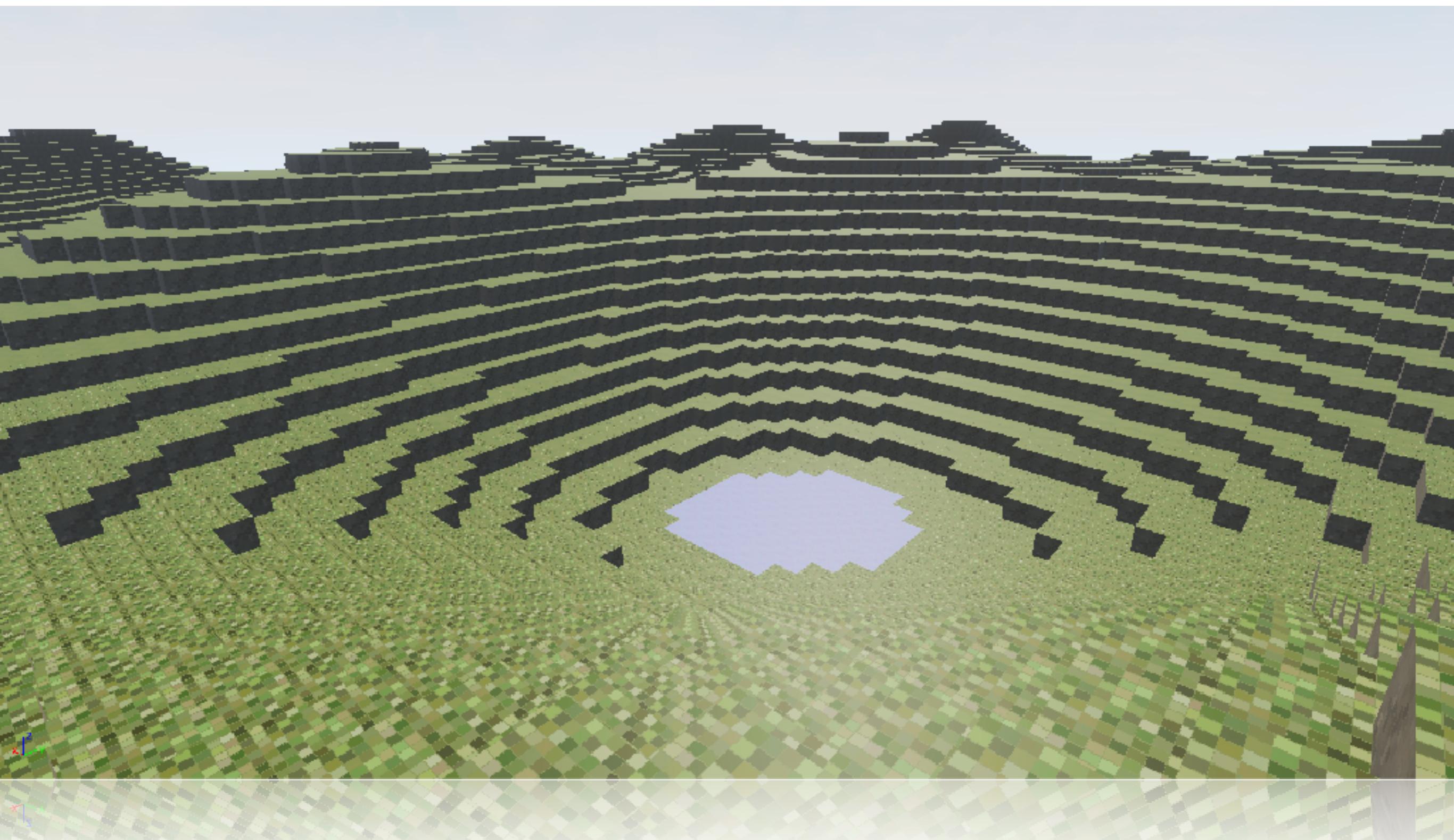


PCG

Portfolio assignment

Andrey Ermak

Element 3



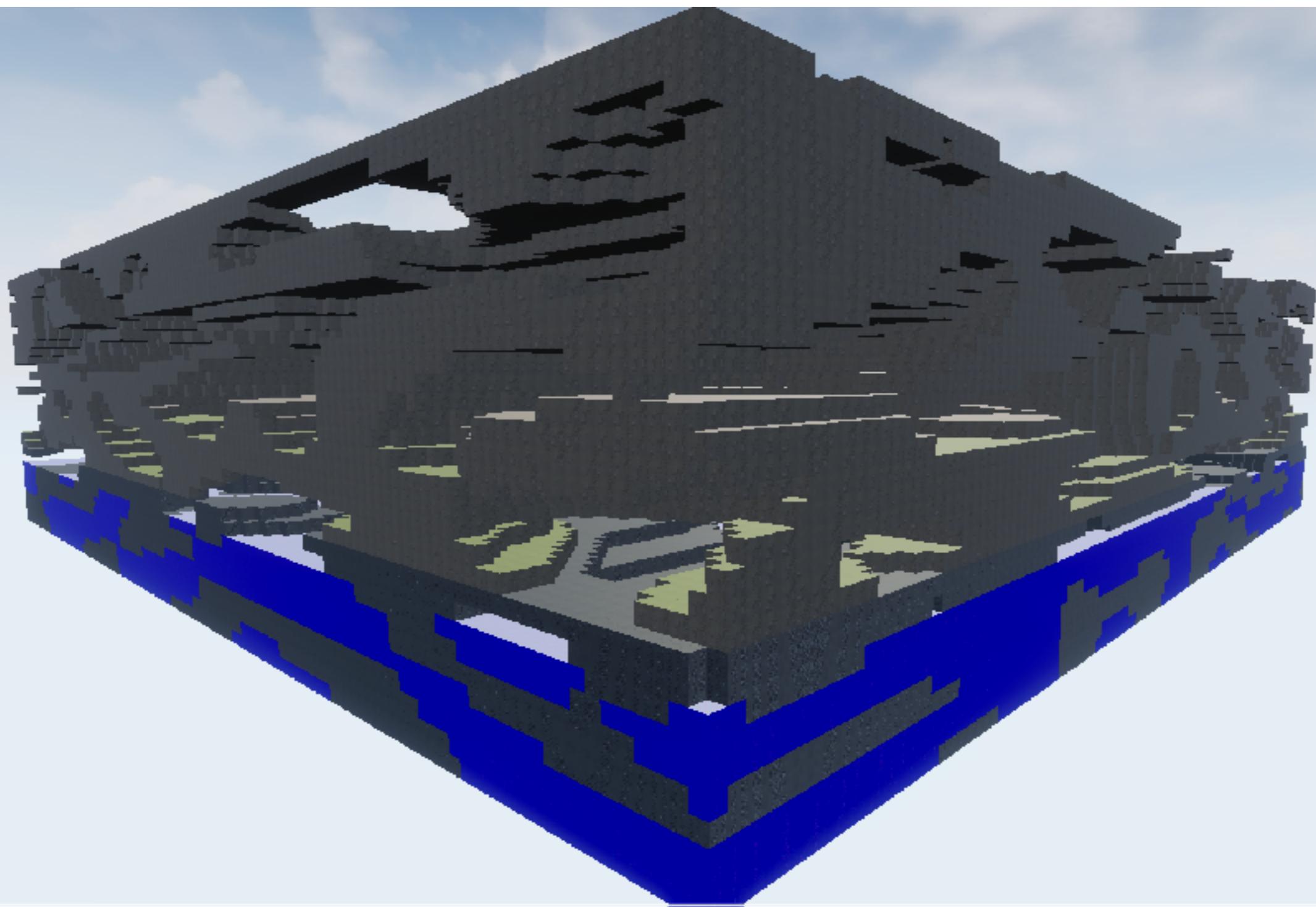
Algorithms

- Perlin noise 2D
- Perlin noise 3D
- Diamond-Square
- Mixed (Combining of the both Perlin noise algorithms)

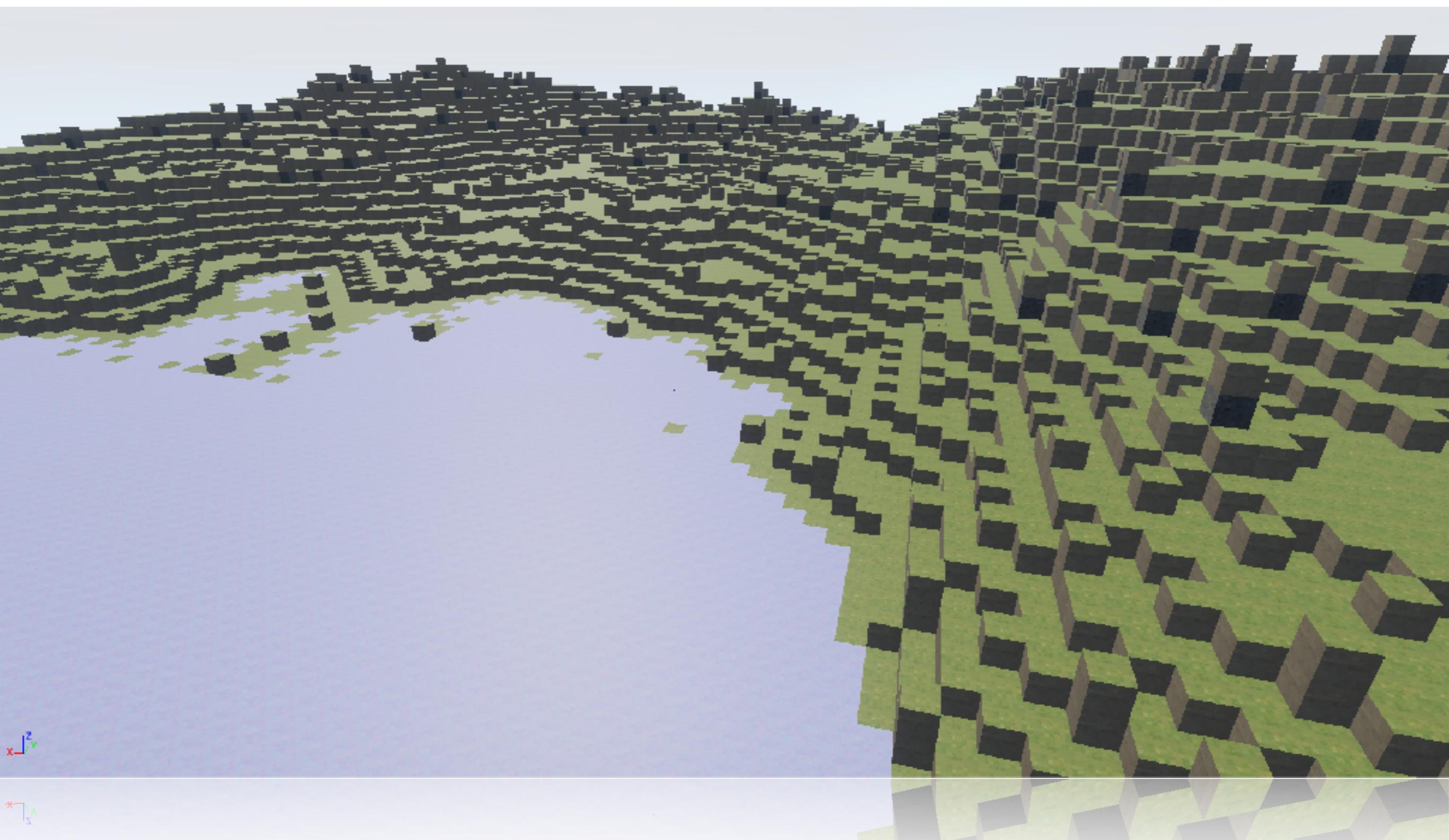
Perlin noise 2D



Perlin noise 3D



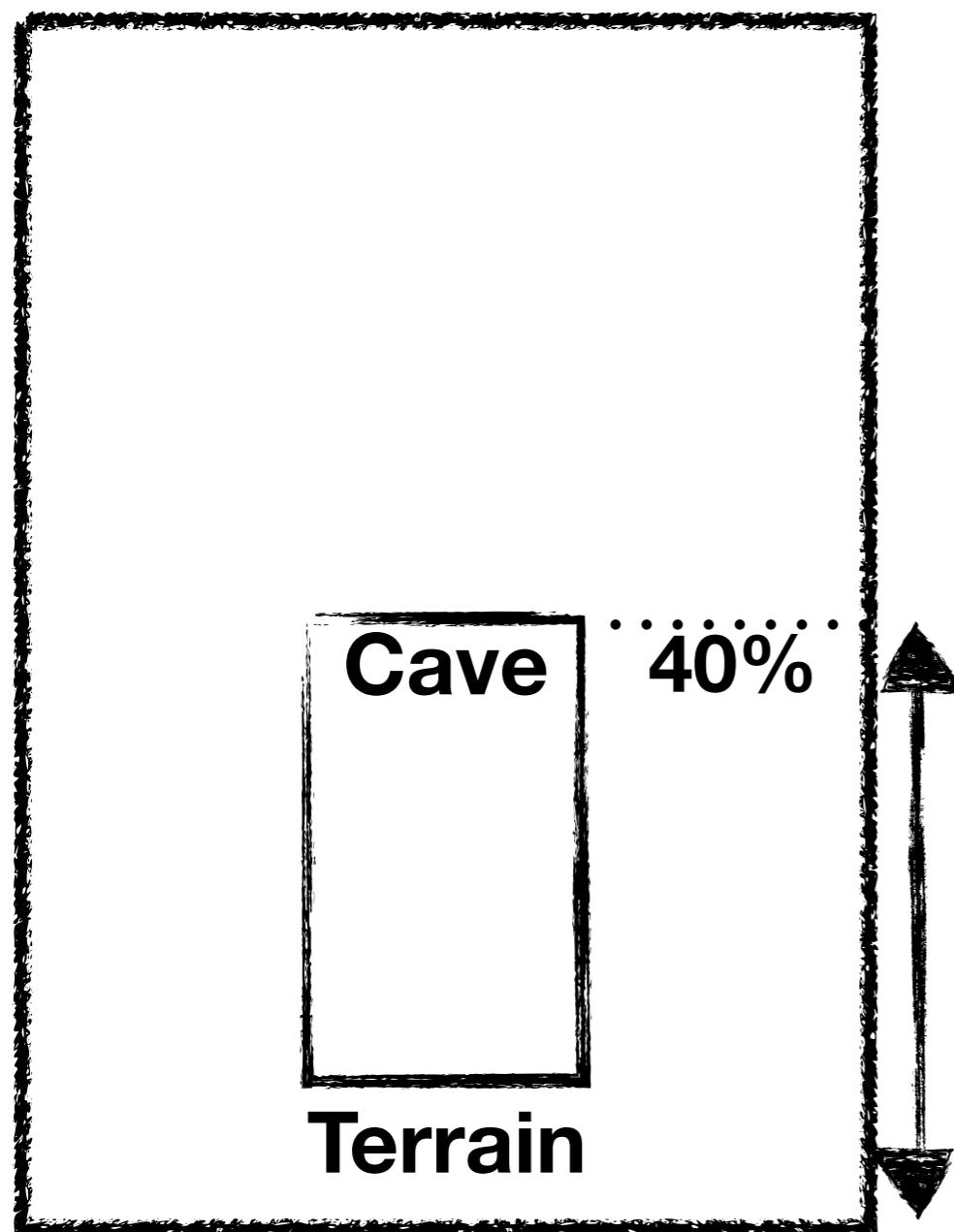
Diamond-square



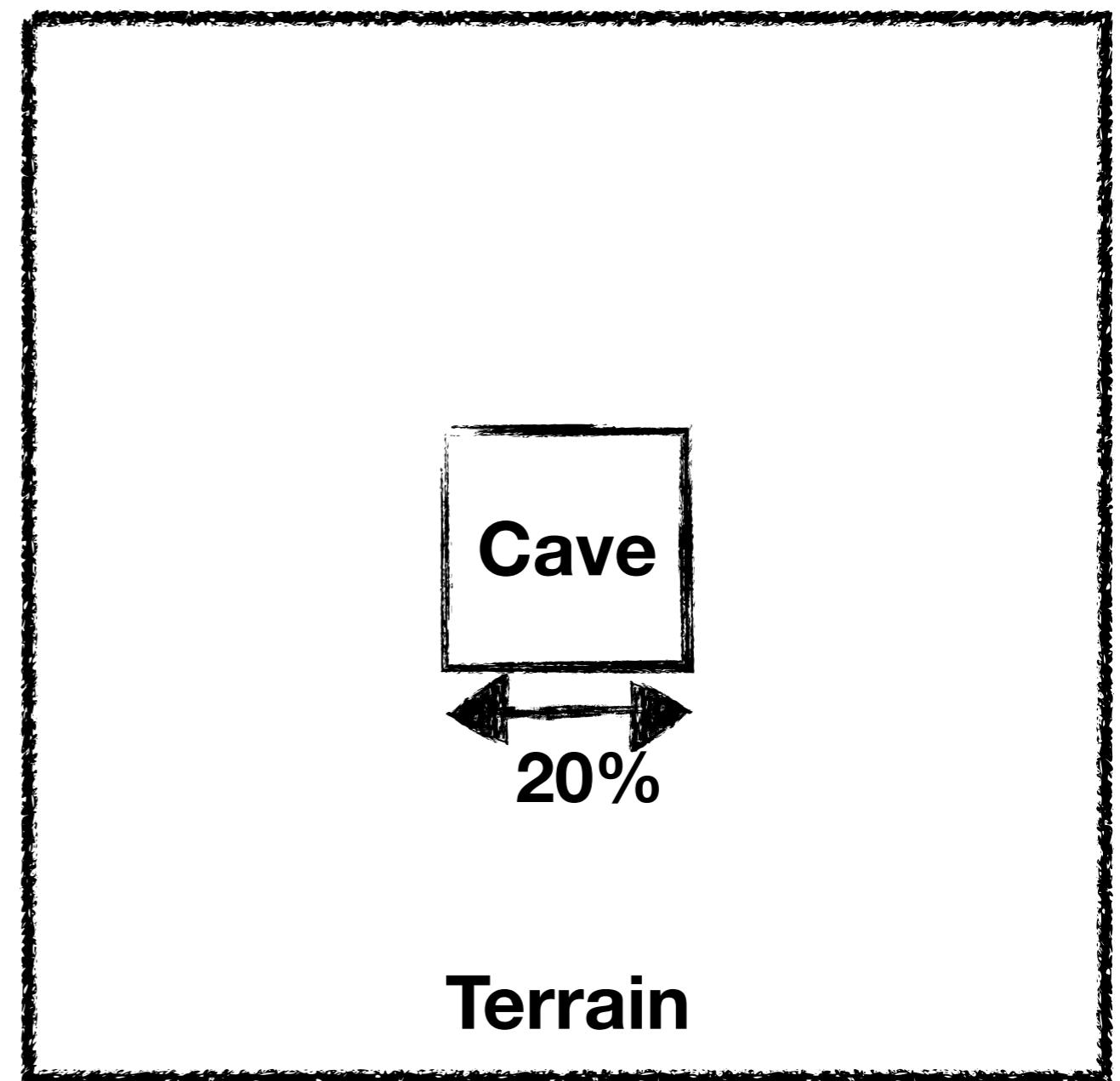
Mixed (with cave system)



The cave system

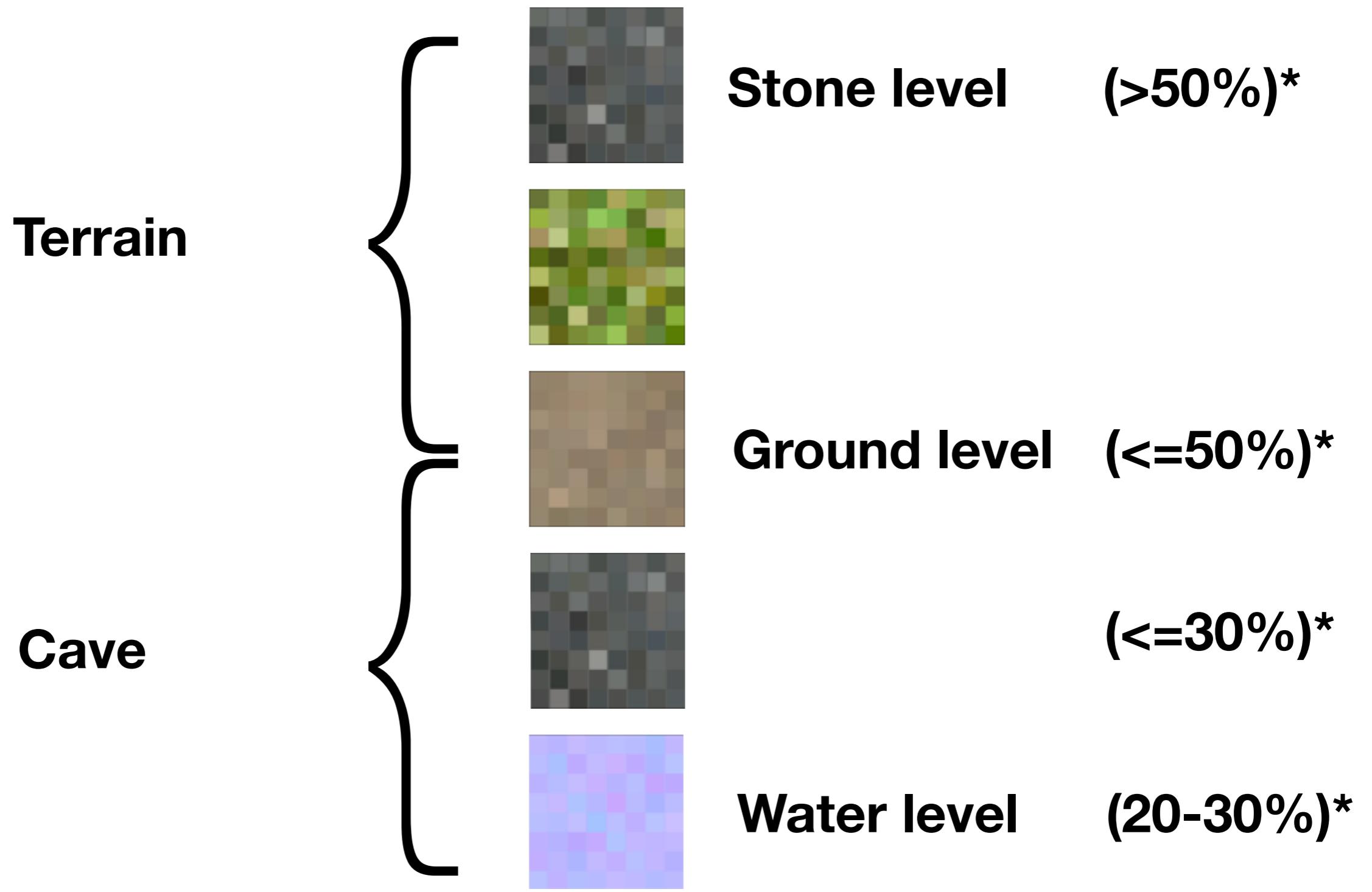


Side view



Top view

Block's types distribution



* Percent of a chunk's height

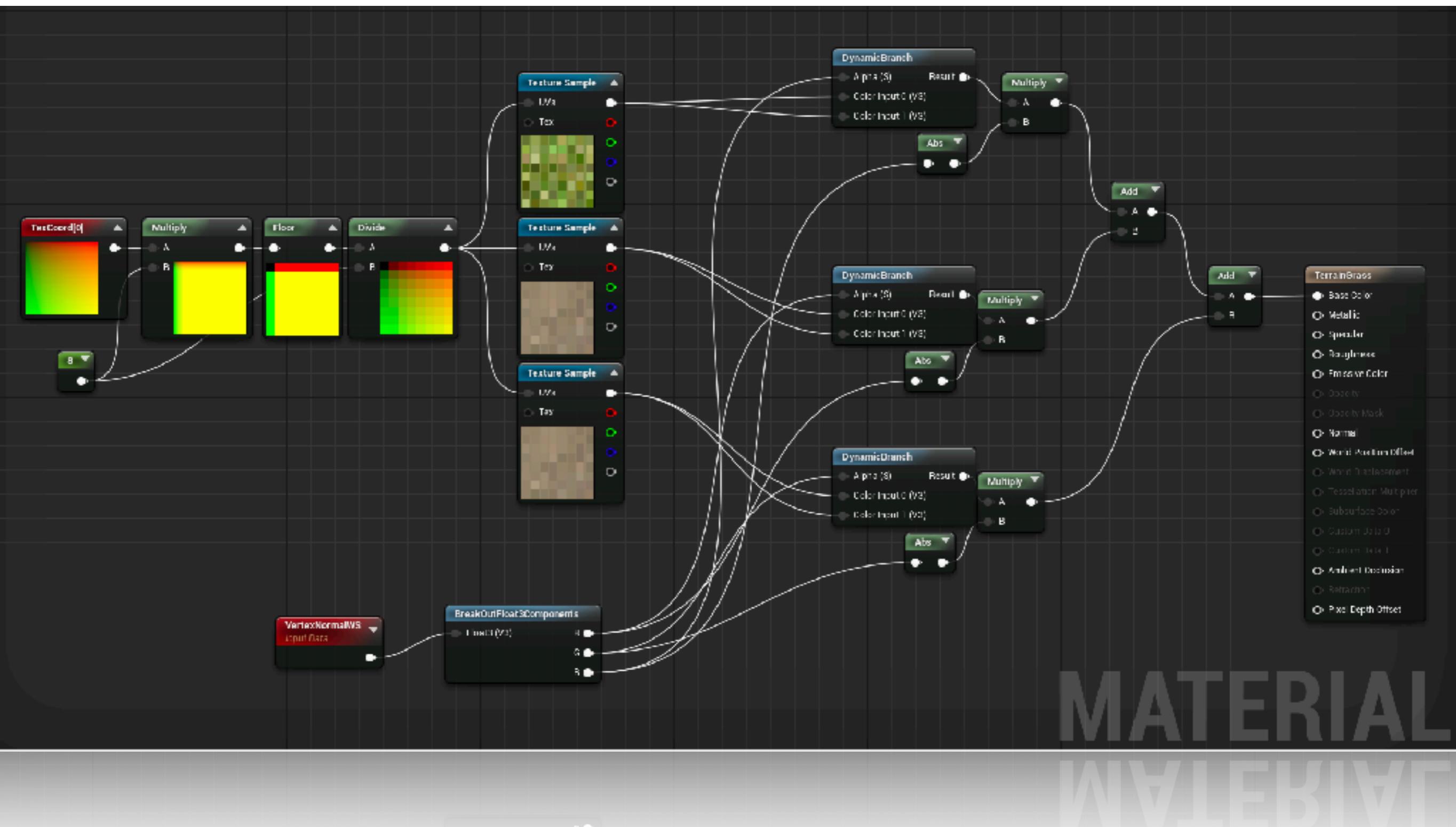
Taxonomy

- Offline
- Necessary
- Degree and Dimensions of control: Seed (little control)
- Generic
- Stochastic
- Constructive
- Automatic

Future works

- Issues:
 - Not optimised blocks spawning (performance issue);
 - Not always correct cave spawning (sometimes the cave's ceiling hangs in the air);
- Modifications:
 - Mix Diamond-square and Perlin noise;
 - More points and settings for cave generation;

Element 4



Taxonomy

- Offline
- Necessary
- Degree and Dimensions of control: Seed (little control)
- Generic
- Stochastic
- Constructive
- Automatic

Future works

- What can be modified:
 - The same texture for every block (I need to slide it for each block for reaching unique texture every time);
 - The seed is fixed;