Abgabe - Übungsblatt [5]

Einführung in die Computergraphik und Visualisierung

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First Exercise

$A(\triangle(x_1, x_2, x_3))$ - the area of a triangle(x_1, x_2, x_3)

$A = \begin{pmatrix} x_1 - x_3 & y_1 - y_3 \\ x_2 - x_3 & y_2 - y_3 \end{pmatrix}$

$x = (0.6, 0.4)^T$

$\lambda_1 = \frac{A(\triangle(x,v_2,v_3))}{A(\triangle(v_1,v_2,v_3))} = \frac{0.1}{0.5} = 0.2$

$\lambda_2 = \frac{A(\triangle(x,v_1,v_3))}{A(\triangle(v_1,v_2,v_3))} = \frac{0.2}{0.5} = 0.4$

$\lambda_3 = \frac{A(\triangle(x,v_2,v_1))}{A(\triangle(v_1,v_2,v_3))} = \frac{0.2}{0.5} = 0.4$

Second Exercise

The color value will be: $c(x) = 0.2 * c(v_1) + 0.4 * c(v_2) + 0.4 * c(v_3) = (0.2, 0, 0) + (0, 0.4, 0) + (0, 0, 0.4) = (0.2, 0.4, 0.4)$