# LAB-6

## Sequential Circuit Project 2

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#### Spesifikasi

Membuat sebuah counter yang akan berhitung dari 0 hingga 3.

Output akan bernilai 1 jika next state lebih kecil dari current state.

State menggunakan 2 bit binary representation.

 $Input A = 0 \ counter \ bertambah \ 1 \ state \ dan \ A = 1 \ counter \ bertambah \ 2 \ state.$ 

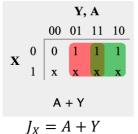
Input = A

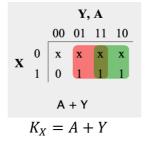
Output = O

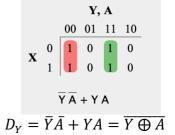
#### State Table (Formulasi)

Current State		Input	Next State		JK		D	Out
X	Y	A	X <sup>+</sup>	Y <sup>+</sup>	$J_x$	$K_x$	$D_{\mathbf{Y}}$	0
0	0	0	0	1	0	X	1	0
0	0	1	1	0	1	X	0	0
0	1	0	1	0	1	X	0	0
0	1	1	1	1	1	X	1	0
1	0	0	1	1	X	0	1	0
1	0	1	0	0	X	1	0	1
1	1	0	0	0	X	1	0	1
1	1	1	0	1	X	1	1	1

### Optimisasi







$$O = XA + XY = X(A + Y)$$

## Technology Mapping

