

MAEG5710 Computer Aided Design and Manufacturing

Course Project

Write a computer program using C++ (MFC recommended) and OpenGL for visualizing 3D objects represented as sets of triangles. The program should consist of the following functions:

1. Read in text files containing triangle data.
2. Zoom, Pan, and Rotation of views.
3. Shading and wireframe display of the object described by the triangle data.

Your work has to be submitted in two stages:

1. Submit a basic framework of your program (i.e. project files) with menus options and dialogues on/before 19 Oct 2019. Actual implementation of the functions for the menu options and dialogues are not required.
2. Submit a fully functioning and documented project file on/before 25 Nov 2019

Text file format for triangle data: STL

Sample data:

```
facet normal 0.0000000e+000 0.0000000e+000 1.0000000e+000
outer loop
  vertex 1.0000000e+000 1.0000000e+000 1.0000000e+000
  vertex 0.0000000e+000 1.0000000e+000 1.0000000e+000
  vertex 1.0000000e+000 0.0000000e+000 1.0000000e+000
endloop endfacet
facet normal 0.0000000e+000 0.0000000e+000 1.0000000e+000
outer loop
  vertex 0.0000000e+000 1.0000000e+000 1.0000000e+000
  vertex 0.0000000e+000 0.0000000e+000 1.0000000e+000
  vertex 1.0000000e+000 0.0000000e+000 1.0000000e+000
endloop endfacet
```

.....
.....
.....
.....

Project Submission Format

1. Name your project strictly following the format as shown below,

First letter of your name + Your student ID

e.g. Name: Tsoi Yiu Wai , SID: 1155003235

Project Name: TYW1155003235

Heavy mark penalty will be given if you don't follow this format.

2. Delete unnecessary files before you upload your file. Please refer to page 3 for details. If you delete the wrong files, your project can't be built. You have the responsibility to make sure your uploaded project can be built before the deadline.

3. Mark penalty will be given for late submission

1Day -> 90%

2Days -> 75%

3Days -> 50%

No mark will be given if you submit the project late for more than 3 days.

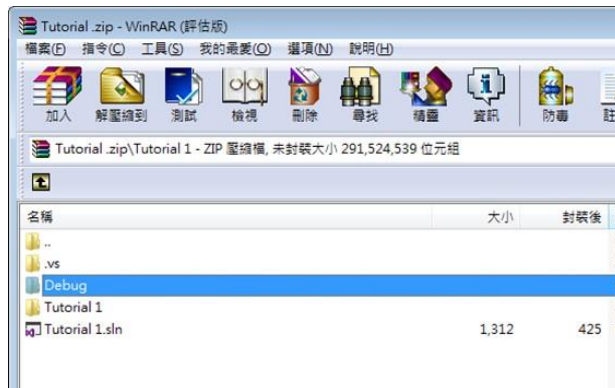
4. Remember to check whether your uploaded project works.
5. Remember to submit the report.

Preparing Your Submission

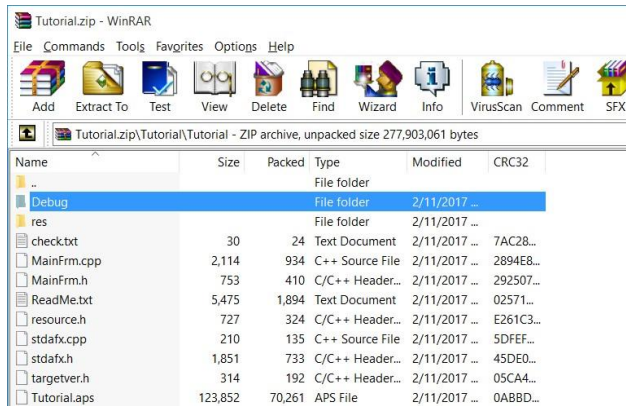
1. Zip your Visual Studio Project together with the report
2. Delete the unnecessary files in the zip file to reduce the file size

For Visual Studio 2019

Delete Debug folder



Delete Debug folder in “*ProjectName*” folder



Delete ipch folder and BrowseVC.db in

.vs -> “*ProjectName*” -> v16

