

Currents: Coding with Cinder

Week 4: Memory Management / Particle System Revisited

Instructors

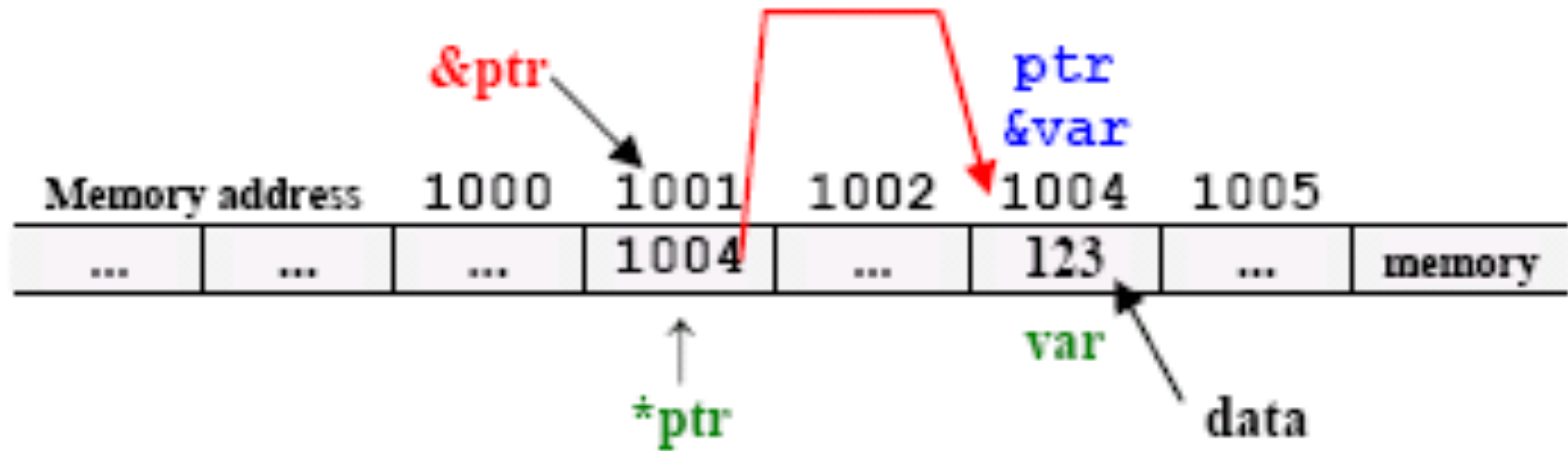
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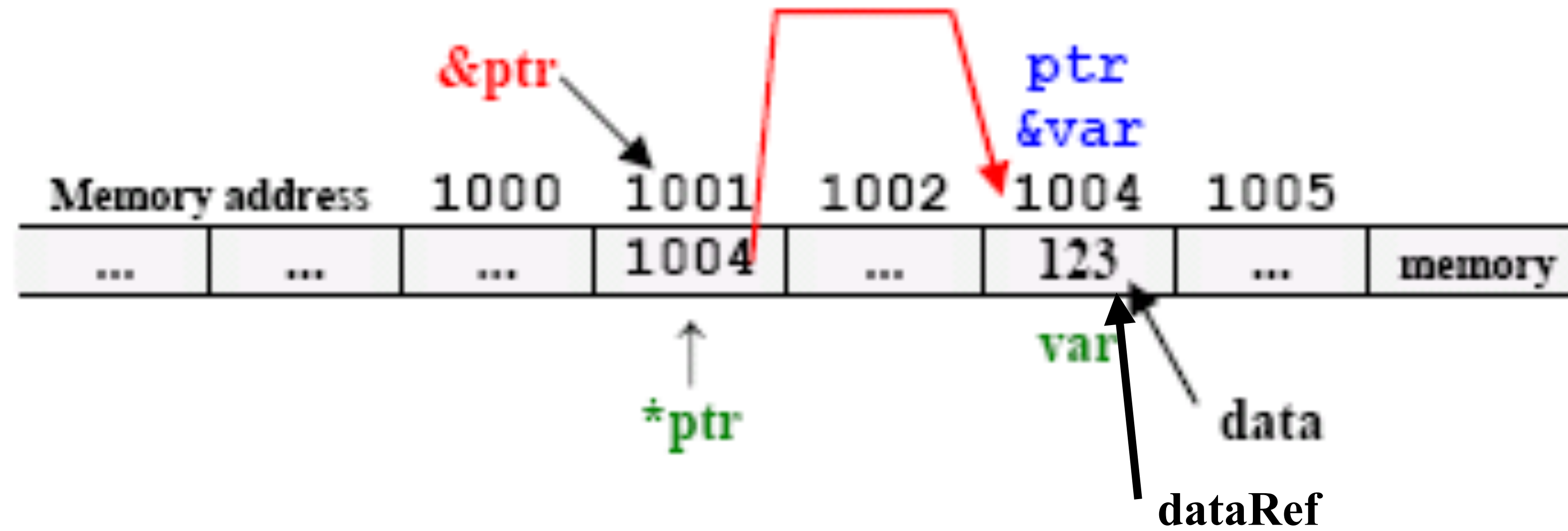
Memory Management

The glory of being a C++ programmer. And the price you pay to one.



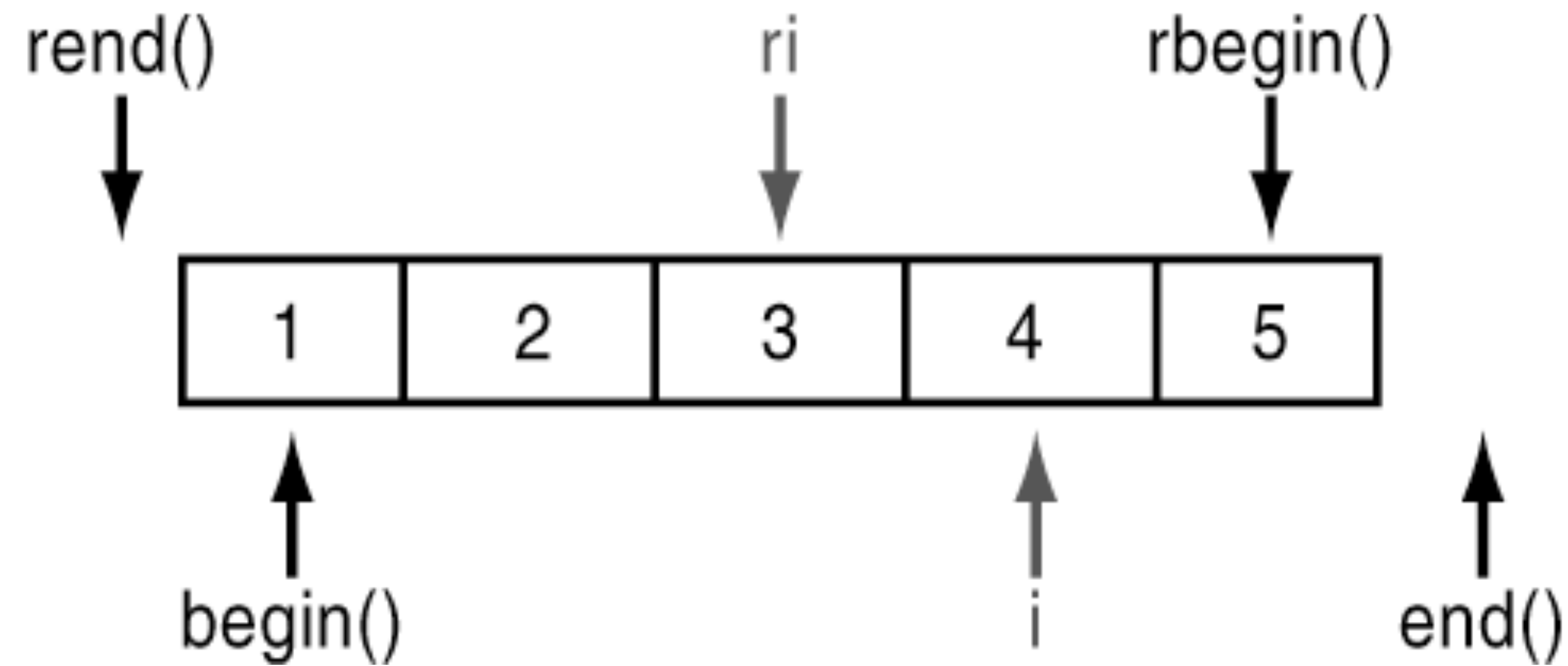
Pointer

A pointer stores the memory address of the object it points to.



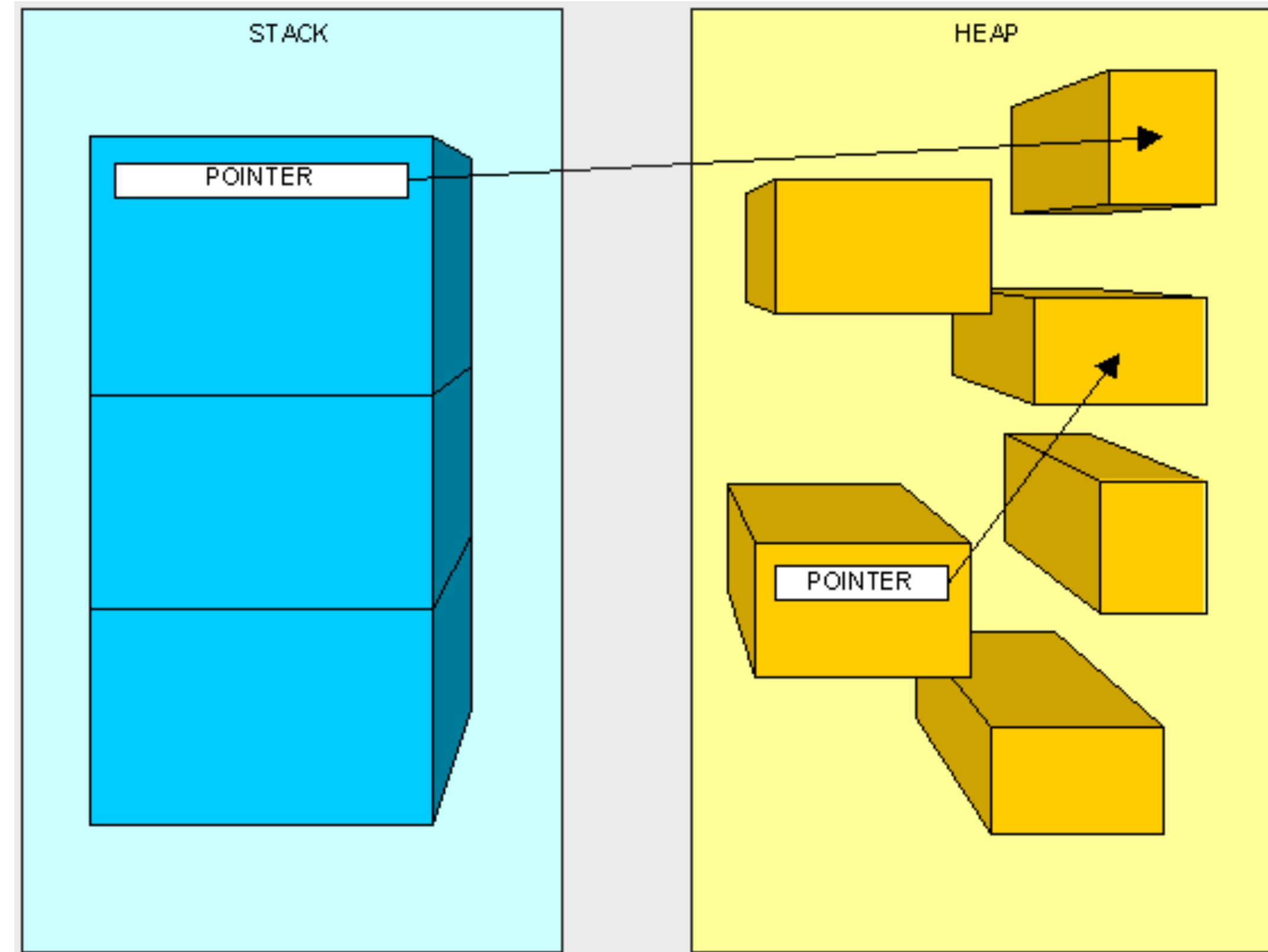
Reference

A reference is an alias of the object it refers to.



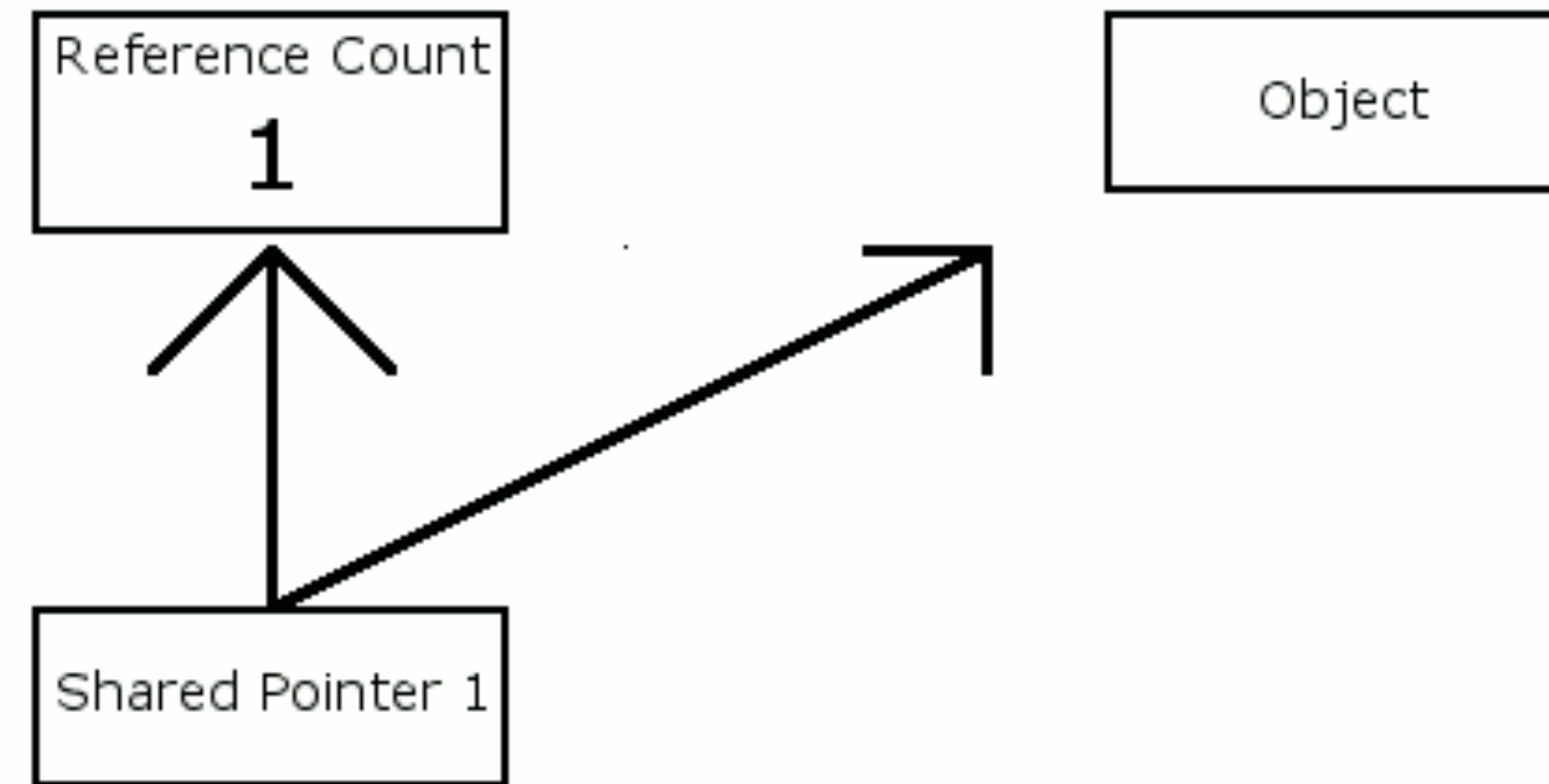
Iterator

Iterators behave like pointers, indicating addresses within a container.



Dynamic Memory

Memory in your C++ program is divided into two parts: the **stack** for local variables and the **heap** for dynamically created objects.



Object is allocated along with the reference count, which is initialised with a value of 1.

Shared Pointer

Shared pointer automatically manages dynamic allocated memory using reference counting.

Perlin Noise

Perlin Noise is an extremely powerful algorithm that is used often in procedural content generation.

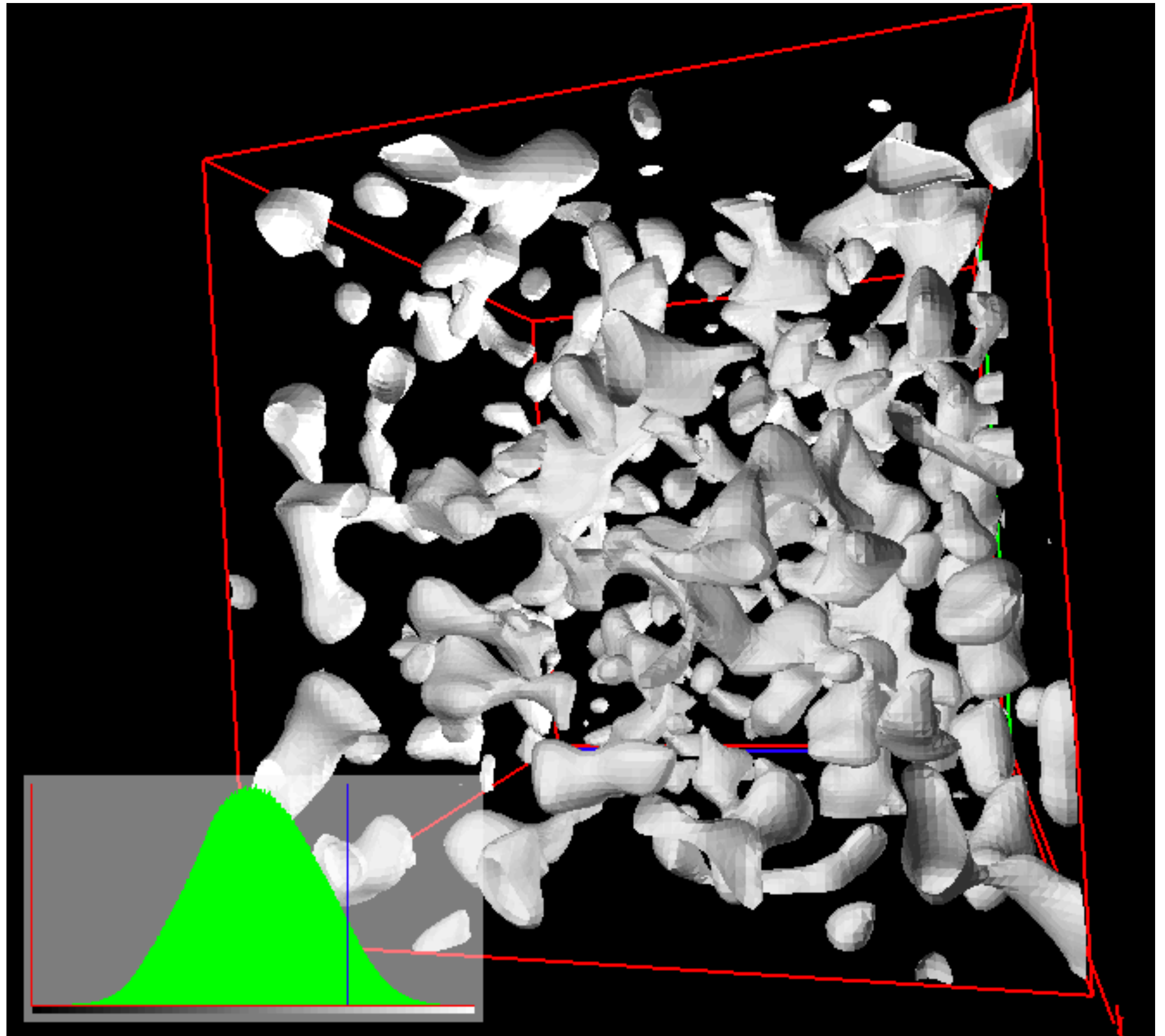
1D Noise



2D Noise

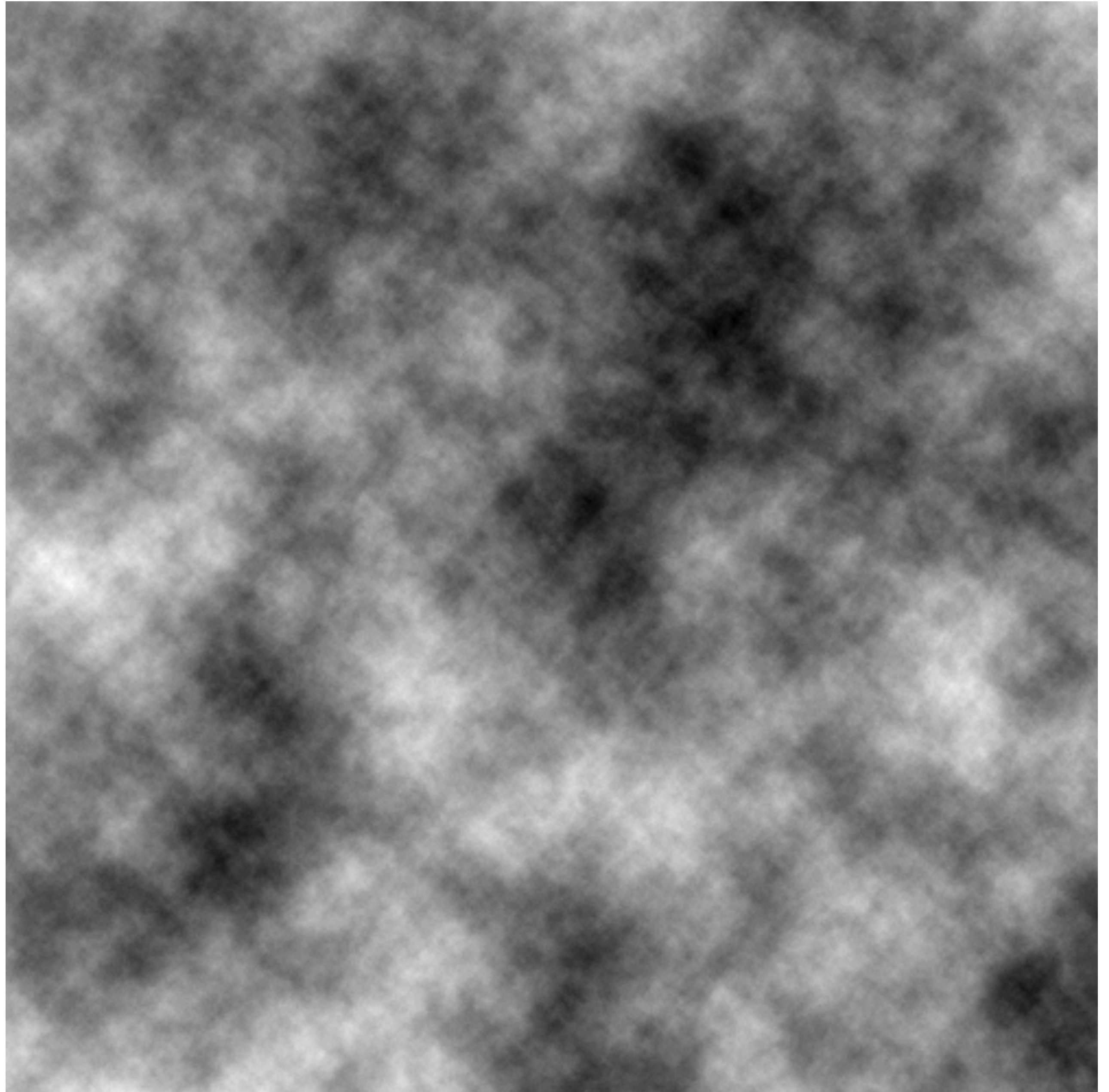


3D Noise



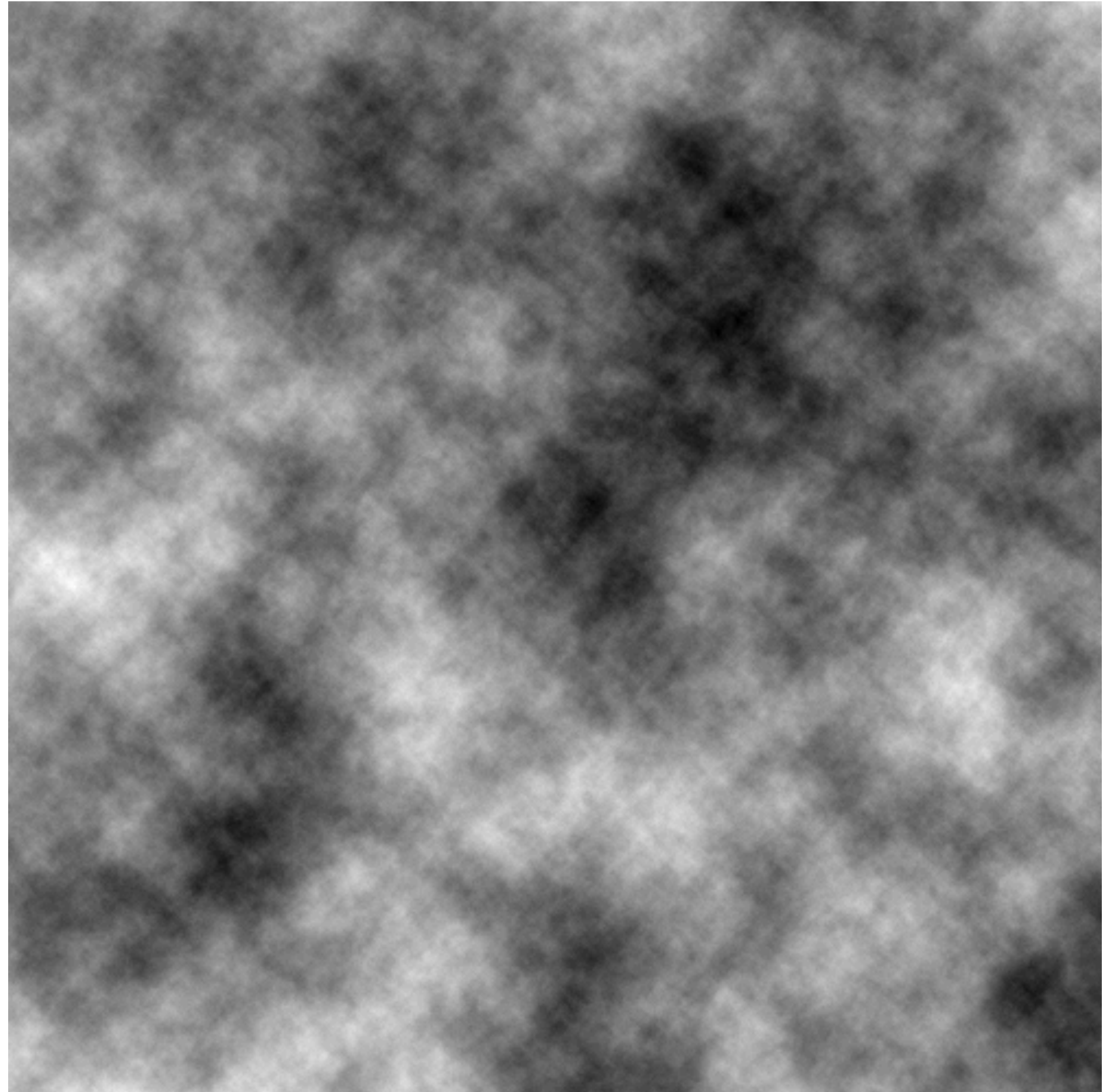
fBm Noise

Fractional Brownian Motion is the summation of successive octaves of noise, each with higher frequency and lower amplitude.



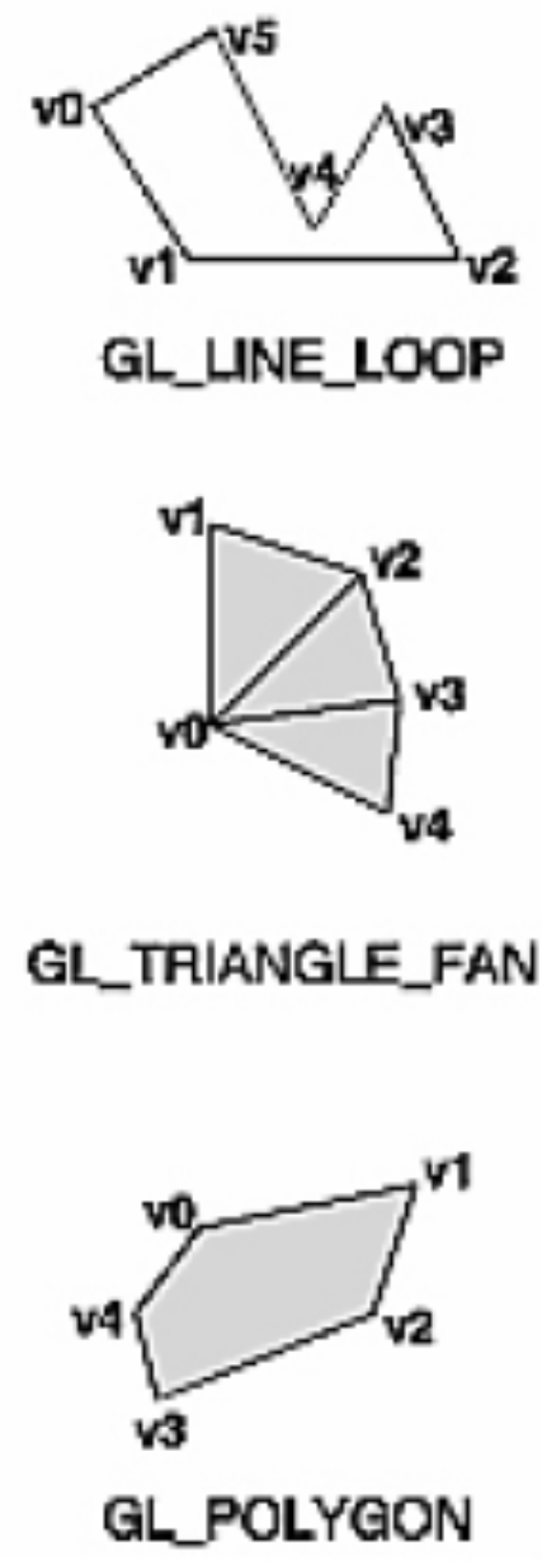
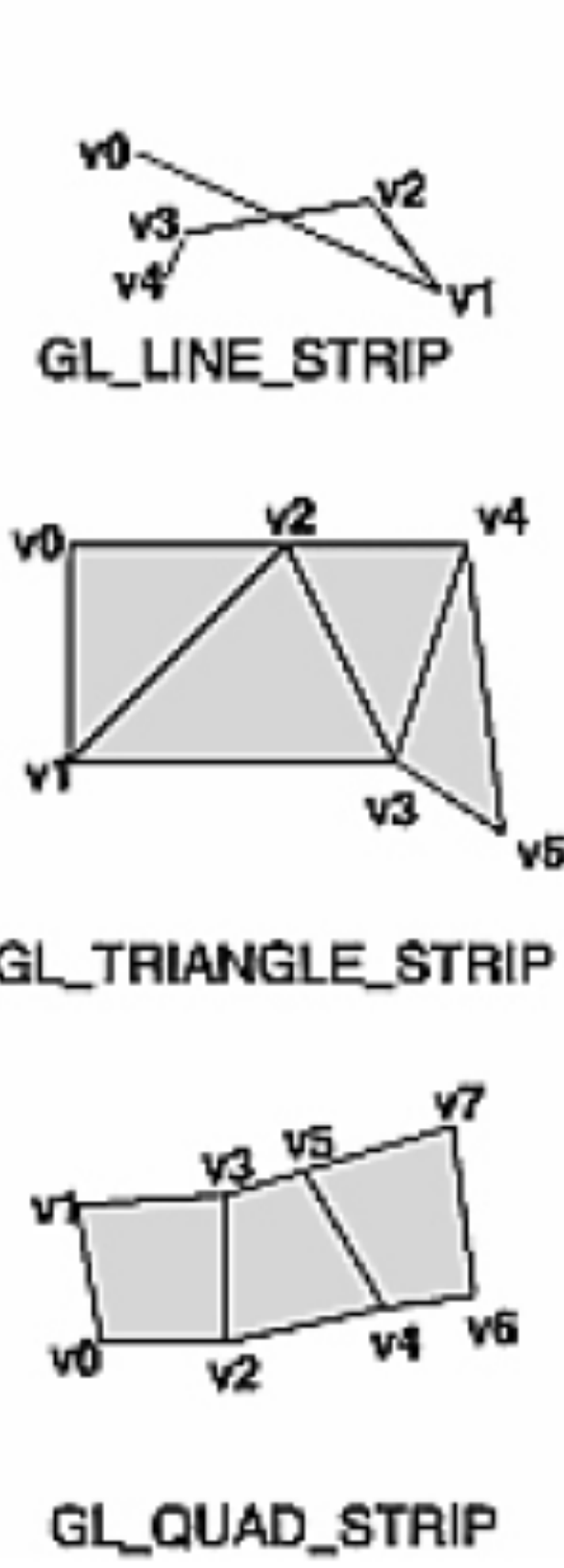
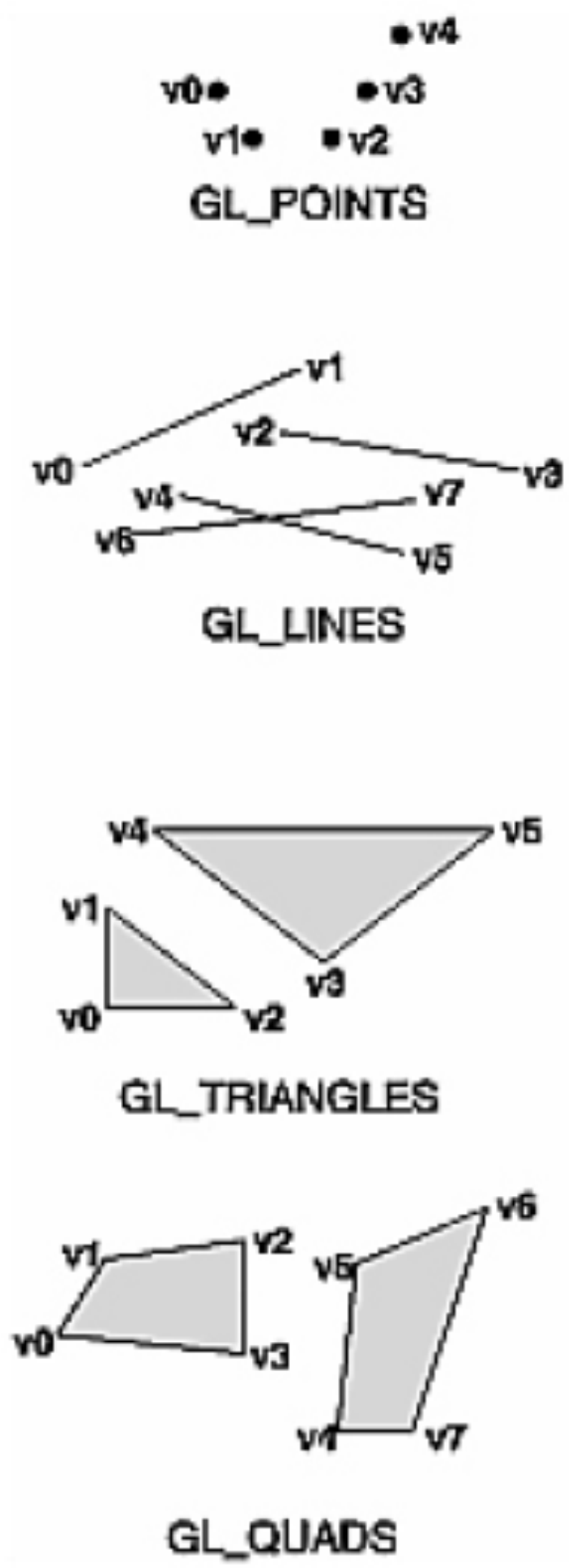
fBm Noise

Fractional Brownian Motion is the summation of successive octaves of noise, each with higher frequency and lower amplitude.



`vec3 dfBm (float x, float y, float z)`

OpenGL Drawing Modes



gl::begin() gl::end()

glBegin and glEnd delimit the vertices that define a primitive or a group of like primitives. glBegin accepts a single argument that specifies in which of ten ways the vertices are interpreted.