Part 1:

A'B'C + A

Part 1: Dataflow Modeling

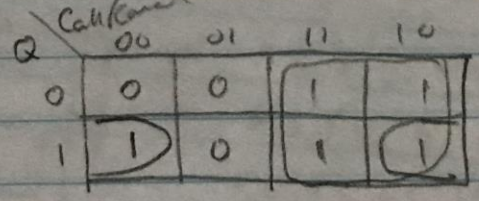
| Call | Cancel | Q | D | |
|---|---|---|---|---|
| 0 | 0 | 0 | 0 | |
| 0 | 0 | 1 | 1 | ← |
| 0 | 1 | 0 | 0 | |
| 0 | 1 | 1 | 0 | |
| 1 | 0 | 0 | 1 | ← |
| 1 | 0 | 1 | 1 | ← |
| 1 | 1 | 0 | 1 | ← |
| 1 | 1 | 1 | 1 | ← |

next_state = (Call' · Cancel' · Q) + (Call · Cancel') + (Call · Cancel)

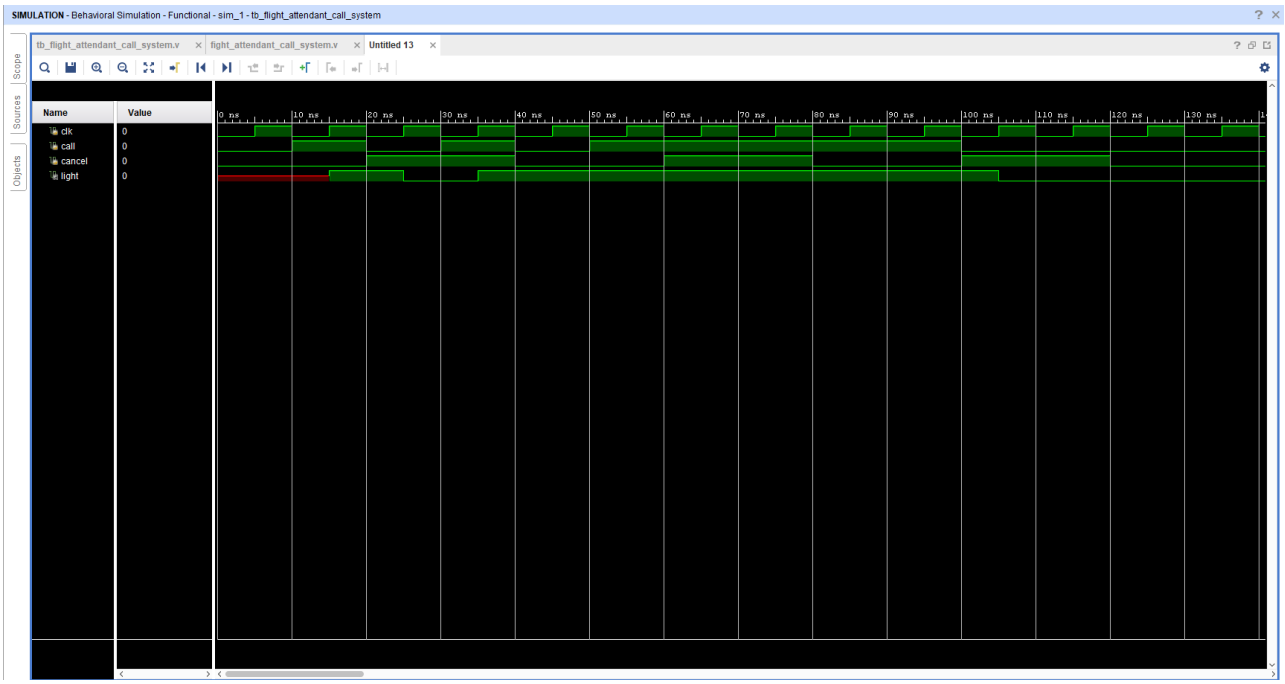
= (Call' · Cancel' · Q) + Call

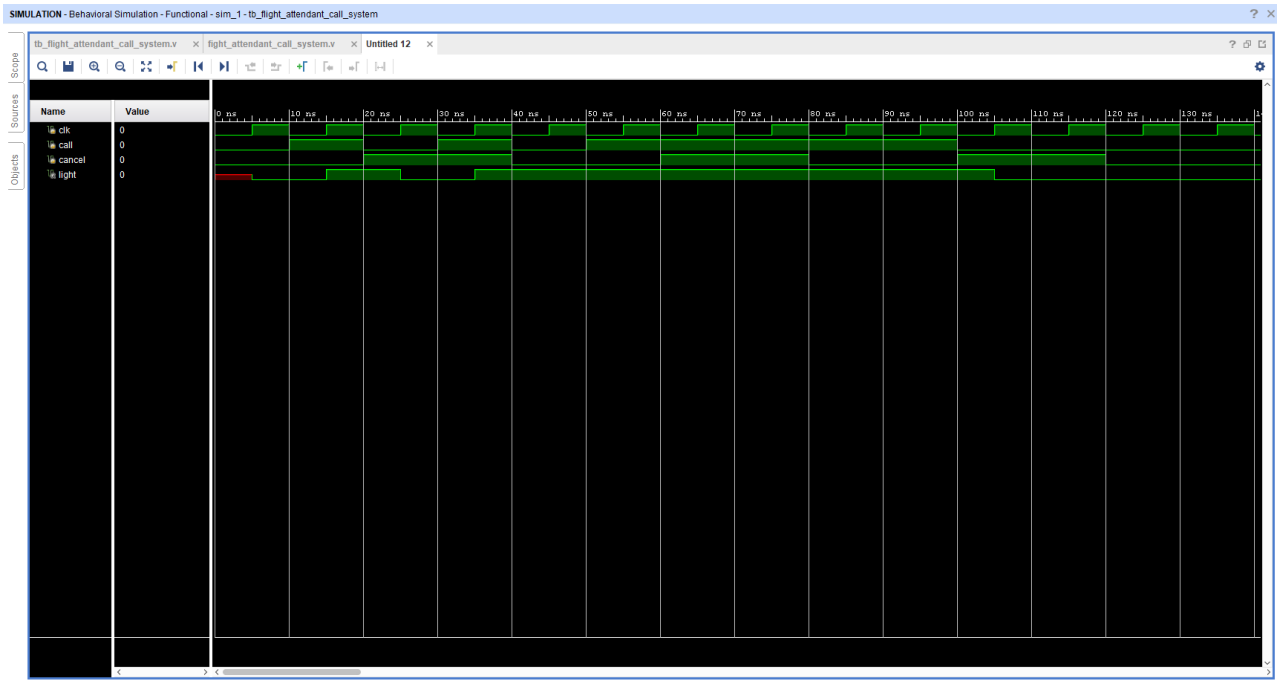
= Call + Cancel' · Q

Via K-Map:

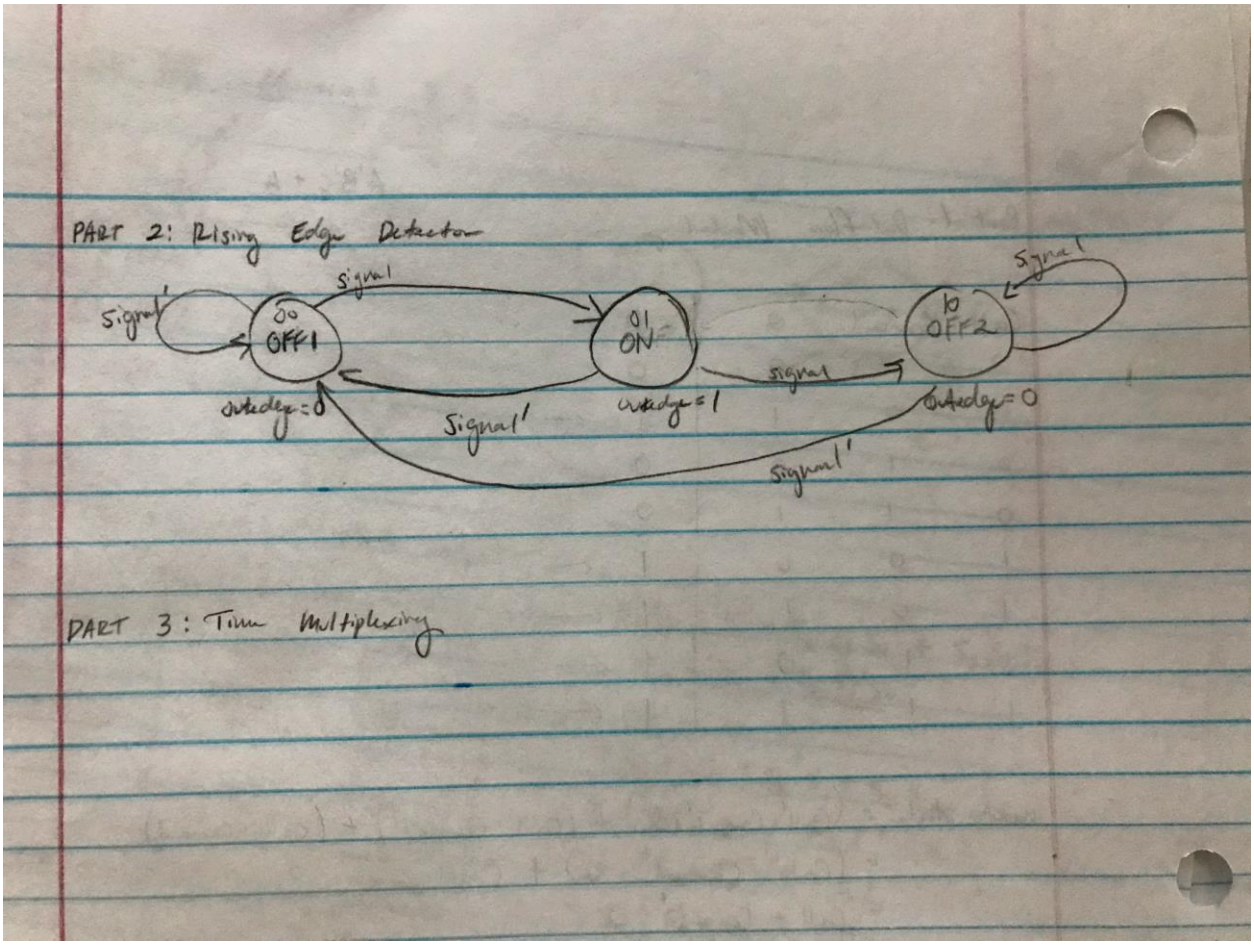


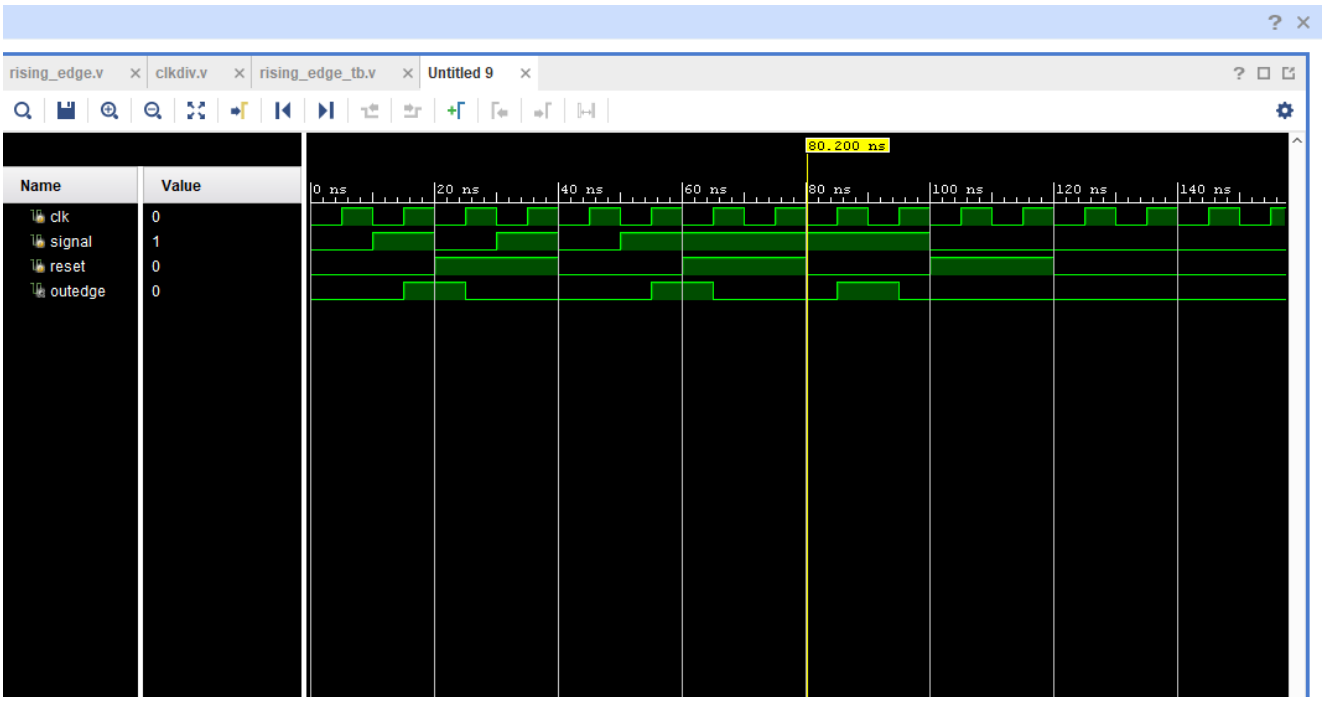

next_state = Call + Cancel' · Q


SIMULATION - Behavioral Simulation - Functional - sim_1 - tb_flight_attendant_call_system
tb_flight_attendant_call_system.v
fight_attendant_call_system.v
Untitled 13
Scope
Sources
Objects
Name
Value
clk
call
cancel
light
0
0 ns
10 ns
20 ns
30 ns
40 ns
50 ns
60 ns
70 ns
80 ns
90 ns
100 ns
110 ns
120 ns
130 ns


SIMULATION - Behavioral Simulation - Functional - sim_1 - tb_flight_attendant_call_system
tb_flight_attendant_call_system.v
fight_attendant_call_system.v
Untitled 12
Scope
Sources
Objects
Name
Value
clk
call
cancel
light
0
0 ns
10 ns
20 ns
30 ns
40 ns
50 ns
60 ns
70 ns
80 ns
90 ns
100 ns
110 ns
120 ns
130 ns

Part 2:


PART 2: Rising Edge Detector
Signal'
Signal
00
OFF1
01
ON
10
OFF2
Signal
Signal'
outedge=0
outedge=1
Signal
outedge=0
Signal'
PART 3: Time Multiplexing


rising_edge.v
clkdiv.v
rising_edge_tb.v
Untitled 9
Name
Value
clk
0
signal
1
reset
0
outedge
0
80.200 ns
0 ns
20 ns
40 ns
60 ns
80 ns
100 ns
120 ns
140 ns

Part 3:


SIMULATION - Behavioral Simulation - Functional - sim_1 - time_mux_state_machine_tb
time_mux_state_machine_tb.v
clk_div_disp.v
time_multiplex_main.v
time_mux_state_machine.v
Untitled 8*
Scope
Sources
Objects
Name
Value
clk
reset
sw[15:0]
an[3:0]
sseg[6:0]
0
0
c951
1011
04
100.100 ns
0 ns
10 ns
20 ns
30 ns
40 ns
50 ns
60 ns
70 ns
80 ns
90 ns
100 ns
110 ns
120 ns
130 ns
0000
0001
0051
0951
c951
1110
1101
1011
0111
01
4f
24
06
31