CODE:

```
#include<iostream>

#include<stdlib.h>

#ifdef __APPLE__ //MACROS

#include<openGL/openGL.h>

#include<GLUT/glut.h>

#else

#include<GL/glut.h>

#endif

using namespace std;

float ballX = -0.8f;

float ballY = -0.3f;

float ballZ = -1.2f;

float colR=3.0;

float colG=1.5;

float colB=1.0;

float bgColR=0.0;

float bgColG=0.0;

float bgColB=0.0;

static int flag=1;

void drawBall(void) {


    glColor3f(colR,colG,colB); //set ball colour

    glTranslatef(ballX,ballY,ballZ); //moving it toward the screen a bit on creation

    glutSolidSphere (0.05, 30, 30); //create ball.
```

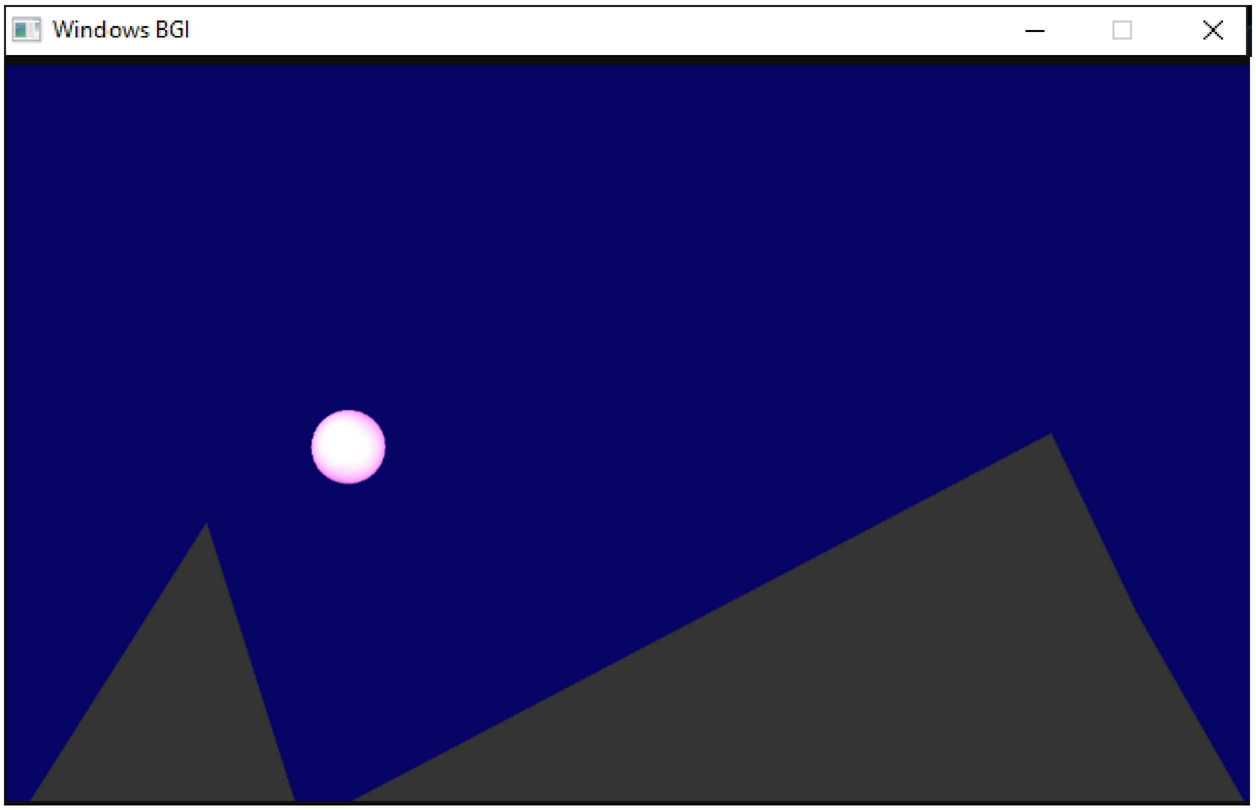
```
}

void drawAv(void) {

       glBegin(GL_POLYGON);

       glColor3f(1.0,1.0,1.0);

       glVertex3f(-0.9,-0.7,-1.0);

       glVertex3f(-0.5,-0.1,-1.0);

       glVertex3f(-0.2,-1.0,-1.0);

       glVertex3f(0.5,0.0,-1.0);

       glVertex3f(0.6,-0.2,-1.0);

       glVertex3f(0.9,-0.7,-1.0);

   glEnd();

}

void drawClouds(){}

void keyPress(int key, int x, int y)

{

     if(key==GLUT_KEY_RIGHT)

       ballX -= 0.05f;

   if(key==GLUT_KEY_LEFT)

       ballX  += 0.05f;

   glutPostRedisplay();

}

void initRendering() {

   glEnable(GL_DEPTH_TEST);

   glEnable(GL_COLOR_MATERIAL);
```

```
    glEnable(GL_LIGHTING); //Enable lighting
    glEnable(GL_LIGHT0); //Enable light #0
    glEnable(GL_LIGHT1); //Enable light #1
    glEnable(GL_NORMALIZE); //Automatically normalize normals
    //glShadeModel(GL_SMOOTH); //Enable smooth shading
}

//Called when the window is resized
void handleResize(int w, int h) {
    //Tell OpenGL how to convert from coordinates to pixel values
    glViewport(0, 0, w, h);
    glMatrixMode(GL_PROJECTION); //Switch to setting the camera perspective
    //Set the camera perspective
    glLoadIdentity(); //Reset the camera
    gluPerspective(45.0,                  //The camera angle
                   (double)w / (double)h, //The width-to-height ratio
                   1.0,                   //The near z clipping coordinate
                   200.0);                //The far z clipping coordinate
}
void drawScene()
{
    glClear(GL_COLOR_BUFFER_BIT|GL_DEPTH_BUFFER_BIT);
    glClearColor(bgColR,bgColG,bgColB,0.0);
    glMatrixMode(GL_MODELVIEW);
    glLoadIdentity();
```

```
//Add ambient light

GLfloat ambientColor[] = {0.2f, 0.2f, 0.2f, 1.0f}; //Color (0.2, 0.2, 0.2)

glLightModelfv(GL_LIGHT_MODEL_AMBIENT, ambientColor);

//Add positioned light

GLfloat lightColor0[] = {0.5f, 0.5f, 0.5f, 1.0f}; //Color (0.5, 0.5, 0.5)

GLfloat lightPos0[] = {4.0f, 0.0f, 8.0f, 1.0f}; //Positioned at (4, 0, 8)

glLightfv(GL_LIGHT0, GL_DIFFUSE, lightColor0);

glLightfv(GL_LIGHT0, GL_POSITION, lightPos0);

//Add directed light

GLfloat lightColor1[] = {0.5f, 0.2f, 0.2f, 1.0f}; //Color (0.5, 0.2, 0.2)

//Coming from the direction (-1, 0.5, 0.5)

GLfloat lightPos1[] = {-1.0f, 0.5f, 0.5f, 0.0f};

glLightfv(GL_LIGHT1, GL_DIFFUSE, lightColor1);

glLightfv(GL_LIGHT1, GL_POSITION, lightPos1);

//drawing the SUN

glPushMatrix();

   drawBall();

glPopMatrix();

//drawing the Mount Avarest

glPushMatrix();

   drawAv();

glPopMatrix();

//drawing the Clouds

glPushMatrix();

   drawClouds();
```

```
    glPopMatrix();

    glutSwapBuffers();

}

//float _angle = 30.0f;

void update(int value) {

    if(ballX>0.9f)

    {

        ballX = -0.8f;

        ballY = -0.3f;

        flag=1;

        colR=2.0;

        colG=1.50;

        colB=1.0;

        bgColB=0.0;

    }

    if(flag)

    {

    ballX += 0.001f;

    ballY +=0.0007f;

    colR-=0.001;

    //colG+=0.002;

    colB+=0.005;

    bgColB+=0.001;

       if(ballX>0.01)

       {
         flag=0;
       }
    }
    if (!flag)
    {
        ballX += 0.001f;
        ballY -=0.0007f;
        colR+=0.001;
        colB-=0.01;
        bgColB-=0.001;
        if(ballX<-0.3)
       {
         flag=1;
       }
    }
    glutPostRedisplay(); //Tell GLUT that the display has changed
    //Tell GLUT to call update again in 25 milliseconds
    glutTimerFunc(25, update, 0);
}
int main(int argc,char** argv)
{
    glutInit(&argc,argv);
    glutInitDisplayMode(GLUT_DOUBLE|GLUT_RGB|GLUT_DEPTH);
    glutInitWindowSize(400,400);
    glutCreateWindow("Sun");
    initRendering();
    glutDisplayFunc(drawScene);
    glutFullScreen();
    glutSpecialFunc(keyPress);
    glutReshapeFunc(handleResize);
    glutTimerFunc(25, update, 0);
    glutMainLoop();
    return(0);
}
```

OUTPUT:


Windows BGI