INF1400 - oblig 2

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1 Report

I began by sketching a finite state machine of how the code lock should operate. Opened Logisim, added inputs and outputs, adjusted the table and generated the circuit. Tried to enter the code, got the "Oscillation detected" error, quickly added the flip-flops. And it worked like a charm after that. I made the flip-flop circuit because there's a visual scaling bug with the built in library one.

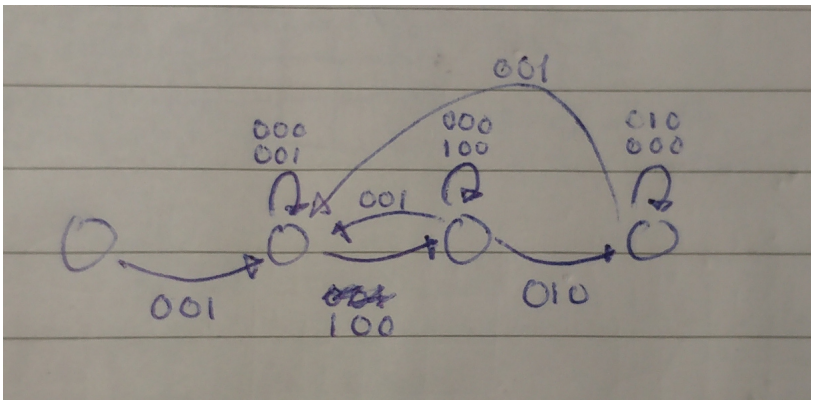

Figure 1: Finite state machine sketch

Q1	Q0	x2	x1	x0	D1	D0	OUT
0	0	0	0	0	0	0	0
0	0	0	0	1	0	1	0
0	0	0	1	0	0	0	0
0	0	0	1	1	0	0	0
0	0	1	0	0	0	0	0
0	0	1	0	1	0	0	0
0	0	1	1	0	0	0	0
0	0	1	1	1	0	0	0
0	1	0	0	0	0	1	0
0	1	0	0	1	0	1	0
0	1	0	1	0	0	0	0
0	1	0	1	1	0	0	0
0	1	1	0	0	1	1	0
0	1	1	0	1	0	0	0
0	1	1	1	0	0	0	0
0	1	1	1	1	0	0	0
1	0	0	0	0	x	x	x
1	0	0	0	1	x	x	x
1	0	0	1	0	x	x	x
1	0	0	1	1	x	x	x
1	0	1	0	0	x	x	x
1	0	1	0	1	x	x	x
1	0	1	1	0	x	x	x
1	0	1	1	1	x	x	x
1	1	0	0	0	1	1	0
1	1	0	0	1	0	1	0
1	1	0	1	0	1	1	1
1	1	0	1	1	0	0	0
1	1	1	0	0	1	1	0
1	1	1	0	1	0	0	0
1	1	1	1	0	0	0	0
1	1	1	1	1	0	0	0

Figure 2: I/O table

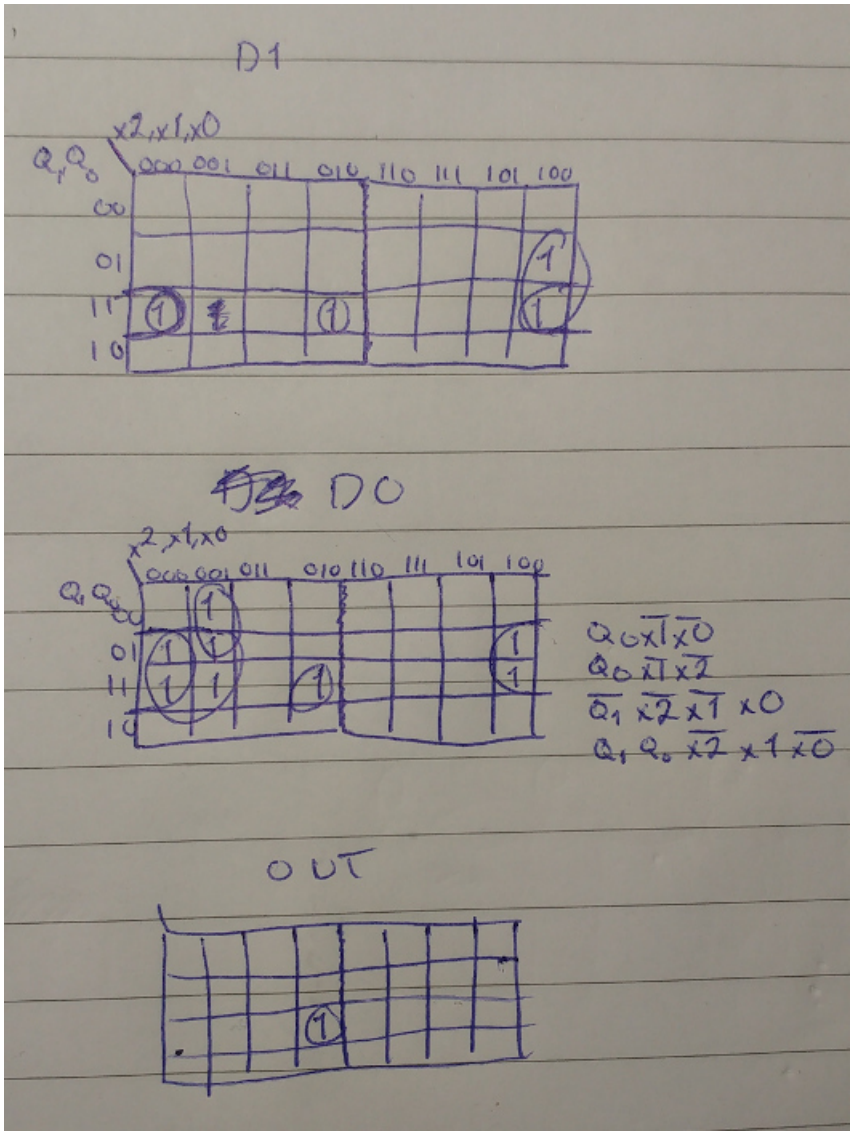

Figure 3: K-maps