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Assignment #5

1)

Homogenous 2D Scaling Matrix

$$\begin{bmatrix} x_2 \\ y_2 \\ 1 \end{bmatrix} = \begin{bmatrix} \text{scaling_factor} & 0 & 0 \\ 0 & \text{scaling_factor} & 0 \\ 0 & 0 & 1 \end{bmatrix} \begin{bmatrix} x \\ y \\ 1 \end{bmatrix}$$

Homogenous 2D Translation Matrix

$$\begin{bmatrix} x_2 \\ y_2 \\ 1 \end{bmatrix} = \begin{bmatrix} 1 & 0 & \text{trans_x} \\ 0 & 1 & \text{trans_y} \\ 0 & 0 & 1 \end{bmatrix} \begin{bmatrix} x \\ y \\ 1 \end{bmatrix}$$

2)

The world window refers to which part of the world that has been selected to be drawn where whatever can be found within the window will be drawn and whatever finds itself outside the window shall be clipped.

The viewport refers to the select visible portion taken from the world

The screen window refers to the frame buffer on which the final translation of the viewport from the world window is shown or made to output on.