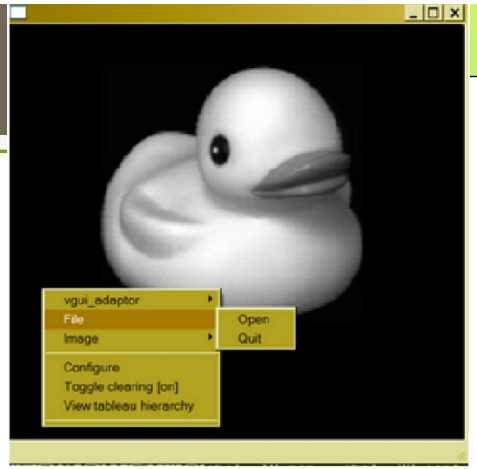
OBJ Parser

Midterm Project 2023

Assignment
(due on 4/28 midnight)



Read Obj file and render

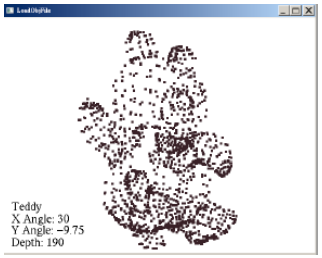
- Obj input files are selectable from your popup menu (20%)
  - Command line input for other files
  - Popup menu to select among the given 4 files
- Render Mode: Point、Line、Face (20%)
  - Use Popup menu to select the mode
- Color mode: single color, random colors (10%)
  - Popup menu to select
- Object transformation: (10%)
  - Rotation (arbitrary axis, x, y, z) & Translation
  - Keyboard control
- Adjustable Camera (10%)
  - Keyboard control (where the camera is, and where it look at)
- Adjust the object to fit into the screen. (20%)
  - The object should load into the screen probably (not too small, not too big, not to far, not to close).
    - Say, approximately 70%-80% size of your screen
    - Tip: Find the bounding box first, and set your view frustum according to the box.
  - 10% (if works for all 4 given obj files)
  - 10% (if works for the testing obj files)

- Demo video and Report. (10%)
  - In your demo video, at least load 1 of the obj files and go through all the functions that required.
  - In your report file, it should include screen shot of each Obj files that loaded in your program. Explain all the control keys of how to use your program.

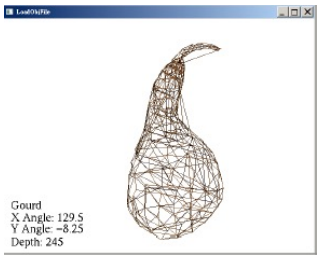
DON NOT USE OTHER LIBRARIES FOR THIS PROJECT!

(Only OpenGL & C++ standard allowed)

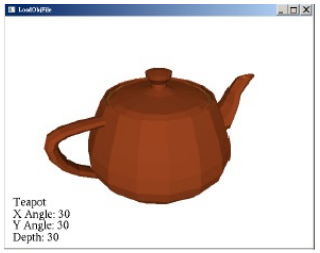
- SUBMIT YOUR SOURCE CODES and word file ONLY
- Due 4/24 midnight



Point



line



face

Obj file format

```
v -1 -1 -1
v 1 -1 -1
v -1 1 -1
v 1 1 -1
v -1 -1 1
v 1 -1 1
v -1 1 1
v 1 1 1
```

```
f 1 3 4
f 1 4 2
f 5 6 8
f 5 8 7
f 1 2 6
f 1 6 5
f 3 7 8
f 3 8 4
f 1 5 7
f 1 7 3
f 2 4 8
f 2 8 6
```

Note: ignore lines start with
Other characters

triangle

```
// Draw a triangle:
glBegin(GL_TRIANGLES);
glVertex3f(-1.0f, -0.5f, -4.0f);
glVertex3f( 1.0f, -0.5f, -4.0f);
glVertex3f( 0.0f, 0.5f, -4.0f);
glEnd();
```