Computer Graphics
CMPT 446 / MSCS 555 – Fall 2015

Final Project – Finishing Touches – 200 points

Goals

To complete an interactive 3D application using JavaScript, WebGL, and GLSL.
To apply techniques such as texture mapping and hierarchical modeling.

Instructions

All work must be saved to your *GraphicsProject* BitBucket repository.
You must extend and modify your WebGL application in order to meet the following requirements:

1. Finish all incomplete features and fix any bugs remaining from *Project4*.
2. All of your work should be done in a <u>new branch</u> named *Final* (create this after merging *Project4* into *master*).
3. Implement a simple hierarchical structure of patches for your grid model so that the entire landscape is rendered now instead of just one small strip.
   - To make sure that your program runs smoothly on most hardware, you should use a lower-resolution array of vertices, provided by the a version of ReadDEM.js attached to this assignment.
4. Implement a texture map to cover the terrain. You may use either:
   a) One large texture image, in which case you will have to correctly assign the appropriate fractional texture coordinates to the points in each patch.
   b) Several smaller texture images, in which case the texture coordinates for each patch of vertices must range over [0,1] to cover each texture image.
5. Add one additional feature to make your application unique. Suggestions:
   - Camera – more sophisticated camera flyover movements
   - Water – use simple blue rectangle(s) intersecting the grid at low points
   - Shading – a custom shader program, possibly slope-based
6. Make <u>frequent use</u> of Git and BitBucket to keep track of your progress.
7. Be sure to follow software development best practices at all times.
   - Demonstrate good coding style and appropriate commenting.
   - Make your user interface clean and easy-to-use.

Submitting

1. Create on BitBucket a <u>Pull Request</u> and assign it to me (username Tientuine).
2. If I subsequently...
   - <u>Approve</u> the request → *You are done!.*
   - <u>Reject</u> the request → *address issues* mentioned in my comments and *re-submit your request.*