CPSC 589: Project Proposal - STORM SIM.

Abstract:
The modelling of a real looking scene of a storm - this includes clouds, lightning, rain/hail/snow, their corresponding lighting effects, and we would like to include the ability to procedural generate varying scenes.

Intro:
We are trying to reimplement and combine the simulations/modellings of clouds and lightning, based on various papers found, together to create accurate storm scenarios. Eventually we would like to add rain and procedural generation to these storms.

Goals and Objectives:
We will have this section dissected into separate goals:
Primary: Clouds and Lightning, with their lighting effects.
Secondary: Procedural Generation of different scenes
Tertiary: Rain/hail/Snow

Methodology:
We would like this to look realistic, and so we will gather resources from various research papers to accomplish this task. The use of physical based methods - where we implement the use of physics to create, or some portions of, the scene, or if this proves infeasible, there are alternative methods of generating clouds in other papers we can look into.

Expected Results:
By the end of this project we expect to have at least our primary goal accomplished, but would like to complete all of our goals. In that case, we would like to have a program that can accept in parameters and create a realistic storm based off that in a procedural manner as a final product.

Timeline:
We would like to start as soon as possible, and we would like the basic lightning and cloud-like-shape generation setup by Mid-march.
From then on we will work on surfacing the cloud, lighting/rendering, procedural generation.

Works Cited:
http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.37.6084
https://dl.acm.org/citation.cfm?id=192256
https://link.springer.com/chapter/10.1007%2F978-3-642-13544-6_1 from pages 1-12

Programming Language:
C++, Opengl, Windows/Linux
Implementing this will (probably) involve various surfaces/curves, mesh-processing, and one of Solid modeling,volumetric modeling or Point based modeling. Also included may be procedural modeling.

By: **Edraelan Ayuban** - 101 612 27, **Cory Jensen** - 101 566 57, **Scott Saunders** - 101 635 41.

CPSC 589: Project Proposal - STORM SIM.

Group Members Responsibilities:
TBD, will likely come about as we work.

By: **Edraelan Ayuban** - 101 612 27, **Cory Jensen** - 101 566 57, **Scott Saunders** - 101 635 41.