COMP4471/5472, Project 2, Fall 2015
Shark Cage 3D

Project 2, Due date: To be announced and posted on course web page

Expand, using WebGL and Javascript (Not Three.js) and the mathematics package that comes with the textbook, project 1 into a three dimensional game where now

1. Player is now at the center of a cube which is centered at the origin and with faces aligned with coordinate planes. Sharks can only attack one of 4 sides of cube (not the ones above and below the player)
2. Interaction similar to project 1 allows the player to rotate to face any of the 4 faces a shark can attack (steps 1 to 4 in project 1)
3. The four cube faces where attacks are allowed now behave as did square sides in project 1. (steps 5 to 10 in project 1)
4. When a shark appears at a face of cube, it casts a shadow (simulated with a change of color) on all of the opposite face
5. Player view of the play volume is a perspective projection viewing one side of cube with enough peripheral vision to see a bit of all adjacent sides (so shadows (see (4) above)) are visible)

A successful implementation for the above will earn a grade of 85%, to get a higher grade the following three of the following should be completed in addition (5% for each additional feature).

1. Sharks can now attack any of the 6 sides of the cube and each side behaves the same (shadows etc. as above)
2. A screen mesh is displayed on each cube face that the shark can attack, and it becomes more sparse as a shark chews at it (and a precise gage of how much is removed is displayed)
3. When a shark is hit or a player is eaten, use a simple particle system to simulate an explosion
4. Lighting is used. Use GUI control to enable or disable lighting

General Notes:

1. A class demonstration is required for each game (using podium in classroom)
2. Students may work in teams of two
3. You may need to read ahead for features needed to complete the game.

Electronic submission of source code and documentation for project 2 using Lakehead e-mail

Submit to mwbenson@lakeheadu.ca

Subject line must contain only the following (all letters are upper case, no blanks in the string):

CS4471PROJECT_TWO_2015

1. Submit ONE attached compressed file (.zip **only**)
2. When uncompressed this .zip file should contain all your source files plus the files specified in (3) below and the files should be correctly placed so that the program runs from a browser.
3. Include in your submission two .doc (or .docx or .pdf) files: one for a user guide and one for a gallery of screen captures (with at most a 3 line explanation of each image). The screen captures should be complete and illustrate all aspects of the project requirements sufficient for marking needs.