



Stealth Planes

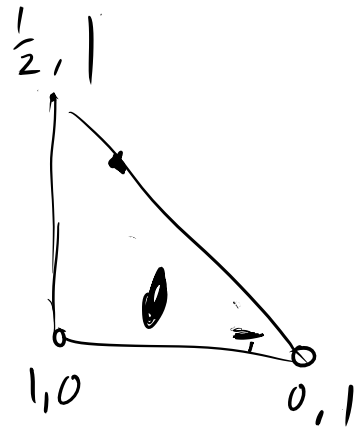
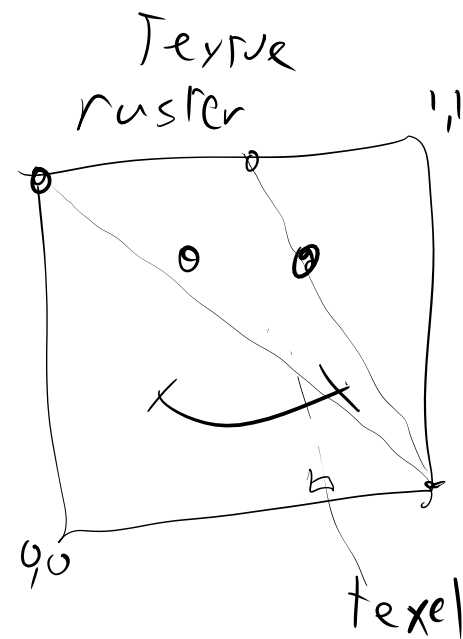


$$C_e \left[C_o \left[w_a A \quad + \quad w_d f_d(\vec{n}, \vec{l}) \right] \quad + \quad w_s f_s(\vec{n}, \vec{l}, \vec{e}) \right]$$

element-wise
0-1 space

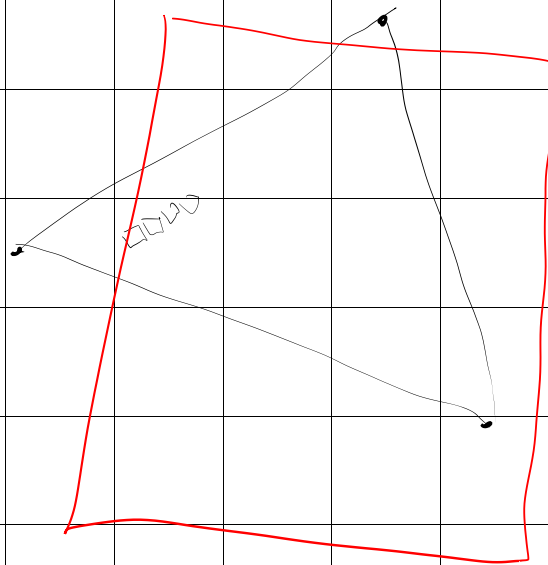
How do we get data to fragment?

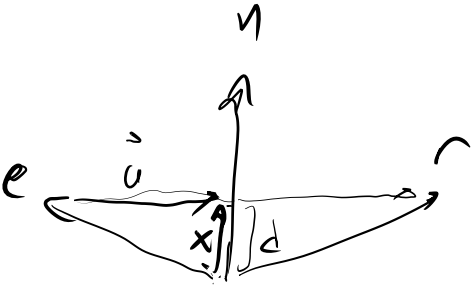
1. constant
2. per-vertex
3. texture map
4. math - procedural texture
5. math + texture (cube map)



max filter

min filter





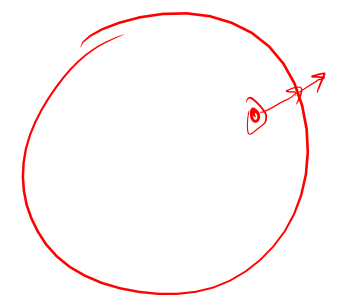
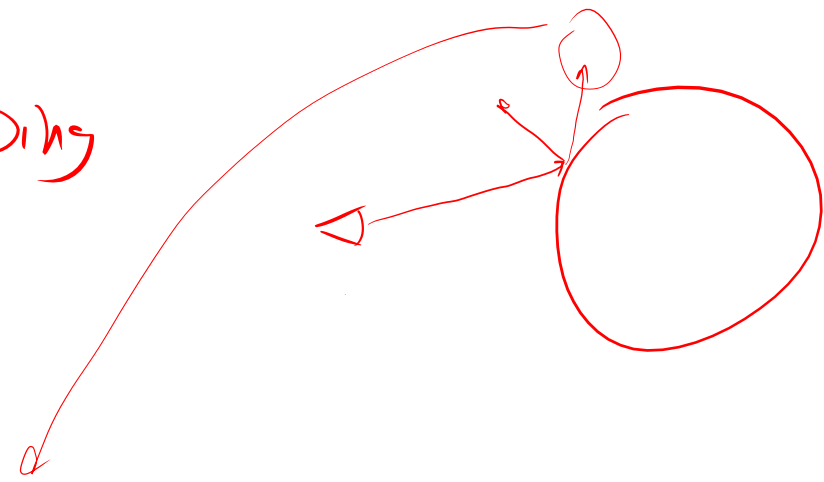
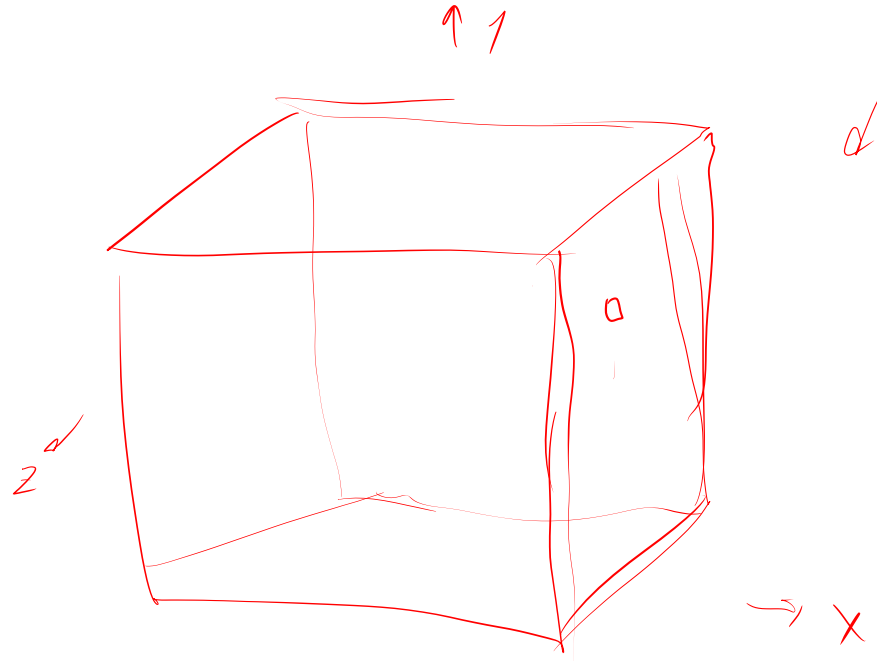
Cube Mapping

$$d = \vec{e} \cdot \vec{n}$$

$$\vec{x} = d \vec{n}$$

$$\vec{a} = \vec{x} - \vec{e}$$

$$\vec{r} = \vec{a} + \vec{x}$$



Non-raytracing

Geometry \rightarrow Pixels

Raytracing

Pixel \rightarrow Geometry

Ray Casting Tracing

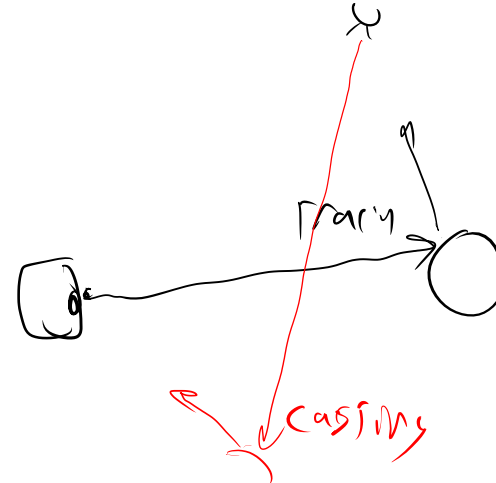
Segment



ray



line



Ray - Intersection

1920 x 1080 pixels

1000000 Triangles

2 trillion

= 1000 seconds

2 GHz

