

Use the keyboard to select between drawing a lighted unit sphere or unit cube. The keyboard also rotates the sphere/cube, and selects (g) Gouraud shading or (f) flat shading:

- Use Z-buffering (but *not* backface culling).
  - `glutInitDisplayMode ( ... | GLUT_DEPTH );`
  - `glEnable (GL_DEPTH_TEST);`
- Use a perspective projection.
  - `gluPerspective( ... );`
- Put the eye on the +Z-axis at  $z = +2.5$ , looking down the -Z axis;
  - `gluLookAt( ... );`
- Use `GL_LIGHT0` with ambient and diffuse WHITE light only.
  - `glLightfv( ... )` with `GL_AMBIENT`, `GL_DIFFUSE`
- Use a light at infinity, in the direction (1,1,1).
  - `glLightfv( ... )` with `GL_POSITION`
- Light is *not* attenuated.
- The sphere/cube reflect only ambient and diffuse light (i.e., it is *not* specular), from front faces only, and has a reddish color.
  - `glMaterialfv ( ... )` with `GL_AMBIENT`, `GL_DIFFUSE`, `GL_FRONT`
- Use flat and Gouraud shading (user selectable)
  - `glShadeModel( ... );`
- Use `gluSphere` with radius 1.0, 16 slices, 16 stacks, drawn with filled polygons having outside oriented normals
  - `gluQuadricDrawStyle ( ... )` with `GLU_FILL`
  - `gluQuadricOrientation ( ... )` with `GLU_OUTSIDE`
- Use `GL_QUADS` and `glNormal*( ... )` to draw a unit cube.
- Left/right arrow rotates around the Y-axis. Up/down arrow rotates around the X-axis.

