Laboratório 7

- Tranca de 2 digitos   (00, 01, 10, ou 11) $\overbrace{\qquad}^{\text{cada digito}}$
- Apenas duas chances
→ A senha será 32, ou seja, 11 e 10
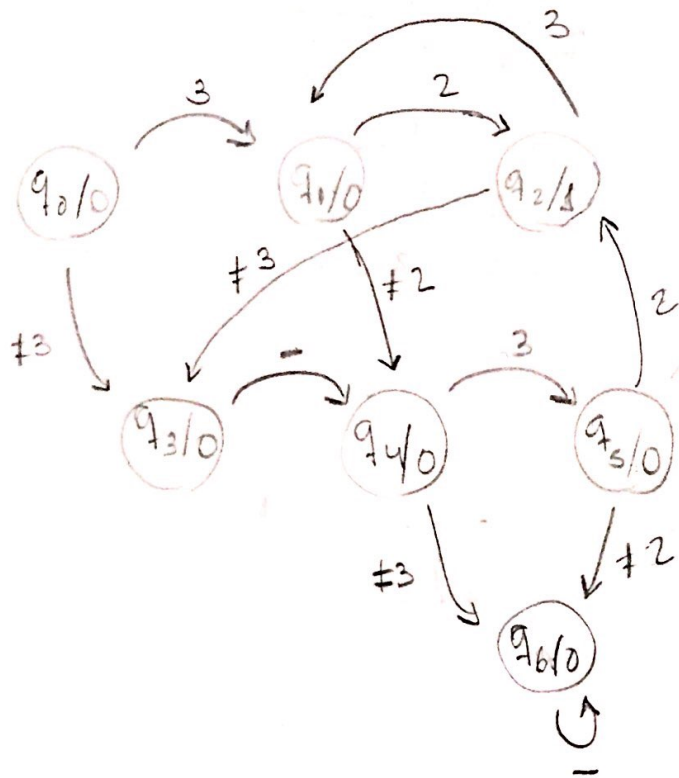
- Diagrama de Estados.

→ Modelo de Moore

	q_2	q_1	q_0	
a	0	0	0	0
b	0	0	1	1
c	0	1	1	3
d	0	1	0	2
e	1	0	0	4
f	1	0	1	5
g	1	1	1	7
h	1	1	0	6

	q	$x_1 x_0$ 00	01	11	10	z
0	a	c	c	b	c	0
1	b	e	e	e	d	0
3	c	e	e	e	d	0
2	d	c	c	b	c	0
4	e	h	h	f	h	0
5	f	h	h	h	d	0
7	g	x	x	x	x	x
6	h	h	h	h	h	0

Tabela de Transição

→ Flip Flop JK

$x_1 x_0$

$y_2 y_1 y_0$	00	01	11	10
a 0 0 0	011	011	001	011
b 0 0 1	100	100	100	010
c 0 1 1	100	100	100	100
d 0 1 0	011	011	001	011
e 1 0 0	110	110	101	110
f 1 0 1	110	110	110	010
g 1 1 1	X	X	>	X
h 1 1 0	110	110	110	110

	J	K
0→0	0	X
0→1	1	X
1→0	X	1
1→1	X	0

$$J_0 = \bar{y_2} + \bar{y_1} x_1 x_0$$

$y_2 = 0$

$y_1 y_0$

$x_1 x_0$	00	01	11	10
00	1	X	X	0
01	1	X	X	1
11	0	X	X	1
10	1	X	X	1

$y_2 = 1$

$y_1 y_0$

$x_1 x_0$	00	01	11	10
00	0	X	X	0
01	0	X	X	0
11	1	X	X	0
10	0	X	X	0

$k_0 = 1$

$y_2 = 0$

$y_1 y_0$

$x_1 x_0$	00	01	11	10
00	X	1	1	X
01	X	1	1	X
11	X	1	1	X
10	X	1	1	X

$y_2 = 1$

$y_1 y_0$

$x_1 x_0$	00	01	11	10
00	X	1	X	X
01	X	1	X	X
11	X	1	X	X
10	X	1	X	X

	y_2	y_1	y_0	$x_1 x_0$			
				00	01	11	10
a	0	0	0	011	011	001	011
b	0	0	1	100	100	100	010
c	0	1	1	100	100	100	100
d	0	1	0	011	011	001	011
e	1	0	0	110	110	101	110
f	1	0	1	110	110	110	010
g	1	1	1				
h	1	1	0	110	110	110	110

	J	K
$0 \to 0$	0	$\times$
$0 \to 1$	1	$\times$
$1 \to 0$	$\times$	1
$1 \to 1$	$\times$	0

$$J_1 = \overline{y_0}\,\overline{x_1} + x_1\overline{x_0} + y_2 y_0$$

K-map $y_2 = 0$:

$x_1 x_0 \backslash y_1 y_0$	00	01	11	10
00	1	0	$\times$	$\times$
01	1	0	$\times$	$\times$
11	0	0	$\times$	$\times$
10	1	1	$\times$	$\times$

K-map $y_2 = 1$:

$x_1 x_0 \backslash y_1 y_0$	00	01	11	10
00	1	1	$\times$	$\times$
01	1	1	$\times$	$\times$
11	0	1	$\times$	$\times$
10	1	1	$\times$	$\times$

$$K_1 = y_0 + \overline{y_2}\,x_1 x_0$$

K-map $y_2 = 0$:

$x_1 x_0 \backslash y_1 y_0$	00	01	11	10
00	$\times$	$\times$	1	0
01	$\times$	$\times$	1	0
11	$\times$	$\times$	1	1
10	$\times$	$\times$	1	0

K-map $y_2 = 1$:

$x_1 x_0 \backslash y_1 y_0$	00	01	11	10
00	$\times$	$\times$	$\times$	0
01	$\times$	$\times$	$\times$	0
11	$\times$	$\times$	$\times$	0
10	$\times$	$\times$	$\times$	0

$y_2 = 0$

$y_1 y_0$ / $x_1 x_0$	00	01	11	10
00	0	1	1	0
01	0	1	1	0
11	0	1	1	0
10	0	0	1	0

$y_2 = 1$

$y_1 y_0$ / $x_1 x_0$	00	01	11	10
00	X	X	X	X
01	X	X	X	X
11	X	X	X	X
10	X	X	X	X

$$J_2 = y_1 y_0 + y_0 \bar{x_1} + y_0 x_0$$

$y_2 = 0$

$y_1 y_0$ / $x_1 x_0$	00	01	11	10
00	X	X	X	X
01	X	X	X	X
11	X	X	X	X
10	X	X	X	X

$y_2 = 1$

$y_1 y_0$ / $x_1 x_0$	00	01	11	10
00	0	0	X	0
01	0	0	X	0
11	0	0	X	0
10	0	1	X	0

$$k_2 = y_0 x_1 \bar{x_0}$$

$$J_0 = \bar{y_2} + \bar{y_1} x_1 x_0 \qquad k_0 = 1$$

$$J_1 = \bar{y_0} \bar{x_1} + x_1 \bar{x_0} + y_2 y_0 \qquad k_1 = y_0 + \bar{y_2} x_1 x_0$$

$$J_2 = y_1 y_0 + y_0 \bar{x_1} + y_0 x_0 \qquad k_2 = y_0 x_1 \bar{x_0}$$

Saída: estado d|

$\hookrightarrow$ D   0 1 0