3D Pong

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Game Overview

• Game play similar to MIT Pong, but…
  – the objects have depth
  – the board can be rotated in 3D while the
game is being played

• Inputs
  – Lab-4 Pong Inputs
  – 3D Trackball for Rotating the Board

• Arbitrary 3D Models in addition to 3D Pong
3D Renderer

- Arbitrary models composed of triangles in a 3D space
- Arbitrary Rotations and Translation
- Shaded using Flat Shading Model
- Perspective Projection
Closer Look: Triangle Pipeline

Legend: triangle_data = \{a_x, a_y, a_z, b_x, b_y, b_z, c_x, c_y, c_z, rgb\}
Closer Look: Triangle Shader

\{x,y,rgb\}
Closer Look: Z-Buffer

- Buffer z-coordinate in addition to RGB for each pixel
- Compare z-coordinates before storing a new pixel color
Questions?