```
/*App-F1-OrthoProjection.c
  C Opengl(GLUT) Example User Application F1:
  2016.07.10 JMS- Added app-specific Author & ID example
  2016.06.24 JMS                                    Version 0.5
  2013.01.17 JMS- Traveler2/Athlon64/WinXPPro/APF9.0:C/OpenGL+CGlut

 Herein: void AppF1(void)
*/
#include <3DEnv.h>   //<- Environment's variables & functions become available.

void AppF1(void) /*---------------------------------------------- 2015.09.11 JMS
          You've entered this application reached by pressing 'F1':          */
{                //    "F_: Title__________________ yyyy.mm.dd\0";      <-e.g.
         char AppName[]="F1: Ortho Projection        2016.06.24\0";

            //Arbitrarily using inches as the unit of measurement...
            //   and assuming an eye separation of 2.4 inches...
            //         E  ,  N    ,     F ,  L  ,  R  , T  , B  ,  D
 double FrustCoes[8]={ 1.2, -8.000, 24.00 ,-10.4, 10.4,-6.5, 6.5, 24.0 };
            //       { 1.2, -8.000, 24.00 ,-10.4, 10.4,-6.5, 6.5, 24.0 }
            //                            for more near-field depth resolution.
            //       { 1.2,-11.994, 24000.,-10.4, 10.4,-6.5, 6.5, 24.0 }
            //                            far depth cutoff is ~.4 miles away.
            //A suggestion: make L,R,T,& B the +- dimensions of your screen.

  int i;
  double Xyzh[4],Rpyh[4];
  char Label[80];

 switch(S.ThreePhase) //------------------------------------

  {case(1)://Phase One- Transfers, initializations, & non-screen computations:
    if(S.AppInit[S.AppNumber]<1)
     { S.iTeapot              = 0;
       S.AppInit[S.AppNumber] = 1;
       S.Scale                = 5.e0;
     }/*S.AppInit*/
       S.FovYZzoom            = 1.e0;

    sprintf(S.AppName,"%s\0",AppName);
                                                      //VuMode
    for(i=0;i<8;i++) { S.FrustCoes[i]=FrustCoes[i]; } //Frustum coefficients
   /*--------------------------------------------------------------*/    break;

   case(2)://Phase Two- 2D orthographic screen graphics:
     //Draw a few 3D colored lines on the ~2D screen:
    //Author & IP information:
    h4Fill(Xyzh, -.25e0*(S.xyWindowRatio),  .95e0, 0.e0, 1.e0);
    h4Fill(Rpyh,90.00e0                   , 0.00e0, 0.e0, 1.e0);
    sprintf(Label,"TBD 2016 Your name here\0");
    Xyzh[1]=.95e0; VecText7D(Xyzh,Rpyh, .03e0, 1.,  1  ,Label);
    sprintf(Label,"             your address here.\0");
    Xyzh[1]=.92e0; VecText7D(Xyzh,Rpyh, .02e0, 1., 11  ,Label);
    sprintf(Label,"          your email address here. \0");
    Xyzh[1]=.89e0; VecText7D(Xyzh,Rpyh, .02e0, 1.,  6  ,Label);
    sprintf(Label," Your App. intellectual property summary here.\0");
    Xyzh[1]=.86e0; VecText7D(Xyzh,Rpyh, .02e0, 1.,  2  ,Label);

      PrntOrtho( 4,2,11,7
                ,"Hold down the left mouse button for pitch & yaw control.\0");
      PrntOrtho( 6,2,11,7,"To see what's going on in depth- press: '`'\0");
      PrntOrtho( 7,2,11,7,"  which toggles a 'Depth Selfie' to the screen.\0");
     if(S.iTeapot==0)
      PrntOrtho( 9,2, 9,7,"For more 3D action: press 't'.\0");
     if(S.iTeapot!=0)
     {PrntOrtho( 9,2, 9,7,"Pressing 't' again changes the teapot.\0");
      PrntOrtho(10,2, 6,7,"To cycle through ALL the viewmodes- press: 'E'\0");
      PrntOrtho(11,2, 6,7,"   ...'E' doesn't change the ortho screen.\0");
      PrntOrtho(12,2, 6,7,"To nutate the 3D content- press: 'n'\0");
      PrntOrtho(14,2,11,7,"Press the right mouse button for menu access.\0");
      PrntOrtho(15,2,11,7,"   ...then select 'Help- keyboard Mouse'\0");
      PrntOrtho(16,2,11,7,"      ...to see your 3D manual control options.\0");
      PrntOrtho(17,2, 9,7,"to save the screen as 'selfie0.bmp'- press: '~'\0");
     }
     glLineWidth(4.0f);
     glShadeModel(GL_FLAT);
     glBegin(GL_LINE_LOOP);
       Colors3D( 2); glVertex3f(-0.5, -0.5 , 0.1);
       Colors3D( 6); glVertex3f(-0.5,  0.0 , 0.2);
       Colors3D( 9); glVertex3f(-0.5,  0.5 , 0.2);
       Colors3D(11); glVertex3f( 0.5,  0.5 , 0.3);
       Colors3D(14); glVertex3f( 0.5, -0.5 , 0.4);
       Colors3D( 1); glVertex3f( 0.2, -0.5 , 0.1);
     glEnd();
     glLineWidth(1.0f);                                            //glFlush();
     CubeGrid( 1);                                                 //glFlush();

     // Example: 6DOF alphanumeric write:
     // Raw mouse output re-purposed as an X,Y input:
     h4Fill( Xyzh
            , (S.MouseXc-S.xWindowFull/2.)/600.e0
            ,-(S.MouseYc-S.yWindowFull/2.)/600.e0
            ,  0.e0
            ,  1.e0                             );

     // <> & the mouse (-LMB:down) control the attitude of the text string:
     sprintf(Label,"'<''>' & Mouse: Roll=%8.3f  Pitch=%8.3f Yaw=%8.3f\0"
                  ,S.Attitudeh[0],S.Attitudeh[1],S.Attitudeh[2]   );
     Alpha6D(    S.vMouse,S.Attitudeh,0,.02e0,1., 9,Label);   //S.vMouse,Xyzh,
     //translation^                        ^Label
     //        rotation^               ^color
     //               mode^                  <-set mode=1 for most 3D uses.
     //           character size^  ^line width(a float)

   /*--------------------------------------------------------------*/    break;

   case(3)://Phase Three- 2D/3D Ee-key-controlled screen graphics:
     Teapot();
     h4Fill( Xyzh , 0.e0, 0.e0,  0.e0, 1.e0);
     h4Fill( Rpyh , 0.e0, 0.e0, 90.e0, 1.e0);
     sprintf(Label,"~~~~~~~~~~~~~~~ Roll=%8.3f  Pitch=%8.3f Yaw=%8.3f\0"
                                       ,Rpyh[0],Rpyh[1],Rpyh[2]   );
     if(S.iTeapot!=0) Alpha6D(    Xyzh,Rpyh,1,.03e0,1., 1,Label);

   /*--------------------------------------------------------------*/    break;
  }/*S.ThreePhase*/

}// End AppF1 -----------------------------------------------------------------


//--------------------------------------------------------------------------7 9
```