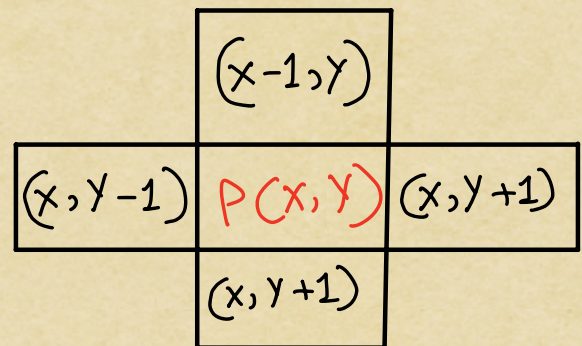


Basic relationship between pixels

4-neighbors(N4)

	$(x-1, y)$	
$(x, y-1)$	$P(x, y)$	$(x, y+1)$
	$(x, y+1)$	



4-diagonal neighbors N_D

$(x-1, y-1)$		$(x-1, y+1)$
	$P(x, y)$	
$(x+1, y-1)$		$(x+1, y+1)$

$(x-1, y-1)$		$(x-1, y+1)$
	$P(x, y)$	
$(x+1, y-1)$		$(x+1, y+1)$

8-neighbors N_8

$(x-1, y-1)$	$(x-1, y)$	$(x-1, y+1)$
$(x, y-1)$	$P(x, y)$	$(x, y+1)$
$(x+1, y-1)$	$(x, y+1)$	$(x+1, y+1)$

so

$$N_8 = N_4 + N_D$$

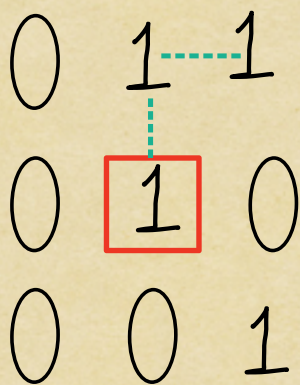
Adjacency

1- 4-adjacency

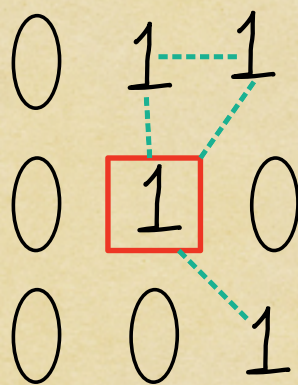
2- 8-adjacency

3- M-adjacency

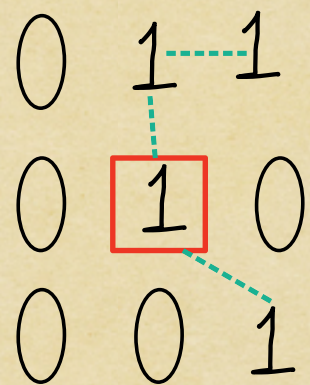
4-bit



8-bit



M-bit



① 1 0 0 1 0 ②

↓