C++ 3D Assignment 4 (2.5 pts) – Terrain Rendering

Learning goal 4: Apply textures in OpenGL (*see lecture 4*)

ASSIGNMENT

Implement terrain rendering in the MGE using the provided terrain assets.

GRADING CRITERIA

- To **pass** this course, each assignment needs to be **finished at the 'mediocre' level at least**, and all assignments together need to result in a minimum grade of **at least 5.5 points** (e.g. 1 'mediocre' + 3 'averages').
- To **pass** a level for a specific rubric you also need to pass all the '**lower**' levels in that rubric *and be able to explain all your implementation changes.*

MEDIOCRE (1 PTS):

Correct plane (8196*8196) used for the terrain.
Terrain correctly deformed in the vertex shader.
Terrain correctly splat mapped in the fragment shader.
There is no lighting, or the light doesn't look or respond correctly (e.g., wrong direction).

AVERAGE (1.5 PTS):

The terrain is correctly lit in world space using a directional light.
Either the terrain or the light rotates to demonstrate a correct lighting implementation.

GOOD (2 PTS):

You are using your own custom height & splat map that define a large body of water surrounding rolling hills.
The water pixels of your terrain are made up of at least 2 semi-transparent animating layers.
The water vertices of your terrain are animating in wave like patterns for example using sin/cosine.

EXCELLENT (2.5 PTS):

Terrain is splat-mapped using tri-planar mapping.
You have implemented a day and night cycle.

Cookie bonus: your implementation is based on dynamic mesh generation using geometry shaders and or tessellation shaders.