CMSC 635 programming assignment #2:

Due: Mar. 12 2013 11:59 pm

Teddy

1. Introduction

IN this project you will implement the Igarashi Teddy, preferable using a graphics package G3D. The paper is on our class website
http://www.csee.umbc.edu/courses/graduate/635/spring13/papers/teddy.pdf.

We have also gone over the algorithm in class
http://www.csee.umbc.edu/courses/graduate/635/spring13/lectures/07_TeddyIntro.pdf.

The primary purpose of this project is to give you experience developing mesh processing algorithms. We expect the actual understanding of the algorithm to come easily this time, and the bulk of the work will come from learning your way around different components needed for implementing the algorithms.

We'd prefer G3D implementations. But you are free to use any libraries you wish to process the mesh.

Please start earlier, because the reading and thinking will take a lot of time.

2. Requirements

We will assume you are familiar with algorithm. If you are not, you can get up to speed by reading some of the CMSC 635 lecture slides & talk to Dr. Keqin Wu (keqin@umbc.edu) and her office hours is Thursday 11:00 am-12:00noon.

You only need to implement the sketch / morph part. You don't need to implement undo and save routines.

3. Support Code

The mesh loader can be downloaded from
http://www.csee.umbc.edu/courses/graduate/635/spring13/asgn/02Teddy/skeletonHandout.tar.gz. I have included c++, java, and Matlab versions that are G3D-free. You may develop using any other mesh loaders you like.

You might also need to rotate the model. G3D allows you to do so without any programming. If you only use OpenGL, one of the most useful implementation of the rotation / zoom in OpenGL is called trackball. You can use the code I released in the Bezier curve manipulation code. Reading that code will tell you the usage:
http://www.csee.umbc.edu/courses/graduate/635/spring13/lectures/Bezier.tar

If you wish to design a GUI, although we strongly suggest Qt Creator for its auto-complete ability, you are free to use anything else. Some of the simpler ones include GLUI (http://glui.sourceforge.net/). Qt Creator can be found at http://qt-project.org/.

4. Handing in

You are required to hand in a README file with your project, as a plain text file. It should contain anything that could make the faculty assistant's life easier (e.g., major design choices, known bugs, kludges).

Do not hard code any paths in your program!

To hand in, email your code **in one tarball** to keqin@umbc.edu.

Reference:

Igarashi, T. [1999]. Teddy: a sketching interface for 3D freeform design, *ACM SIGGRAPH 99 Proceedings*, pp. 409-416.