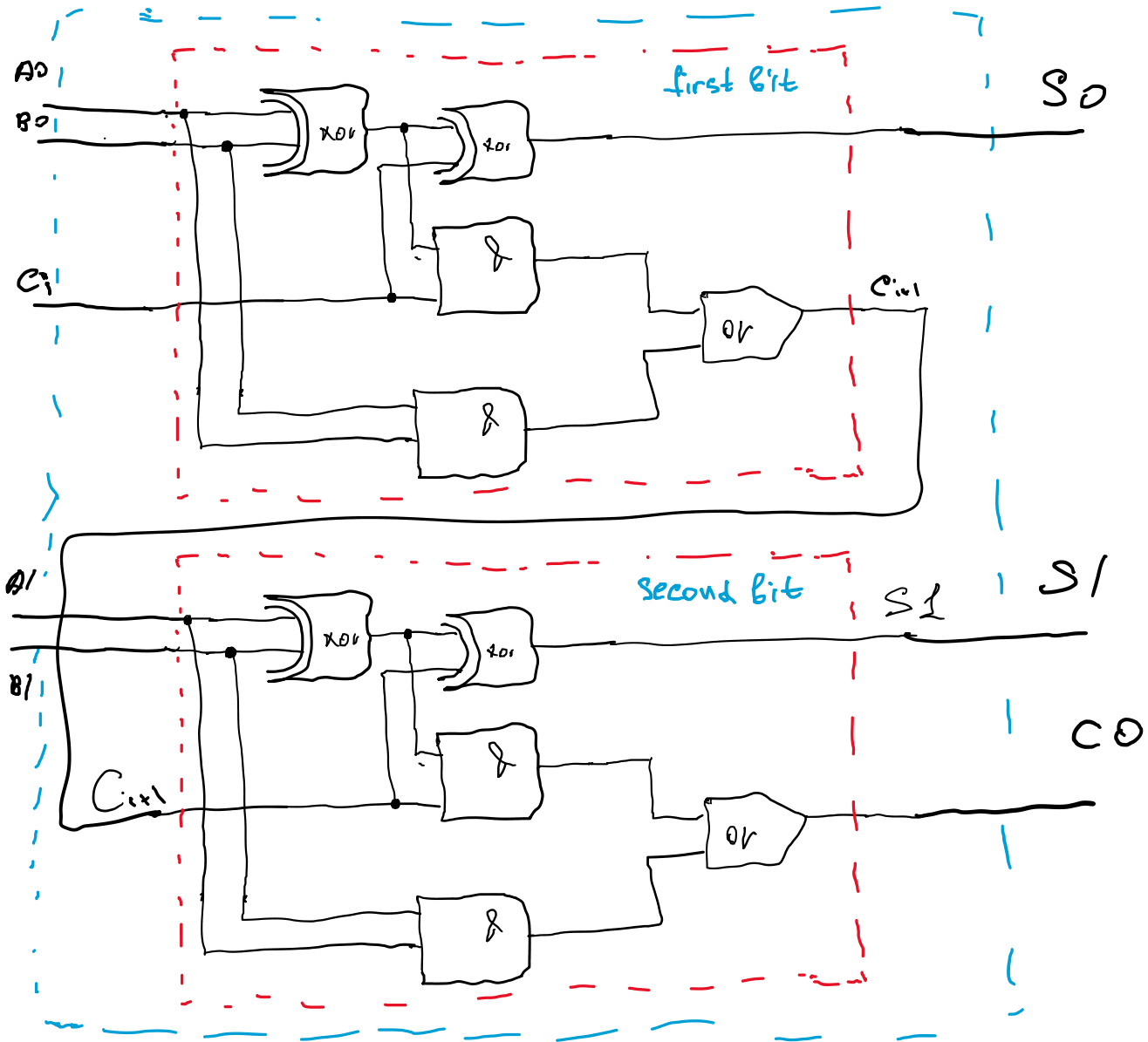


1 ex.



$$* S_0(A_0, B_0, C) = (A_0 \text{ xor } B_0) \text{ and } C_i$$

$$C_{i+1} = (A_0 \text{ and } B_0) \text{ or } (C_i \text{ and } (A_0 \text{ xor } B_0))$$

$$* S_1 = (A_1 \text{ xor } B_1) \text{ and } C_{i+1} =$$

$$= (A_1 \text{ xor } B_1) \text{ and } [(A_0 \text{ and } B_0) \text{ or } (C_i \text{ and } (A_0 \text{ xor } B_0))]$$

$$* C_0 = (A_1 \text{ and } B_1) \text{ or } (C_{i+1} \text{ and } (A_0 \text{ xor } B_0)) =$$

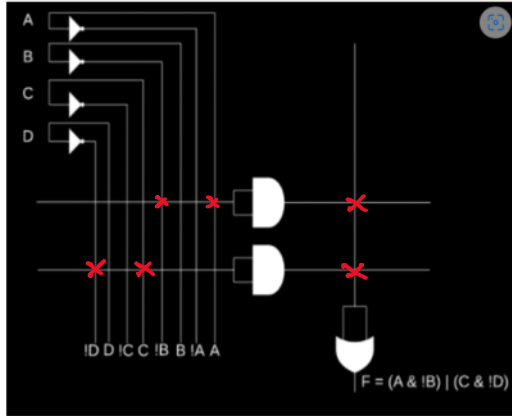
$$= (A_1 \text{ and } B_1) \text{ or } [(A_0 \text{ and } B_0) \text{ or } (C_i \text{ and } (A_0 \text{ xor } B_0))] \text{ and } (A_0 \text{ xor } B_0)$$

$$= (A_1 \text{ and } B_1) \text{ or } \left[\left((A_0 \text{ and } B_0) \text{ or } (C_1 \text{ and } (A_0 \text{ xor } B_0)) \right) \text{ and } (A_0 \text{ xor } B_0) \right]$$

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

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

