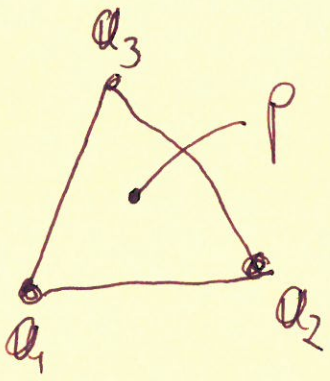
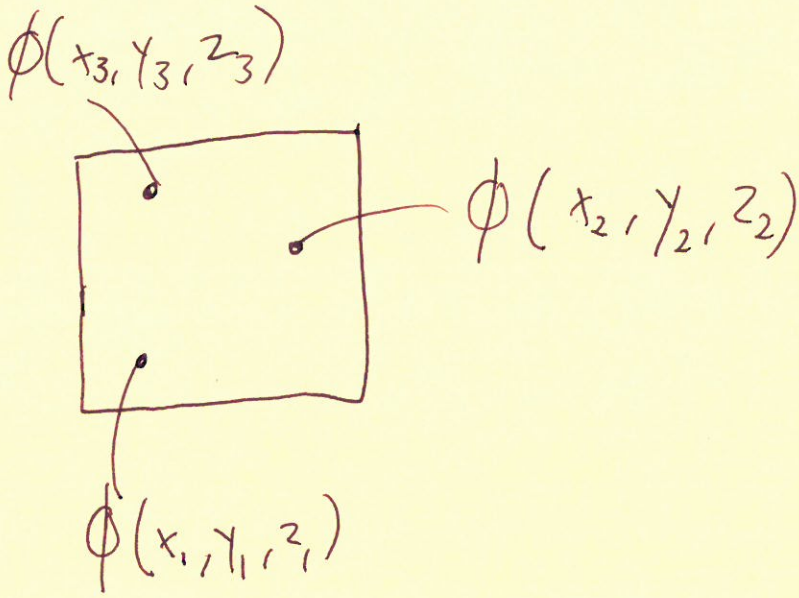
Texturing (Pt 2)

March 29

Given verts of a $\triangle$

$(x \quad y \quad z \quad u \quad v)$ for each vertex





determine texture cordinate at p

(α, β, γ)

$b = as\_barycentric(a_1, a_2, a_3, p)$

$(u_1, v_1) = as\_tex(a_1)$

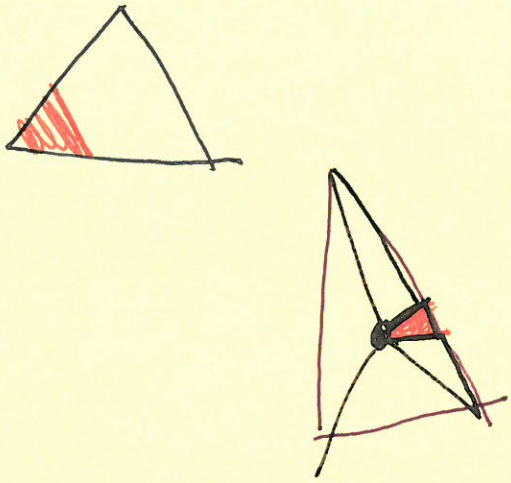
$(u_2, v_2) = as\_tex(a_2)$

$(u_3, v_3) = as\_tex(a_3)$

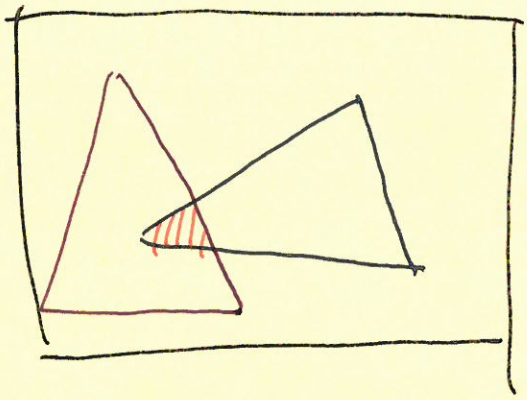
$$\begin{bmatrix} u_p \\ v_p \end{bmatrix} = \alpha \begin{bmatrix} u_1 \\ v_1 \end{bmatrix} + \beta \begin{bmatrix} u_2 \\ v_2 \end{bmatrix} + \gamma \begin{bmatrix} u_3 \\ v_3 \end{bmatrix}$$

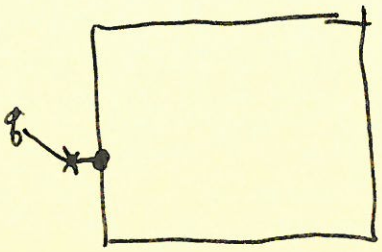
what is ~~this~~ the math?

object

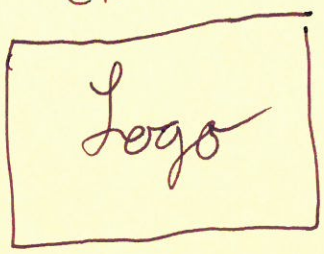


texture

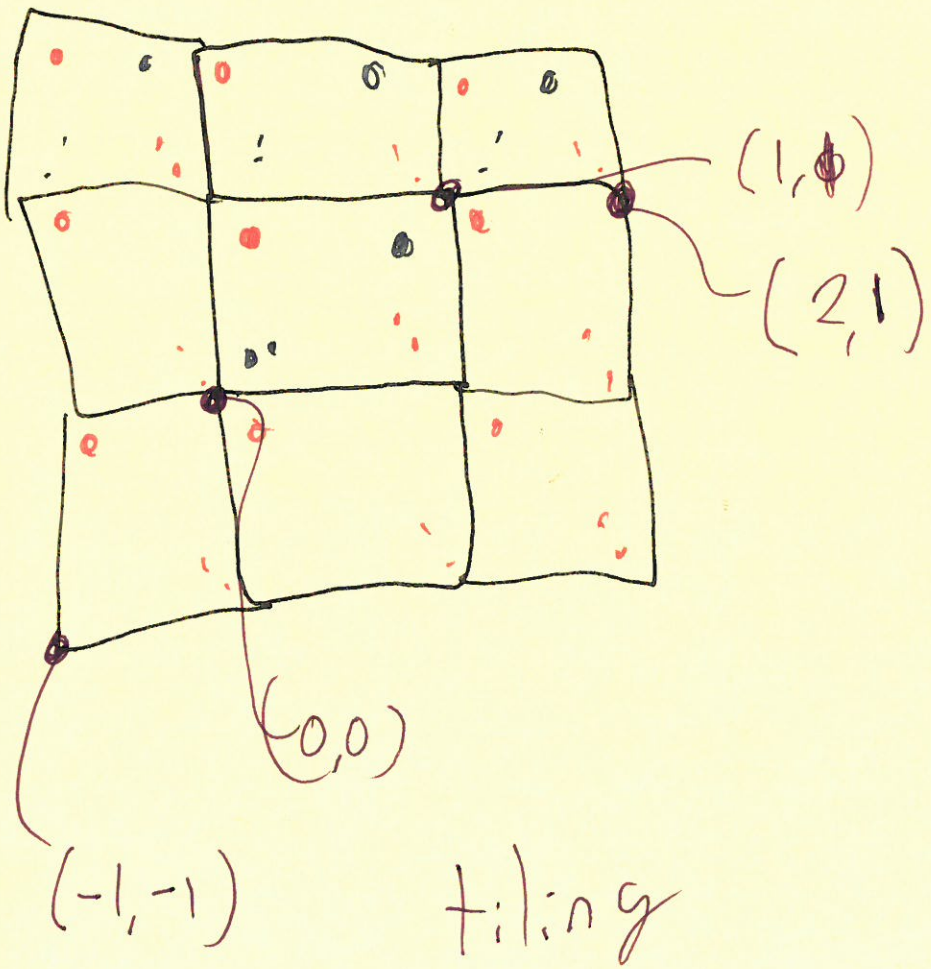




ex



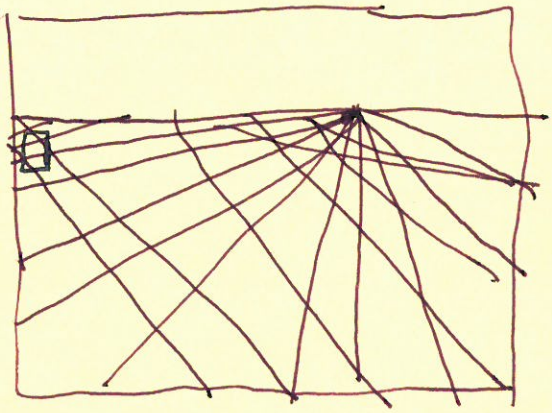
- clamp - pick closest point



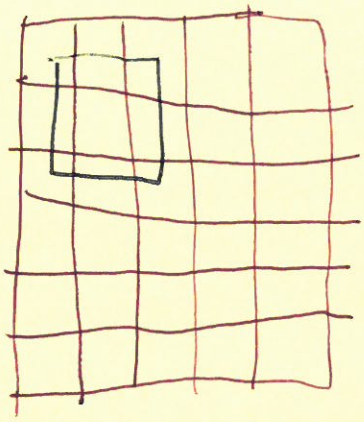
tiling

Mip mapping

Image

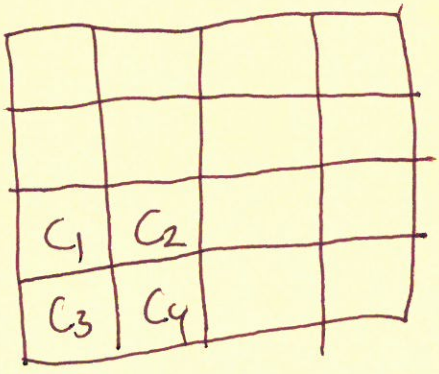


texture



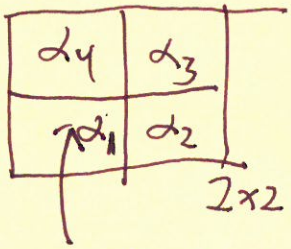
texture space footprint:
texels covered by a pixel

texture @ level 0



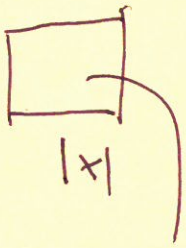
4x4

texture @ level 1



$\frac{C_1+C_2+C_3+C_4}{4}$

texture @ level 2



$\frac{\alpha_1+\alpha_2+\alpha_3+\alpha_4}{4}$