2023-1 Computer Graphics

6th week

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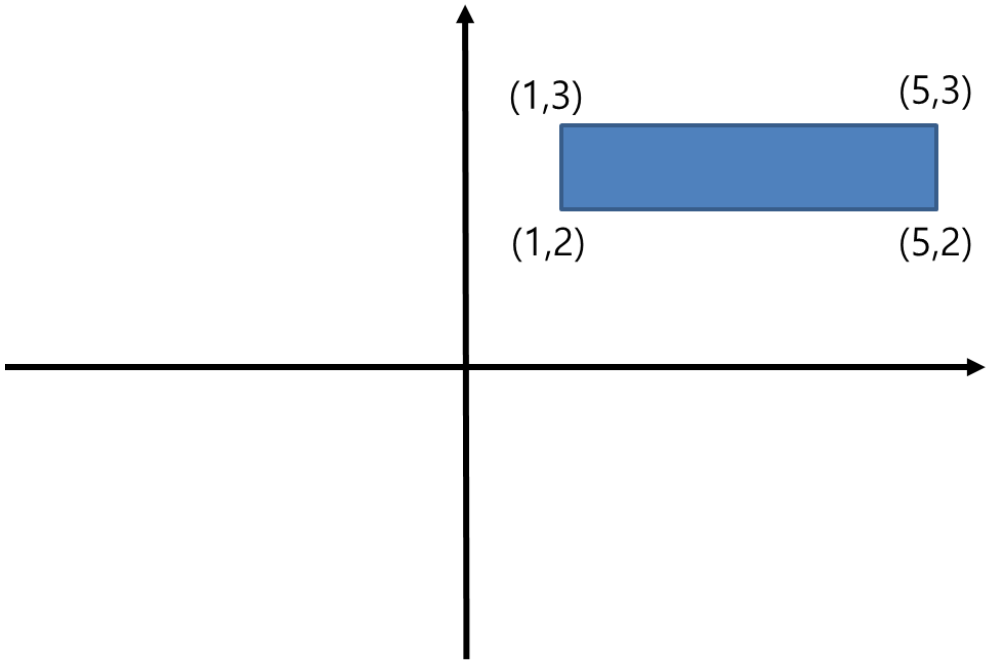
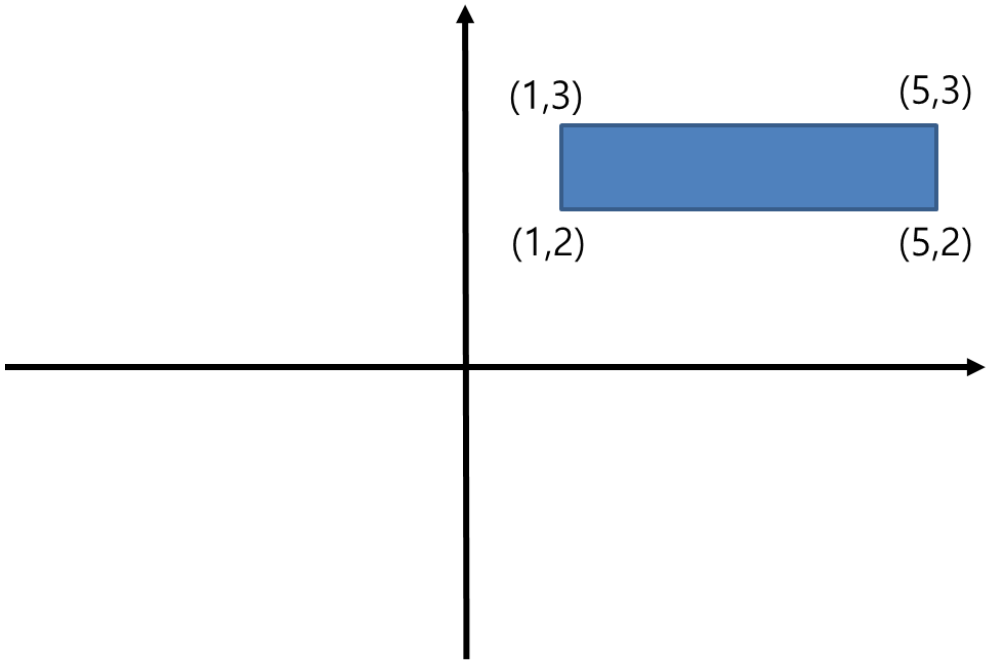
Group activity

- Suppose you have a 2D rectangle shown below
- Increase the rectangle by 2 in X direction and by 4 in Y direction.
- Translate the rectangle by 4 in X direction.



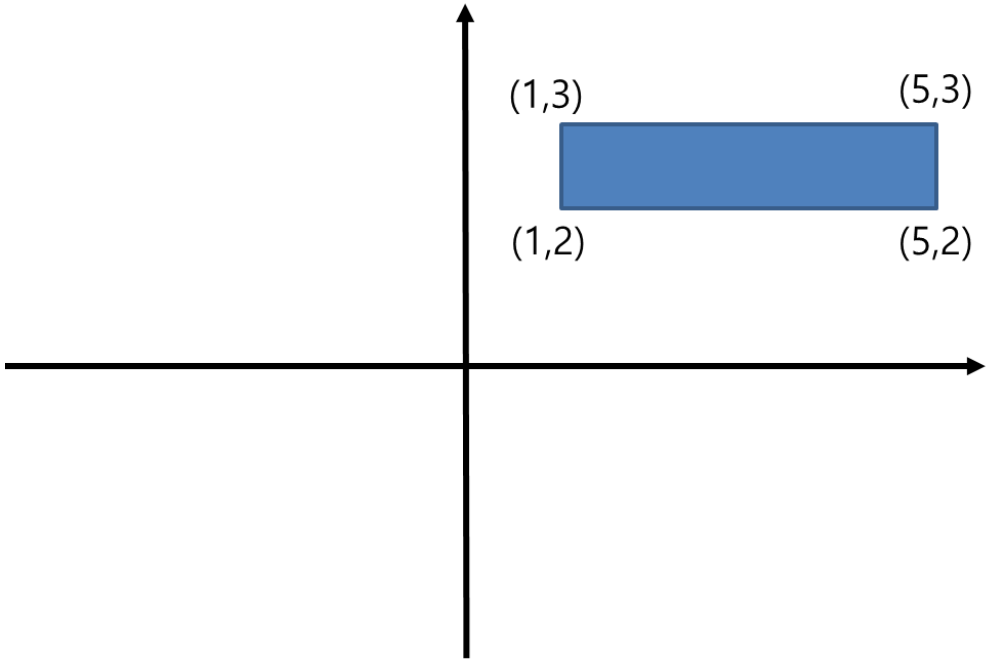
Group activity

- Rotate the rectangle by 90 degrees and increase the rectangle by 2 in X direction and by 4 in Y direction.
- Increase the rectangle by 2 in X direction and by 4 in Y direction and rotate the rectangle by 90 degrees.



Group activity

- Perform 2D transformation on the rectangle by using the matrix
- $\begin{bmatrix} 3 & 3 & 2 \\ 3 & 3 & 2 \\ 0 & 0 & 1 \end{bmatrix}, \begin{bmatrix} 3 & 3 & 2 \\ 3 & 3 & 2 \\ 0 & 1 & 1 \end{bmatrix}$
- Analyze the transformation result



Transform hierarchy

- Similarity transform
- Affine transform
- Perspective transform(homography)

Transform hierarchy

- Perspective transform example