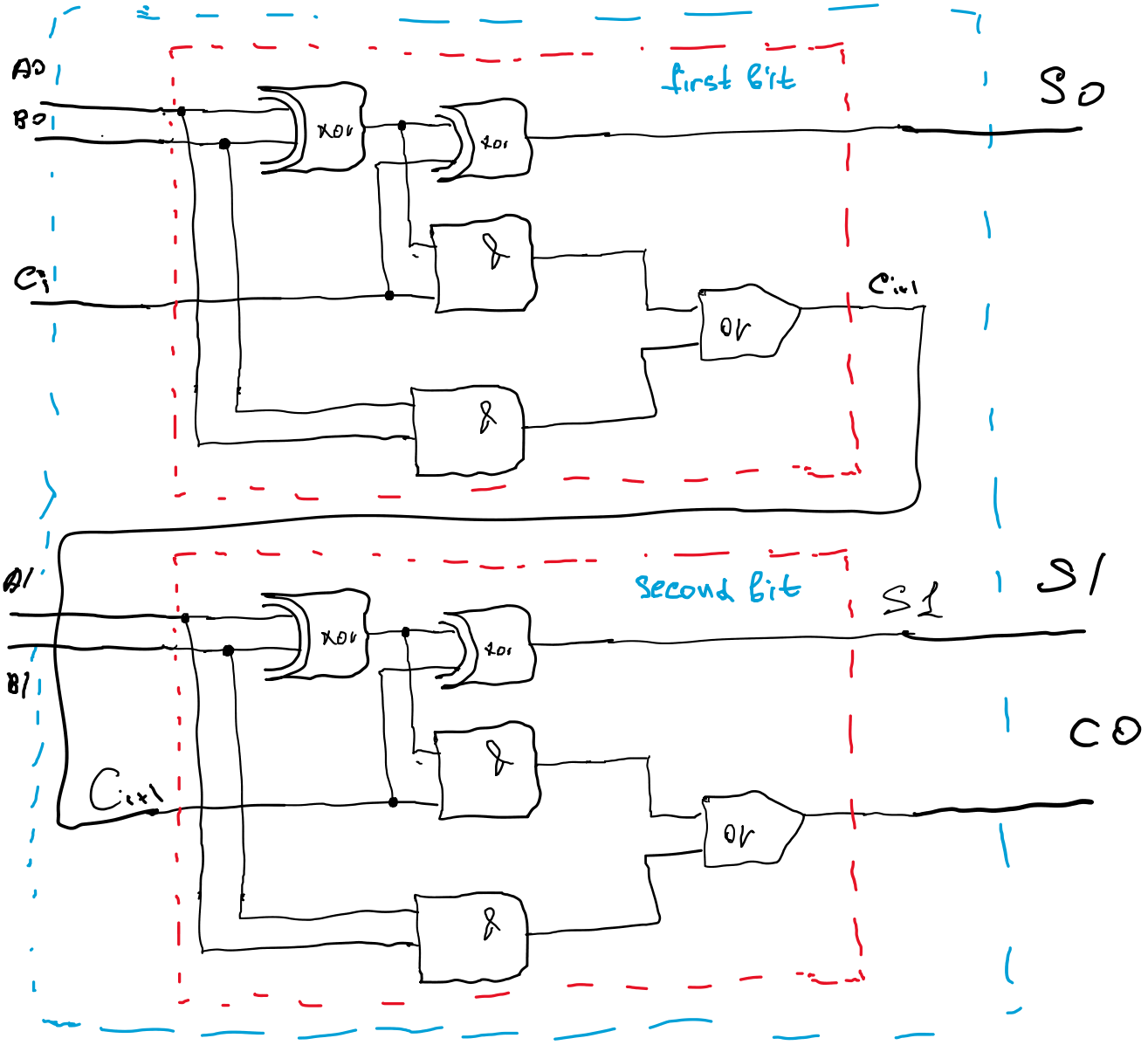
1 ex.



* $S0(A0, B0, C) = (A0 \text{ xor } B0) \text{ and } Ci$

$C_{i+1} = (A0 \text{ and } B0) \text{ or } (C_i \text{ and } (A0 \text{ xor } B0))$

* $S1 = (A1 \text{ xor } B1) \text{ and } C_{i+1} =$

$= (A1 \text{ xor } B1) \text{ and } [(A_0 \text{ and } B_0) \text{ or } (C_i \text{ and } (A0 \text{ xor } B0))]$

* $C0 = (A1 \text{ and } B1) \text{ or } (C_{i+1} \text{ and } (A0 \text{ xor } B0)) =$

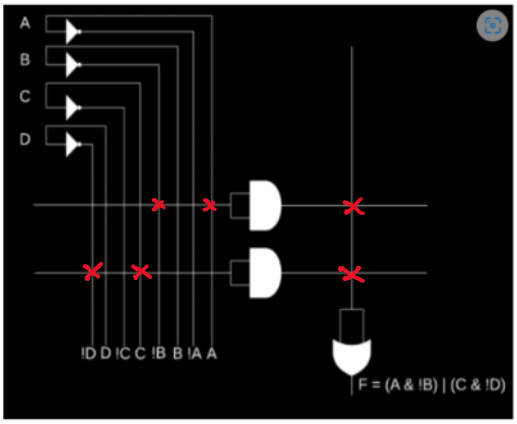
$= (A1 \text{ and } B1) \text{ or } [((A_0 \text{ and } B0) \text{ or } (Ci \text{ and } (A0 \text{ xor } B0))) \text{ and } (A0 \text{ xor } B0)]$

= (A1 and B1) or [((A0 and B0) or (C1 and (A0 xor B0))) and (A0 xor B0)]

2 ex.

2. Show how the logic equation **(A AND NOT(B)) OR (C AND NOT(D))** can be implemented using the following:

A. The PLA shown here:



B. The LUT shown here:

RAM CONTENTS				
Address				Output Data
A	B	C	D	F
0	0	0	0	0
0	0	0	1	0
0	0	1	0	1
0	0	1	1	0
0	1	0	0	0
0	1	0	1	0
0	1	1	0	1
0	1	1	1	0
1	0	0	0	1
1	0	0	1	1
1	0	1	0	1
1	0	1	1	1
1	1	0	0	0
1	1	0	1	0
1	1	1	0	1
1	1	1	1	0

F = (A & !B) | (C & !D)