

Live Lecture Chat Window February 24, 2023

15:57:52 Can we use the *find* shader with the API and the keyboard() function to accomplish the same thing?

Absolutely!

16:42:01 Can you subdivide individual vertices into smaller vertices?

Vertices themselves don't really have size. A vertex is just a location in space. It's things with *area*, like triangles, that can be subdivided.

16:43:11 Can you run the geometry shader multiple times in a row to subdivide primitives?

Yes. I've never tried it, but I know you can feed the output of a geometry shader back into itself.

16:58:53 Are GLM and legacy OpenGL mutually exclusive? Or can you use both interchangeably?

When you use one of the OpenGL built-in transformations, e.g., `glRotatef()`, the driver on the CPU makes a matrix and feeds it into the graphics hardware. When you do it yourself with GLM, you are making a matrix on the CPU and feeding it into the graphics hardware. So, it's the same operation, but the difference is in who is doing it.

17:02:53 Is it much more complicated to produce shadows that are elongated? Like sunrise, sunset?

No more complicated because it happens automatically. If you place the light along the horizon of something, almost even with the something instead of above it, the shadow will be elongated just because that's what the optics says should happen.

17:04:09 Could you use the technique in the shadows shader to create shadows for multiple light sources?

Yes. In that case, there would be two "first" passes, each from a different light position, producing two depth textures and two light matrices. Then the final fragment shader would have a two-pass for-loop in it. Some fragments would be in both shadows, some in one, and some in neither.

17:08:44 Do the shadows incorporate, or can they incorporate, the color of the medium to change the color of the shadow (or also different colored lights)?

Yes, you just add that detail to the final fragment shader.