3D reconstruction technique experiment one

March 6, 2012

Purpose:

Get familiar with the models' representation in computer.

Assignment

Read a model stored in a file (OBJ or PLY), and display it. You have to read a PLY format file, but the OFF format is optional.

Template

- You will be offered a template which is quite similar to the one used in assignment.
- The template has already implemented some initial works, such as displaying a model in one window, translation, rotation and scaling.
- The interfaces of the functions that you need to fill in and the data structures you will use are given in 'ReadFile.h' and 'ReadFile.cpp'.

Your task

Your task is to implement the following two functions

1. void ReadFile::ReadOFF(char* fileName);
   To read a OFF file

2. void ReadFile::ReadPLY(char* fileName)
   To read a PLY file

and fill the following data structure with your file data(**vertex** ,**normal**(if you have, if not please set the value to $(0.0, 0.0, 0.0)$)).

1. vertexNumber
   The number of vertices

2. faceNumber
   The number of face. The face means the triangle you get. If you get a polygon other than a triangle from the file, you need to translate it to some triangles.

Requirements

You need to finish the assignment before $May, 28th, 2012$. If you are interested, you can write the whole program by yourself. Your can download the model data from websites or get them from teaching assistant. The template is just a demo, there are still a lot of work to do about OBJ file. Sorry for any bug in the template.

Useful Resource

1. Resource about OBJ

   OBJ format description
   OBJ related format mtl

2. Resource about PLY
   PLY format description I
   PLY format description II PLY model download

3. Resource about OFF

OFF format description

Model download I
Model download II
Model download III
Model download IV