Computer Graphics

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ICL/ITRI

Assignment #1

Draw Some 3D Models

Solid / Wireframe Display

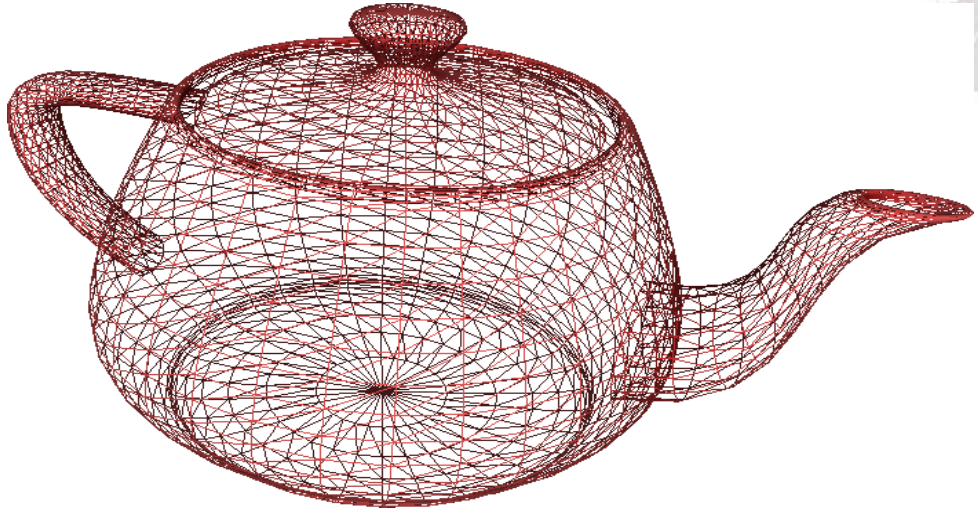
Purpose of the assignment

- **Familiar with the OpenGL programming environment**
- **Understand the basic OpenGL framework**
- **Knowing how to render a model as expected**
- **Knowing how to change the attributes of a model**
- **Display the model in solid or in wireframe mode**

Requirements

- You are required to use the framework that TA provided to draw some 3D models and display them in solid or in wireframe

Solid mode



Wireframe mode

Requirements

- **Follow the guidelines that TA provided to write the required codes such as normalization, retrieve primitives, change vertex positions, colors, etc.**

Input Model Format

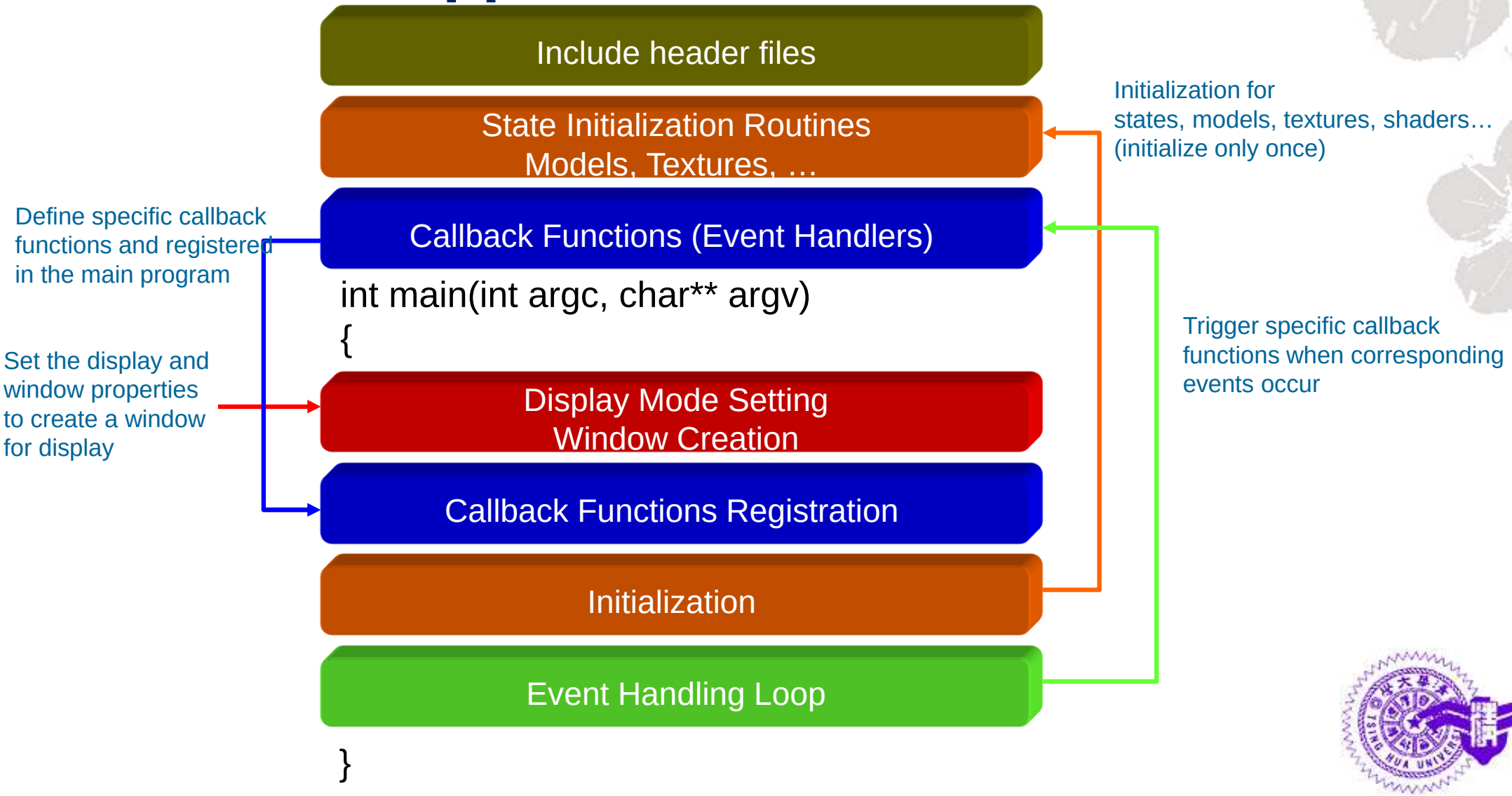
- **Wavefront 3D Graphics model description file with extension .obj**
- **Refer to** http://en.wikipedia.org/wiki/Wavefront_.obj_file **for detail file format**
- **Color model is the only one you need in this homework**

Hints

- Refer to an obj 3D model parser, glm, provided by TA for how to use it
- Consult with TA if you have problem in using the glm parser

Hints (OpenGL Using glut)

Common Application Framework



Hints

- Refer to an obj 3D model parser, glm, provided by TA for how to use it
- Consult with TA if you have problem in using the glm parser

Hints

- Not every model has the same scale. You have to normalize first and then scale and move to appropriated place for better visual result

Hints

- **How to derive better visual result**
  - **Step 1: Normalization**
    - **Normalize the coordinates to locate within (-1, 1)**
  - **Step 2: Scale to desire size (must less than final output image size)**
  - **Step 3: Move the model center to proper location, such as image center or the designated location in a scene.**

Due Date

- Two weeks after announcement
- Submit your assignment, source codes, executable binary on PC, and as well as your documentation, to course webpage at NTHU iLMS system.
- Contact with TA if you don’t know how to submit your work.
- Late submission is allowed with less score
- No score if you don’t submit you assignment
- If you copy from others, your score will be down-graded or become zero.

Q&A