

AMERICAN INTERNATIONAL UNIVERSITY-BANGLADESH

COMPUTER GRAPHICS – PROJECT DOCUMENTATION

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| --- | --- |
| **Course Name** | Computer Graphics |
| **Section** | j |
| **Course Tutor** | ANEEM AL AHSAN RUPAI |

**Group Members Information: 06**

|  |  |
| --- | --- |
| **Name** | **ID** |
| Md. Mazharul Islam Shimul | 18-37938-2 |
| Ananna Rahman | 19-39822-1 |
| Mostafa Mahim Masrukh | 17-34429-1 |
| Sholaiman Khan Shitol | 18-38778-3 |

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**Introduction**

The project is about a scenario, where we have created a “City view “ type scenario. In this scenario we have used several Objects where, some of are with animations and some of are without animation. We have created all the objects with a specific ID which was one of the core instructions of the project.

**Proposal**

The project about a scenario type. There will be a real life scenario about a “city view ”. There will be trees, ground, boat, cloud, sun ,building , river, road ,rocket ,stars,moon . In the scenario there will be day and night. There will be moving cars, rocket, cloud and boat.

**Schematic Diagram**

****

**List of Objects**

1. Road
2. cloud\_left
3. cloud\_right
4. sky
5. rocket
6. Moving\_car
7. Moving\_car2
8. sun
9. Building1
10. Building2
11. Building3
12. Building4
13. Building5
14. Building6
15. Building7
16. Moon
17. Stars
18. Triangle Tree
19. Round Tree
20. Middle Trees
21. Ground1
22. Road2
23. River
24. boat

**Funtions to Represent The Objects**

|  |  |  |
| --- | --- | --- |
| **Object** | **Function** | **ID** |
| plane | void plane() |  |
| Cloud1 | void cloud1() |  |
| Cloud2 | void cloud2() |  |
| sky | void sky() |  |
| Car2 | void car2() |  |
| road | void road() |  |
| ground | void ground() |  |
| car | void car() |  |
| Shopping Mall | void building1() |  |
| sun | Void sun () |  |
| Tree1 | void Tree1() |  |
| Building1 | void building1() |  |
| Hotel | void hotel() |  |
| Tree2 | void Tree2() |  |
| Tree3 | void Tree3() |  |
| river | Void river() |  |
| Building2 | Void building2() |  |
| moon | Void moon() |  |
| Building2 | void building2() |  |
| Building3 | void building3() |  |
| Building4 | void building4() |  |
| Building5 | void building5() |  |
| Building6 | void building6() |  |
| Building7 | void building7() |  |
| stars | Void stars() |  |
| Road2 | Void Road2() |  |
|  |  |  |
|  |  |  |
|  |  |  |

**Interactive Functions**

|  |  |  |
| --- | --- | --- |
| **Function** | **Interactive Functions** | **ID** |
| Void\_day,void\_night | Car\_move, run\_car |  |
| Void\_day,void\_night | Plane\_move |  |
| Void\_day,void\_night | Boat\_move, run\_boat |  |
| Void\_day,void\_night | Car2\_move, run\_car2 |  |
| Void\_day | Cloud\_move1 |  |
| Void\_day | Cloud\_move2 |  |
| Void\_day | Cloud\_move3 |  |
| Void\_day | Cloud\_move4 |  |
| Void\_day | Cloud\_move5 |  |
| Void\_day | Cloud\_move6 |  |
| Void\_day | Cloud\_move7 |  |

**Task Assignment and Codes of Funchtions**

**Contribution Table:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Member-1** | **Member-2** | **Member-3** | **Member-4** | **TOTAL** |
| 25% | 25% | 25% | 25% | 100% |

|  |  |
| --- | --- |
| **Name**  **ID** | **Contribution in Project** |
| **Member-1** | moving\_boat,sun,moon,stars |
| **Member-2** | *Buildings,roads, ground, moving\_cloud* |
| **Member-3** | Round trees, moving\_plane, *triangular trees* |
| **Member-4** | Day night view , river ,moving\_cars |

**Code:**

#include<windows.h>

#include <GL/glut.h>

#include <stdio.h>

#include <GL/gl.h>

#include <math.h>

GLfloat tx = 0.0;

GLfloat ty = 0.0;

static float car\_run = 0.0;

static float car\_run2 = 0.0;

static float boat\_move = 0.0;

static float cloud\_right = 0.0;

static float cloud\_left = 0.0;

static float plane\_move = 0.0;

float t=0;

void init(void)

{

glClearColor(0.0,0.0,0.0,0.0);

glMatrixMode(GL\_PROJECTION);

glLoadIdentity();

glOrtho(-50,50,-50,25,-25,5);

}

void circle(GLfloat rx,GLfloat ry,GLfloat cx,GLfloat cy)//radius\_x,radius\_y,certre\_position\_x,centre\_position\_y

{

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();

}

//Car1

void car()

{glPushMatrix();

glColor3ub(220.5, 230.0, 130.0);

glTranslatef(tx,ty,0);

glBegin(GL\_QUADS);

glVertex2d(-42.0,-48.0);

glVertex2d(-19.0, -48.0);

glVertex2d(-19.0, -43.0);

glVertex2d(-42.0,-43.0);

glEnd();

glBegin(GL\_QUADS);

glVertex2d(-37.0,-39.0);

glVertex2d(-39.0,-43.0);

glVertex2d(-22.0, -43.0);

glVertex2d(-24.0, -39.0);

glEnd();

glColor3f(0.0f,0.0f,1.0f);

glBegin(GL\_QUADS);

glVertex2d(-36.0,-40.0);

glVertex2d(-38.0,-44.0);

glVertex2d(-23.0, -44.0);

glVertex2d(-25.0, -40.0);

glEnd();

glColor3ub(230.5f,220.0f,130.0f);

glBegin(GL\_QUADS);

glVertex2d(-31.0,-44.0);

glVertex2d(-29.0,-44.0);

glVertex2d(-29.0, -40.0);

glVertex2d(-31.0, -40.0);

glEnd();

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

circle(2.5,2.5,-36,-47);

circle(2.5,2.5,-26,-47);

glColor3ub(247, 244, 245);

circle(1,1,-36,-47);

circle(1,1,-26,-47);

//circle(4,4);

glPopMatrix();

}

//Car2

void car2()

{glPushMatrix();

glColor3ub(150.0, 150.0, 0.0);

glTranslatef(tx,ty,0);

glBegin(GL\_QUADS);

glVertex2d(-22.0,-40.0);

glVertex2d(1.0, -40.0);

glVertex2d(1.0, -35.0);

glVertex2d(-22.0,-35.0);

glEnd();

glBegin(GL\_QUADS);

glVertex2d(-17.0,-31.0);

glVertex2d(-19.0,-35.0);

glVertex2d(-2.0, -35.0);

glVertex2d(-4.0, -31.0);

glEnd();

glColor3ub(120.f,233.0f,123.0f);

glBegin(GL\_QUADS);

glVertex2d(-16.0,-32.0);

glVertex2d(-18.0,-36.0);

glVertex2d(-3.0, -36.0);

glVertex2d(-5.0, -32.0);

glEnd();

glColor3ub(150.0f,150.0f,0.0f);

glBegin(GL\_QUADS);

glVertex2d(-11.5,-36.0);

glVertex2d(-9.5,-36.0);

glVertex2d(-9.5, -32.0);

glVertex2d(-11.5, -32.0);

glEnd();

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

circle(2.5,2.5,-14.7,-39);

circle(2.5,2.5,-4.7,-39);

glColor3ub(247, 244, 245);

circle(1,1,-14.7,-39);

circle(1,1,-4.7,-39);

//circle(4,4);

glPopMatrix();

}

void boat(){

//Boat1

glColor3f( 0.5 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(-5 ,-30);

glVertex2f(10 ,-30);

glVertex2f(15 ,-25);

glVertex2f(-5 ,-25);

glEnd();

glColor3ub( 147.0 ,0.0, 219.0);

glBegin(GL\_POLYGON);

glVertex2f(-3 ,-25);

glVertex2f(11 ,-25);

glVertex2f(9 ,-22);

glVertex2f(-3 ,-22);

glEnd();

glColor3ub( 148.0 ,1.0, 1.0);

glBegin(GL\_POLYGON);

glVertex2f(-1.5 ,-24.5);

glVertex2f(0.5 ,-24.5);

glVertex2f(0.5 ,-22.5);

glVertex2f(-1.5 ,-22.5);

glEnd();

glColor3ub( 148.0 ,1.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(2.5 ,-24.5);

glVertex2f(4.5 ,-24.5);

glVertex2f(4.5 ,-22.5);

glVertex2f(2.5 ,-22.5);

glEnd();

glColor3ub( 148 ,1.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(6.5 ,-24.5);

glVertex2f(8.5 ,-24.5);

glVertex2f(8.5 ,-22.5);

glVertex2f(6.5 ,-22.5);

glEnd();

}

void boat\_Move(){

boat\_move=boat\_move+0.01;

if (boat\_move>70)

boat\_move=-70;

glutPostRedisplay();

}

void cloud1(){

//Cloud1

glPushMatrix();

glTranslatef(-60.0f, 5.0f, 0.0f);

glRotatef(0, 0.0f, 0.0f, -1.0f);

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

circle(2,2,14,11);

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

circle(2,2,16.5,11);

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

circle(2,2,19.5,11);

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

circle(2,2,15.5,13.2);

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

circle(2,2,18.3,13.2);

glPopMatrix();

}

void cloud2(){

//Cloud2

glPushMatrix();

glTranslatef(-40.0f, 0.0f, 0.0f);

glRotatef(0, 0.0f, 0.0f, -1.0f);

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

circle(2,2,14,11);

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

circle(2,2,16.5,11);

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

circle(2,2,19.5,11);

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

circle(2,2,15.5,13.2);

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

circle(2,2,18.3,13.2);

glPopMatrix();

}

void cloud3(){

//Cloud3

glPushMatrix();

glTranslatef(-30.0f, 8.0f, 0.0f);

glRotatef(0, 0.0f, 0.0f, -1.0f);

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

circle(1,1,19,10);

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

circle(1,1,20.5,10);

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

circle(1,1,22,10);

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

circle(1,1,19.5,11.2);

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

circle(1,1,21.0,11.2);

glPopMatrix();

}

void cloud4(){

//Cloud4

glPushMatrix();

glTranslatef(-10.0f, 7.0f, 0.0f);

glRotatef(0, 0.0f, 0.0f, -1.0f);

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

circle(2,2,14,11);

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

circle(2,2,16.5,11);

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

circle(2,2,19.5,11);

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

circle(2,2,15.5,13.2);

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

circle(2,2,18.3,13.2);

glPopMatrix();

}

void cloud5(){

//Cloud5

glPushMatrix();

glTranslatef(-10.0f, 7.0f, 0.0f);

glRotatef(0, 0.0f, 0.0f, -1.0f);

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

circle(2,2,14,11);

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

circle(2,2,16.5,11);

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

circle(2,2,19.5,11);

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

circle(2,2,15.5,13.2);

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

circle(2,2,18.3,13.2);

glPopMatrix();

}

void cloud6(){

//Cloud6

glPushMatrix();

glTranslatef(0.0f, 0.0f, 0.0f);

glRotatef(0, 0.0f, 0.0f, -1.0f);

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

circle(1,1,19,10);

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

circle(1,1,20.5,10);

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

circle(1,1,22,10);

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

circle(1,1,19.5,11.2);

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

circle(1,1,21.0,11.2);

glPopMatrix();

}

void cloud7(){

//Cloud7

glPushMatrix();

glTranslatef(28.0f, 0.0f, 0.0f);

glRotatef(0, 0.0f, 0.0f, -1.0f);

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

circle(2,2,14,11);

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

circle(2,2,16.5,11);

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

circle(2,2,19.5,11);

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

circle(2,2,15.5,13.2);

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

circle(2,2,18.3,13.2);

glPopMatrix();

}

void plane()

{

glColor3f(0,0,0.2);

glBegin(GL\_POLYGON);

glVertex2f(21,20);

glVertex2f(18,19);

glVertex2f(21,19);

glVertex2f(24,19);

glVertex2f(24,20);

glVertex2f(25,21);

glEnd();

glColor3f(1,1,1);

circle(.2,.2,20,19.6);

glColor3f(0,0,1);

circle(.2,.2,23.8,20);

glColor3f(1,0,0);

circle(.2,.2,23.8,19.5);

}

void cloud1\_move()

{

cloud\_right=cloud\_right+0.0005;

if (cloud\_right>100)

cloud\_right=-50;

glutPostRedisplay();

}

void cloud6\_move()

{

cloud\_right=cloud\_right+0.0005;

if (cloud\_right>100)

cloud\_right=-70;

glutPostRedisplay();

}

void cloud7\_move()

{

cloud\_left=cloud\_left-0.0005;

if (cloud\_left<-60)

cloud\_left=70;

glutPostRedisplay();

}

void cloud3\_move()

{

cloud\_left=cloud\_left-0.0005;

if (cloud\_left<-60)

cloud\_left=70;

glutPostRedisplay();

}

void car\_Run()

{

car\_run=car\_run+0.05;

if (car\_run>100)

car\_run=-50;

glutPostRedisplay();

}

void car\_Run2()

{

car\_run2=car\_run2-0.05;

if (car\_run2<-100)

car\_run2=70;

glutPostRedisplay();

}

void plane\_Move()

{

plane\_move=plane\_move-0.05;

if (plane\_move<-100)

plane\_move=70;

glutPostRedisplay();

}

void sky(){

//sky

glColor3f(0.4,0.7,1.0);

glBegin(GL\_POLYGON);

glVertex2f(-50,-50);

glVertex2f(50,-50);

glVertex2f(50,35);

glVertex2f(-50,35);

glEnd();

}

void ground(){

//Ground

glPushMatrix();

glTranslatef(0.0f, 30.0f, 0.0f);

glRotatef(0, 0.0f, 0.0f, -1.0f);

glColor3f(0.0,0.6,0.0);

glBegin(GL\_POLYGON);

glVertex2f(-50,-50);

glVertex2f(50,-50);

glVertex2f(50,-40);

glVertex2f(-50,-40);

glEnd();

glPopMatrix();

}

void river(){

//river

glPushMatrix();

glTranslatef(0.0f, 10.0f, 0.0f);

glRotatef(0, 0.0f, 0.0f, -1.0f);

glColor3f(0.0,0.5,1.0);

glBegin(GL\_POLYGON);

glVertex2f(-50,-50);

glVertex2f(50,-50);

glVertex2f(50,-30);

glVertex2f(-50,-30);

glEnd();

glPopMatrix();

glPushMatrix();

glTranslatef(0.0f, 8.0f, 0.0f);

glRotatef(0, 0.0f, 0.0f, -1.0f);

glColor3f(0.0,0.5,0.7);

glBegin(GL\_POLYGON);

glVertex2f(-50,-50);

glVertex2f(50,-50);

glVertex2f(50,-30);

glVertex2f(-50,-30);

glEnd();

glPopMatrix();

glPushMatrix();

glTranslatef(0.0f, 6.0f, 0.0f);

glRotatef(0, 0.0f, 0.0f, -1.0f);

glColor3f(0.0,0.4,0.7);

glBegin(GL\_POLYGON);

glVertex2f(-50,-50);

glVertex2f(50,-50);

glVertex2f(50,-30);

glVertex2f(-50,-30);

glEnd();

glPopMatrix();

glPushMatrix();

glTranslatef(0.0f, 4.0f, 0.0f);

glRotatef(0, 0.0f, 0.0f, -1.0f);

glColor3f(0.0,0.3,0.6);

glBegin(GL\_POLYGON);

glVertex2f(-50,-50);

glVertex2f(50,-50);

glVertex2f(50,-30);

glVertex2f(-50,-30);

glEnd();

glPopMatrix();

glPushMatrix();

glTranslatef(0.0f, 2.0f, 0.0f);

glRotatef(0, 0.0f, 0.0f, -1.0f);

glColor3f(0.0,0.2,0.5);

glBegin(GL\_POLYGON);

glVertex2f(-50,-50);

glVertex2f(50,-50);

glVertex2f(50,-30);

glVertex2f(-50,-30);

glEnd();

glPopMatrix();

}

void Tree1(){

//Tree1

glColor3f( 1.0 ,0.5, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(-8.9 ,-2.5);

glVertex2f(-6.8 ,-2.5);

glVertex2f(-6.8 ,-12);

glVertex2f(-8.9 ,-12);

glEnd();

glColor3f(0.0f, 0.5f, 0.0f);

circle(1.5,1.5,-10.5,-1.5);

glColor3f(0.0f, 0.5f, 0.0f);

circle(1.5,1.5,-8.5,-1.5);

glColor3f(0.0f, 0.5f, 0.0f);

circle(1.5,1.5,-7,-1.5);

glColor3f(0.0f, 0.5f, 0.0f);

circle(1.5,1.5,-5,-1.5);

glColor3f(0.1f, 0.5f, 0.0f);

circle(1.5,1.5,-9.5,0.6);

glColor3f(0.0f, 0.5f, 0.0f);

circle(1.5,1.5,-8.1,0.6);

glColor3f(0.0f, 0.5f, 0.0f);

circle(1.5,1.5,-6.3,0.6);

glColor3f(0.0f, 0.5f, 0.0f);

circle(2,2,-8,1.7);

}

void Tree2(){

//Tree2

glColor3ub( 125.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(10 ,-3);

glVertex2f(11.2 ,-3);

glVertex2f(11.2 ,-12);

glVertex2f(10 ,-12);

glEnd();

glColor3f( 0.0 ,1.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(7 ,-5);

glVertex2f(14 ,-5);

glVertex2f(10.8 ,4);

glEnd();

glColor3f( 0.2 ,0.6, 0.5);

glBegin(GL\_POLYGON);

glVertex2f(7 ,-2);

glVertex2f(14 ,-2);

glVertex2f(10.8 ,3);

glEnd();

glColor3f( 0.0 ,1.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(8.2 ,1);

glVertex2f(13 ,1);

glVertex2f(10.8 ,5);

glEnd();

}

void Tree3(){

glPushMatrix();

glTranslatef(-35.0f, 0.0f, 0.0f);

glRotatef(0, 0.0f, 0.0f, -1.0f);

//Tree1

glColor3f( 1.0 ,0.5, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(-8.9 ,-2.5);

glVertex2f(-6.8 ,-2.5);

glVertex2f(-6.8 ,-12);

glVertex2f(-8.9 ,-12);

glEnd();

glColor3f(0.0f, 0.5f, 0.0f);

circle(1.5,1.5,-10.5,-1.5);

glColor3f(0.0f, 0.5f, 0.0f);

circle(1.5,1.5,-8.5,-1.5);

glColor3f(0.0f, 0.5f, 0.0f);

circle(1.5,1.5,-7,-1.5);

glColor3f(0.0f, 0.5f, 0.0f);

circle(1.5,1.5,-5,-1.5);

glColor3f(0.0f, 0.5f, 0.0f);

circle(1.5,1.5,-9.5,0.6);

glColor3f(0.0f, 0.5f, 0.0f);

circle(1.5,1.5,-8.1,0.6);

glColor3f(0.0f, 0.5f, 0.0f);

circle(1.5,1.5,-6.3,0.6);

glColor3f(0.0f, 0.5f, 0.0f);

circle(2,2,-8,1.7);

//Tree2

glColor3ub( 125.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(9.3 ,-3);

glVertex2f(10.5 ,-3);

glVertex2f(10.5 ,-12);

glVertex2f(9.3 ,-12);

glEnd();

glColor3f( 0.0 ,1.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(7 ,-5);

glVertex2f(12.7 ,-5);

glVertex2f(9.85 ,4);

glEnd();

glColor3f( 0.2 ,0.6, 0.5);

glBegin(GL\_POLYGON);

glVertex2f(7 ,-2);

glVertex2f(12.7 ,-2);

glVertex2f(9.85 ,3);

glEnd();

glColor3f( .0 ,1.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(7.5 ,1);

glVertex2f(12.2 ,1);

glVertex2f(9.85 ,5);

glEnd();

}

void House1(){

//House1

glColor3ub( 50.7 ,95.0, 120.0);

glBegin(GL\_POLYGON);

glVertex2f(-3.2 ,-15);

glVertex2f(6.8 ,-15);

glVertex2f(6.8 ,5);

glVertex2f(-3.2 ,5);

glEnd();

glColor3f( 1.0 ,1.0, 1.0);

glBegin(GL\_POLYGON);

glVertex2f(-2.7 ,-6);

glVertex2f(0.8 ,-6);

glVertex2f(0.8 ,4.3);

glVertex2f(-2.7 ,4.3);

glEnd();

glColor3f( 0.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(-1 ,-6);

glVertex2f(-0.90 ,-6);

glVertex2f(-0.90 ,4.3);

glVertex2f(-1 ,4.3);

glEnd();

glColor3f( 0.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(-2.7 ,-3.35);

glVertex2f(0.8 ,-3.35);

glVertex2f(0.8 ,-3.45);

glVertex2f(-2.7 ,-3.45);

glEnd();

glColor3f( 0.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(-2.7 ,1.70);

glVertex2f(0.8 ,1.70);

glVertex2f(0.8 ,1.85);

glVertex2f(-2.7 ,1.85);

glEnd();

glColor3f( 1.0 ,1.0, 1.0);

glBegin(GL\_POLYGON);

glVertex2f(3 ,-6);

glVertex2f(6.3 ,-6);

glVertex2f(6.3 ,4.3);

glVertex2f(3 ,4.3);

glEnd();

glColor3f( 0.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(4.65 ,-6);

glVertex2f(4.72 ,-6);

glVertex2f(4.72 ,4.3);

glVertex2f(4.65 ,4.3);

glEnd();

glColor3f( 0.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(3 ,1.70);

glVertex2f(6.3 ,1.70);

glVertex2f(6.3 ,1.85);

glVertex2f(3 ,1.85);

glEnd();

glColor3f( 0.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(3 ,-3.35);

glVertex2f(6.3 ,-3.35);

glVertex2f(6.3 ,-3.45);

glVertex2f(3 ,-3.45);

glEnd();

//Door

glColor3f( 1.0 ,1.0, 1.0);

glBegin(GL\_POLYGON);

glVertex2f(0.3 ,-15);

glVertex2f(3.7 ,-15);

glVertex2f(3.7 ,-7);

glVertex2f(0.3 ,-7);

glEnd();

}

void House2(){

//House2

glColor3ub( 123.2 ,0.0, 123.2);

glBegin(GL\_POLYGON);

glVertex2f(-22.2 ,-15);

glVertex2f(-12.2 ,-15);

glVertex2f(-12.2 ,5);

glVertex2f(-22.2 ,5);

glEnd();

glColor3f( 1.0 ,1.0, 1.0);

glBegin(GL\_POLYGON);

glVertex2f(-21.7 ,-6);

glVertex2f(-18.2 ,-6);

glVertex2f(-18.2 ,4.3);

glVertex2f(-21.7 ,4.3);

glEnd();

glColor3f( 0.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(-20 ,-6);

glVertex2f(-19.90 ,-6);

glVertex2f(-19.90 ,4.3);

glVertex2f(-20 ,4.3);

glEnd();

glColor3f( 0.2 ,0.0, 0.2);

glBegin(GL\_POLYGON);

glVertex2f(-21.7 ,-0.7);

glVertex2f(-18.2 ,-0.7);

glVertex2f(-18.2 ,0);

glVertex2f(-21.7 ,0);

glEnd();

glColor3f( 0.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(-21.7 ,-3.35);

glVertex2f(-18.2 ,-3.35);

glVertex2f(-18.2 ,-3.45);

glVertex2f(-21.7 ,-3.45);

glEnd();

glColor3f( 0.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(-21.7 ,1.75);

glVertex2f(-18.2 ,1.75);

glVertex2f(-18.2 ,1.95);

glVertex2f(-21.7 ,1.95);

glEnd();

glColor3f( 1.0 ,1.0, 1.0);

glBegin(GL\_POLYGON);

glVertex2f(-16 ,-6);

glVertex2f(-12.7 ,-6);

glVertex2f(-12.7 ,4.3);

glVertex2f(-16 ,4.3);

glEnd();

glColor3f( 0.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(-14.35 ,-6);

glVertex2f(-14.28 ,-6);

glVertex2f(-14.28 ,4.3);

glVertex2f(-14.35 ,4.3);

glEnd();

glColor3f( 0.2 ,0.0, 0.2);

glBegin(GL\_POLYGON);

glVertex2f(-16 ,-0.7);

glVertex2f(-12.7 ,-0.7);

glVertex2f(-12.7 ,0);

glVertex2f(-16 ,0);

glEnd();

glColor3f( 0.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(-16 ,1.75);

glVertex2f(-12.7 ,1.75);

glVertex2f(-12.7 ,1.95);

glVertex2f(-16 ,1.95);

glEnd();

glColor3f( 0.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(-16 ,-3.35);

glVertex2f(-12.7 ,-3.35);

glVertex2f(-12.7 ,-3.45);

glVertex2f(-16 ,-3.45);

glEnd();

//Door

glColor3f( 1.0 ,1.0, 1.0);

glBegin(GL\_POLYGON);

glVertex2f(-18.7 ,-15);

glVertex2f(-15.3 ,-15);

glVertex2f(-15.3 ,-7);

glVertex2f(-18.7 ,-7);

glEnd();

}

void House3(){

//House3

glColor3ub( 120.2 ,240.0, 80.2);

glBegin(GL\_POLYGON);

glVertex2f(14.3 ,-15);

glVertex2f(24.3 ,-15);

glVertex2f(24.3 ,5);

glVertex2f(14.3 ,5);

glEnd();

glColor3f( 1.0 ,1.0, 1.0);

glBegin(GL\_POLYGON);

glVertex2f(14.8 ,-6);

glVertex2f(18.3 ,-6);

glVertex2f(18.3 ,4.3);

glVertex2f(14.8 ,4.3);

glEnd();

glColor3f( 0.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(16.5 ,-6);

glVertex2f(16.6 ,-6);

glVertex2f(16.6 ,4.3);

glVertex2f(16.5 ,4.3);

glEnd();

glColor3f( 1.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(14.8 ,-0.7);

glVertex2f(18.3 ,-0.7);

glVertex2f(18.3 ,0);

glVertex2f(14.8 ,0);

glEnd();

glColor3f( 0.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(14.8 ,1.75);

glVertex2f(18.3 ,1.75);

glVertex2f(18.3 ,1.95);

glVertex2f(14.8 ,1.95);

glEnd();

glColor3f( 1.0 ,1.0, 1.0);

glBegin(GL\_POLYGON);

glVertex2f(20.5 ,-6);

glVertex2f(23.8 ,-6);

glVertex2f(23.8 ,4.3);

glVertex2f(20.5 ,4.3);

glEnd();

glColor3f( 0.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(22.15 ,-6);

glVertex2f(22.22 ,-6);

glVertex2f(22.22 ,4.3);

glVertex2f(22.15 ,4.3);

glEnd();

glColor3f( 1.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(20.5 ,-0.7);

glVertex2f(23.8 ,-0.7);

glVertex2f(23.8 ,0);

glVertex2f(20.5 ,0);

glEnd();

glColor3f( 0.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(20.5 ,1.75);

glVertex2f(23.8 ,1.75);

glVertex2f(23.8 ,1.95);

glVertex2f(20.5 ,1.95);

glEnd();

//Door

glColor3f( 1.0 ,1.0, 1.0);

glBegin(GL\_POLYGON);

glVertex2f(17.8 ,-15);

glVertex2f(21.2 ,-15);

glVertex2f(21.2 ,-7);

glVertex2f(17.8 ,-7);

glEnd();

}

void House4(){

//House4

glPushMatrix();

glTranslatef(15.0f, 0.0f, 0.0f);

//glRotatef(0, 0.0f, 0.0f, -1.0f);

glColor3ub( 030.7 ,160.0, 130.0);

glBegin(GL\_POLYGON);

glVertex2f(14.3 ,-15);

glVertex2f(24.3 ,-15);

glVertex2f(24.3 ,5);

glVertex2f(14.3 ,5);

glEnd();

glColor3f( 1.0 ,1.0, 1.0);

glBegin(GL\_POLYGON);

glVertex2f(14.8 ,-6);

glVertex2f(18.3 ,-6);

glVertex2f(18.3 ,4.3);

glVertex2f(14.8 ,4.3);

glEnd();

glColor3f( 1.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(14.8 ,-0.7);

glVertex2f(18.3 ,-0.7);

glVertex2f(18.3 ,0);

glVertex2f(14.8 ,0);

glEnd();

glColor3f( 0.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(14.8 ,-3.35);

glVertex2f(18.3 ,-3.35);

glVertex2f(18.3 ,-3.45);

glVertex2f(14.8 ,-3.45);

glEnd();

glColor3f( 0.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(14.8 ,1.75);

glVertex2f(18.3 ,1.75);

glVertex2f(18.3 ,1.95);

glVertex2f(14.8 ,1.95);

glEnd();

glColor3f( 1.0 ,1.0, 1.0);

glBegin(GL\_POLYGON);

glVertex2f(20.5 ,-6);

glVertex2f(23.8 ,-6);

glVertex2f(23.8 ,4.3);

glVertex2f(20.5 ,4.3);

glEnd();

glColor3f( 1.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(20.5 ,-0.7);

glVertex2f(23.8 ,-0.7);

glVertex2f(23.8 ,0);

glVertex2f(20.5 ,0);

glEnd();

glColor3f( 0.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(20.5 ,1.75);

glVertex2f(23.8 ,1.75);

glVertex2f(23.8 ,1.95);

glVertex2f(20.5 ,1.95);

glEnd();

glColor3f( 0.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(20.5 ,-3.35);

glVertex2f(23.8 ,-3.35);

glVertex2f(23.8 ,-3.45);

glVertex2f(20.5 ,-3.45);

glEnd();

//Door

glColor3f( 1.0 ,1.0, 1.0);

glBegin(GL\_POLYGON);

glVertex2f(17.8 ,-15);

glVertex2f(21.2 ,-15);

glVertex2f(21.2 ,-7);

glVertex2f(17.8 ,-7);

glEnd();

glPopMatrix();

}

void House5(){

//House5

glPushMatrix();

glTranslatef(30.0f, 0.0f, 0.0f);

glRotatef(0, 0.0f, 0.0f, -1.0f);

glColor3ub( 150.2 ,24.2, 145.0);

glBegin(GL\_POLYGON);

glVertex2f(14.3 ,-15);

glVertex2f(24.3 ,-15);

glVertex2f(24.3 ,5);

glVertex2f(14.3 ,5);

glEnd();

glColor3f( 1.0 ,1.0, 1.0);

glBegin(GL\_POLYGON);

glVertex2f(14.8 ,-6);

glVertex2f(18.3 ,-6);

glVertex2f(18.3 ,4.3);

glVertex2f(14.8 ,4.3);

glEnd();

glColor3f( 0.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(16.5 ,-6);

glVertex2f(16.6 ,-6);

glVertex2f(16.6 ,4.3);

glVertex2f(16.5 ,4.3);

glEnd();

glColor3f( 1.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(14.8 ,-0.7);

glVertex2f(18.3 ,-0.7);

glVertex2f(18.3 ,0);

glVertex2f(14.8 ,0);

glEnd();

glColor3f( 0.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(14.8 ,-3.35);

glVertex2f(18.3 ,-3.35);

glVertex2f(18.3 ,-3.45);

glVertex2f(14.8 ,-3.45);

glEnd();

glColor3f( 0.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(14.8 ,1.75);

glVertex2f(18.3 ,1.75);

glVertex2f(18.3 ,1.95);

glVertex2f(14.8 ,1.95);

glEnd();

glColor3f( 1.0 ,1.0, 1.0);

glBegin(GL\_POLYGON);

glVertex2f(20.5 ,-6);

glVertex2f(23.8 ,-6);

glVertex2f(23.8 ,4.3);

glVertex2f(20.5 ,4.3);

glEnd();

glColor3f( 0.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(22.15 ,-6);

glVertex2f(22.22 ,-6);

glVertex2f(22.22 ,4.3);

glVertex2f(22.15 ,4.3);

glEnd();

glColor3f( 1.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(20.5 ,-0.7);

glVertex2f(23.8 ,-0.7);

glVertex2f(23.8 ,0);

glVertex2f(20.5 ,0);

glEnd();

glColor3f( 0.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(20.5 ,1.75);

glVertex2f(23.8 ,1.75);

glVertex2f(23.8 ,1.85);

glVertex2f(20.5 ,1.85);

glEnd();

glColor3f( 0.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(20.5 ,-3.35);

glVertex2f(23.8 ,-3.35);

glVertex2f(23.8 ,-3.45);

glVertex2f(20.5 ,-3.45);

glEnd();

//Door

glColor3f( 1.0 ,1.0, 1.0);

glBegin(GL\_POLYGON);

glVertex2f(17.8 ,-15);

glVertex2f(21.2 ,-15);

glVertex2f(21.2 ,-7);

glVertex2f(17.8 ,-7);

glEnd();

glPopMatrix();

}

void House6(){

//House6

glColor3ub( 230.2 ,60.2, 134.0);

glBegin(GL\_POLYGON);

glVertex2f(-3.2 ,-15);

glVertex2f(6.8 ,-15);

glVertex2f(6.8 ,5);

glVertex2f(-3.2 ,5);

glEnd();

glColor3f( 1.0 ,1.0, 1.0);

glBegin(GL\_POLYGON);

glVertex2f(-2.7 ,-6);

glVertex2f(0.8 ,-6);

glVertex2f(0.8 ,4.3);

glVertex2f(-2.7 ,4.3);

glEnd();

glColor3f( 0.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(-1 ,-6);

glVertex2f(-0.9 ,-6);

glVertex2f(-0.9 ,4.3);

glVertex2f(-1 ,4.3);

glEnd();

glColor3f( 1.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(-2.7 ,-0.7);

glVertex2f(0.8 ,-0.7);

glVertex2f(0.8 ,0);

glVertex2f(-2.7 ,0);

glEnd();

glColor3f( 1.0 ,1.0, 1.0);

glBegin(GL\_POLYGON);

glVertex2f(3 ,-6);

glVertex2f(6.3 ,-6);

glVertex2f(6.3 ,4.3);

glVertex2f(3 ,4.3);

glEnd();

glColor3f( 0.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(4.65 ,-6);

glVertex2f(4.72 ,-6);

glVertex2f(4.72 ,4.3);

glVertex2f(4.65 ,4.3);

glEnd();

glColor3f( 1.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(3 ,-0.7);

glVertex2f(6.3 ,-0.7);

glVertex2f(6.3 ,0);

glVertex2f(3 ,0);

glEnd();

//Door

glColor3f( 1.0 ,1.0, 1.0);

glBegin(GL\_POLYGON);

glVertex2f(0.3 ,-15);

glVertex2f(3.7 ,-15);

glVertex2f(3.7 ,-7);

glVertex2f(0.3 ,-7);

glEnd();

}

void House7(){

//House7

glColor3f( 0.2 ,0.0, 0.2);

glBegin(GL\_POLYGON);

glVertex2f(-22.2 ,-15);

glVertex2f(-12.2 ,-15);

glVertex2f(-12.2 ,5);

glVertex2f(-22.2 ,5);

glEnd();

glColor3f( 1.0 ,1.0, 1.0);

glBegin(GL\_POLYGON);

glVertex2f(-21.7 ,-6);

glVertex2f(-18.2 ,-6);

glVertex2f(-18.2 ,4.3);

glVertex2f(-21.7 ,4.3);

glEnd();

glColor3f( 0.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(-20 ,-6);

glVertex2f(-19.95 ,-6);

glVertex2f(-19.95 ,4.3);

glVertex2f(-20 ,4.3);

glEnd();

glColor3f( 0.2 ,0.0, 0.2);

glBegin(GL\_POLYGON);

glVertex2f(-21.7 ,-0.7);

glVertex2f(-18.2 ,-0.7);

glVertex2f(-18.2 ,0);

glVertex2f(-21.7 ,0);

glEnd();

glColor3f( 0.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(-21.7 ,-3.35);

glVertex2f(-18.2 ,-3.35);

glVertex2f(-18.2 ,-3.45);

glVertex2f(-21.7 ,-3.45);

glEnd();

glColor3f( 0.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(-21.7 ,1.75);

glVertex2f(-18.2 ,1.75);

glVertex2f(-18.2 ,1.85);

glVertex2f(-21.7 ,1.85);

glEnd();

glColor3f( 1.0 ,1.0, 1.0);

glBegin(GL\_POLYGON);

glVertex2f(-16 ,-6);

glVertex2f(-12.7 ,-6);

glVertex2f(-12.7 ,4.3);

glVertex2f(-16 ,4.3);

glEnd();

glColor3f( 0.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(-14.35 ,-6);

glVertex2f(-14.28 ,-6);

glVertex2f(-14.28 ,4.3);

glVertex2f(-14.35 ,4.3);

glEnd();

glColor3f( 0.2 ,0.0, 0.2);

glBegin(GL\_POLYGON);

glVertex2f(-16 ,-0.7);

glVertex2f(-12.7 ,-0.7);

glVertex2f(-12.7 ,0);

glVertex2f(-16 ,0);

glEnd();

glColor3f( 0.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(-16 ,1.75);

glVertex2f(-12.7 ,1.75);

glVertex2f(-12.7 ,1.95);

glVertex2f(-16 ,1.95);

glEnd();

glColor3f( 0.0 ,0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(-16 ,-3.35);

glVertex2f(-12.7 ,-3.35);

glVertex2f(-12.7 ,-3.45);

glVertex2f(-16 ,-3.45);

glEnd();

//Door

glColor3f( 1.0 ,1.0, 1.0);

glBegin(GL\_POLYGON);

glVertex2f(-18.7 ,-15);

glVertex2f(-15.3 ,-15);

glVertex2f(-15.3 ,-7);

glVertex2f(-18.7 ,-7);

glEnd();

glPopMatrix();

}

void Road1(){

//Road1

glColor3ub(22, 21, 21);

glBegin(GL\_POLYGON);

glVertex2f(-50 ,-20);

glVertex2f(50 ,-20);

glVertex2f(50 ,-15);

glVertex2f(-50 ,-15);

glEnd();

glColor3ub(252, 249, 249);

glBegin(GL\_LINES);

glVertex2d(-50.0,-17.5);

glVertex2d(50.0,-17.5);

glEnd();

}

void Moon()

{

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

circle(3,3,25.5,16.5);

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

circle(3,3,24.5,17.5);

}

void stars()

{

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

circle(0.2,0.3,10.5,16.5);

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

circle(0.2,0.3,-5.5,10.5);

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

circle(0.2,0.3,-8.5,12.5);

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

circle(0.2,0.3,-20,18.5);

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

circle(0.2,0.3,-15,7.5);

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

circle(0.2,0.3,-25,11.5);

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

circle(0.2,0.3,-32,14.5);

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

circle(0.2,0.3,-40,10.5);

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

circle(0.2,0.3,-46,16.5);

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

circle(0.2,0.3,32,19.5);

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

circle(0.2,0.3,37,14.5);

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

circle(0.2,0.3,46,17.5);

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

circle(0.2,0.3,0,18);

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

circle(0.2,0.3,-8,20.5);

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

circle(0.2,0.3,8,13.5);

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

circle(0.2,0.3,15,11.5);

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

circle(0.2,0.3,19,18.5);

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

circle(0.2,0.3,14,20.5);

}

void Road2(){

//Road2

glColor3ub(22, 21, 21);

glBegin(GL\_QUADS);

glVertex2d(-50,-50);

glVertex2d(50,-50);

glVertex2d(50,-35);

glVertex2d(-50,-35);

glEnd();

glColor3ub(252, 249, 249);

glBegin(GL\_LINES);

glVertex2d(-50.0,-42.5);

glVertex2d(50.0,-42.5);

glEnd();

}

void Sun(){

//Sun

glPushMatrix();

glTranslatef(35.0f, 5.0f, 0.0f);

glRotatef(0, 0.0f, 0.0f, -1.0f);

glColor3f(1.0f, 1.0f, 0.0f);

circle(3,3,4.5,11.5);

glPopMatrix();

}

void Day()

{ glClear(GL\_COLOR\_BUFFER\_BIT);

//sky

sky();

//Ground

ground();

//river

river();

//Back Wall

//Tree1

Tree1();

//Tree2

Tree2();

//House1

House1();

//House2

House2();

//House3

House3();

//Road1

Road1();

//Sun

Sun();

//House4

House4();

//House5

House5();

//Tree3

Tree3();

//House6

House6();

//House7

House7();

//Road2

Road2();

plane\_Move();

for(int i=0; i<1; i++)

{

glPushMatrix();

glTranslatef(plane\_move+i,0,0);

plane();

glPopMatrix();

}

cloud1\_move();

for(int i=0; i<1; i++)

{

glPushMatrix();

glTranslatef(cloud\_right+i,0,0);

cloud1();

glPopMatrix();

}

cloud1\_move();

for(int i=0; i<1; i++)

{

glPushMatrix();

glTranslatef(cloud\_right+i,0,0);

cloud2();

glPopMatrix();

}

cloud3\_move();

for(int i=0; i<1; i++)

{

glPushMatrix();

glTranslatef(cloud\_left+i,0,0);

cloud3();

glPopMatrix();

}

cloud3\_move();

for(int i=0; i<1; i++)

{

glPushMatrix();

glTranslatef(cloud\_left+i,0,0);

cloud4();

glPopMatrix();

}

cloud1\_move();

for(int i=0; i<1; i++)

{

glPushMatrix();

glTranslatef(cloud\_right+i,0,0);

cloud5();

glPopMatrix();

}

cloud6\_move();

for(int i=0; i<1; i++)

{

glPushMatrix();

glTranslatef(cloud\_right+i,0,0);

cloud6();

glPopMatrix();

}

cloud7\_move();

for(int i=0; i<1; i++)

{

glPushMatrix();

glTranslatef(cloud\_left+i,0,0);

cloud7();

glPopMatrix();

}

car\_Run2();

for(int i=0; i<1; i++)

{

glPushMatrix();

glTranslatef(car\_run2+i,0,0);

car2();

glPopMatrix();

}

car\_Run();

for(int i=0; i<1; i++)

{

glPushMatrix();

glTranslatef(car\_run+i,0,0);

car();

glPopMatrix();

}

boat\_Move();

for(int i=0; i<1; i++)

{

glPushMatrix();

glTranslatef(boat\_move+i,0,0);

boat();

glPopMatrix();

}

glutSwapBuffers();

}

void Night(){

glClear(GL\_COLOR\_BUFFER\_BIT);

//sky

glColor3f(0.0,0.0,.0);

glBegin(GL\_POLYGON);

glVertex2f(-50,-50);

glVertex2f(50,-50);

glVertex2f(50,35);

glVertex2f(-50,35);

glEnd();

//Ground

ground();

//river

river();

//Back Wall

stars();

//Tree1

Tree1();

//Tree2

Tree2();

//House1

House1();

//House2

House2();

//House3

House3();

//Road1

Road1();

Moon();

//Stars

//House4

House4();

//House5

House5();

//Tree3

Tree3();

//House6

House6();

//House7

House7();

//Front Wall

//Road2

Road2();

plane\_Move();

for(int i=0; i<1; i++)

{

glPushMatrix();

glTranslatef(plane\_move+i,0,0);

plane();

glPopMatrix();

}

car\_Run2();

for(int i=0; i<1; i++)

{

glPushMatrix();

glTranslatef(car\_run2+i,0,0);

car2();

glPopMatrix();

}

car\_Run();

for(int i=0; i<1; i++)

{

glPushMatrix();

glTranslatef(car\_run+i,0,0);

car();

glPopMatrix();

}

boat\_Move();

for(int i=0; i<1; i++)

{

glPushMatrix();

glTranslatef(boat\_move+i,0,0);

boat();

glPopMatrix();

}

glutSwapBuffers();

}

void spe\_key(int key, int x, int y)

{

switch (key) {

case GLUT\_KEY\_UP:

//ty +=5;

PlaySound("sweet\_tone.wav", NULL, SND\_ASYNC|SND\_FILENAME);

t=1;

glutPostRedisplay();

break;

case GLUT\_KEY\_DOWN:

//ty +=5;

PlaySound(NULL, NULL, 0);

t=0;

glutPostRedisplay();

break;

default:

break;

}

}

void handleKeypress(unsigned char key, int x, int y) {

switch (key) {

case 'd':

glutDisplayFunc(Day);

glutKeyboardFunc(handleKeypress);

PlaySound("morning\_alarm.wav", NULL, SND\_ASYNC|SND\_FILENAME);

glutPostRedisplay();

break;

case 'D':

glutDisplayFunc(Day);

glutKeyboardFunc(handleKeypress);

PlaySound("morning\_alarm.wav", NULL, SND\_ASYNC|SND\_FILENAME);

glutPostRedisplay();

break;

case 'n':

glutDisplayFunc(Night);

glutKeyboardFunc(handleKeypress);

PlaySound("night.wav", NULL, SND\_ASYNC|SND\_FILENAME);

glutPostRedisplay();

break;

case 'N':

glutDisplayFunc(Night);

glutKeyboardFunc(handleKeypress);

PlaySound("night.wav", NULL, SND\_ASYNC|SND\_FILENAME);

glutPostRedisplay();

break;

}

}

int main(int argc,char \*\*argv){

glutInit(&argc,argv);

glutInitDisplayMode ( GLUT\_RGB | GLUT\_DOUBLE );

glutInitWindowPosition(30,0);

glutInitWindowSize(1000,650);

glutCreateWindow("Cool City");

init();

glutSpecialFunc(spe\_key);

glutDisplayFunc(Day);

glutKeyboardFunc(handleKeypress);

glutMainLoop();

return 0;

}

**OUTPUT**

|  |  |
| --- | --- |
| **day** |  |
| **night** |  |

**Conclusion**

To conclude this project, we used simple graphics to show how the environment in a simple part of a city looks like in a day view and night view. We used various type of polygons, various modes and to produce the necessary graphic we needed to show for our project and we successfully ended up with a nice final product which ultimately produced an animation which shows how the city looks like. Due to time constraint, we could have added more things which could have showed better emphasis itself. But to end it all, we have completed all the requirements needed for the project and finished it properly.