

CS418

Discussion Section

Presented by : Wei-Wen Feng
1/28/2008

I Am Your TA

- Name
- Major/Interest
- My job :
 - Holding weekly discussion/tutorial section
 - Holding Office hours
 - Answering technical/administrative questions on newsgroup
 - In summary : help you learn these materials

Survey Form

- Anonymous.
- Select any responses you find appropriate.
- Help me understand your background and what you wish from the discussion session.

Office Hour

- Location : 0207 Siebel
 - Time : 11:00 ~ 12:00 AM Tue. and Thu.
 - Or by appointments
-
- News group : class.cs418
 - Setting up a newsgroup reader:
<https://agora.cs.uiuc.edu/display/tsg/news.cs.uiuc.edu>

EMAIL

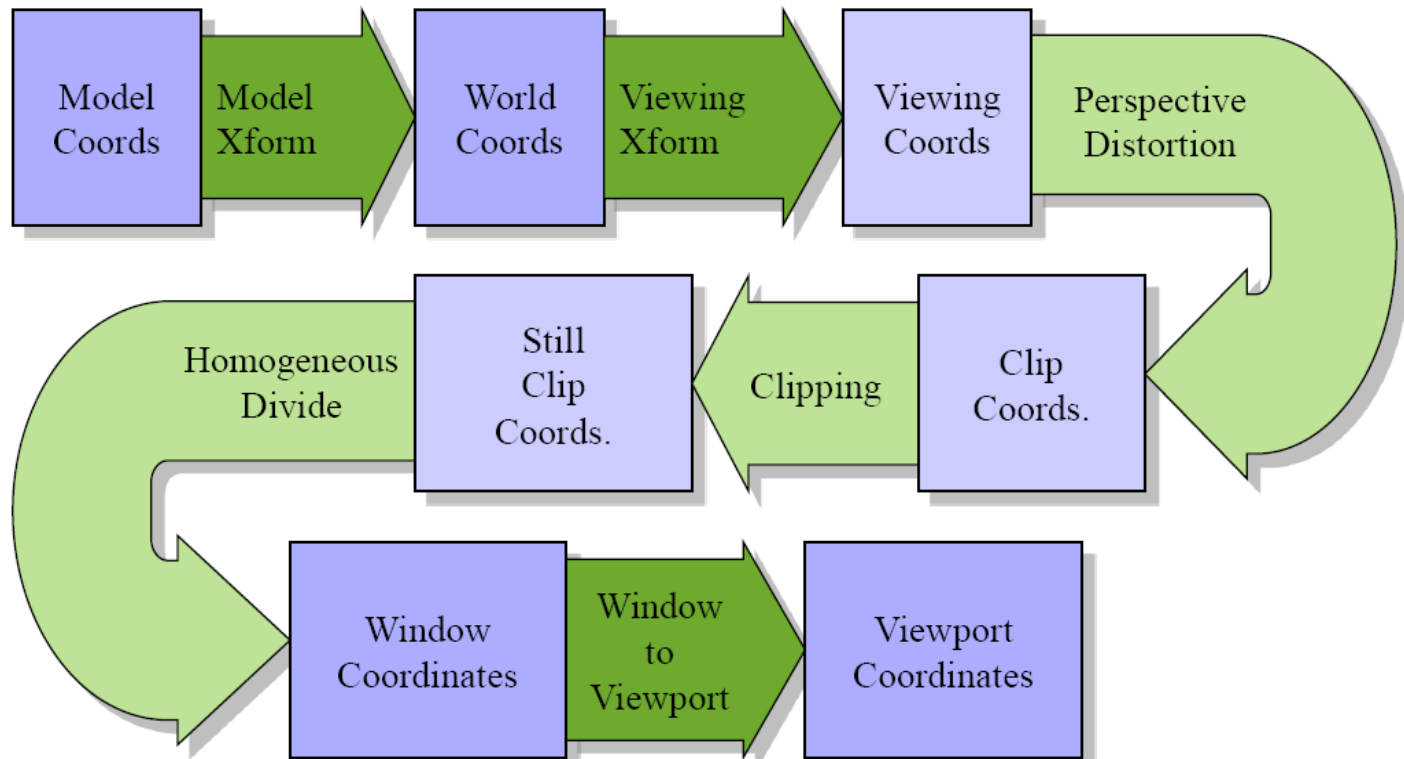
- wfeng2@uiuc.edu
- Subject : CS418
- Try to discuss problems in newsgroup first. (I will also answer them in newsgroup.)
- (Please don't wait until the night before due date of MP/HW to ask questions :p)

How This Session Works

- Format :
 - Tutorial + Q&A
- Cover materials can be :
 - OpenGL programming
 - Tips for MP / HW
 - Review Course Material ?
 - Your interest ?

A quick overview

Graphics Pipeline



A quick overview

- Usually we will have 4 MPs
- Demo

Tips for Success

- Three most important things to remember :
 - Start early, Start early and Start early !
- Setup OpenGL environment.
- Start from some sample codes.
- Ask questions earlier !

Programming

- Visual Studio is available for free to CS students through the [MSDN Academic Alliance](#).
- Good open source IDEs available too.
 - Code::Blocks
 - Eclipse
 - Many others
- You can use VS, or other platform (Linux, MacOS, etc) with source code is ok.

Setup Program

- Libraries for OpenGL programming
 - GL/GLU : Core and Utility library
 - GLUT : Help you setup a window application
- Nate Robin's page .
<http://www.xmission.com/~nate/glut.html>
- Linux : FreeGlut
- Make sure you set library/include path correctly !

GLUT + MSVC

- Idea: put the files in the default path for VS
- Copy
 - glut32.dll ->
 - C:\Windows\System32\glut32.dll
 - glut32.lib ->
 - C:\Program Files\<VSVersion>\VC\lib\GL\glut32.lib **OR**
 - C:\Program Files\<VSVersion>\VC\PlatformSDK\GL\glut32.lib
 - glut.h ->
 - C:\Program Files\<VSVersion>\VC\include\GL\glut.h **OR**
 - C:\Program Files\<VSVersion>\VC\PlatformSDK\include\GL\glut.h

Troubleshooting

- Create a Console project in VS.
 - Copy example codes to the project. Careful about program entry point.
- No GL/GLU lib ?
 - Probably need to install PlatformSDK if using VS-Express.
 - Add **glut32.lib**, **glu32.lib**, and **opengl32.lib** in your link dependency.
- exit redefinition ?
 - Include glut.h “after” other headers (stdlib.h, STL, etc).

Example Code

- Setup a basic glut window application
- Draw a rotating teapot

Example Code

■ Display function

- Core part of your code → How should you draw
- DON'T do any intensive things other than drawing (load files, etc).
- `glClear`
- `glutSolidTeapot`
- `glutPoseRedisplay`

Example Code

- Reshape function
 - Called whenever your window is resized
 - Usually, adjust viewport size & projection matrix here
- Others : Keyboard, Mouse
 - User interaction

Resources

■ Books

- [OpenGL Programming Guide \(OpenGL Red Book\)](#)

■ On-line Reference

- <http://www.opengl.org/sdk/docs/man/>

■ On-line tutorials

- <http://nehe.gamedev.net/>
- <http://www.lighthouse3d.com/opengl/>
- <http://www.xmission.com/~nate/opengl.html>

Demo Video

- Far Cry 2
- Prince of Persia (NPR)
- Real-Time Cloth Simulation