

Assignment 3

What you need to do:

- - set up md2.h & md2.cpp to load models. NICE UI wanted here... Keyboard loses marks GLUT menu - QT Display
- - grab the data you want from MD2 & store it in your own nice data structure (half-edge) - save MD2 data
- - write code to render your data structure
 - wireframe
 - flat shading → GL_TRIANGLES → calculate normal Cross Product
- - turn on OpenGL lights
- - smooth shading
 - calculate vertex normals (& display)
- load model in center of screen
 - determine size & pos of model
 - use `glScale` / `glTranslate` to do this (NOT `glOrtho`, `glFrustum`)
- interface for affine transformations, `gluLookAt` → trackball
- interface to choose orthographic or perspective

Upcoming Labs

- lighting
- what else do you want me to cover?
- for bonuses, catch me after L5 or via email.
→ QTimer

Bonuses

- Animation isn't hard, just replace vertices. Then interpolate
- Weapon ... easiest but have to ensure is in right pos.
- Texture Mapping ... most involved
- Viewing & transformations ... straight forward.

- num_xyz (per frame)
i = 0 to num_xyz - 1

→ vertex → (m_vertices[i][0], m_vertices[i][1], m_vertices[i][2])

- num_st (not necessarily equal to # of vertices)

→ Triangles → num_tris

→ 3 indices to vertices → index_xyz[3]

→ 3 indices to texture coordinates → index_st[3]

→ num_frames → # of key frames

→ Really there are num_xyz * num_frames * vertices

anim

To access key frame j you go

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

vertex[i] = (md2.m_vertices[md2.num_xyz * j + i][0],
[1],
[2])

anim_t - first_frame } specific animation → always 21 of these
- last_frame }
- fps }
→ several key frames
→ rate of fps changes
→ interpolate in-between frames

Example: Wave → starts at key frame 10
ends at key frame 17