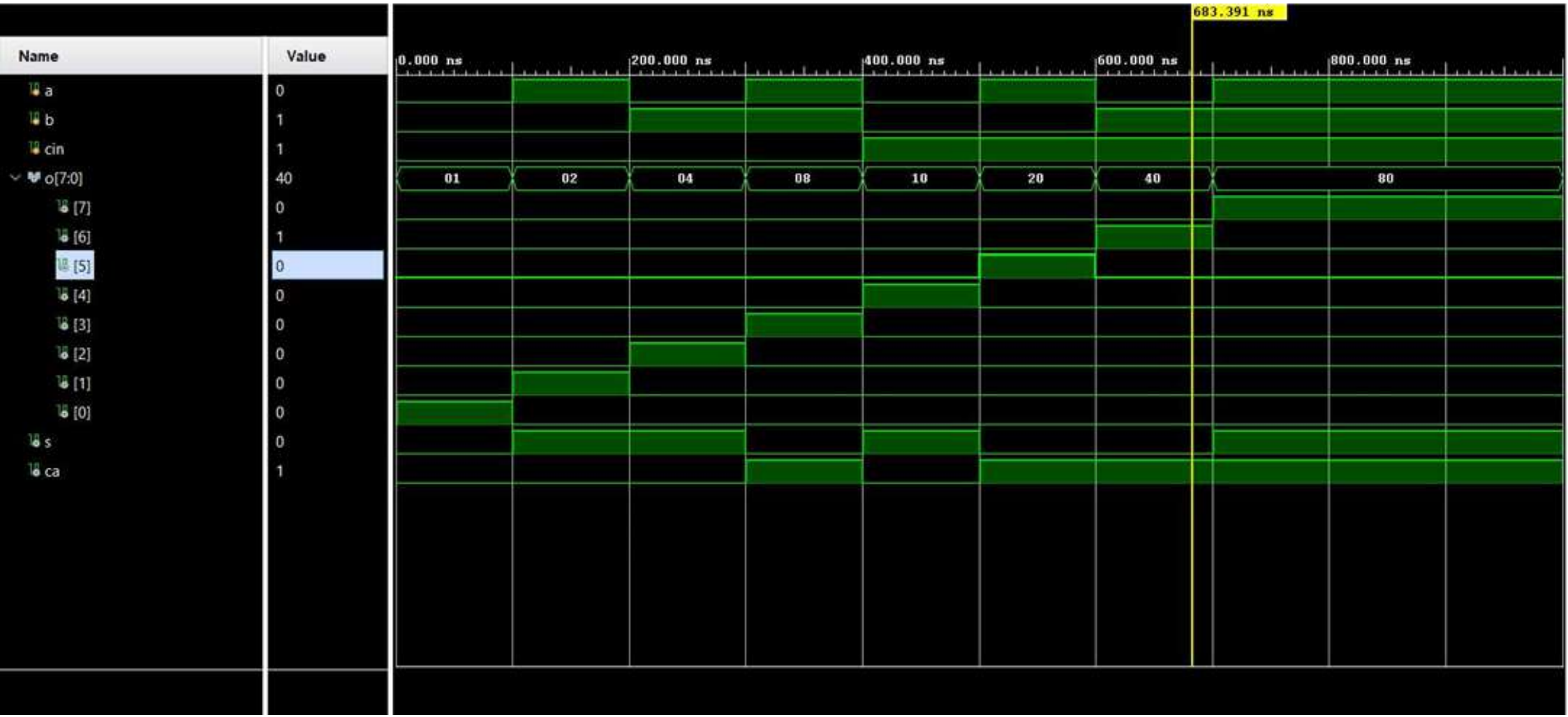
Name
Value
a
0
b
1
cin
1
o[7:0]
40
[7]
0
[6]
1
[5]
0
[4]
0
[3]
0
[2]
0
[1]
0
[0]
0
s
0
ca
1
0.000 ns
200.000 ns
400.000 ns
600.000 ns
800.000 ns
683.391 ns
01
02
04
08
10
20
40
80

fa_2to4decoder - [C:/Users/raghava guptha/fa_2to4decoder/fa_2to4decoder.xpr] - Vivado 2023.2

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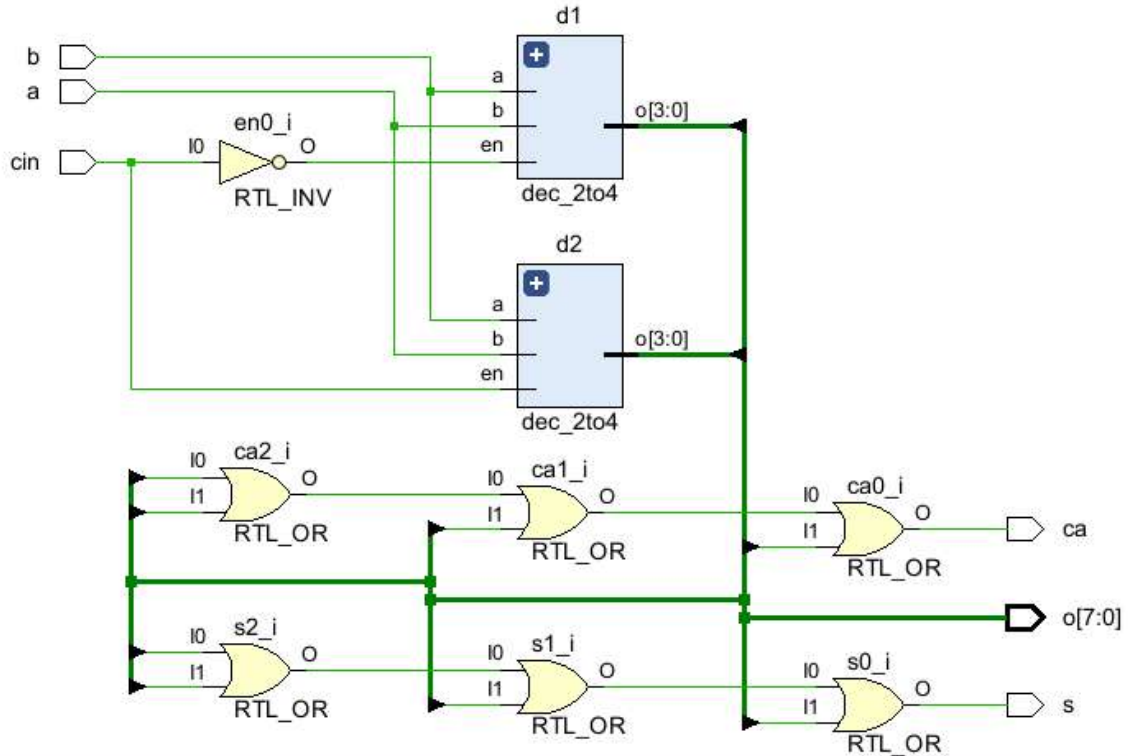
9 Cells 13 I/O Ports 18 Nets



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83°F Partly cloudy

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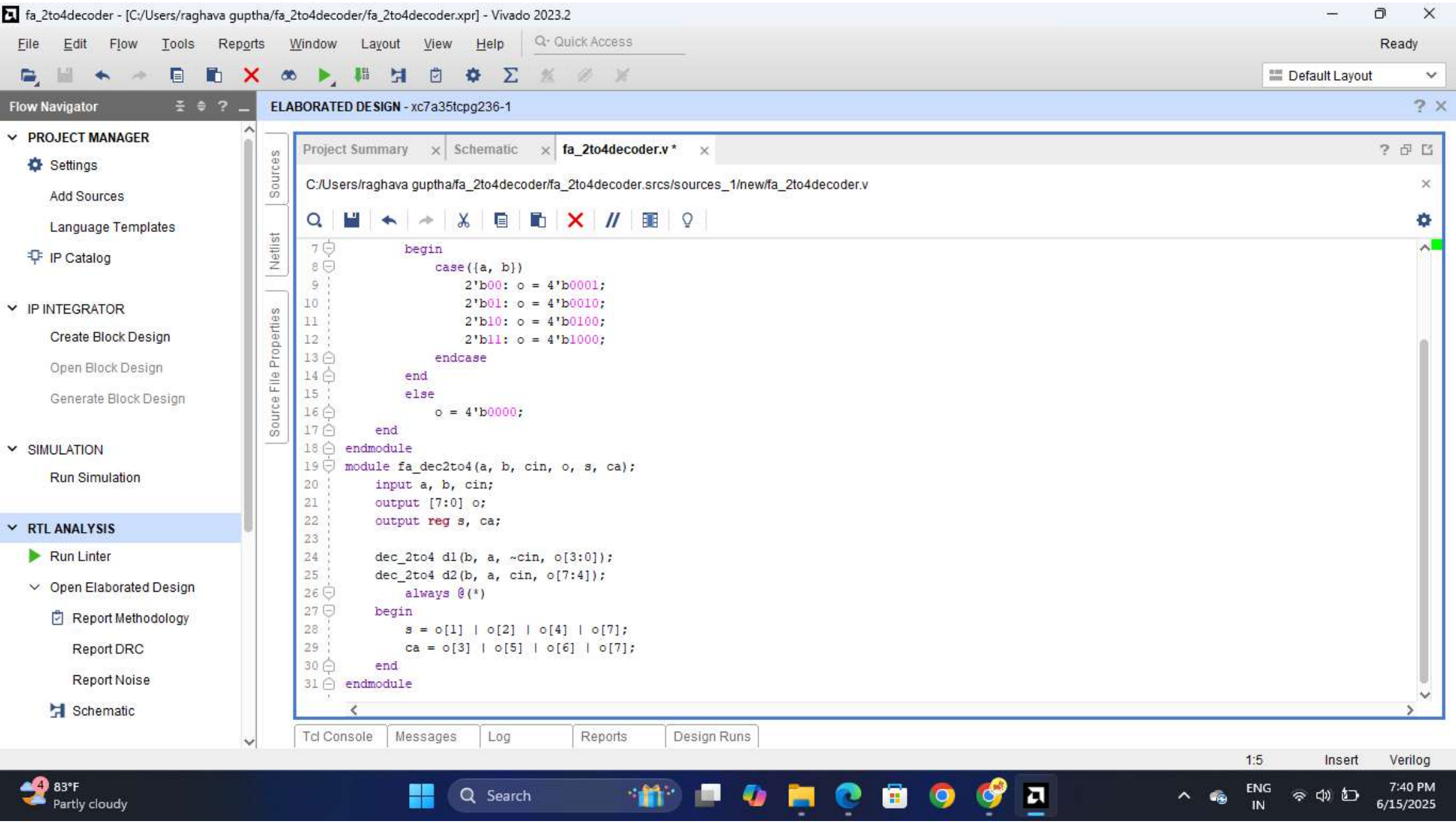
ENG IN

7:40 PM 6/15/2025


fa_2to4decoder - [C:/Users/raghava guptha/fa_2to4decoder/fa_2to4decoder.xpr] - Vivado 2023.2
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fa_2to4decoder.v *
C:/Users/raghava guptha/fa_2to4decoder/fa_2to4decoder.srcs/sources_1/new/fa_2to4decoder.v
7 begin
8 case({a, b})
9 2'b00: o = 4'b0001;
10 2'b01: o = 4'b0010;
11 2'b10: o = 4'b0100;
12 2'b11: o = 4'b1000;
13 endcase
14 end
15 else
16 o = 4'b0000;
17 end
18 endmodule
19 module fa_dec2to4(a, b, cin, o, s, ca);
20 input a, b, cin;
21 output [7:0] o;
22 output reg s, ca;
23
24 dec_2to4 d1(b, a, ~cin, o[3:0]);
25 dec_2to4 d2(b, a, cin, o[7:4]);
26 always @(*)
27 begin
28 s = o[1] | o[2] | o[4] | o[7];
29 ca = o[3] | o[5] | o[6] | o[7];
30 end
31 endmodule
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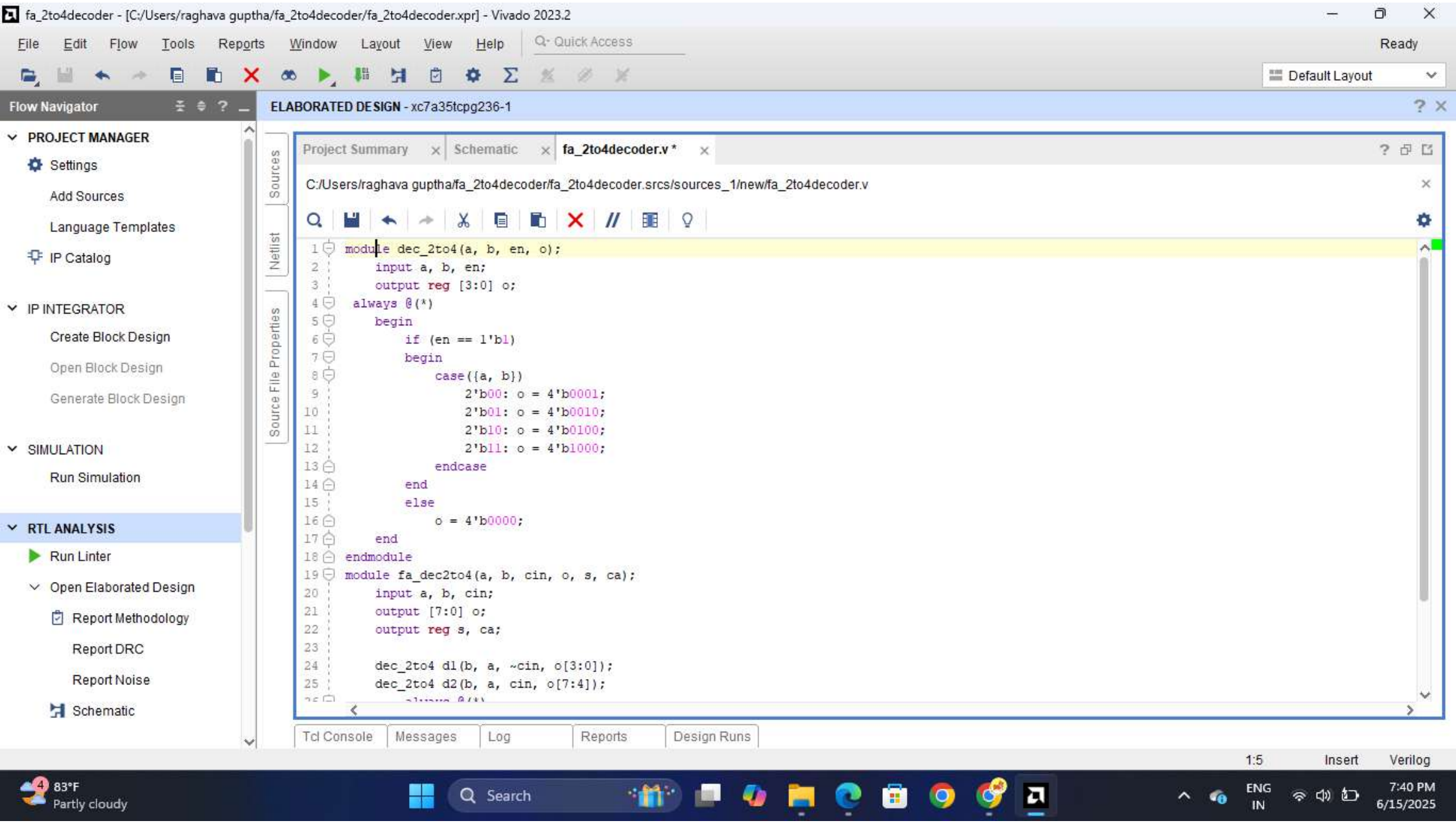
fa_2to4decoder - [C:/Users/raghava guptha/fa_2to4decoder/fa_2to4decoder.xpr] - Vivado 2023.2
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C:/Users/raghava guptha/fa_2to4decoder/fa_2to4decoder.srcs/sources_1/new/fa_2to4decoder.v
1 module dec_2to4(a, b, en, o);
2 input a, b, en;
3 output reg [3:0] o;
4 always @(*)
5 begin
6 if (en == 1'b1)
7 begin
8 case({a, b})
9 2'b00: o = 4'b0001;
10 2'b01: o = 4'b0010;
11 2'b10: o = 4'b0100;
12 2'b11: o = 4'b1000;
13 endcase
14 end
15 else
16 o = 4'b0000;
17 end
18 endmodule
19 module fa_dec2to4(a, b, cin, o, s, ca);
20 input a, b, cin;
21 output [7:0] o;
22 output reg s, ca;
23
24 dec_2to4 d1(b, a, ~cin, o[3:0]);
25 dec_2to4 d2(b, a, cin, o[7:4]);
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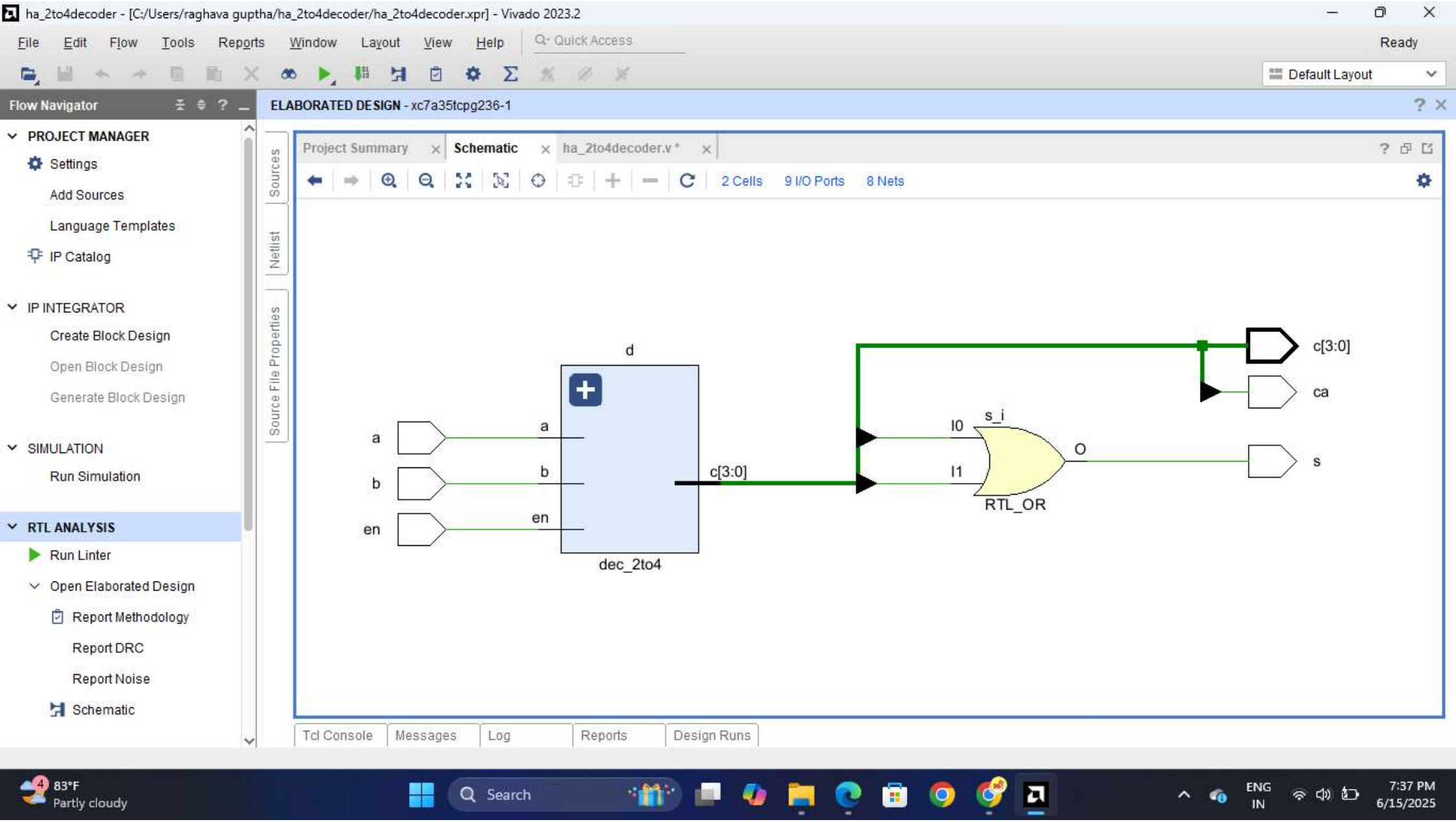
0.519 ns
Name
Value
0.000 ns
100.000 ns
200.000 ns
300.000 ns
400.000 ns
500.000 ns
a
0
b
0
en
0
o[3:0]
X
[3]
X
[2]
X
[1]
X
[0]
X
s
X
ca
X
X
1
2
4
8
1


ha_2to4decoder - [C:/Users/raghava guptha/ha_2to4decoder/ha_2to4decoder.xpr] - Vivado 2023.2
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ha_2to4decoder.v *
2 Cells
9 I/O Ports
8 Nets
d
a
b
en
c[3:0]
dec_2to4
s_i
I0
I1
O
RTL_OR
c[3:0]
ca
s
Tcl Console
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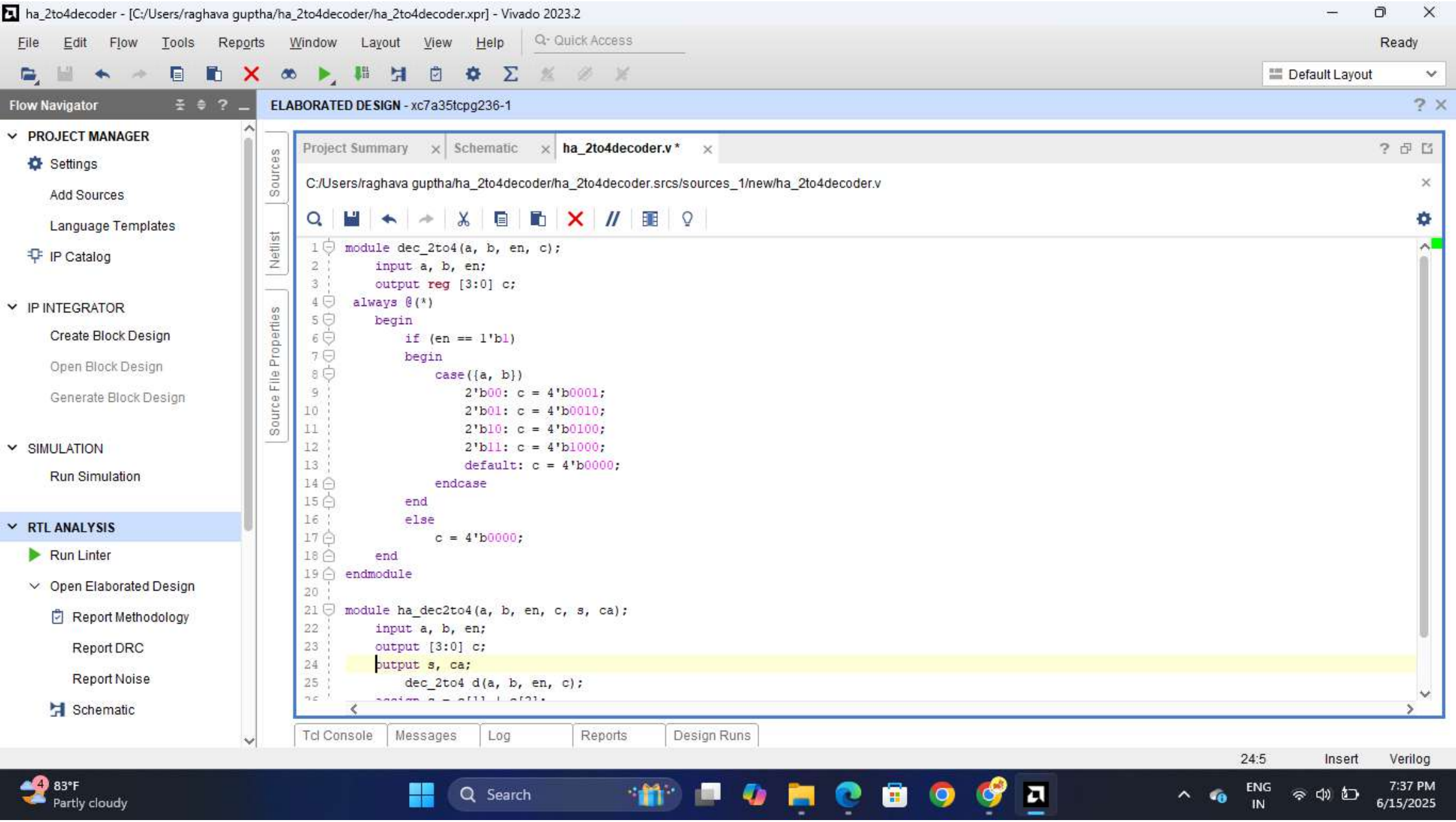
ha_2to4decoder - [C:/Users/raghava guptha/ha_2to4decoder/ha_2to4decoder.xpr] - Vivado 2023.2
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1 module dec_2to4(a, b, en, c);
2 input a, b, en;
3 output reg [3:0] c;
4 always @(*)
5 begin
6 if (en == 1'b1)
7 begin
8 case({a, b})
9 2'b00: c = 4'b0001;
10 2'b01: c = 4'b0010;
11 2'b10: c = 4'b0100;
12 2'b11: c = 4'b1000;
13 default: c = 4'b0000;
14 endcase
15 end
16 else
17 c = 4'b0000;
18 end
19 endmodule
20
21 module ha_dec2to4(a, b, en, c, s, ca);
22 input a, b, en;
23 output [3:0] c;
24 output s, ca;
25 dec_2to4 d(a, b, en, c);
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