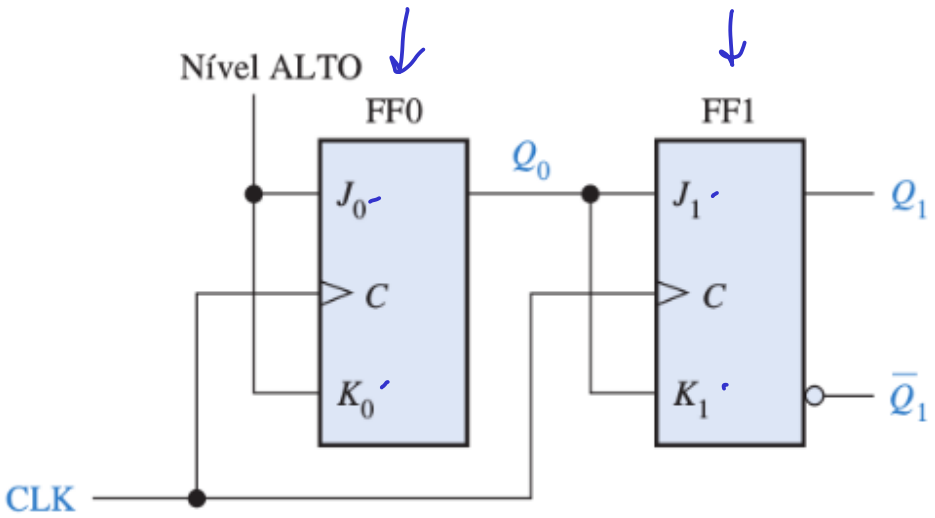
MAC0329 23/06/2020

BOM DIA!

- Análise de Circuitos Seq.
- Logisim + EP3



J	K	Q	Q^*
0	0	0	0
0	0	1	1
0	1	0	0
0	1	1	0
1	0	0	1
1	0	1	1
1	1	0	1
1	1	1	0

$Q^* = ? \; J\overline{Q} + \overline{K}Q$

JK \ Q	0	1
00	0	1 ($\overline{K}Q$)
01	0	0
11	1	0
10	1	1

($J\overline{Q}$)

1) Sinais do J e K

$J_0 = K_0 = 1$

$J_1 = K_1 = Q_0$

2) Equação do próximo estado

$Q_0^* = J_0\overline{Q}_0 + \overline{K}_0 Q_0$

$= 1\,\overline{Q}_0 + 0\,Q_0 = \overline{Q}_0$

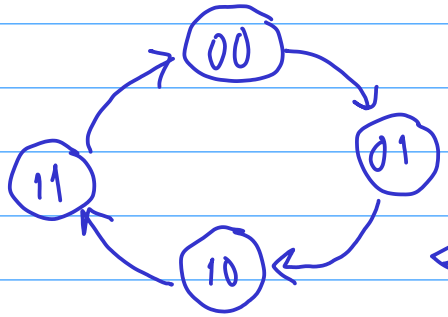
$Q_1^* = J_1\overline{Q}_1 + \overline{K}_1 Q_1$

$= Q_0\overline{Q}_1 + \overline{Q}_0 Q_1 = Q_0 \oplus Q_1$

3) Tabela de transição de estados

$Q_1 Q_0$	$Q_1^* Q_0^*$
0 0	0 1
0 1	1 0
1 0	1 1
1 1	0 0

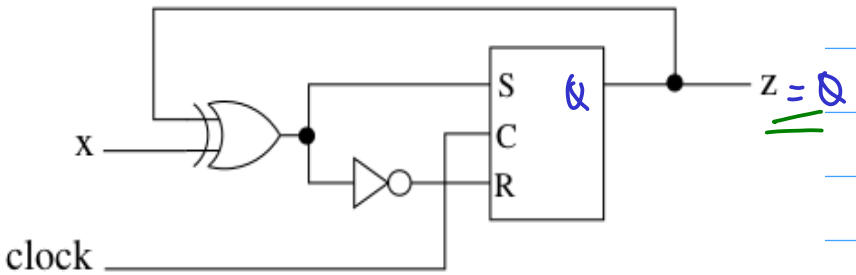
4) Diagrama de Trans. Estados



← contador de 2 bits módulo 2^2

$S=R=1 \Rightarrow$ don't care

$$Q^* = S + Q\bar{R}$$



1) Sinal de S e R

$S = x \oplus Q$

$R = \overline{x \oplus Q} = \bar{S}$

2) Próximo estado Q^*

$$Q^* = \underbrace{x \oplus Q}_{S} + Q\overline{(x \oplus Q)} = x \oplus Q = S$$
$$+ QS = S$$

3) Tabela de Trans. Est.

Q	Q^*/z	
	$x=0$	$x=1$
0	0/0	1/1 → Q^*/z
1	1/1	0/0

4) Diagrama