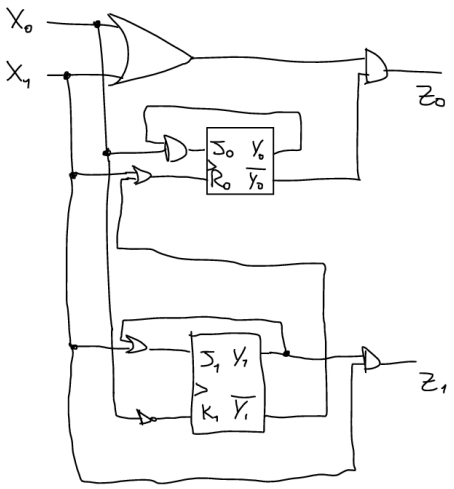
Lezione 15

Esercizio, Automa a stati finiti, Trasformazione da Moore a Mealy

Esercizio, Automa a stati finiti, Trasformazione da Moore a Mealy

Es. 7 27/6/2018



E.B

$S_0 = X_0 Y_0$

$k_0 = X_1 + \overline{Y_1}$

$S_1 = X_1 + Y_1$

$K_1 = \overline{X_0}$

$Z_0 = (X_0 + X_1)\,\overline{Y_0}$

$Z_1 = X_1 Y_1$

Jk	Y
00	Y
01	0
10	1
11	$\overline{Y}$

Tavola stati futuri

$X_0X_1Y_0Y_1$	J_0K_0	J_1K_1	Z_0Z_1	Y_0Y_1
0000	01	01	00	00
0001	00	11	00	00
0010	01	01	00	00
0011	00	11	00	10
0100	01	11	10	01
0101	01	11	11	00
0110	01	11	00	01
0111	01	11	01	00
1000	01	00	10	00
1001	00	10	10	01
1010	11	00	00	00
1011	10	10	00	11
1100	01	10	10	01
1101	01	10	11	01
1110	01	10	00	01
1111	01	10	01	01

Nomi simbolici

$Y_0\,Y_1$
$0\,0 \rightarrow S_0$
$0\,1 \rightarrow S_1$
$1\,0 \rightarrow S_2$
$1\,1 \rightarrow S_3$

	00	01	10	11
S_0	$S_0/00$	$S_1/10$	$S_2/10$	$S_3/10$
S_1	$S_0/00$	$S_1/11$	$S_3/10$	$S_3/11$
S_2	$S_0/00$	$S_1/00$	$S_2/00$	$S_3/00$
S_3	$S_2/00$	$S_0/01$	$S_2/00$	$S_3/01$

Stati

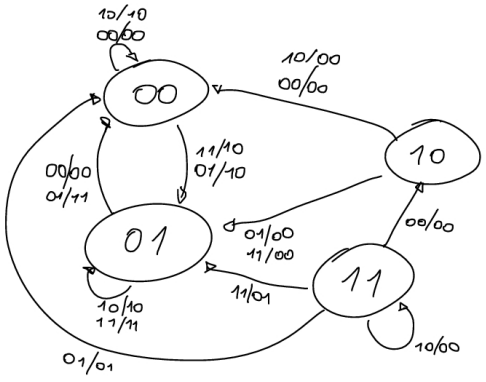
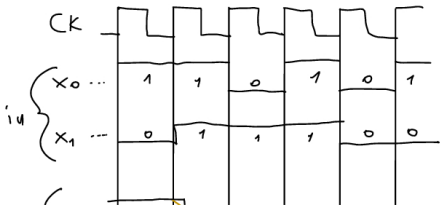
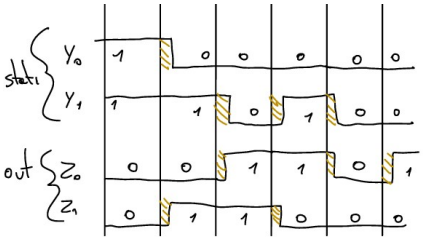


Diagramma temporale

Da $Y_0Y_1 = 11$

X_0 1 1 0 1 0 1
X_1 0 1 1 1 0 0





- Automa a stati finiti

$< Q, \Sigma, \delta, q_0, U, \lambda >$

Q = insieme finito degli stati

Σ = Alfabeto finito di ingresso

δ = funzione di transizione

$\rightarrow Q \times \Sigma \rightarrow Q$

q_0 = Stato iniziale

U = Alfabeto di uscita

λ = Funzione di uscita

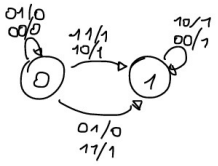
Modello di Mealy

$\lambda_{mealy} : Q \times \Sigma \rightarrow U$

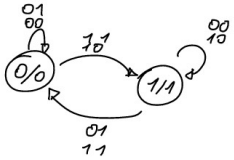
Modello di Moore

$\lambda_{moore} : Q \rightarrow U$

Automa del FF JK

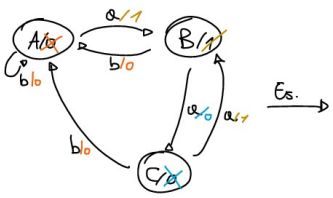


Mealy

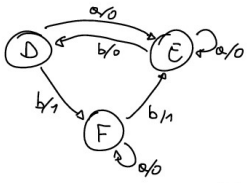


Moore

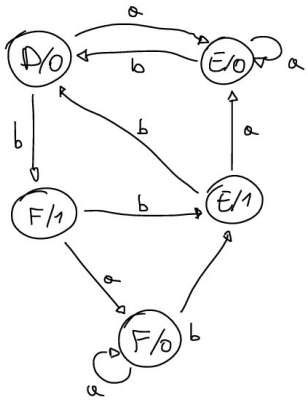
- Trasformazione da Moore a Mealy



Es.



Moore



	a	b
D	E/0	F/1
E	E/0	D/0
F	F/0	E/1