CSE 167: OpenGL

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1   OpenGL

OpenGL is one of the two most widespread graphics APIs, the other being DirectX. It directly calls commands on the graphics card. We can use OpenGL with other APIs such as GLU (for utilities*) and GLFW (for windows) which work on top of OpenGL.

* One example being NURBS (parametric surfaces that are rounded, i.e. with curvature).

- OpenGL is a state machine, meaning we individually define state (color, materials) and then OpenGL remembers this state to use for subsequent drawing calls.

- It also has its own types, e.g. GLfloat, and GLint, which are system-independent. These have the same number of bits on any system but otherwise behave as normal C++ data types.

The main geometric primitives in OpenGL are GL_{`POINTS, LINES, LINE_STRIP, TRIANGLES`,* `TRIANGLE_STRIP, QUADS, QUAD_STRIP, POLYGON`}. There are a couple more which I left out because Prof. Schulze said he's never used them in his life.

* The most important primitive for drawing solid surfaces.