Quick Reference
OpenGL - 1

init window

```
void glutInitDisplayMode(int mask)
            mask:       GLUT_RGB
                        GLUT_INDEX
                        GLUT_DOUBLE
                        GLUT_DEPTH
void glutInitWindowPosition( x, y )
void glutInitWindowSize( width, height )
void glutCreateWindow( char *title )
```

color index mode

```
void glutInitDisplayMode(...|GLUT_INDEX)
void glutSetColor( index, r, g, b )
void glClearIndex( index )
void glIndexi( index )
```

rgba color mode

```
void glutInitDisplayMode(...|GLUT_RGBA)
void glClearColor( r, g, b, 1.0 )
void glColor3f( r, g, b )
```

clearing buffers

```
void glClear( Glbitfield mask )
      mask: GL_COLOR_BUFFER_BIT
            GL_DEPTH_BUFFER_BIT
            GL_STENCIL_BUFFER_BIT
            GL_ACCUMULATION_BUFFER_BIT
```

eventi

```
void glutReshapeFunc (void(*f)(int,int))
void glutDisplayFunc (void(*f)(void))
void glutKeyboardFunc(void(*f)( k,x,y )
void glutSpecialFunc (void(*f)( k,x,y )
void glutMouseFunc( void(*f)(b,s,x,y) )
      b:          GLUT_LEFT_BUTTON
                  GLUT_MIDDLE_BUTTON
                  GLUT_RIGHT_BUTTON
      s:          GLUT_DOWN
                  GLUT_UP
void glutIdleFunc( void(*f)(void) )
void glutMainLoop( void )
```

tipi di dati

tipo	abbrev.	Lungh.
GLbyte	b	8 bit
GLubyte	ub	8 bit
GLshort	s	16 bit
GLushort	us	16 bit
GLint	i	32 bit
GLuint	ui	32 bit
GLfloat	f	32 bit
GLdouble	d	64 bit

primitive drawing

```
void glBegin( primitive_type )
      <vertex_list>
void glEnd()
```

primitive type:

```
      GL_POINTS
      GL_LINES
      GL_LINE_STRIP
      GL_LINE_LOOP
      GL_TRIANGLES
      GL_TRIANGLE_STRIP
      GL_TRIANGLE_FAN
      GL_QUADS
      GL_QUAD_STRIP
      GL_POLYGON
```

vertex:

```
      void glVertex4f( x,y,z,w )
      void glVertex3f( x,y,z )
      void glVertex2f( x,y )
```

glut primitives

```
void glutWireTetrahedron(void)
void glutWireOctahedron(void)
void glutWireDodecahedron(void)
void glutWireIcosahedron(void)
void glutWireCube(GLdouble)
void glutWireTeapot(GLdouble)
void glutWireSphere(GLdouble,GLint,GLint)
void  glutWireCone(GLdouble,GLdouble,GLint,GLint)
void  glutWireTorus(GLdouble,GLdouble,GLint,GLint)

void glutSolidTetrahedron(void)
void glutSolidOctahedron(void)
void glutSolidDodecahedron(void)
void glutSolidIcosahedron(void)
void glutSolidCube(GLdouble)
void glutSolidTeapot(GLdouble)
void glutSolidSphere(GLdouble,GLint,GLint)
void glutSolidCone(GLdouble,GLdouble,GLint,GLint)
void glutSolidTorus(GLdouble,GLdouble,GLint,GLint)
```

Quick Reference
OpenGL - 2

matrici

```
void glMatrixMode(GLenum s)
      s:          GL_MODELVIEW
                  GL_PROJECTION
                  GL_TEXTURE
void glPushMatrix(void)
void glPopMatrix(void)
void glLoadIdentity(void)
void glLoadMatrixf( const GLfloat *m )
void glMultMatrixf( const GLfloat *m )
void glTranslatef( x, y, z )
void glRotatef( a, x, y, z )
void glScalef( x, y, z )
```

trasformazioni predefinite

modelview:

```
void gluLookAt( eyeX,eyeY,eyeZ,
            targX,targY,targZ,upX,upY,upZ )
```

projection:

```
void gluOrtho2D(left,right,bottom,top)
void
  glOrtho(left,right,bottom,top,near,far)
void gluPerspective(fovY,aspect,near,far)
```

viewport:

```
void glViewport(x,y,width,height)
```

proprieta‘ di materiale

```
void glMaterialfv(face,propty,params)
face:
      GL_FRONT
      GL_BACK
      GL_FRONT_AND_BACK
property, parameters:
      GL_AMBIENT              (rgba)
      GL_DIFFUSE              (rgba)
      GL_AMBIENT_AND_DIFFUSE  (rgba)
      GL_SPECULAR             (rgba)
      GL_EMISSION             (rgba)
      GL_SHININESS            (0-128)
```

double buffering

```
void glutInitDisplayMode(...|GLUT_DOUBLE)
void glutSwapBuffers( void )
```

z-buffering

```
void glutInitDisplayMode(...|GLUT_DEPTH)
void glClear(... | GL_DEPTH_BUFFER_BIT)
void glEnable( GL_DEPTH_TEST )
```

normali sui vertici

```
void glEnable( GL_NORMALIZE )
void glNormal3f( x, y, z )
```

sorgenti luminose

```
void glLightfv(light_num,propty,params)
      light_num:
            GL_LIGHT0   ...   GL_LIGHT7
      property, parameters:
            GL_AMBIENT        (rgba)
            GL_DIFFUSE        (rgba)
            GL_SPECULAR       (rgba)
            GL_POSITION       (xyzw)
            GL_SPOT_DIRECTION (xyz)
            GL_SPOT_CUTOFF    (0.0-90.0)
void glEnable( light_num )
```

modello di illuminazione

```
void glLightModelfv(GL_LIGHT_MODEL_AMBIENT,rgba)
void glLightModeli(GL_LIGHT_MODEL_LOCAL_VIEWER,f)
            flag:       GL_TRUE
                        GL_FALSE
void glLightModeli(GL_LIGHT_MODEL_TWO_SIDE,flag)
            flag:       GL_TRUE
                        GL_FALSE
void glEnable( GL_LIGHTING )
```

svuotamento pipeline

```
void glFlush( void )
void glFinish( void )
```