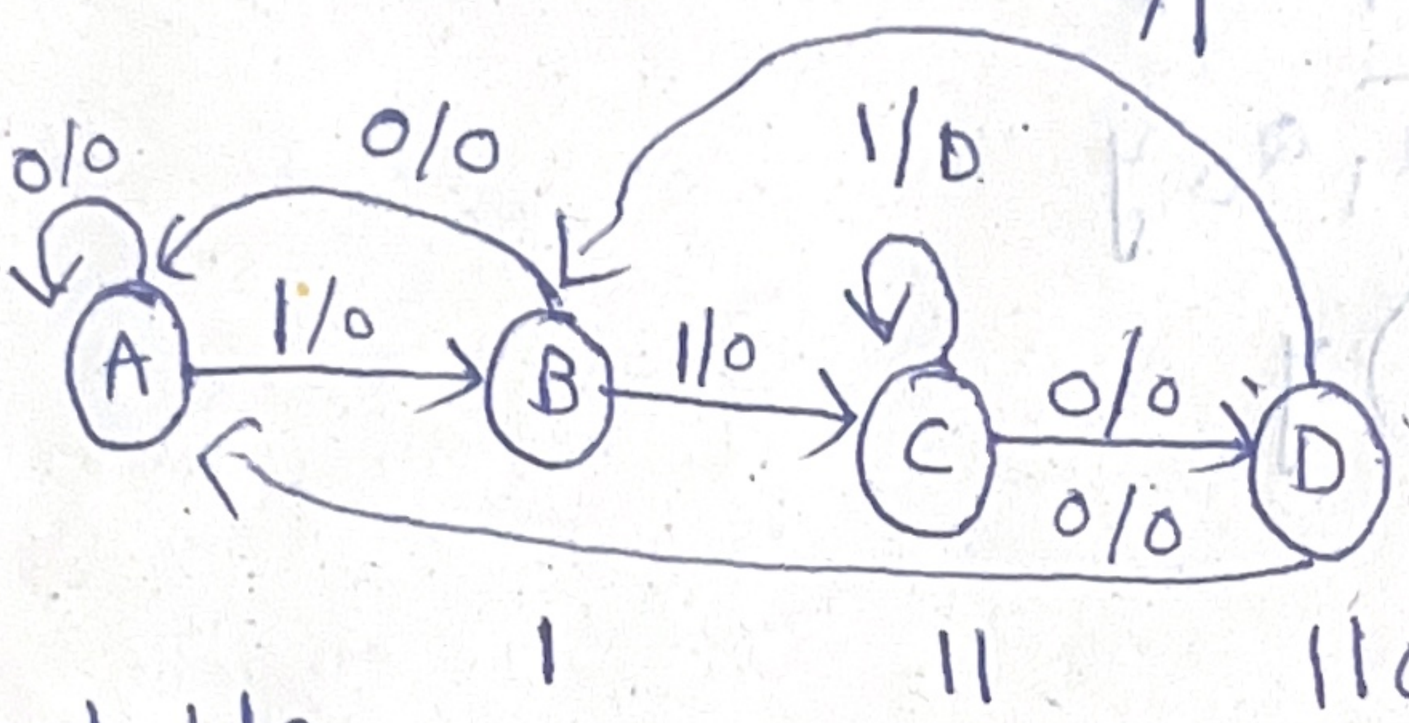
Fsm based sequence detector (overlapping) mealy

1101

* N states for mealy
* 4 states A, B, C, D
* [illegible] flipflops required



FSM table

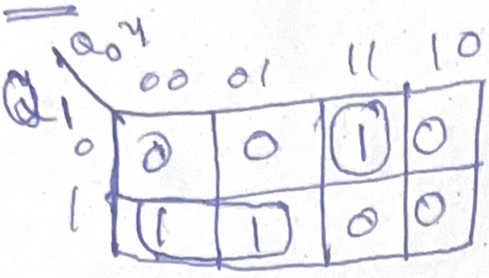
State	N.S x=0	N.S x=1	output x=0	output x=1
A	A	B	0	0
B	A	C	0	0
C	D	C	0	0
D	A	B	0	1

A = 00
B = 01
C = 10
D = 11

$q_1 q_0$	x	q_1^+	q_0^+	D_1	D_0	y
00	0	0	0	0	0	0
00	1	0	1	0	1	0
01	0	0	0	0	0	0
01	1	1	0	1	0	0
10	0	0	1	1	0	0
10	1	1	0	1	0	0
11	0	0	1	0	1	0
11	1	1	1	0	1	1

Kmaps

D_1

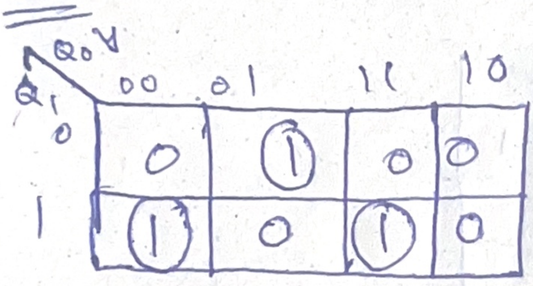


$Q_1\overline{Q_0} + \overline{Q_1}Q_0y$

$D_1 \Rightarrow Q_1\overline{Q_0} + \overline{Q_1}Q_0y$

$\Rightarrow (Q_1 \oplus Q_0)y$

D_0

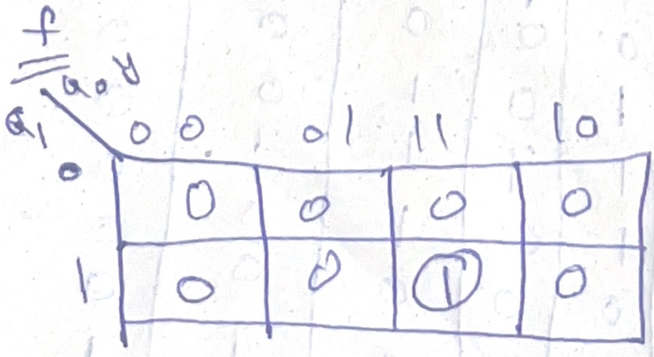


$Q_1\overline{Q_0}\,\overline{y} + \overline{Q_1}\overline{Q_0}y + Q_1Q_0y$

$\Rightarrow \overline{Q_0}\,\overline{y}(Q_1 + \overline{Q_1}) + Q_1Q_0y$

$\Rightarrow \overline{Q_0}\,\overline{y} + Q_1Q_0y$

f



$f \Rightarrow Q_1Q_0y$