CIS 351 Sample SL4 Problem

06 September 2025

SL4: Tracing Sequential Circuits

(a) Complete the characteristic table for the circuit shown below.

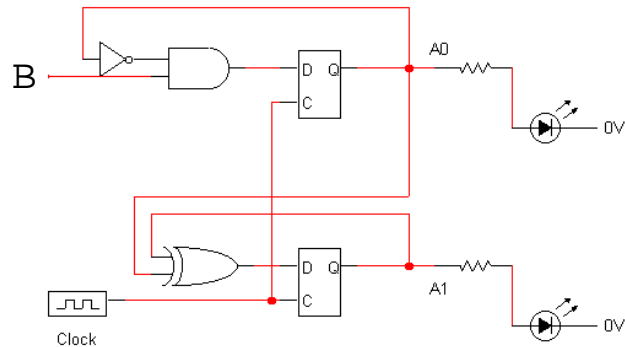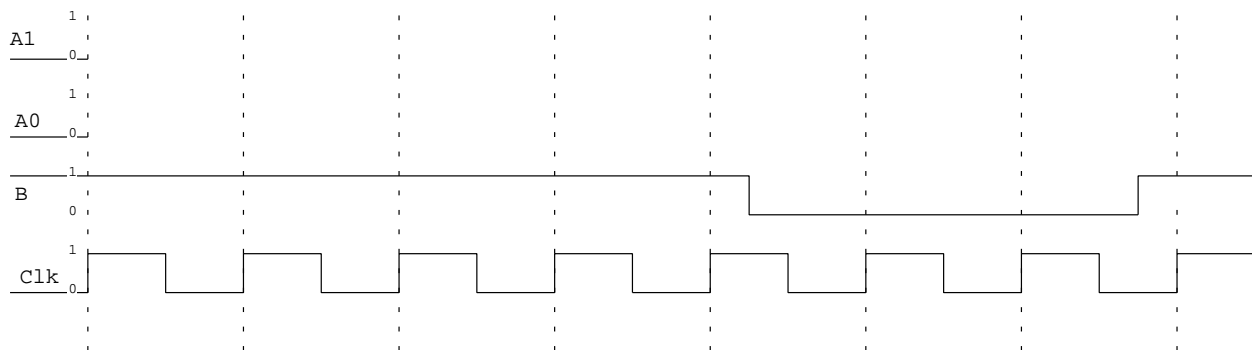| Current state			Next State	
B	A_0	A_1	A_0	A_1
0	0	0		
0	0	1		
0	1	0		
0	1	1		
1	0	0		
1	0	1		
1	1	0		
1	1	1		

Figure 3-4

(b) Now complete the following timing diagram. Again, remember that the flip-flops are positive-edge triggered. This means that A_0 and A_1 *will change* **only** *when the clock rises from 0 to 1!*

CIS 351 Sample SL4 Problem Solutions

Fri 26th Sept, 2025

SL4: Tracing Sequential Circuits

(a) Complete the characteristic table for the circuit shown below.

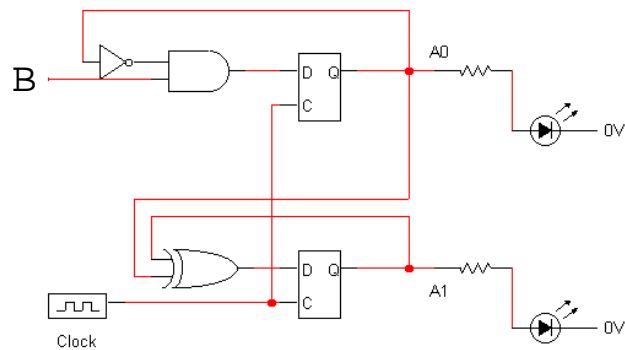| Current state			Next State	
B	A_0	A_1	A_0	A_1
0	0	0	0	0
0	0	1	0	1
0	1	0	0	1
0	1	1	0	0
1	0	0	1	0
1	0	1	1	1
1	1	0	0	1
1	1	1	0	0

Figure 3-4

(b) Now complete the following timing diagram. Again, remember that the flip-flops are positive-edge triggered. This means that A_0 and A_1 *will change* **only** *when the clock rises from 0 to 1!*