Shaders

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What is a shader?

Maybe this thing?
Shader definition

Computer program that is used to do shading
So what exactly do they do?

- Calculate rendering effects on graphics hardware
- Allows customized effects
  - Hue
  - Saturation
  - Brightness
  - Contrast

Everything on the fly!
Basics of graphics pipeline (from shaders’ POV)

CPU → GPU → Geometry is formed (vertex shader) → Geometry shader

→ Tessellation shader → Geometry is triangulated → Fragment shader

→ Depth test → Rendering frame → Rendering frame
Shader types

- Vertex shaders - describe vertices (position, texture, colours)
- Geometry shader
- Tessellation shader
- Fragment shaders (Pixel shaders) - describe pixels (colour, depth)
Geometry shader

Performs tasks that vertex nor pixel shaders can’t really do
Tessellation shader

Takes geometry and starts splitting surfaces into smaller and smaller triangles, thus making things smoother
PN Triangles
(dynamic 16px/edge)

No Tessellation

TESSELATION is quite cool, however it can only change THIS into THIS (certainly) and not THAT.
Shaders: Low
Shaders: High
Shaders: Medium
Shaders: High