CMP305 Procedural Methods

Coursework Proposal

Jay Bretherton 1800231

# Brief Overview

My plan is to re-create an approximation of Minecraft’s procedural world, with a particular emphasis on Minecraft’s cave systems. This will be an attempt to create coherent tunnel-like caves from a voxel map, with Minecraft as inspiration only. I will not be trying to recreate a faithful recreation of Minecraft. As a stretch goal, I will attempt to create Minecraft-like terrain generation for the ground above.

# Procedural Techniques

I’ll use the voxel engine for rendering.

My plan is to implement Perlin Worms to create the cave structures. This will require some form of fractal coherent noise, I’ll use Perlin or simplex.

I also want to make a simple terrain above the ground, also using coherent noise to create fractional Brownian motion as a height map.

# Background

I’ve found [this website](http://libnoise.sourceforge.net/examples/worms/) on Perlin worms, along with an example implementation.

I’ll use the lap resources mostly for the above ground implementation.

# Anything else

I’d love to include either/both some procedural audio and a little procedurally generated names as they are both areas that fascinate me, but I couldn’t think of a way to make a project solely focused on them.

Obviously, they’ll take a backseat priority to the caves and terrain but I’m keen to include them as a stretch goal.

I currently don’t know how to play audio (I assume the framework will not help me here) or render text in the framwork so I’ll need to discover how that can be done.