#include<windows.h>

#include<GL\glut.h>

#include <GL/glu.h>

#include<math.h>

#include <stdlib.h>

#include<stdio.h>

#define PI 3.1416

GLint i, j, k;

GLfloat sun\_spin=0, sun\_x=0, sun\_y=0;

GLfloat ax=0,bx=0,cx=0,dx=0,str=500.0,mn=500.0;

GLfloat sr=0.0,sg=0.749,sb=1.0;

GLfloat spin = 0.0;

void init(void)

{

glClearColor(.40, .110, 1.0, 0.0);

glMatrixMode(GL\_PROJECTION);

gluOrtho2D(0.0, 1000.0, 0.0, 500.0);

}

///\*\*\* All\_Model \*\*\*///

///\*\*\* Circle\_Model\*\*\*///

void circle(GLdouble rad)

{

GLint points = 50;

GLdouble delTheta = (2.0 \* PI) / (GLdouble)points;

GLdouble theta = 0.0;

glBegin(GL\_POLYGON);

{

for( i = 0; i <=50; i++, theta += delTheta )

{

glVertex2f(rad \* cos(theta),rad \* sin(theta));

}

}

glEnd();

}

/// \* Sun\_Model \*\*///

void Sun\_Model(){

glPushMatrix();

glTranslatef(500,0,0);

circle(40);

glPopMatrix();

}

void Moving\_Sun\_Model(){

glPushMatrix();

glRotatef(-sun\_spin, 0,0,-.009);

Sun\_Model();

glPopMatrix();

}

///\*\*\* Cloud\_Model\*\*\*///

void cloud\_model\_one(){

glColor3f(0.00, 1.00, 1.00);

///Top\_Left

glPushMatrix();

glTranslatef(320,210,0);

circle(15);

glPopMatrix();

///Top

glPushMatrix();

glTranslatef(340, 225, 0);

circle(16);

glPopMatrix();

///Right

glPushMatrix();

glTranslatef(360,210,0);

circle(16);

glPopMatrix();

///middle\_Fill

glPushMatrix();

glTranslatef(355,210,0);

circle(16);

glPopMatrix();

glPushMatrix();

glTranslatef(350,210,0);

circle(16);

glPopMatrix();

glPushMatrix();

glTranslatef(345,204,0);

circle(10);

glPopMatrix();

glPushMatrix();

glTranslatef(340,204,0);

circle(10);

glPopMatrix();

glPushMatrix();

glTranslatef(335,204,0);

circle(10);

glPopMatrix();

glPushMatrix();

glTranslatef(330,204,0);

circle(10);

glPopMatrix();

glPushMatrix();

glTranslatef(325,204,0);

circle(10);

glPopMatrix();

glPushMatrix();

glTranslatef(320,204,0);

circle(10);

glPopMatrix();

glPushMatrix();

glTranslatef(315,204,0);

circle(10);

glPopMatrix();

glPushMatrix();

glTranslatef(310,204,0);

circle(10);

glPopMatrix();

glPushMatrix();

glTranslatef(305,204,0);

circle(10);

glPopMatrix();

///\*\*\*\*Fill End\*\*\*\*

}

void cloud\_model\_Two(){

glColor3f(0.00, 1.00, 1.00);

///Left\_Part

glPushMatrix();

glTranslatef(305,205,0);

circle(10);

glPopMatrix();

///Top

glPushMatrix();

glTranslatef(320,210,0);

circle(15);

glPopMatrix();

///Right\_Part

glPushMatrix();

glTranslatef(334,207,0);

circle(10);

glPopMatrix();

///Bottom\_Part

glPushMatrix();

glTranslatef(320,207,0);

circle(10);

glPopMatrix();

}

void cloud\_model\_Three(){

glColor3f(0.00, 1.00, 1.00);

///Left\_Part

glPushMatrix();

glTranslatef(300,200,0);

circle(15);

glPopMatrix();

///Top\_Left

glPushMatrix();

glTranslatef(320,210,0);

circle(15);

glPopMatrix();

///Top

glPushMatrix();

glTranslatef(340,220,0);

circle(16);

glPopMatrix();

///Top\_Right

glPushMatrix();

glTranslatef(360,210,0);

circle(15);

glPopMatrix();

///Right\_Part

glPushMatrix();

glTranslatef(380,200,0);

circle(15);

glPopMatrix();

///Bottom\_Right

glPushMatrix();

glTranslatef(360,190,0);

circle(20);

glPopMatrix();

///Bottom\_Left

glPushMatrix();

glTranslatef(320,190,0);

circle(20);

glPopMatrix();

///Bottom

glPushMatrix();

glTranslatef(340,190,0);

circle(20);

glPopMatrix();

///\*\*\*\*Fill End\*\*\*\*

}

///\*\*\* Hill\_Model\*\*\*///

void hill\_big(){

///Hill

glBegin(GL\_POLYGON);

glColor3f(0.11, 0.23, 0.36);

glVertex2i(70, 70);

glVertex2i(200, 225);

glVertex2i(330, 70);

glEnd();

///Hill\_Snow

glBegin(GL\_POLYGON);

glColor3f(0.00, 1.00, 1.00);

glVertex2i(200, 225);

glVertex2i(230, 190);

glVertex2i(220, 180);

glVertex2i(200, 190);

glVertex2i(190, 180);

glVertex2i(170, 190);

glEnd();

}

void hill\_small(){

///Hill\_Small

glBegin(GL\_POLYGON);

glColor3f(0.11, 0.23, 0.36);

glVertex2i(250, 100);

glVertex2i(310, 175);

glVertex2i(370, 100);

glEnd();

///Hill\_Small\_Snow

glBegin(GL\_POLYGON);

glColor3f(0.00, 1.00, 1.00);

glVertex2i(290, 150);

glVertex2i(310, 175);

glVertex2i(330, 150);

glVertex2i(325, 140);

glVertex2i(310, 150);

glVertex2i(300, 140);

glEnd();

}

///\*\*\* Tilla\_Model \*\*\*///

void Tilla\_One\_Model(){

///Tilla

glBegin(GL\_POLYGON);

glColor3f(0.7, 0.7, 0.7);

glVertex2i(125, 70);

glVertex2i(150, 80);

glVertex2i(160, 90);

glVertex2i(170, 90);

glVertex2i(180, 100);

glVertex2i(190, 105);

glVertex2i(200, 108);

glVertex2i(300, 110);

glVertex2i(300, 70);

glEnd();

}

void Tilla\_Two\_Model(){

glColor3f(0.1, 1.293, 0.0);

/// Left\_Part

glPushMatrix();

glTranslatef(430,90,0);

circle(30);

glPopMatrix();

glPushMatrix();

glTranslatef(420,87,0);

circle(30);

glPopMatrix();

glPushMatrix();

glTranslatef(410,80,0);

circle(30);

glPopMatrix();

glPushMatrix();

glTranslatef(400,80,0);

circle(30);

glPopMatrix();

glPushMatrix();

glTranslatef(390,70,0);

circle(30);

glPopMatrix();

///Right\_Part

glPushMatrix();

glTranslatef(445,80,0);

circle(30);

glPopMatrix();

glPushMatrix();

glTranslatef(455,75,0);

circle(30);

glPopMatrix();

glPushMatrix();

glTranslatef(465,70,0);

circle(30);

glPopMatrix();

glPushMatrix();

glTranslatef(470,65,0);

circle(30);

glPopMatrix();

glPushMatrix();

glTranslatef(480,60,0);

circle(30);

glPopMatrix();

glPushMatrix();

glTranslatef(485,55,0);

circle(20);

glPopMatrix();

}

///\*\*\* House\_Model \*\*\*///

void house(){

///House\_Roof

glBegin(GL\_POLYGON);

glColor3f(.990, 0.0, 0.0);

glVertex2i(285, 105);

glVertex2i(285, 130);

glVertex2i(380, 115);

glVertex2i(380, 105);

glEnd();

///House\_Roof\_Shadow

glBegin(GL\_POLYGON);

glColor3f(.890, 0.0, 0.0);

glVertex2i(285, 105);

glVertex2i(285, 120);

glVertex2i(380, 105);

glVertex2i(380, 105);

glEnd();

///House\_Fence

glBegin(GL\_POLYGON);

glColor3f(.555, 1.0, 1.0);

glVertex2i(290, 70);

glVertex2i(290, 104);

glVertex2i(375, 104);

glVertex2i(375, 70);

glEnd();

///House\_Fence\_Shadow

glBegin(GL\_POLYGON);

glColor3f(.555, 0.924, 0.930);

glVertex2i(310, 70);

glVertex2i(350, 104);

glVertex2i(375, 104);

glVertex2i(375, 70);

glEnd();

///House\_Door

glBegin(GL\_POLYGON);

glColor3f(0.38, 0.41, 0.36);

glVertex2i(330, 70);

glVertex2i(330, 100);

glVertex2i(350, 100);

glVertex2i(350, 70);

glEnd();

///House\_Window1

glBegin(GL\_POLYGON);

glColor3f(0.39, 0.40, 0.26);

glVertex2i(295, 75);

glVertex2i(295, 90);

glVertex2i(310, 90);

glVertex2i(310, 75);

glEnd();

///House\_Window2

glBegin(GL\_POLYGON);

glColor3f(0.38, 0.21, 1.26);

glVertex2i(312, 75);

glVertex2i(312, 90);

glVertex2i(327, 90);

glVertex2i(327, 75);

glEnd();

///House\_Window3

glBegin(GL\_POLYGON);

glColor3f(1.38, 1.21, 0.26);

glVertex2i(355, 75);

glVertex2i(355, 90);

glVertex2i(370, 90);

glVertex2i(370, 75);

glEnd();

///House\_Small\_Roof

glBegin(GL\_POLYGON);

glColor3f(0.0, 0.0, 1.0);

glVertex2i(250, 90);

glVertex2i(257, 104);

glVertex2i(290, 104);

glVertex2i(290, 90);

glEnd();

///House\_Small\_Fence

glBegin(GL\_POLYGON);

glColor3f(.00,1.00,1.00);

glVertex2i(255, 70);

glVertex2i(255, 90);

glVertex2i(290, 90);

glVertex2i(290, 70);

glEnd();

///House\_Small\_Door

glBegin(GL\_POLYGON);

glColor3f(1.0, 0.0, 1.0);

glVertex2i(260, 70);

glVertex2i(260, 80);

glVertex2i(285, 80);

glVertex2i(285, 70);

glEnd();

}

///\*\*\* Field\_Model \*\*\*///

void field(){

///Field

glBegin(GL\_POLYGON);

glColor3f(0.533, 1.293, 0.0);

glVertex2i(0, 50);

glVertex2i(0, 70);

glVertex2i(1000, 70);

glVertex2i(1000, 50);

glEnd();

///Field\_Shadow

glBegin(GL\_POLYGON);

glColor3f(0.1, 1.293, 0.0);

glVertex2i(0, 0);

glVertex2i(0, 50);

glVertex2i(1000, 50);

glVertex2i(1000, 0);

glEnd();

}

///\*\*\* Tree\_Model \*\*\*///

void Tree\_Model\_One(){

glPushMatrix();

glTranslatef(110,110,0);

circle(15);

glPopMatrix();

glPushMatrix();

glTranslatef(110,100,0);

circle(15);

glPopMatrix();

glBegin(GL\_POLYGON);

glColor3f(0.38, 0.21, 0.26);

glVertex2f(109, 70);

glVertex2f(109, 90);

glVertex2f(111, 90);

glVertex2f(111, 70);

glEnd();

}

void Tree\_Model\_Two(){

glPushMatrix();

glTranslatef(130,130,0);

circle(5);

glPopMatrix();

glPushMatrix();

glTranslatef(125,126,0);

circle(5);

glPopMatrix();

glPushMatrix();

glTranslatef(135,126,0);

circle(5);

glPopMatrix();

glPushMatrix();

glTranslatef(130,125,0);

circle(5);

glPopMatrix();

glBegin(GL\_POLYGON);

glColor3f(0.38, 0.21, 0.26);

glVertex2f(129, 110);

glVertex2f(129, 124);

glVertex2f(131, 124);

glVertex2f(131, 110);

glEnd();

}

void Tree\_Model\_Three(){

glBegin(GL\_POLYGON);

glVertex2f(125, 123);

glVertex2f(133, 145);

glVertex2f(141, 123);

glEnd();

glBegin(GL\_POLYGON);

glColor3f(0.38, 0.21, 0.26);

glVertex2f(132, 110);

glVertex2f(132, 124);

glVertex2f(134, 124);

glVertex2f(134, 110);

glEnd();

}

/// \* Windmill\_Stand\_Model \*\*\*///

void Windmill\_Stand\_Model(){

glColor3f(0.38, 0.41, 0.36);

glBegin(GL\_POLYGON);

glVertex2i(375, 100);

glVertex2i(380, 240);

glVertex2i(384, 240);

glVertex2i(390, 100);

glEnd();

}

///\*\*\* Windmill\_Blades\_Model \*\*\*///

void Windmill\_Blade(){

///Blade\_One

glPushMatrix();

glRotatef(spin,0,0,90);

glBegin(GL\_POLYGON);

glVertex2i(-5, 0);

glVertex2i(-85, -36);

glVertex2i(-83, -37);

glVertex2i(-3, -8);

glEnd();

glPopMatrix();

///Blade\_Two

glPushMatrix();

glRotatef(spin,0,0,90);

glBegin(GL\_POLYGON);

glVertex2i(0, 5);

glVertex2i(45, 70);

glVertex2i(50, 73);

glVertex2i(5, 0);

glEnd();

glPopMatrix();

///Blade\_Three

glPushMatrix();

glRotatef(spin,0,0,90);

glBegin(GL\_POLYGON);

glVertex2i(68, -78);

glVertex2i(0,0);

glVertex2i(5, 5);

glVertex2i(70, -77);

glEnd();

glPopMatrix();

}

///\*\*\* Windmill\_Final\_Model \*\*\*///

void Windmill(){

///Windmill\_Stand

glColor3f(1.00, 1.00, 1.00);

glPushMatrix();

Windmill\_Stand\_Model();

glPopMatrix();

///Windmill\_Motor

glColor3f(1.00, 1.00, 1.00);

glPushMatrix();

glTranslatef(380,250,0);

circle(10);

glPopMatrix();

///Windmill\_Rotary\_Blades

glColor3f(1.00, 1.00, 1.00);

glPushMatrix();

glTranslatef(380,251,0);

Windmill\_Blade();

glPopMatrix();

}

///Model\_End

///=======================================================================================================///

///=================///

///\*\*\* Object \*\*\*///

///=================///

///\*\*\* Sun \*\*\*///

void Sun(){

glColor3f(1, 1, 0);

glPushMatrix();

Moving\_Sun\_Model();

glPopMatrix();

}

///\*\*\* Cloud\_One\_Model\_One \*\*\*///

void cloud\_one(){

glPushMatrix();

glTranslatef(cx,-20,0);

cloud\_model\_one();

glPopMatrix();

}

///\*\*\* Cloud\_Two\_Model\_one \*\*\*///

void cloud\_two(){

glPushMatrix();

glTranslatef(bx+100,150,0);

cloud\_model\_one();

glPopMatrix();

}

///\*\*\* Cloud\_Three\_Model\_Two \*\*\*///

void cloud\_three(){

glPushMatrix();

glTranslatef(ax-80,80,0);

cloud\_model\_Two();

glPopMatrix();

}

///\*\*\* Cloud\_Four\_Model\_Two \*\*\*///

void cloud\_four(){

glPushMatrix();

glTranslatef(dx+300,125,0);

cloud\_model\_Two();

glPopMatrix();

}

///\*\*\* Cloud\_Five\_Model\_Three \*\*\*///

void cloud\_five(){

glPushMatrix();

glTranslatef(ax+-300,170,0);

cloud\_model\_Three();

glPopMatrix();

}

///\*\*\* Cloud\_Six\_Model\_Three \*\*\*///

void cloud\_six(){

glPushMatrix();

glTranslatef(cx+-500,20,0);

cloud\_model\_Three();

glPopMatrix();

}

///\*\*\* House\_One \*\*\*///

void house\_one(){

glPushMatrix();

glTranslatef(0,0,0);

house();

glPopMatrix();

}

///\*\*\* House\_Two \*\*\*///

void house\_two(){

glPushMatrix();

glTranslatef(450,0,0);

house();

glPopMatrix();

}

///\*\*\* House\_Two \*\*\*///

void house\_three(){

glPushMatrix();

glTranslatef(320, 37,0);

house();

glPopMatrix();

}

///\*\*\* Hill\_big\_One \*\*\*///

void Hill\_Big\_One(){

glPushMatrix();

glTranslatef(0,0,0);

hill\_big();

glPopMatrix();

}

///\*\*\* Hill\_big\_Two \*\*\*///

void Hill\_Big\_Two(){

glPushMatrix();

glTranslatef(550,-20,0);

hill\_big();

glPopMatrix();

}

///\*\*\* Hill\_Small\_One \*\*\*///

void Hill\_Small\_One(){

glPushMatrix();

glTranslatef(0,0,0);

hill\_small();

glPopMatrix();

}

/// \* Tilla\_One\_Model\_One \*\*\*///

void Tilla\_One(){

glPushMatrix();

glTranslatef(0,0,0);

Tilla\_One\_Model();

glPopMatrix();

}

/// \* Tilla\_Two\_Model\_Two \*\*\*///

void Tilla\_Two(){

glPushMatrix();

glTranslatef(0,0,0);

Tilla\_Two\_Model();

glPopMatrix();

}

/// \* Tilla\_Three\_Model\_Two \*\*\*///

void Tilla\_Three(){

glPushMatrix();

glTranslatef(400,0,0);

Tilla\_Two\_Model();

glPopMatrix();

}

/// \* Tilla\_Four\_Model\_One \*\*\*///

void Tilla\_Four(){

glColor3f(1.00,.00,1.00);

glPushMatrix();

glTranslatef(380,0,0);

Tilla\_One\_Model();

glPopMatrix();

}

///\*\*\* Tree\_1 \*\*\*///

void Tree\_One(){

glColor3f(0.00,1.00,0.00);

glPushMatrix();

glTranslatef(0,0,0);

Tree\_Model\_One();

glPopMatrix();

}

///\*\*\* Tree\_2 \*\*\*///

void Tree\_Two(){

glColor3f(0.00,1.00,0.00);

glPushMatrix();

glTranslatef(540,0,0);

Tree\_Model\_One();

glPopMatrix();

}

///\*\*\* Tree\_3 \*\*\*///

void Tree\_Three(){

glColor3f(0.533, 1.293, 0.0);

glPushMatrix();

glTranslatef(750,0,0);

Tree\_Model\_One();

glPopMatrix();

}

///\*\*\* Tree\_4 \*\*\*///

void Tree\_Four(){

glColor3f(0.533, 1.293, 0.0);

glPushMatrix();

glTranslatef(292,40,0);

Tree\_Model\_One();

glPopMatrix();

}

///\*\*\* Tree\_5 \*\*\*///

void Tree\_Five(){

glColor3f(0.533, 1.293, 0.0);

glPushMatrix();

glTranslatef(30,-20,0);

Tree\_Model\_Two();

glPopMatrix();

}

///\*\*\* Tree\_6 \*\*\*///

void Tree\_Six(){

glColor3f(0.533, 1.293, 0.0);

glPushMatrix();

glTranslatef(50,-10,0);

Tree\_Model\_Two();

glPopMatrix();

}

///\*\*\* Tree\_7 \*\*\*///

void Tree\_Seven(){

glColor3f(0.533, 1.293, 0.0);

glPushMatrix();

glTranslatef(322,0,0);

Tree\_Model\_Two();

glPopMatrix();

}

///\*\*\* Tree\_8 \*\*\*///

void Tree\_Eight(){

glColor3f(0.533, 1.293, 0.0);

glPushMatrix();

glTranslatef(350,-15,0);

Tree\_Model\_Two();

glPopMatrix();

}

///\*\*\* Tree\_9 \*\*\*///

void Tree\_Nine(){

glColor3f(0.533, 1.293, 0.0);

glPushMatrix();

glTranslatef(760,-25,0);

Tree\_Model\_Two();

glPopMatrix();

}

///\*\*\* Tree\_10 \*\*\*///

void Tree\_Ten(){

glColor3f(0.00,1.00,0.00);

glPushMatrix();

glTranslatef(90,-2,0);

Tree\_Model\_Three();

glPopMatrix();

}

///\*\*\* Tree\_11 \*\*\*///

void Tree\_Eleven(){

glColor3f(0.00,1.00,0.00);

glPushMatrix();

glTranslatef(125,0,0);

Tree\_Model\_Three();

glPopMatrix();

}

///\*\*\* Tree\_12 \*\*\*///

void Tree\_Twelve(){

glColor3f(0.533, 1.293, 0.0);

glPushMatrix();

glTranslatef(408,-22,0);

Tree\_Model\_Three();

glPopMatrix();

}

/// \* Windmill \*\*\*///

void Windmill\_One(){

glColor3f(1.00, 1.00, 1.00);

glPushMatrix();

glTranslatef(0,-10,0);

Windmill();

glPopMatrix();

}

void Windmill\_Two(){

glColor3f(1.00, 1.00, 1.00);

glPushMatrix();

glTranslatef(508,-70,0);

Windmill();

glPopMatrix();

}

void Windmill\_Three(){

glColor3f(1.00, 1.00, 1.00);

glPushMatrix();

glTranslatef(108,-90,0);

Windmill();

glPopMatrix();

}

///Object\_End

///=========================================================================================================///

///========================///

///\*\*\* Display Function \*\*\*///

///========================///

void display(void)

{

glClear(GL\_COLOR\_BUFFER\_BIT);

glColor3f(0.0, 0.0, 1.0);

///\*\*\* Object\_Layer \*\*\*///

Sun();

Windmill\_Three();

Hill\_Big\_One();

Tilla\_Four();

house\_three();

Hill\_Big\_Two();

Hill\_Small\_One();

cloud\_three();

cloud\_four();

Windmill\_One();

Windmill\_Two();

Tilla\_One();

Tilla\_Two();

Tilla\_Three();

house\_one();

cloud\_one();

house\_two();

Tree\_One();

Tree\_Two();

Tree\_Three();

Tree\_Four();

Tree\_Five();

Tree\_Six();

Tree\_Seven();

Tree\_Eight();

Tree\_Nine();

Tree\_Ten();

Tree\_Eleven();

Tree\_Twelve();

cloud\_two();

cloud\_five();

cloud\_six();

field();

glFlush();

}

///========================///

///\*\*\* Speed & Movement \*\*\*///

///========================///

///\*\*\* Sun\_Move \*\*\*///

void sun\_move(){

sun\_spin = sun\_spin + 0.0008;

}

void move\_right(){

sun\_move();

spin = spin +.1;

ax = ax + .05;

bx = bx + .08;

cx = cx + .10;

dx = dx + .15;

if(cx>1000){

cx = -300;

}

if(bx>1000){

bx= -400;

}

if(cx>1000){

cx= -400;

}

if(dx>1000){

dx= -500;

}

glutPostRedisplay();

}

void mouse(int key, int state, int x, int y){

switch (key)

{

case GLUT\_LEFT\_BUTTON:

if (state == GLUT\_DOWN)

{

glutIdleFunc(move\_right);

}

break;

case GLUT\_MIDDLE\_BUTTON:

case GLUT\_RIGHT\_BUTTON:

if (state == GLUT\_DOWN)

{

glutIdleFunc(NULL);

}

break;

default:

break;

}

}

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

{

glutInit(&argc, argv);

glutInitDisplayMode(GLUT\_SINGLE | GLUT\_RGB);

glutInitWindowPosition(50, 50);

glutInitWindowSize(1900, 1900);

glutCreateWindow("Smart Village");

init();

glutDisplayFunc(display);

glutMouseFunc(mouse);

glutMainLoop();

}

