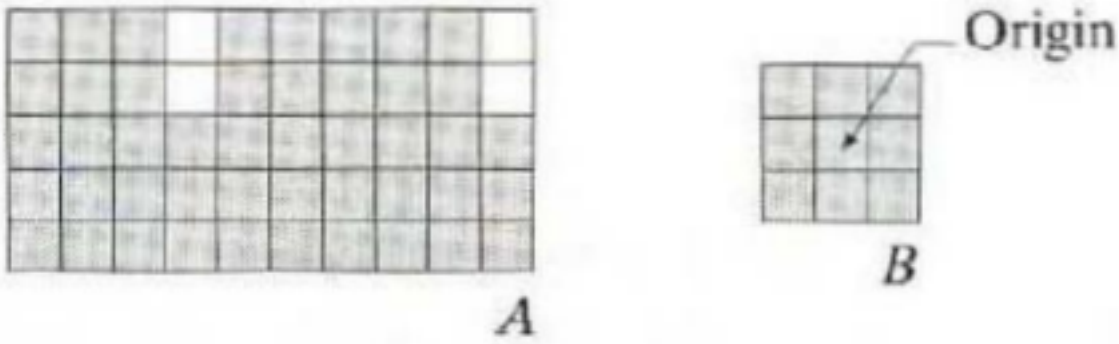
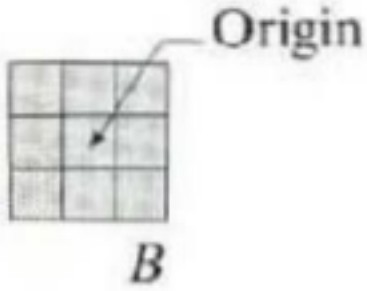
BOUNDARY EXTRACTION

The boundary of a set A, denoted by $\beta(A)$, can be obtained by first eroding A by B and then performing the set difference between A and its erosion.

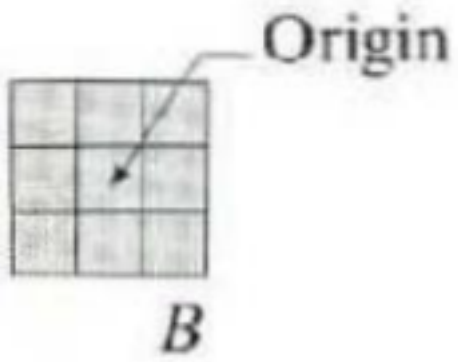
$$\beta(A) = A - (A \ominus B)$$

where B -> structuring element


Origin
A
B

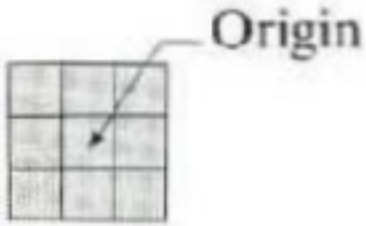


1	1	1		1	1	1	1	1	
1	1	1		1	1	1	1	1	
1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1



A

1	1	1		1	1	1	1	1	
1	**1**	1		1	**1**	**1**	**1**	1	
1	**1**	1	1	1	**1**	**1**	**1**	1	1
1	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	1
1	1	1	1	1	1	1	1	1	1



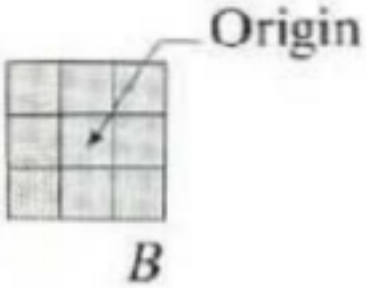
B

A

$A \ominus B$

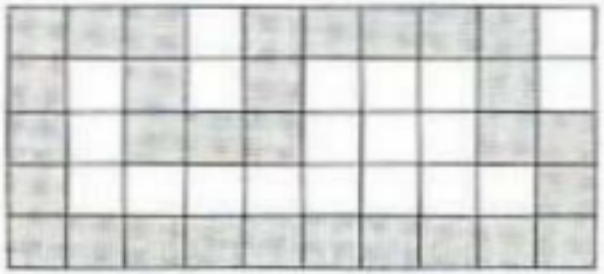
Image source: Digital image processing by Gonzalez and

A



B

$A \ominus B$



$\beta(A)$