

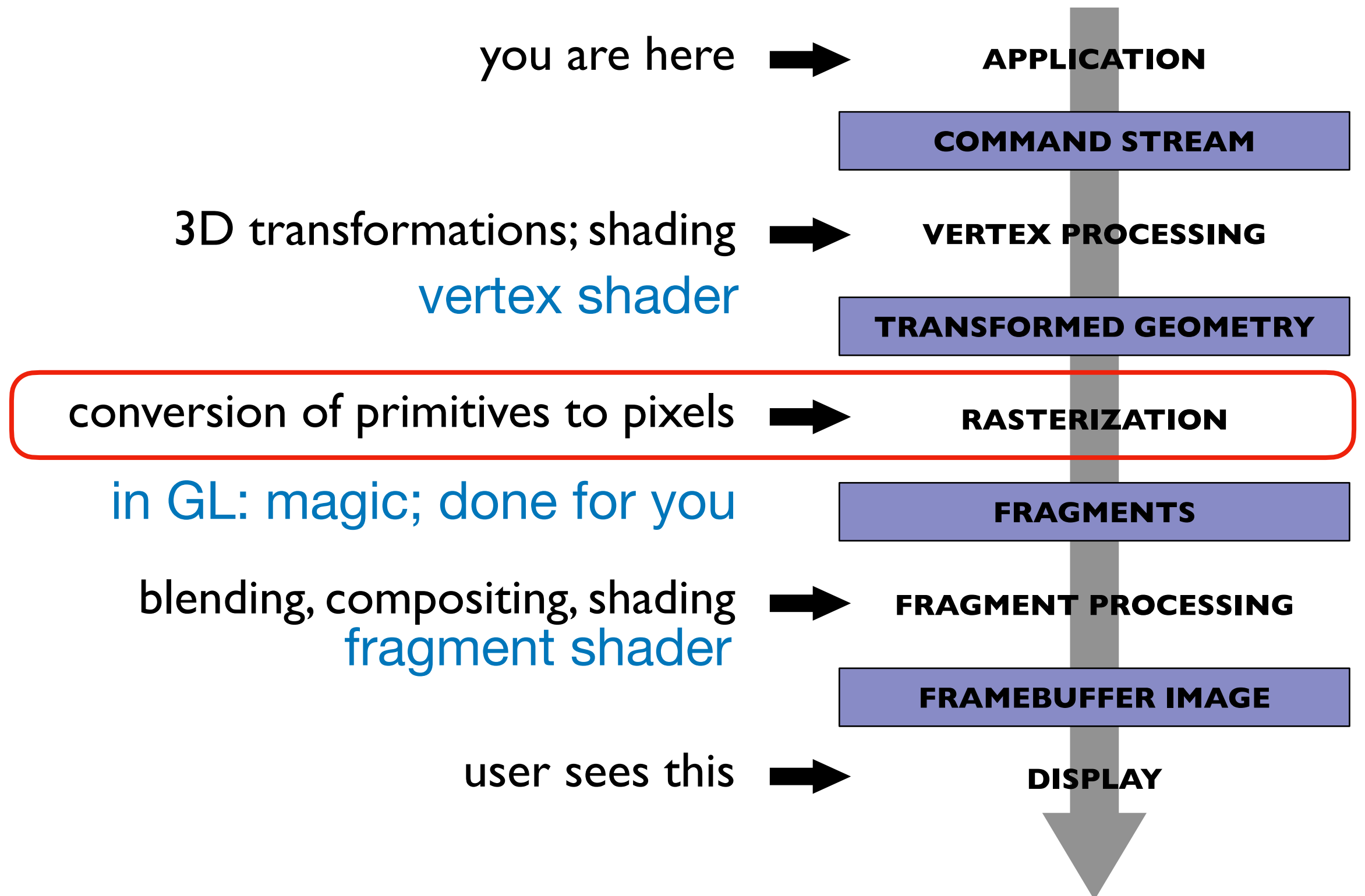
Computer Graphics

Lecture 27:
Clipping

Announcements

- Please continue not talking about the exam through Wednesday 10pm
- Proposal feedback is out - revisions (if applicable) due Wednesday 10pm
- FP milestone 1 is one week from today!
- Line lab due Thursday 11/10 10pm (if not already completed)
- A3 due Wednesday 10pm
 - This is the last assignment where slip days can be used

Graphics Pipeline: Overview



Rasterization: Overview

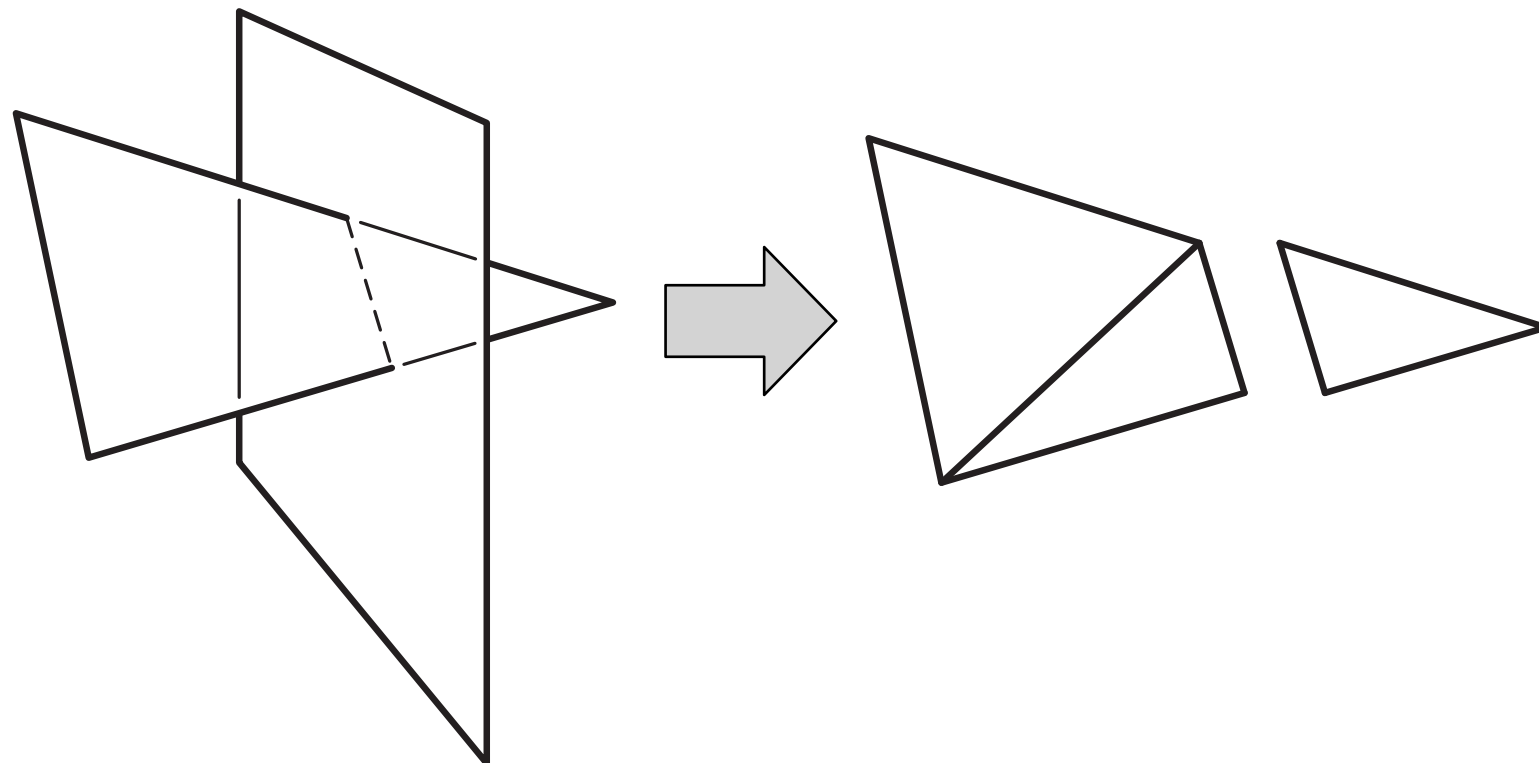
- 7(!?) weeks ago: rasterizing triangles
- 1 week ago: z buffering, backface culling
- Last time: rasterizing lines
- Today: **clipping**

Clipping

- Rasterizer tends to assume triangles are on screen
 - particularly problematic to have triangles crossing the plane $z = 0$
- After projection
 - clip against the planes $x, y, z = 1, -1$ (6 planes)
 - primitive operation: clip triangle against axis-aligned plane

Clipping a triangle against a plane

- 4 cases, based on sidedness of vertices
 - all in (keep)
 - all out (discard)
 - one in, two out (one clipped triangle)
 - two in, one out (two clipped triangles)



Exercise: Write pseudocode to do this.

- 4 cases, based on sidedness of vertices
 - all in (keep)
 - all out (discard)
 - one in, two out (one clipped triangle)
 - two in, one out (two clipped triangles)

