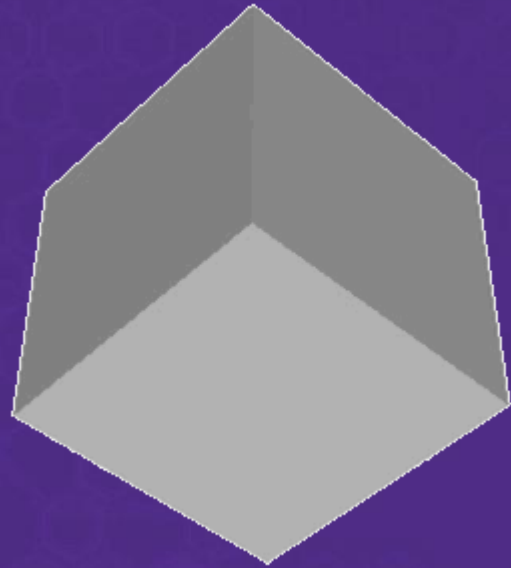


Developing Graphics Frameworks with Java and OpenGL



Part 06: Drawing Lines and Triangles

Rendering Lines and Triangles

- *Vertex buffers*: memory in GPU, stores arrays of data that describe vertex properties/attributes (such as position)
- **glDrawArrays(*drawMode* , *firstIndex* , *indexCount*)**
Draws geometric primitives (points, lines, or triangles) using the GPU program specified by **glUseProgram**.
 - Type of geometric primitive specified by *drawMode*; value is an OpenGL constant such as GL_POINTS, GL_LINES, GL_LINE_LOOP, GL_TRIANGLES, etc.

Draw Modes

- drawMode constant controls grouping of vertices.

Given a set of vertices: V0, V1, V2, V3, V4, V5, they are grouped as follows

GL_POINTS: [V0] [V1] [V2] [V3] [V4] [V5]

GL_LINES: [V0 V1] [V2 V3] [V4 V5]

GL_LINE_STRIP: [V0 V1] [V1 V2] [V2 V3] [V3 V4] [V4 V5]

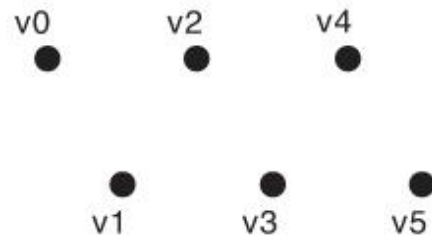
GL_LINE_LOOP: [V0 V1] [V1 V2] [V2 V3] [V3 V4] [V4 V5] [V5 V0]

GL_TRIANGLES: [V0 V1 V2] [V3 V4 V5]

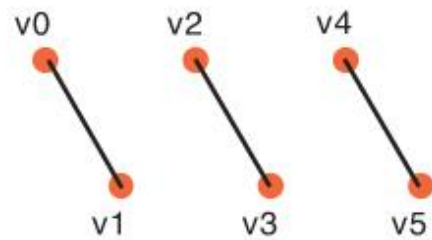
GL_TRIANGLE_STRIP: [V0 V1 V2] [V1 V2 V3] [V2 V3 V4] [V3 V4 V5]

GL_TRIANGLE_FAN: [V0 V1 V2] [V0 V2 V3] [V0 V3 V4] [V0 V4 V5]

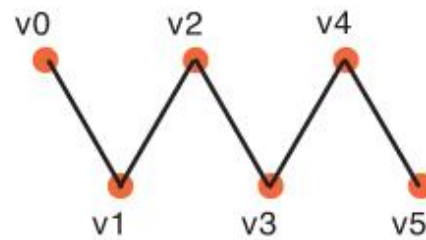
Draw Modes, Illustrated



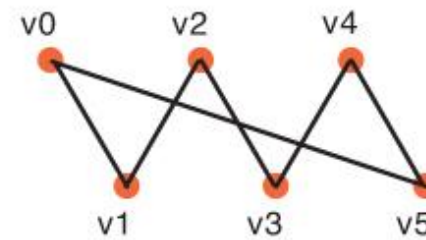
gl.POINTS



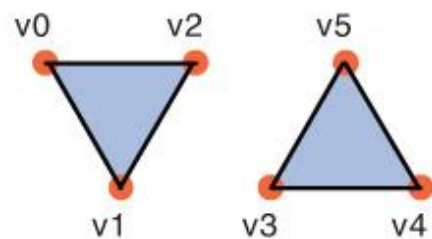
gl.LINES



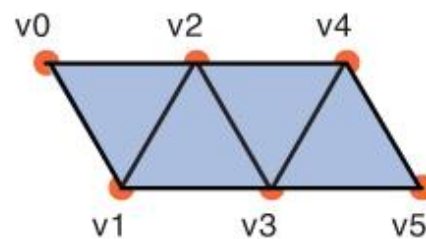
gl.LINE_STRIP



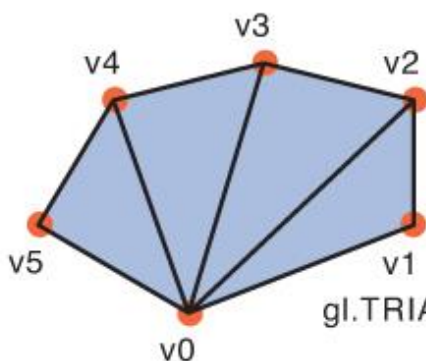
gl.LINE_LOOP



gl.TRIANGLES



gl.TRIANGLE_STRIP



gl.TRIANGLE_FAN