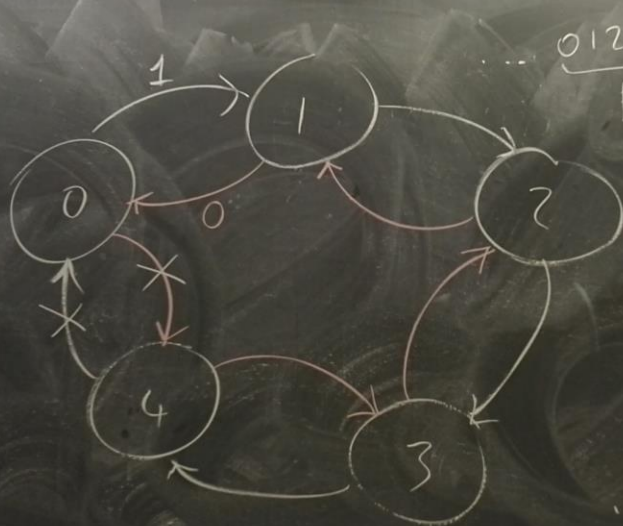
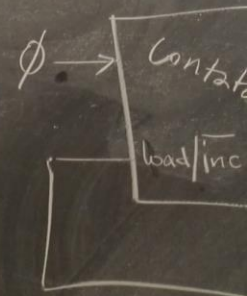


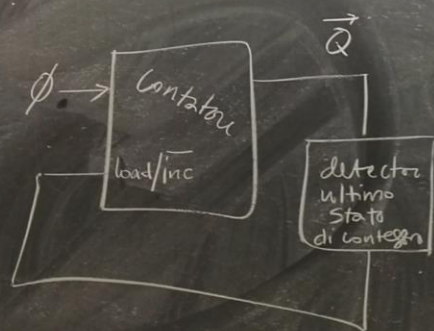


... 0 1 2 3 4 3 2 1 0 1 2 ...
período 8

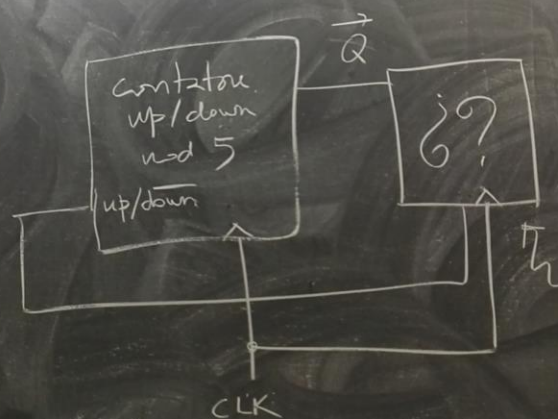
... 0 1 3 3 2 4 1 2 ...



3 2 1 0 1 2 ...
4 6 8

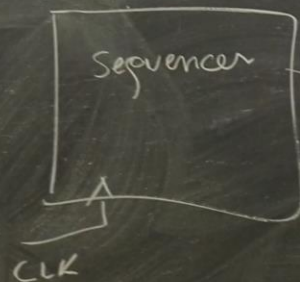


4 1 2 ...



L'import

L'importanza della funzione g



$$\vec{Q}(t) = \dots \underbrace{01234321012\dots}$$

t



$\vec{Q}(up)$

0
1
2
3
4
5
6
7
0
1
2

$g(\vec{Q})$

0
1
2
3
4
3
2
1

Rite!
comb.



$$X = 10 \text{ €}$$

$$F = \max$$

$$Y = 1 \text{ M €}$$

$$1 = \varphi x + \bar{\varphi} \bar{x}$$

vincolo

$$1 = \bar{x} y$$

obiettivo

$\varphi(x, y)$ tale che vincolo = obiettivo

x	y	φ
0	0	
0	1	
1	0	
1	1	

vincolo

obiettivo

obiettivo

x	y	$\varphi(x,y)$
0	0	φ_0
0	1	φ_1
1	0	φ_2
1	1	φ_3

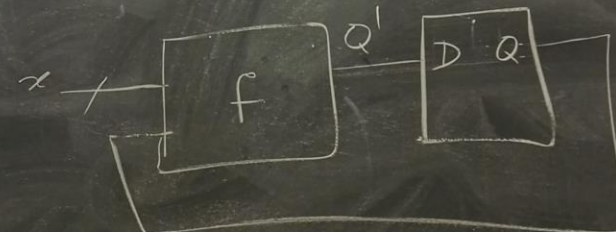
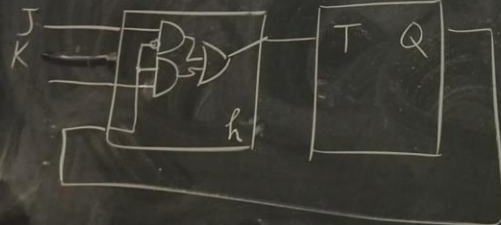
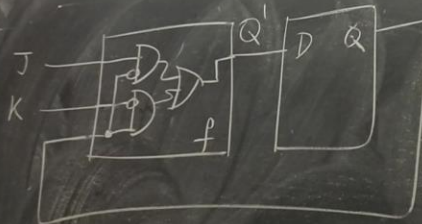
vincolo

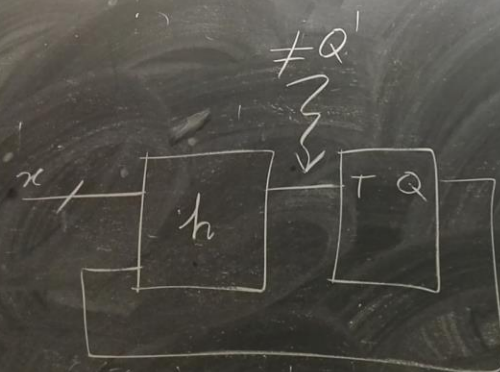
obiettivo

$\varphi(x,y)\bar{x} + \overline{\varphi(x,y)}\bar{x} = \bar{x}y$	$\varphi(x,y)$
$\bar{\varphi}_0$	1
$\bar{\varphi}_1$	0
φ_2	0
φ_3	0

$$\varphi(x,y) = \bar{x}y$$

Sintesi vincolata





$\longleftrightarrow$



Realizzazione in FF JK partendo da un FF T

JKQ	Q' obiettivo $J\bar{Q} + KQ$	Q' vincolo $\bar{T}\bar{Q} + TQ$	T
0 0 0	0	$\bar{T}_0$	0
0 0 1	1	$\bar{T}_1$	0
0 1 0	0	$\bar{T}_2$	0
0 1 1	0	$\bar{T}_3$	1
1 0 0	1	$\bar{T}_4$	0
1 0 1	1	$\bar{T}_5$	1
1 1 0	1	$\bar{T}_6$	1
1 1 1	0	$\bar{T}_7$	1

$$T = h(J, K, Q)$$

T_0
 T_1
 T_2
 $\vdots$
 T_7

Vincolo = obiettivo

Q	JK			
	00	01	11	10
0	0	0	1	1
1	0	1	1	0

$$T = h(J, K, Q) = J\bar{Q} + KQ$$



VIETATO FUMARE

colata

JKQ	$Q^{desiderato}$	$Q \rightarrow Q^{desiderato}$
0 0 0	0	hold v reset
0 0 1	1	hold v set
0 1 0	0	reset v hold
0 1 1	0	reset v toggle
1 0 0	1	set v toggle
1 0 1	1	set v hold
1 1 0	1	toggle v set
1 1 1	0	toggle v reset

vincolo =
transizione
realizzabile con il T

hold
hold
hold
toggle
toggle
hold
toggle
toggle

ingresso T per realizzare
la transizione desiderata

0
0
0
1
1
0
1
1

Tabella
delle
eccitazioni

ingresso per realizzare
la transizione desiderata

0
0
0
1
1
0
1
1

Tabella
della
eccitazioni

TQ	Q'
00	0
01	1
10	1
11	0

} hold
} toggle

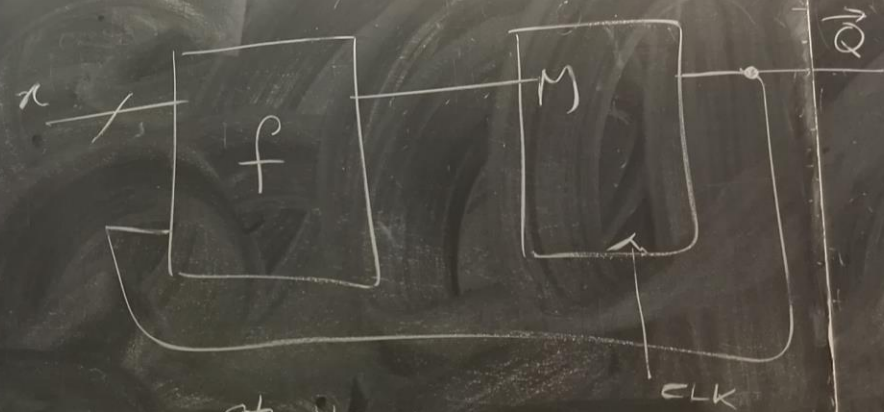
Realizzare

J	K	Q'
0	0	0
0	0	1
0	1	0
0	1	1
1	0	0
1	0	1
1	1	0
1	1	1

Registro a scorrimento

all'ora gr visto

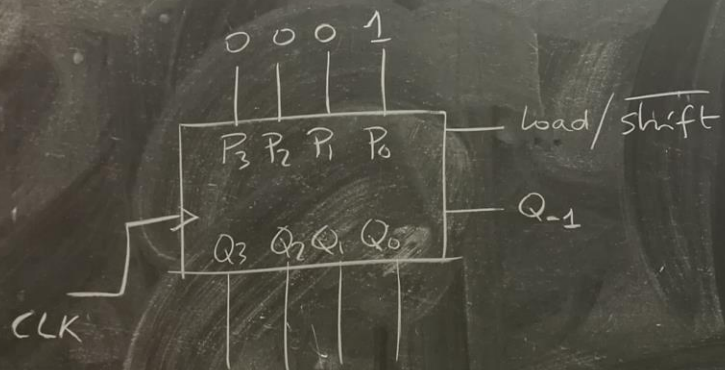
- reg. stato
- " dati
- " Contatore



struttura generale
di un registro

$\vec{Q}$

Q1. : LEFT
SHIFT
REGISTER a 4 bit



op	Q'_3	Q'_2	Q'_1	Q'_0
load	P_3	P_2	P_1	P_0
shift	Q_2	Q_1	Q_0	Q_{-1}

op	Q_3'	Q_2'	Q_1'	Q_0'
hold	Q_3	Q_2	Q_1	Q_0
load	P_3	P_2	P_1	P_0
shl	Q_2	Q_1	Q_0	Q_{-1}
shr	Q_4	Q_3	Q_2	Q_1

