Assignment 1

January 23, 2014
Outline

1. Organization
2. OpenMesh
   - General Information
3. Homework
   - Reading Material
   - Submission
4. Deadline
Office Hours

- SAL 219
- Wednesday 11:30 - 13:30
piazza.com/usc/spring2014/cs599dgp

- Questions
- Answers
- Assignments
- Solutions
Outline

1. Organization

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General Information.

- C++ library
- Half-edge data structure
- Basic geometric operations
- Reading/writing 3D models
C++ Templates.

- Template meta-programming to allow customization.
- We will be using default parameters.
C++ Templates.

- Template meta-programming to allow customization.
- We will be using default parameters.
OpenMesh

- Similar to STL
  - Mesh is a container
  - Iterators
    - Enumerate vertices, faces, halfedges
  - Circulators
    - Enumerate adjacent items: vertex-vertex, vertex-face, ...
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**Container**

- Contains vertices, faces, halfedges
- Random access
- Custom attributes
  - Vertex
  - Face
  - Halfedge
Contains vertices, faces, halfedges

Random access

Custom attributes
- Vertex
- Face
- Halfedge
Container

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OpenMesh Tutorials

http://openmesh.org/

- Building a cube
- Using iterators and circulators
- Using custom properties
Compute Vertex Valences

- Number of vertices in the 1-ring
- Custom vertex attribute
Compute Vertex Valences

- Number of vertices in the 1-ring
- Custom vertex attribute
Framework
Components

- CMake build system
- FreeGLUT
- Reads and displays a mesh
- Placeholders for your code
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Submitting Code

- [ ] \url{http://www.dropitto.me/us-cs599dgp}
- [ ] ididit
- [ ] Can submit multiple times
January 30, 00:00 hrs