# Two Dimensional:

- The partial derivatives of Two dimensional functions represent direction of most rapid change in the intensity.

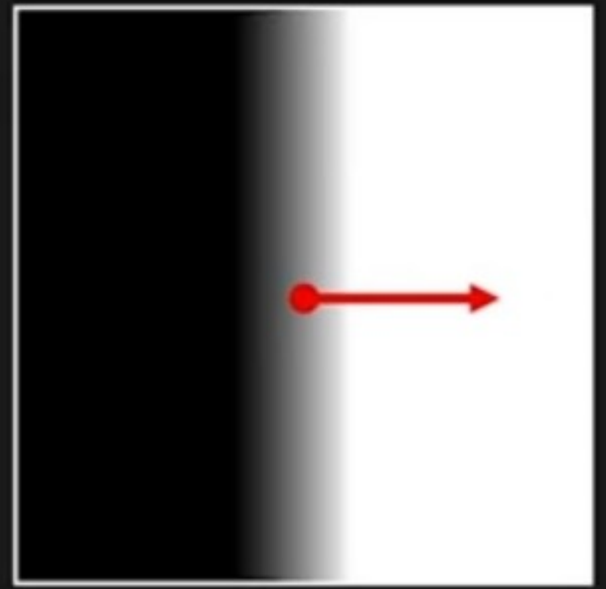
- THE PARTIAL DERIVATES ARE REPRESENTED BY GRADIENT "∇I"

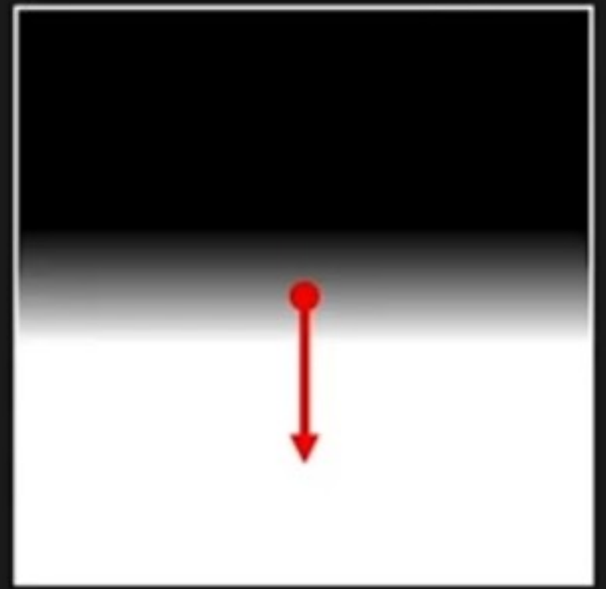
$I(x, y)$:

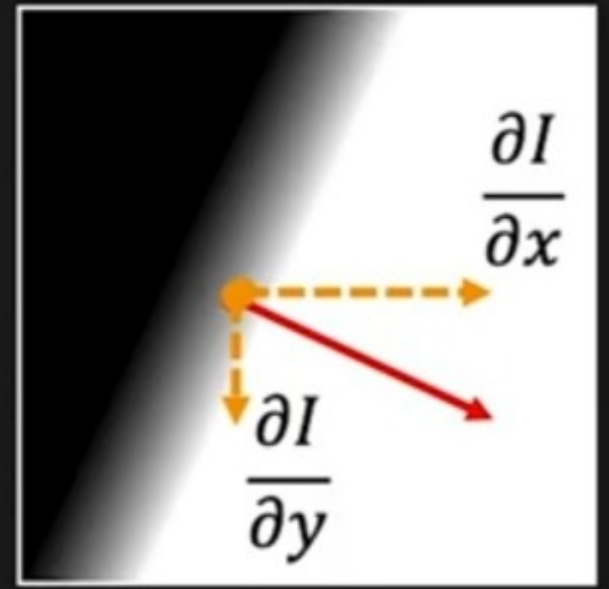
Edge

Edge

- $\nabla I = [\partial I/\partial x, 0]$






$\frac{\partial I}{\partial x}$
$\frac{\partial I}{\partial y}$

- $\nabla I = [0, \partial I/\partial y]$

- $\nabla I = [\partial I/\partial x, \partial I/\partial y]$

- The resultant vector $\nabla I$ represents the direction of change in intensity