#include<stdio.h>

#include<stdlib.h>

#include<GL/glut.h>

#include<math.h>

#include<string.h>

static int m=0,M=0,v=0,V=0,E=0,e=0,r=0,R=0,j=0,J=0,s=0,S=0,U=0,u=0,n=0,N=0,X=0,z=0,B=0,b=0,c=0;

static GLint axis=2;

#define TEXTID 5

int f=1;

GLfloat diffuseMaterial[4]={0.5,0.5,0.5,1.0};

/\*initialize material property,light soure,lighting model,and depth buffer\*/

void myinit(void)

{

glClearColor(0.0,0.0,0.0,0.0);

glShadeModel(GL\_SMOOTH);

glEnable(GL\_DEPTH\_TEST);

GLfloat mat\_specular[]={1.0,1.0,1.0,1.0};

GLfloat light\_position[]={1.0,1.0,1.0,0.0};

glMaterialfv(GL\_FRONT,GL\_DIFFUSE,diffuseMaterial);

glMaterialfv(GL\_FRONT,GL\_SPECULAR,mat\_specular);

glMaterialf(GL\_FRONT,GL\_SHININESS,25.0);

glEnable(GL\_LIGHTING);

glEnable(GL\_LIGHT0);

glLightfv(GL\_LIGHT0,GL\_POSITION,light\_position);

glColorMaterial(GL\_FRONT,GL\_DIFFUSE);

glEnable(GL\_COLOR\_MATERIAL);

}

void display(void)

{

GLfloat position[]={0.0,0.0,1.5,1.0};

glClear(GL\_COLOR\_BUFFER\_BIT|GL\_DEPTH\_BUFFER\_BIT);

glClearColor(0.0,0.0,0.0,0.0);

glColor3f(1.0,0.5,0.0);

glPushMatrix();

glRotatef((GLfloat)z,1.0,1.0,1.0);

glLightfv(GL\_LIGHT0,GL\_POSITION,position);

glDisable(GL\_LIGHTING);

glutSolidSphere(0.8,40,16); /\*draw sun\*/

glPopMatrix();

glPushMatrix();

glLightfv(GL\_LIGHT0,GL\_POSITION,position);

glDisable(GL\_LIGHTING);

glEnable(GL\_LIGHTING);

glColor3f(1.5,0.5,0.0);

glutSolidTorus(0.2,0.9,6,20);

glPopMatrix();

glPushMatrix();

glRotatef((GLfloat)M,0.0,1.0,0.0);

glTranslatef(1.5,0.0,0.0);

glRotatef((GLfloat)m,0.0,1.0,0.0);

glColor3f(1.0,0.0,0.0);

glutSolidSphere(0.2,20,8); /\*draw smaller planet mercury\*/

glPopMatrix();

glPushMatrix();

glRotatef((GLfloat)V,0.0,1.0,0.0);

glTranslatef(2.0,0.0,1.0);

glRotatef((GLfloat)v,0.0,1.0,0.0);

glColor3f(7.5,9.5,1.0);

glutSolidSphere(0.2,20,8); /\*draw smaller plant venus\*/

glPopMatrix();

glPushMatrix();

glRotatef((GLfloat)E,0.0,1.0,0.0);

glTranslatef(3.5,0.0,0.0);

glRotatef((GLfloat)e,0.0,1.0,0.0);

glColor3f(0.1,6.5,2.0);

glutSolidSphere(0.2,20,8); /\*draw smaller plant earth\*/

glRotatef((GLfloat)X,0.0,1.0,0.0);

glTranslatef(0.3,0.2,0.0);

glColor3f(4.3,3.5,8.0);

glutSolidSphere(0.1,20,14); /\*draw moon\*/

glPopMatrix();

glPushMatrix();

glRotatef((GLfloat)R,0.0,1.0,0.0);

glTranslatef(5.0,0.0,3.0);

glRotatef((GLfloat)r,0.0,1.0,0.0);

glColor3f(1.0,0.2,0.0);

glutSolidSphere(0.2,20,8); /\*draw smaller planet mars\*/

glPopMatrix();

glPushMatrix();

glRotatef((GLfloat)J,0.0,1.0,0.0);

glTranslatef(-2.5,0.0,1.0);

glRotatef((GLfloat)j,0.0,1.0,0.0);

glColor3f(0.9,0.7,0.3);

glutSolidSphere(0.2,20,8);/\*draw smaller planet Jupiter\*/

glPopMatrix();

glPushMatrix();

glRotatef((GLfloat)S,0.0,1.0,0.0);

glTranslatef(-5.0,0.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)s,0.0,0.0,5.0);

glColor3f(4.5,0.5,0.0);

glutSolidSphere(0.5,20,16); /\*draw smaller plant Saturn\*/

int i=0;

glBegin(GL\_QUAD\_STRIP);

for(i=0;i<=360;i++)

{

glVertex3f(sin(i\*3.1416/180)\*0.5,cos(i\*3.1416/180)\*0.5,0);

glVertex3f(sin(i\*3.1416/180)\*0.7,cos(i\*3.1416/180)\*0.7,0);

}

glEnd();

glPopMatrix();

glPushMatrix();

glRotatef ((GLfloat) U, 0.0, 1.0,0.0);

glTranslatef (-6.5, 0.0, 0.0);

gluLookAt (10.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 10.0, 1.0);

glRotatef((GLfloat) u, 0.0, 0.0, 5.0);

glColor3f( 1.2, 0.6,0.2);

glutSolidSphere (0.5, 20, 16); /\* draw smaller planet Uranus\*/

glBegin(GL\_QUAD\_STRIP);

for(i=0; i<=360; i++)

{

glVertex3f(sin(i\*3.1416/180)\*0.5,cos(i\*3.1416/180)\*0.5, 0);

glVertex3f(sin(i\*3.1416/180)\*0.7, cos(i\*3.1416/180)\*0.7,0);

}

glEnd();

glPopMatrix();

glPushMatrix();

glRotatef ((GLfloat) N,0.0, 1.0, 0.0);

glTranslatef (-8.0, 0.0, 0.0);

glRotatef ((GLfloat) n, 0.0, 1.0, 0.0);

glColor3f(1.0, 2.0, 0.0);

glutSolidSphere(0.4, 20, 8);

glPopMatrix();/\* draw smaller planet Neptune \*/

glPushMatrix();

glRotatef ((GLfloat) c, 6.0, -14.0,-6.0);

glTranslatef (5.0,3.0,-1.0);

glScalef(0.60,0.0,2.5);

glColor3f (7.5, 9.5, 2.0);

glutSolidSphere (0.2, 12, 6);

glPopMatrix();/\*draw comet\*/

//to put the stars as a background

glPushMatrix();

glTranslatef(0.0,-2.0,0.0);

gluLookAt(0.0,10.0,0.0,1.0,0.0,0.0,0.0,0.0,3.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glScalef(200.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(0.0,2.0,0.0);

gluLookAt(0.0,10.0,0.0,1.0,0.0,0.0,0.0,0.0,3.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glScalef(200.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(0.0,-4.0,0.0);

gluLookAt(0.0,10.0,0.0,1.0,0.0,0.0,0.0,0.0,3.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glScalef(200.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(0.0,4.0,0.0);

gluLookAt(0.0,10.0,0.0,1.0,0.0,0.0,0.0,0.0,3.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glScalef(200.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.1,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(0.0,-6.0,0.0);

gluLookAt(0.0,10.0,0.0,1.0,0.0,0.0,0.0,0.0,3.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glScalef(200.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.1,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(0.0,6.0,0.0);

gluLookAt(0.0,10.0,0.0,1.0,0.0,0.0,0.0,0.0,3.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glScalef(200.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.1,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(0.0,-8.0,0.0);

gluLookAt(0.0,10.0,0.0,1.0,0.0,0.0,0.0,0.0,3.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glScalef(200.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.1,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(0.0,8.0,0.0);

gluLookAt(0.0,10.0,0.0,1.0,0.0,0.0,0.0,0.0,3.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glScalef(200.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.1,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(8.0,0.0,0.0);

gluLookAt(0.0,10.0,0.0,1.0,0.0,0.0,0.0,0.0,3.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glScalef(200.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(-8.0,-2.0,0.0);

gluLookAt(0.0,10.0,0.0,1.0,0.0,0.0,0.0,0.0,3.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glScalef(200.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(6.0,4.0,0.0);

gluLookAt(0.0,10.0,0.0,1.0,0.0,0.0,0.0,0.0,3.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glScalef(200.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(-6.0,4.0,0.0);

gluLookAt(0.0,10.0,0.0,1.0,0.0,0.0,0.0,0.0,3.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glScalef(200.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(5.0,-4.0,0.0);

gluLookAt(0.0,10.0,0.0,1.0,0.0,0.0,0.0,0.0,3.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glScalef(200.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(-7.0,3.0,0.0);

gluLookAt(0.0,10.0,0.0,1.0,0.0,0.0,0.0,0.0,3.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glScalef(200.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(-7.0,2.0,0.0);

gluLookAt(0.0,10.0,0.0,1.0,0.0,0.0,0.0,0.0,3.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glScalef(200.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(7.0,-2.0,0.0);

gluLookAt(0.0,10.0,0.0,1.0,0.0,0.0,0.0,0.0,3.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glScalef(200.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(7.0,-3.0,0.0);

gluLookAt(0.0,10.0,0.0,1.0,0.0,0.0,0.0,0.0,3.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glScalef(200.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(-7.0,-3.0,0.0);

gluLookAt(0.0,10.0,0.0,1.0,0.0,0.0,0.0,0.0,3.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glScalef(200.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(7.0,2.0,0.0);

gluLookAt(0.0,10.0,0.0,1.0,0.0,0.0,0.0,0.0,3.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glScalef(200.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(1.0,-7.0,0.0);

gluLookAt(0.0,10.0,0.0,1.0,0.0,0.0,0.0,0.0,3.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glScalef(200.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(2.0,-5.0,0.0);

gluLookAt(0.0,10.0,0.0,1.0,0.0,0.0,0.0,0.0,3.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glScalef(200.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(5.0,-1.0,0.0);

gluLookAt(0.0,10.0,0.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.07,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(-6.0,7.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.07,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(-0.5,3.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.07,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(-1.5,4.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.07,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(-9.0,3.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.07,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(9.0,-5.9,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.1,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(6.5,8.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.1,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(5.0,7.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.1,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(-9.0,6.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.1,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(-10.5,9.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.07,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(-11.0,-7.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.07,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(-11.0,5.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.05,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(-7.0,-5.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(-10.0,3.7,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(-7.0,-2.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(-8.0,5.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.03,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(-8.0,-5.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.05,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(-11.0,-4.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(6.0,-5.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(-6.9,7.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(5.0,-4.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.05,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(6.0,4.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(3.0,-4.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(4.0,-7.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat) b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.05,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(-4.0,-3.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(4.0,-7.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(11.0,-4.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.05,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(9.0,-9.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(8.0,-4.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.05,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(9.0,5.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef (7.0,7.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(0.9,7.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(1.0,6.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(0.8,-5.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(3.0,-7.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.05,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(1.0,5.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(2.0,4.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(0.0,7.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.05,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(0.0,5.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(-9.0,0.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.05,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(-10.0,4.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(9.0,3.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.05,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(-10.0,-6.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(10.0,0.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.05,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(-9.0,-7.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(-3.0,4.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.05,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(-9.9,-7.5,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(1.0,5.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.05,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(3.0,6.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(-2.0,-5.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.05,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(-3.0,-2.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(-4.0,-8.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.05,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(8.3,-7.1,0.0);

gluLookAt (0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(-10.0,7.6,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.05,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(-3.0,7.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(-1.4,7.5,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.05,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(3.0,6.5,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(-6.0,4.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(-6.0,-6.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.05,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(0.7,4.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(2.0,2.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glScalef(200.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(0.0,0.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glScalef(200.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(0.0,-1.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glScalef(200.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(0.0,1.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glScalef(200.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(0.0,2.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,0.0,0.0,0.0);

glScalef(200.0,0.0,0.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glPushMatrix();

glTranslatef(8.7,9.0,0.0);

gluLookAt(0.0,10.0,2.0,1.0,0.0,0.0,0.0,0.0,1.0);

glRotatef((GLfloat)b,1.0,7.0,5.0);

glColor3f(4.3,3.5,1.0);

glutSolidSphere(0.04,20,8);

glPopMatrix();

glutSwapBuffers();

}

void reshape(int w,int h)

{

glViewport(0,0,(GLsizei)w,(GLsizei)h);

glMatrixMode(GL\_PROJECTION);

glLoadIdentity();

gluPerspective(60.0,(GLfloat)w/(GLfloat)h,1.0,20.0);

glMatrixMode(GL\_MODELVIEW);

glLoadIdentity();

gluLookAt(0.0,0.0,5.0,0.0,0.0,0.0,0.0,1.0,0.0);

}

void mouse(int btn ,int state,int x,int y)

{

if(btn==GLUT\_LEFT\_BUTTON && state==GLUT\_DOWN)

{

z=(z+50)%360;

b=(b+10)%360;

c=(c+1)%360;

m=(m+3)%360;M=(M+12)%360;

v=(v+2)%360;V=(V+10)%360;

e=(e+5)%360;E=(E+8)%360;

r=(r+6)%360;R=(R+6)%360;

j=(j+10)%360;J=(J+4)%360;

s=(s+9)%360;S=(S+3)%360;

u=(u+8)%360;U=(U+2)%360;

n=(n+7)%360;N=(N+1)%360;

glutPostRedisplay();

}

if(btn==GLUT\_MIDDLE\_BUTTON && state==GLUT\_DOWN)

{

z=(z+50)%360;

b=(b+10)%360;

c=(c+1)%360;

m=(m+3)%360;M=(M+12)%360;

v=(v-2)%360;V=(V-10)%360;

e=(e+5)%360;E=(E+8)%360;

r=(r-6)%360;R=(R-6)%360;

j=(j+10)%360;J=(J+4)%360;

s=(s-9)%360;S=(S-3)%360;

u=(u+8)%360;U=(U+2)%360;

n=(n-7)%360;N=(N-1)%360;

glutPostRedisplay();

}

if(btn==GLUT\_RIGHT\_BUTTON && state==GLUT\_DOWN)

{

z=(z-50)%360;

b=(b-10)%360;

c=(c+1)%360;

m=(m-3)%360;M=(M-12)%360;

v=(v-2)%360;V=(V-10)%360;

e=(e-5)%360;E=(E-8)%360;

r=(r-6)%360;R=(R-6)%360;

j=(j-10)%360;J=(J-4)%360;

s=(s-9)%360;S=(S-3)%360;

u=(u-8)%360;U=(U-2)%360;

n=(n-7)%360;N=(N-1)%360;

glutPostRedisplay();

}

}

void DrawTextXY(double x,double y,double z,double scale,char \*s)

{

int i;

glPushMatrix();

glTranslatef(x,y,z);

glScalef(scale,scale,scale);

for (i=0;i < strlen(s);i++)

glutStrokeCharacter(GLUT\_STROKE\_MONO\_ROMAN,s[i]);

glPopMatrix();

}

void cover()

{

glClear(GL\_COLOR\_BUFFER\_BIT | GL\_DEPTH\_BUFFER\_BIT);

glLoadIdentity();

glClearColor(0.15,0.1,0.01,0);

glTranslatef(0.0,0.0,-6.0);

glTranslatef(0.0,-1.3,0.0);

glColor3f(1.00,0.0,0.0);

glLoadName(TEXTID);

glColor3f(0.9,0.1,0.3);

DrawTextXY(-4.7,3.5,0.0,0.0020," CHANNABASAVESHWARA INSTITUTE OF TECHNOLOGY ");

glColor3f(1.0,0.0,0.7);

DrawTextXY(-3.7,2.8,0.0,0.0015," MINI PROJECT ON GRAPHICAL IMPLEMENTATION OF ");

glColor3f(0.0,0.0,1.0);

DrawTextXY(-1.75,2,1.0,0.0014,"CELESTIAL EXPLORATORY ");

glColor3f(1.0,0.0,0.0);

DrawTextXY(-3.25,1.5,0.0,0.001," SUBMITTED BY :- ");

glColor3f(0.0,0.0,1.0);

DrawTextXY(-2.5,1.2,0.0,0.001," B R NITHYASHREE ");

DrawTextXY(-2.5,0.95,0.0,0.001," ABHISHEK K T ");

glColor3f(0.0,0.0,1.0);

DrawTextXY(1.009,1.2,0.0,0.001,"1CG15CS011");

DrawTextXY(1.015,0.95,0.0,0.001,"1CG15CS001");

glColor3f(1.0,0.0,0.0);

DrawTextXY(-1.25,0,0.0,0.001," UNDER THE GUIDENCE OF : ");

//glColor3f(0.0,0.0,1.0);

glColor3f(1.0,0.0,0.2);

DrawTextXY(0.2,-.2,0.0,0.001,"DHARNESH KUMAR M L"); //red

DrawTextXY(0.3,-.4,0.0,0.001," Assistant Prof.of CSE ");

DrawTextXY(0.3,-.6,0.0,0.001," CIT GUBBI");

glColor3f(0.0,0.0,0.0);

DrawTextXY(1.25,-1.25,0.0,0.0015," Press i to move on... ");

glFlush();

glutSwapBuffers();

}

void inst()

{

glClear(GL\_COLOR\_BUFFER\_BIT | GL\_DEPTH\_BUFFER\_BIT);

glLoadIdentity();

glClearColor(0.15,0.1,0.01,0);

glTranslatef(0.0,0.0,-6.0);

glTranslatef(0.0,-1.3,0.0);

glColor3f(1.00,0.0,0.0);

glLoadName(TEXTID);

glColor3f(0.9,0.1,0.3);

DrawTextXY(-4.7,3.5,0.0,0.0020," INSTRUCTIONS ");

glColor3f(1.0,0.8,0.4);

DrawTextXY(-1.25,3.1,0.0,0.001," 1: Press B to overview the complete Celestial Exploratory ");

DrawTextXY(-1.25,2.9,0.0,0.001," 2: M to rotate the Planet Mercury around the Sun ");

DrawTextXY(-1.25,2.7,0.0,0.001," 3: m to rotate the Planet Mercury with in its Path ");

DrawTextXY(-1.25,2.5,0.0,0.001," 4: V or v to rotate the Planet Venus ");

DrawTextXY(-1.25,2.3,0.0,0.001," 5: E or e to rotate the Planet Earth ");

DrawTextXY(-1.25,2.1,0.0,0.001," 6: R or r to rotate the Planet Mars");

DrawTextXY(-1.25,1.9,0.0,0.001," 7: J or j to rotate the Planet Jupiter");

DrawTextXY(-1.25,1.7,0.0,0.001," 8: S or s to rotate the Planet Satrun");

DrawTextXY(-1.25,1.5,0.0,0.001," 9: U or u to rotate the Planet Uranus");

DrawTextXY(-1.25,1.3,0.0,0.001,"10: N or n to rotate the Planet Neptune");

glColor3f(0.0,0.0,0.0);

DrawTextXY(1.25,-1.25,0.0,0.0015," Press d to move on... ");

glFlush();

glutSwapBuffers();

}

void keyboard(unsigned char key,int x,int y)

{

switch(key)

{

case 'z':z=(z+50)%360;

glutPostRedisplay();

break;

case 'm':m=(m+3)%360;

glutPostRedisplay();

break;

case 'M':M=(M+12)%360;

glutPostRedisplay();

break;

case 'v':v=(v+2)%360;

glutPostRedisplay();

break;

case 'V':V=(V+10)%360;

glutPostRedisplay();

break;

case 'e':e=(e+5)%360;

glutPostRedisplay();

break;

case 'E':E=(E+8)%360;

glutPostRedisplay();

break;

case 'r':r=(r+6)%360;

glutPostRedisplay();

break;

case 'R':R=(R+6)%360;

glutPostRedisplay();

break;

case 'j':j=(j+10)%360;

glutPostRedisplay();

break;

case 'J':J=(J+4)%360;

glutPostRedisplay();

break;

case 's':s=(s+9)%360;

glutPostRedisplay();

break;

case 'S':S=(S+3)%360;

glutPostRedisplay();

break;

case 'u':u=(u+8)%360;

glutPostRedisplay();

break;

case 'U':U=(U+2)%360;

glutPostRedisplay();

break;

case 'n':n=(n+7)%360;

glutPostRedisplay();

break;

case 'N':N=(N+1)%360;

glutPostRedisplay();

break;

case 'b':b=(b+10)%360;

glutPostRedisplay();

break;

case 'c':c=(c+1)%360;

b=(b+10)%360;

glutPostRedisplay();

break;

case 'X':X=(X+5)%360;

glutPostRedisplay();

break;

case 'a':z=(z+50)%360;

b=(b+10)%360;

m=(m+3)%360;

v=(v+2)%360;

e=(e+5)%360;

r=(r+6)%360;

j=(j+10)%360;

s=(s+9)%360;

u=(u+8)%360;

n=(n+7)%360;

c=(c+1)%360;

glutPostRedisplay();

break;

case 'A':z=(z+50)%360;

b=(b+10)%360;

M=(M+12)%360;

V=(V+10)%360;

E=(E+8)%360;

R=(R+6)%360;

J=(J+4)%360;

S=(S+3)%360;

U=(U+2)%360;

N=(N+1)%360;

c=(c+1)%360;

glutPostRedisplay();

break;

case 'B':z=(z+50)%360;

b=(b+10)%360;

c=(c+1)%360;

m=(m+3)%360;M=(M+12)%360;

v=(v+2)%360;V=(V+10)%360;

e=(e+5)%360;E=(E+8)%360;

r=(r+6)%360;R=(R+6)%360;

j=(j+10)%360;J=(J+4)%360;

s=(s+9)%360;S=(S+3)%360;

u=(u+8)%360;U=(U+2)%360;

n=(n+7)%360;N=(N+1)%360;

glutPostRedisplay();

break;

case 'f':f=1;

break;

case 'i':f=2;

break;

case ‘d’:f=3;

break;

case 'q':f=4;

break;

case 27:exit(0);

break;

default:break;

}

}

void dis()

{

switch(f)

{

case 1: cover();

break;

case 2:inst();

break;

case 3: display();

break;

case 4:exit(0);

break;

}

}

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

{

glutInit(&argc,argv);

glutInitDisplayMode(GLUT\_DOUBLE|GLUT\_RGB|GLUT\_DEPTH);

glutInitWindowSize(500,500);

glutInitWindowPosition(100,100);

glutCreateWindow("planets amidst stars");

myinit();

glutDisplayFunc(dis);

glutIdleFunc(dis);

glutReshapeFunc(reshape);

glutKeyboardFunc(keyboard);

glutMouseFunc(mouse);

glEnable(GL\_DEPTH\_TEST);

glutMainLoop();

return 0;

}