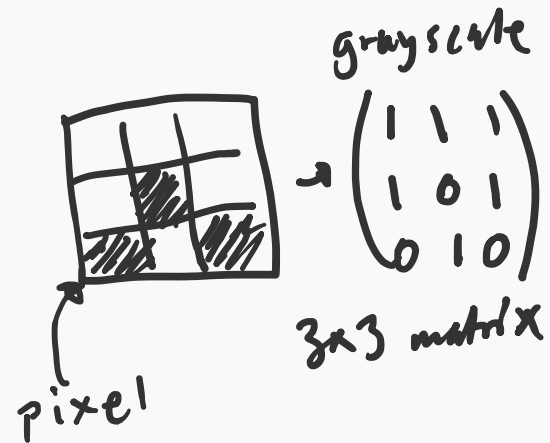kokchun giang

images are simply **matrices** of numbers which we can process using linear algebra
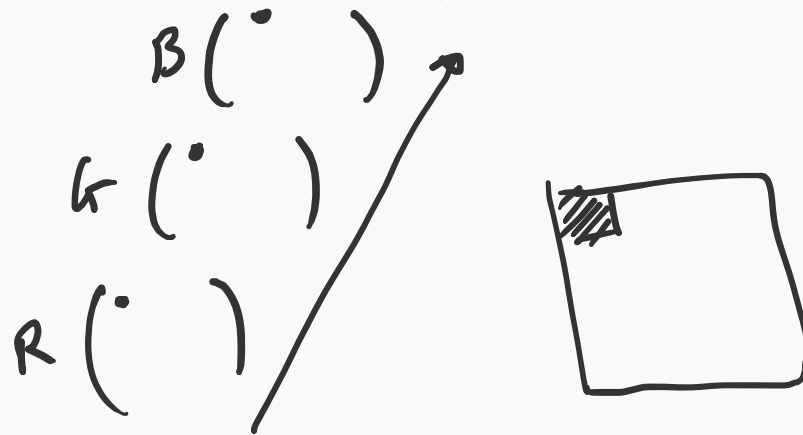
images are **matrices**, pixels are **elements**

grayscale

$$\rightarrow \begin{pmatrix} 1 & 1 & 1 \\ 1 & 0 & 1 \\ 0 & 1 & 0 \end{pmatrix}$$

3x3 matrix

pixel

an element in the matrix correspond to a pixel

· intensity of the pixel depends on the values in the matrix

Color images

$$B \begin{pmatrix} \cdot \end{pmatrix}$$

$$G \begin{pmatrix} \cdot \end{pmatrix}$$

$$R \begin{pmatrix} \cdot \end{pmatrix}$$

a pixels color is determined by proportions of R, G, B in that pixels position