.8,0.6,0.6,0);
    glClearColor(0.6,0.7,1,0);
    //glClearColor(0.8,0.6,0.8,0);

    glOrtho(-100,100,-100,100,-10,10);
}
```

```
void circle(GLfloat rx,GLfloat ry,GLfloat cx,GLfloat cy)
{

    glBegin(GL_TRIANGLE_FAN );
    glVertex2f(cx,cy);

    for(int i=0; i<=100; i++)
```

```

{
    float angle = 2.0f * 3.1416f * i/100;

    float x = rx * cosf(angle);
    float y = ry * sinf(angle);

    glVertex2f(x+cx,y+cy);
}
glEnd();
}

```

```

void star()
{
    glColor3f(1.0f, 1.0f, 1.0f);
    circle(0.5,0.15,-50,30);
    circle(0.15,0.5,-50,30);

    glColor3f(1.0f, 1.0f, 1.0f);
    circle(0.5,0.15,-30,25);
    circle(0.15,0.5,-30,25);
    glColor3f(1.0f, 1.0f, 1.0f);
    circle(0.5,0.15,-60,20);
    circle(0.15,0.5,-60,20);

    glColor3f(1.0f, 1.0f, 1.0f);
    circle(0.5,0.15,-35,30);
    circle(0.15,0.5,-35,30);

    glColor3f(1.0f, 1.0f, 1.0f);
    circle(0.5,0.15,-70,30);
    circle(0.15,0.5,-70,30);

    glColor3f(1.0f, 1.0f, 1.0f);
    circle(0.5,0.15,-15,22);
    circle(0.15,0.5,-15,22);

    glColor3f(1.0f, 1.0f, 1.0f);
    circle(0.5,0.15,-45,22);
}

```

```
circle(0.15,0.5,-45,22);
```

```
}
```

```
void design()
```

```
{
```

```
    //day upper sungls
```

```
    glColor3f(1.0f, 1.0f, 1.0f);
```

```
    circle(3,13,77,43);
```

```
    circle(10,4,77,43);
```

```
    glColor3f(0.0f, 0.0f, 0.0f);
```

```
    circle(2,12,77,43);
```

```
    circle(9,3,77,43);
```

```
    // night upper sungls
```

```
    glColor3f(0.0f, 0.0f, 0.0f);
```

```
    circle(3,13,-77,43);
```

```
    circle(10,4,-77,43);
```

```
    glColor3f(1.0f, 1.0f, 1.0f);
```

```
    circle(2,12,-77,43);
```

```
    circle(9,3,-77,43);
```

```
}
```

```
void Glass()
```

```
{
```

```
    glColor3f(1,1,1);
```

```
    glRectf(-5,16,5,18);
```

```
    //glass border1
```

```
    glColor3f(1,1,1.2 );
```

```
    glBegin(GL_POLYGON);
```

```
    glVertex2d(74,-43);
```

```
glVertex2d(8,-35);  
glVertex2d(6,32);  
glVertex2d(78,43);  
glEnd();
```

```
//glass border2  
glColor3f(1,1,1.2 );  
glBegin(GL_POLYGON);  
glVertex2d(-74,-43);  
glVertex2d(-8,-35);  
glVertex2d(-6,32);  
glVertex2d(-78,43);  
glEnd();
```

```
//glass1  
glColor3f(0.4,0.8,1);  
glBegin(GL_POLYGON);  
glVertex2d(4,21);  
glVertex2d(8,-32);  
glVertex2d(70,-40);  
glVertex2d(75,40);
```

```
glVertex2d(4,32);  
glEnd();
```

```
//glass2  
glColor3f(0.1,0.1,0.3);  
glBegin(GL_POLYGON);  
glVertex2d(-70,-40);  
glVertex2d(-8,-32);  
glVertex2d(-4,21);
```

```
glVertex2d(-4,32);  
glVertex2d(-75,40);
```

```
glEnd();
```

```
//sunglass stick
```

```
glColor3f(0.0f, 0.0f, 0.0f);
```

```
glColor3f(1,1,1);  
glBegin(GL_POLYGON);  
glVertex2d(-4,21);  
glVertex2d(4,21);  
glVertex2d(6,32);  
glVertex2d(-6,32);  
glEnd();
```

```
}
```

```
float p=7,t=7;
```

```
void Cld1()  
{  
//sun
```

```
glColor3f(1.0f, 1.0f, 0.0f);  
circle(7,10,25,t+20);
```

```
if(t<=4)  
t=t+0.003;
```

```
else  
t=-20;
```

```
glutPostRedisplay();
```

```
//cloud
```

```
glColor3f(1.0f, 1.0f, 1.0f);  
circle(3,5,p+1,15);  
glColor3f(1.0f, 1.0f, 1.0f);  
circle(3,5,p+4,20);  
glColor3f(1.0f, 1.0f, 1.0f);
```

```
circle(3,5,p+8,18);
glColor3f(0.9,1,1);
circle(3,5,p+10,13);
glColor3f(0.9,1,1);
circle(3,5,p+4,12);
glColor3f(0.9,1,1);
circle(3,5,p+8,12);
```

```
if(p<=62)
    p=p+.006;
```

```
else
    p=7;
```

```
glutPostRedisplay();
```

```
}
```

```
float q=2;
```

```
void Cld2()
```

```
{
```

```
//Moon
```

```
glColor3f(1.0f, 1.0f, 1.0f);
circle(6,9,q-57,20);
```

```
glColor3f(0.1,0.1,0.3);
circle(6,9,q-54,22);
```

```
if(q<=43)
    q=q+.003;
```

```
else
    q=-10;
```

```
glutPostRedisplay();
```

```
}
```

```
void roads()
```

```
{
```

```
    //road
```

```
    glColor3f( 0.5,0.6,0.6);  
    glBegin(GL_POLYGON);  
    glVertex2d(8,-32);  
    glVertex2d(70,-40);  
    glVertex2d(71,-25);  
    glVertex2d(7.2,-25);  
    glEnd();
```

```
    //brown line
```

```
    glColor3f( 0.5,0.4,0.3 );  
    glRectf(7.2,-25,71,-23);
```

```
    //white line
```

```
    glColor3f( 1,1,1 );  
    glRectf(10,-32,15,-31);  
    glRectf(20,-32,25,-31);  
    glRectf(30,-32,35,-31);  
    glRectf(40,-32,45,-31);  
    glRectf(50,-32,55,-31);  
    glRectf(60,-32,65,-31);  
    glRectf(70,-32,72,-31);
```

```
    //gls -2
```

```
    //brown line
```

```
    glColor3f( 0.5,0.4,0.5 );  
    glRectf(-7.3,-25,-71,-23);
```



```
//road
```

```
glColor3f( 0.3,0.3,0.3);  
glBegin(GL_POLYGON);  
glVertex2d(-8,-32);  
glVertex2d(-70,-40);  
glVertex2d(-71,-25);  
glVertex2d(-7.2,-25);  
glEnd();
```

```
//white line
```

```
glColor3f( 1,1,1 );  
glRectf(-10,-32,-15,-31);  
glRectf(-20,-32,-25,-31);  
glRectf(-30,-32,-35,-31);  
glRectf(-40,-32,-45,-31);  
glRectf(-50,-32,-55,-31);  
glRectf(-60,-32,-65,-31);  
glRectf(-70,-32,-72,-31);
```

```
}
```

```
float r=7 ,s=7;
```

```
void Elements()  
{
```

```
//house b1
```

```
glColor3f(0.3,0.7,0.6);  
glBegin(GL_POLYGON);  
  
glVertex2d(7.2,-23);  
glVertex2d(11,-23);  
glVertex2d(11,1);  
glVertex2d(5.2,5);
```

```
glColor3f(0.4,0.7,0.7);
```

```
glBegin(GL_POLYGON);  
glVertex2d(5.5,1);  
glVertex2d(10,1);  
glVertex2d(10,5);  
glVertex2d(5.2,5);  
glEnd();
```

```
////house b2
```

```
glColor3f(0.4,0.7,0.7);  
glRectf(11,-23,25,-1);
```

```
////house b3
```

```
glColor3f(0.4,0.7,0.7);  
glRectf(30,-23,36,8);
```

```
glColor3f(0.4,0.8,0.6);  
glRectf(30,-23,33,-3);  
glRectf(33,-3,34,-6);
```

```
////house b4
```

```
glColor3f(0.4,0.7,0.7);  
glRectf(48,-23,66,4);  
glRectf(48,4,67,7);
```

```
glColor3f(0.5,0.8,0.8);  
glRectf(30,-23,55,-10);  
glRectf(48,-23,52,-5);
```

```
glColor3f(0.4,0.8,0.6);  
glRectf(30,-23,33,-3);  
glRectf(33,-3,34,-6);
```

```
//house b5
```

```
glColor3f(0.5,0.8,0.8);
```

```
glRectf(61,-23,69,1);
```

```
//house f4:
```

```
glColor3f(0.8,0.5,0);
```

```
glRectf(53,-23,64,15);
```

```
glRectf(52,15,65,17);
```

```
glRectf(53,17,64,18);
```

```
//white shade
```

```
glColor3f(1,1,1);
```

```
glRectf(53,-18,64,-16.9);
```

```
glRectf(53,-12,64,-10.9);
```

```
glRectf(53,-6,64,-4.9);
```

```
glRectf(53,0,64,1.3);
```

```
glRectf(53,6,64,7.3);
```

```
glRectf(53,12,64,13.3);
```

```
glRectf(55,15,56,-23);
```

```
glRectf(58,15,59,-23);
```

```
glRectf(61,15,62,-23);
```

```
//House f5:
```

```
glColor3f(0.7,0.7,1);
```

```
glBegin(GL_POLYGON);
```

```
glVertex2d(63,-23);
```

```
glVertex2d(71,-23);
```

```
glVertex2d(72.4,-2);
```

```
glVertex2d(63,-2);
```

```
glEnd();
```

```
//window
```

```
glColor3f(0.6,0.3,0);
```

```
glRectf(65,-22,67,-4);
```

```
glColor3f(1,1,1);
glRectf(65.5,-21,66.5,-19.5);
glRectf(65.5,-18,66.5,-16.5);
glRectf(65.5,-15,66.5,-13.5);
glRectf(65.5,-12,66.5,-10.5);
glRectf(65.5,-9,66.5,-7.5);
glRectf(65.5,-6,66.5,-4.5);
```

```
glColor3f(1,1,1);
glRectf(67.5,-21,68.5,-19.5);
glRectf(67.5,-18,68.5,-16.5);
glRectf(67.5,-15,68.5,-13.5);
glRectf(67.5,-12,68.5,-10.5);
glRectf(67.5,-9,68.5,-7.5);
glRectf(67.5,-6,68.5,-4.5);
```

```
glColor3f(0.6,0.3,0);
glRectf(69,-22,71,-4);
glColor3f(1,1,1);
glRectf(69.5,-21,70.5,-19.5);
glRectf(69.5,-18,70.5,-16.5);
glRectf(69.5,-15,70.5,-13.5);
glRectf(69.5,-12,70.5,-10.5);
glRectf(69.5,-9,70.5,-7.5);
glRectf(69.5,-6,70.5,-4.5);
```

```
glRectf(62.5,-1.5,72.5,-3);
glColor3f(0.6,0.3,0);
glRectf(63,0,72.5,-1.5);
```

//house f3: Mosjid

```
//first floor
glColor3f(0,0.4,0.1);
glRectf(34,-23,50,-13);
```

```
//window
glColor3f(0.5,0.7,0.6);
```

```
glRectf(35,-23,37,-15);  
glRectf(38.5,-23,40,-17);  
glRectf(41,-23,43.6,-15);  
glRectf(44.5,-23,46,-17);  
glRectf(47,-23,49,-15);
```

```
//ling miner  
glColor3f(0,0.4,0.4);  
glRectf(47,-13,49.5,13);
```

```
glColor3f(0,0.6,0.6);  
glRectf(46.8,10,49.7,15);
```

```
glColor3f(0,0.4,0.4);  
glRectf(47,12,49.5,15);  
glColor3f(0,0.6,0.6);  
glRectf(48,15,48.5,19);
```

```
//round minr  
glColor3f(0,0.3,0.4);  
circle(5,7,41,0);
```

```
glColor3f(0,0.4,0.3);  
glRectf(40,6.7,42,8.5);  
glRectf(40.8,8.5,41.3,10.5);
```

```
//2nd floor  
glColor3f(0,0.3,0);  
glRectf(35,-13.5,46.7,-03);
```

```
//window  
glColor3f(0.5,0.7,0.6);
```

```
glRectf(36,-12,38,-8);  
glRectf(39,-12,40.8,-8);  
glRectf(41.8,-12,43.5,-8);  
glRectf(44.5,-12,46.5,-8);
```

```
//bar
```

```
glColor3f(0,0.5,0.7);  
glRectf(34.6,-5,47,-3);
```

```
glColor3f(0.8,0.8,0.8);
```

```
glRectf(35,-3,37.5,-1);  
glRectf(38,-3,40.5,-1);  
glRectf(41,-3,43.5,-1);  
glRectf(44,-3,46.7,-1);
```

```
//house f2
```

```
glColor3f(0.7,0.8,0.3);  
glRectf(15,-23,30,4);
```

```
glColor3f(0.7,0.6,0.3);  
glRectf(13,4,32,5);  
circle(9.5,1,22.5,5);
```

```
//line
```

```
glColor3f(0.4,0.4,0.0);  
glRectf(16,-4,29,-3);  
glRectf(16,-14,29,-13);
```

```
//window
```

```
glColor3f(0.4,0.4,0.0);  
glRectf(16.5,-1,19.5,3);
```

```
glRectf(21,-1,24,3);  
glRectf(25.5,-1,28.5,3);
```

```
glRectf(16.5,-6,19.5,-10);  
glRectf(21,-6,24,-10);  
glRectf(25.5,-6,28.5,-10);
```

```
glRectf(16.5,-16,19.5,-20);
```

```
glRectf(21,-23,24,-16);  
glRectf(25.5,-16,28.5,-20);
```

```
////house f1
```

```
glColor3f(0.6,0.5,0.6);  
glBegin(GL_POLYGON);  
glVertex2d(7.2,-23);  
glVertex2d(17,-23);  
glVertex2d(17,-6);  
glVertex2d(5.9,-6);  
glEnd();
```

```
glColor3f(0.9,0.7,0.2);  
glBegin(GL_POLYGON);  
glVertex2d(6.4,-12);  
glVertex2d(20,-12);  
glVertex2d(17,-6);  
glVertex2d(5.9,-6);  
glEnd();
```

```
glColor3f(0.6,0.5,0.6);  
glRectf(6,-6,17,-4);
```

```
glColor3f(0.9,0.7,0.2);  
glRectf(13,-4,16,-1);
```

```
//window
```

```
glColor3f(0.8,0.8,0.8);  
glRectf(7,-19,10,-16);  
glRectf(12,-19,15,-16);
```

```
////Glass-2
```

```
// house back-1
```

```
glColor3f(0.3,0.3,0.40);
```

```
glBegin(GL_POLYGON);
```

```
glVertex2d(-72.8,4);
```

```
glVertex2d(-65,4);
```

```
glVertex2d(-65,-23);
```

```
glVertex2d(-71.2,-23);
```

```
glEnd();
```

```
//house b2:
```

```
glColor3f(0.3,0.3,0.7 );
```

```
glRectf(-36,-3,-55,-23);
```

```
glColor3f(0.3,0.4,0.6);
```

```
glRectf(-25,4,-45,-23);
```

```
glRectf(-25,5,-46,2);
```

```
////
```

```
glColor3f(0.3,0.3,0.5);
```

```
glBegin(GL_POLYGON);
```

```
glVertex2d(-65.8,0);
```

```
glVertex2d(-50,0);
```

```
glVertex2d(-50,-23);
```

```
glVertex2d(-65.2,-23);
```

```
glEnd();
```

```
glRectf(-60.8,-1,-49,1);
```

```
// house back-3
```

```
glColor3f(0.3,0.3,0.5);
```

```
glRectf(-8,10,-20,-23);
```

```
glRectf(-12,15,-20,-23);
```



```
glColor3f(0.3,0.4,0.5);  
glRectf(-15,-2,-25,-23);
```

```
//2d home
```

```
glColor3f(0.3,0.2,0.4);
```

```
glBegin(GL_POLYGON);
```

```
glVertex2d(-70,8.5);
```

```
glVertex2d(-58,10);
```

```
glVertex2d(-58,-23);
```

```
glVertex2d(-70,-23);
```

```
glEnd();
```

```
glBegin(GL_POLYGON);
```

```
glColor3f(0.2,0.2,0.4);
```

```
glVertex2d(-58,10);
```

```
glVertex2d(-58,-23);
```

```
glVertex2d(-53,-23);
```

```
glVertex2d(-53,7.5);
```

```
glEnd();
```

```
//shade window
```

```
glColor3f(0.5,0.6,0.8);
```

```
glBegin(GL_POLYGON);
```

```
glVertex2d(-68,7);
```

```
glVertex2d(-65,7.5);
```

```
glVertex2d(-65,-20);
```

```
glVertex2d(-68,-20.5);
```

```
glEnd();
```

```
glBegin(GL_POLYGON);
```

```
glVertex2d(-63,7.5);  
glVertex2d(-60,8);  
glVertex2d(-60,-19.5);  
glVertex2d(-63,-20);  
glEnd();
```

```
glBegin(GL_POLYGON);  
glVertex2d(-56.5,7);  
glVertex2d(-56.5,-20);  
glVertex2d(-54.5,-20.5);  
glVertex2d(-54.5,5.5);
```

```
glEnd();
```

```
//house f3:
```

```
glColor3f(0.3,0.2,0.3);
```

```
glRectf(-19,-23,-34,8);  
glRectf(-18,8,-35,10);
```

```
glColor3f(0.3,1,0.8);  
glRectf(-24,-20,-26,-17);  
glColor3f(0.5,0.6,0.8);
```

```
glRectf(-24,-15,-26,-12);  
glRectf(-24,-10,-26,-7);  
glColor3f(0.3,1,0.8);  
glRectf(-24,-5,-26,-2);  
glColor3f(0.5,0.6,0.8);
```

```
glRectf(-24,0,-26,3);  
glRectf(-24,5,-26,8);
```

```
glRectf(-20.5,-20,-22.5,-17);  
glRectf(-20.5,-15,-22.5,-12);  
glRectf(-20.5,-10,-22.5,-7);  
glRectf(-20.5,-5,-22.5,-2);
```

```
glRectf(-20.5,0,-22.5,3);  
glColor3f(0.3,1,0.8);  
glRectf(-20.5,5,-22.5,8);  
glColor3f(0.5,0.6,0.8);
```

```
glRectf(-27.5,-20,-29.5,-17);  
glRectf(-27.5,-15,-29.5,-12);  
glRectf(-27.5,-10,-29.5,-7);  
glRectf(-27.5,-5,-29.5,-2);  
glRectf(-27.5,0,-29.5,3);  
glColor3f(0.3,1,0.8);  
glRectf(-27.5,5,-29.5,8);
```

```
glColor3f(0.5,0.6,0.8);
```

```
glRectf(-31,-20,-33,-17);  
glColor3f(0.3,1,0.8);  
glRectf(-31,-15,-33,-12);  
glColor3f(0.5,0.6,0.8);
```

```
glRectf(-31,-10,-33,-7);  
glRectf(-31,-5,-33,-2);  
glColor3f(0.3,1,0.8);
```

```
glRectf(-31,0,-33,3);  
glColor3f(0.5,0.6,0.8);
```

```
glRectf(-31,5,-33,8);
```

```
////house front 2
```

```
glColor3f(0.3,0.5,0.6);  
glRectf(-35,-5,-52,-23);
```

```
glColor3f(0.3,0.6,0.8);
```

```
glRectf(-36.5,-7,-50.5,-22);
```

```
glColor3f(0.3,0.4,0.9);
```

```
glBegin(GL_POLYGON);
```

```
glVertex2d(-33,-10);
```

```
glVertex2d(-54,-10);
```

```
glVertex2d(-52,-6);
```

```
glVertex2d(-35,-6);
```

```
glEnd();
```

```
//window
```

```
glRectf(-41.5,-12,-45,-22);
```

```
glColor3f(0.3,1,0.8);
```

```
glRectf(-47,-15,-49.5,-19);
```

```
glRectf(-37.5,-15,-40,-19);
```

```
////house f4
```

```
glColor3f(0.3,0.5,0.6);
```

```
// glColor3f(0.6,0.5,0.6);
```

```
glBegin(GL_POLYGON);
```

```
glVertex2d(-7.2,-23);
```

```
glVertex2d(-12,-23);
```

```
glVertex2d(-12,-6);
```

```
glVertex2d(-5.9,-6);
```

```
glEnd();
```

```
//glColor3f(0.9,0.7,0.2);
```

```
glColor3f(0.5,0.8,0.9);
```

```
glBegin(GL_POLYGON);
```

```
glVertex2d(-6.4,-12);
```

```
glVertex2d(-15,-12);
```

```
glVertex2d(-12,-6);
```

```
glVertex2d(-5.9,-6);
```

```
glEnd();
```

```
//
```

```
//glColor3f(0.6,0.5,0.6);  
glColor3f(0.3,0.5,0.6);  
glRectf(-6,-6,-12,-4);
```

```
//window
```

```
glColor3f(0.3,1,0.8);  
glRectf(-7,-19,-10,-16);
```

```
// lamp 3
```

```
glColor3f(0,0,0);
```

```
glRectf(-17,-23,-16,-5);  
glRectf(-12,-9,-21,-9.5);
```

```
glRectf(-12.5,-9,-12,-7);  
glRectf(-21,-9,-20.5,-7);
```

```
glColor3f(1,1,0.2);  
circle(1.6,2,-16.5,-5);
```

```
glColor3f(1,1,0.7);
```

```
circle(1,1,-12.25,-7);  
circle(1,1,-20.75,-7);
```

```
//lamp 2
```

```
glColor3f(0,0,0);
```

```
glRectf(-40,-23,-41,-5);  
glRectf(-36,-9,-45,-9.5);
```

```
glRectf(-36.5,-9,-36,-7);  
glRectf(-45,-9,-44.5,-7);
```

```
glColor3f(1,1,0.2);  
circle(1.6,2,-40.5,-5);
```

```
glColor3f(1,1,0.7);
```

```
circle(1,1,-36.25,-7);  
circle(1,1,-44.75,-7);
```

```
//lamp 1
```

```
glColor3f(0,0,0);
```

```
glRectf(-63,-23,-64,-5);  
glRectf(-59,-9,-68,-9.5);
```

```
glRectf(-59.5,-9,-59,-7);  
glRectf(-68,-9,-68.5,-7);
```

```
glColor3f(1,1,0.2);  
circle(1.6,2,-63.5,-5);
```

```
glColor3f(1,1,0.7);
```

```
circle(1,1,-59.25,-7);  
circle(1,1,-67.75,-7);
```

```
// gls-1
```

```
//lamp 2
```

```
glColor3f(0,0,0);
```

```
glRectf(31,-23,32,-5);  
glRectf(27,-9,36,-9.5);
```

```
glRectf(27.5,-9,27,-7);  
glRectf(36,-9,35.5,-7);
```

```
glColor3f(0.5,0.6,0.6);  
circle(1.6,2,31.5,-5);  
circle(1,1,27.25,-7);  
circle(1,1,35.75,-7);
```

```
//lamp 1
```

```
glColor3f(0,0,0);
```

```
glRectf(63,-23,64,-5);  
glRectf(59,-9,68,-9.5);
```

```
glRectf(59.5,-9,59,-7);  
glRectf(68,-9,67.5,-7);
```

```
glColor3f(0.5,0.6,0.6);  
circle(1.6,2,63.5,-5);  
circle(1,1,59.25,-7);  
circle(1,1,67.75,-7);
```

```
//Car
```

```
glColor3f(0.8,0.4,0.6);  
glRectf(r+1,-15,r+22,-13.5);
```

```
glColor3f(0.8,0.4,0.6);  
glRectf(r+1,-28,r+22,-15);  
glRectf(r+22,-28,r+21,-23);  
glRectf(r+22,-28,r+23,-23);
```

```
glColor3f(0,0.3,0.4);  
circle(2.5,-3,r+6,-28);  
circle(2.5,-3,r+18,-28);
```

```
glColor3f(0.9,0.9,0.8);
```

```
circle(1.5,-2,r+18,-28);  
circle(1.5,-2,r+6,-28);
```

```
glColor3f(0,0.3,0.4);  
glBegin(GL_POLYGON);  
glVertex2d(r+2,-23);  
glVertex2d(r+23,-23);  
glVertex2d(r+22,-15);  
glVertex2d(r+2,-15);  
glEnd();
```

```
glColor3f(0.8,0.4,0.6);
```

```
glRectf(r+6,-23,r+6.5,-15);  
glRectf(r+10,-23,r+10.5,-15);  
glRectf(r+14,-23,r+14.5,-15);  
glRectf(r+18,-23,r+18.5,-15);
```

```
glColor3f(0.6,0.7,1);  
// glColor3f(0.8,0.6,0.7);
```

```
glBegin(GL_POLYGON);  
glVertex2d(-8,-32);  
glVertex2d(8,-32);  
glVertex2d(6,-5);  
glVertex2d(-6,-5);  
glEnd();
```

```
if(r<=48)  
    r=r+0.045;
```

```
else  
    r=-72;
```

```
glutPostRedisplay();
```



```
//plane
```

```
glColor3f(0,0.3,0.4);
```

```
circle(8,1,s-71,24);
```

```
circle(7.5,1,s-73,25.2);
```

```
glBegin(GL_POLYGON);
```

```
glVertex2d(s-71,24);
```

```
glVertex2d(s-68,24);
```

```
glVertex2d(s-74,18);
```

```
glVertex2d(s-74.4,18);
```

```
glEnd();
```

```
glBegin(GL_POLYGON);
```

```
glVertex2d(s-71.5,25);
```

```
glVertex2d(s-69,25);
```

```
glVertex2d(s-75,30);
```

```
glVertex2d(s-75.4,30);
```

```
glEnd();
```

```
glBegin(GL_POLYGON);
```

```
glVertex2d(s-78,25);
```

```
glVertex2d(s-76,25);
```

```
glVertex2d(s-77,28);
```

```
glVertex2d(s-78,28.5);
```

```
glEnd();
```

```
if(s<=137)
```

```
    s=s+0.05;
```

```
else
```

```
    s=7;
```

```
glutPostRedisplay();
```

```
//// cover white stick
```

```
glColor3f(0.6,0.7,1);
```

```
//glColor3f(0.8,0.6,0.7);
```

```
glBegin(GL_POLYGON);  
glVertex2d(-4.3,18);  
glVertex2d(4.3,18);  
glVertex2d(4,21);  
glVertex2d(-4,21);
```

```
glEnd();  
glColor3f(0.0f, 0.0f, 0.0f);
```

```
glColor3f(1,1,1);  
glBegin(GL_POLYGON);  
glVertex2d(-4,21);  
glVertex2d(4,21);  
glVertex2d(6,32);  
glVertex2d(-6,32);  
glEnd();  
/////////  
glFlush();
```

```
}
```

```
void wlcDisplay(void){
```

```
glClear(GL_COLOR_BUFFER_BIT);
```

```
glColor3f(0.75,0.6,0.7);  
glRectf(-100,-100,100,100);
```

```
glColor3f(1,1,1);  
glRectf(-60,-60,60,60);
```

```
glColor3f(0,0,0);  
glRectf(-50,-50,50,50);
```

```
glColor3f(1,1,1);  
glRectf(-17,35,17,42);
```

```
glColor3f(0,0,0);
glRasterPos3f(-14,37,0);

char txt1[]="Welcome to the Project";

for(int a=0;a<strlen(txt1);a++ )
{
    glutBitmapCharacter(GLUT_BITMAP_TIMES_ROMAN_24,txt1[a]);
}
glColor3f(1,1,1);
glRasterPos3f(-20,22,0);

char txt2[]="Project Name: ";
for(int b=0;b<strlen(txt2);b++ ){
    glutBitmapCharacter(GLUT_BITMAP_TIMES_ROMAN_24 ,txt2[b]);
}
glColor3f(1,0,0);
glRasterPos3f(-1,22,0);

char txt3[]="Reflecting Mode ";
for(int c=0;c<strlen(txt3);c++ ){
    glutBitmapCharacter(GLUT_BITMAP_TIMES_ROMAN_24 ,txt3[c]);
}
glColor3f(1,1,1);
glRasterPos3f(-19,12,0);

char txt4[]="Submitted By : Nusrat Jahan Marjana";
for(int c=0;c<strlen(txt4);c++ ){
    glutBitmapCharacter(GLUT_BITMAP_HELVETICA_18 ,txt4[c]);
}
glColor3f(1,1,1);
glRasterPos3f(-10,6,0);

char txt5[]="ID: 191-15-12999 ";
for(int c=0;c<strlen(txt5);c++ ){
    glutBitmapCharacter(GLUT_BITMAP_HELVETICA_18 ,txt5[c]);
}
```

```

}

glColor3f(1,1,1);
glRasterPos3f(-5,0,0);

char txt6[]="Sec: J";
for(int c=0;c<strlen(txt6);c++){
    glutBitmapCharacter(GLUT_BITMAP_HELVETICA_18 ,txt6[c]);
}

glColor3f(1,1,1);
glRasterPos3f(-16,-25,0);

char txt7[]="Press X/x to see the project";
for(int c=0;c<strlen(txt7);c++){
    glutBitmapCharacter(GLUT_BITMAP_9_BY_15 ,txt7[c]);
}
glFlush();

}

void myDisplay(void)
{
    glClear(GL_COLOR_BUFFER_BIT);
    Glass();
    Cld1();
    Cld2();
    roads();
    Elements();
    star();
    glFlush();
}

```

```
void snd1 (void) {  
    sndPlaySound("C:\\Users\\Gigabyte\\Desktop\\CG  
Lab\\Reflecting_mode\\3.wav",SND_ASYNC);  
  
};
```

```
void snd2(void) {  
    sndPlaySound("C:\\Users\\Gigabyte\\Desktop\\CG  
Lab\\Reflecting_mode\\4.wav",SND_ASYNC);  
  
};
```

```
void my_keyboard(unsigned char key,int x,int y )  
{  
    if((key=='X')||(key=='x'))  
    {  
        glutDisplayFunc(myDisplay);  
        snd1();  
    }  
  
    glutPostRedisplay();  
}
```

```
int main()  
{  
    glutInitDisplayMode(GLUT_SINGLE | GLUT_RGB);  
    glutInitWindowSize(1600,1600);  
    glutInitWindowPosition(150, 0);  
    glutCreateWindow("Reflecting Mode");  
    init();  
    glutDisplayFunc(wlcmDisplay);  
    //glutDisplayFunc(myDisplay);  
    glutKeyboardFunc(my_keyboard);  
    snd2();  
    glutMainLoop();  
    return 0;  
}
```

## OutPut:



