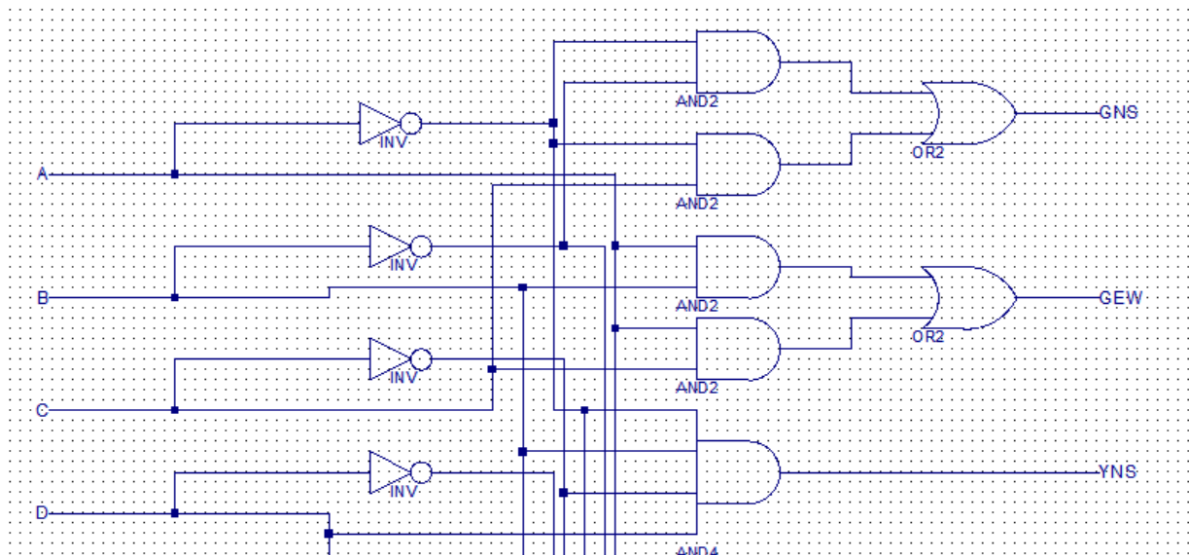
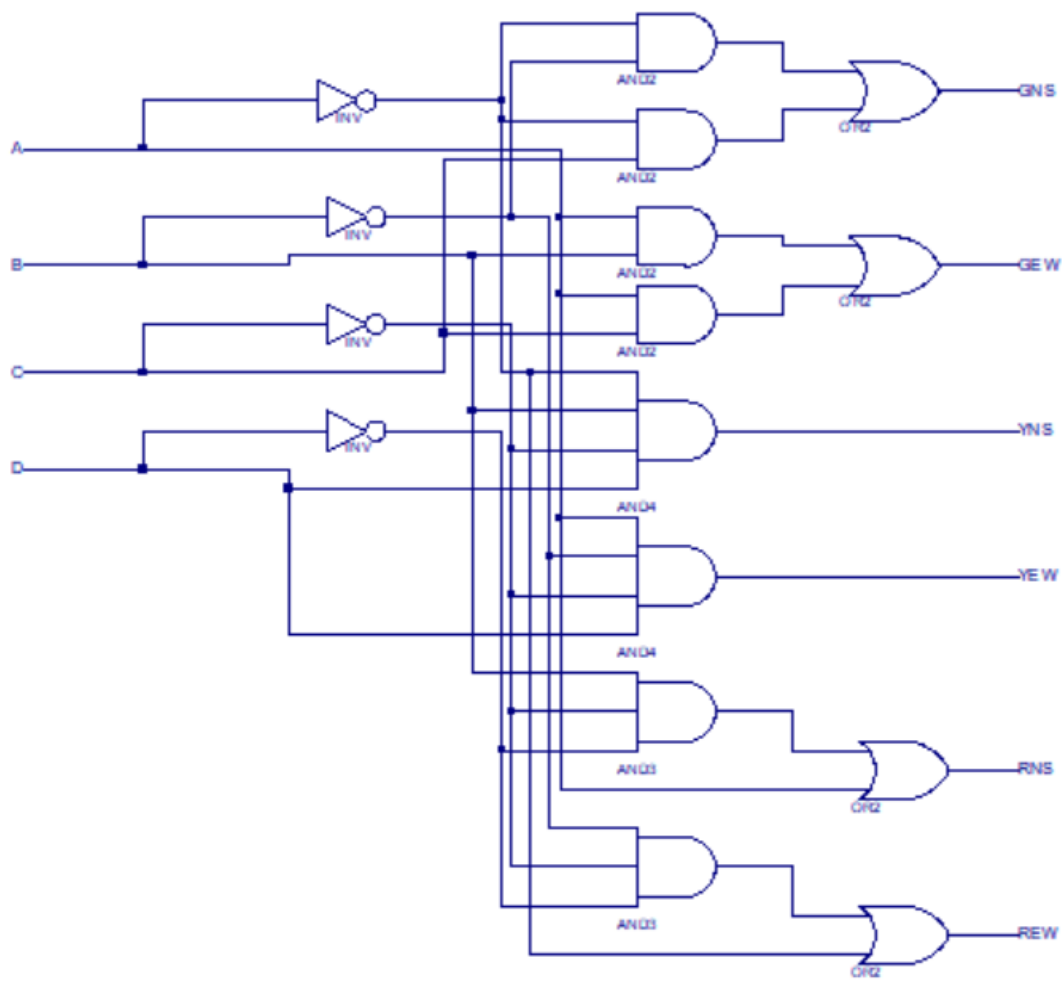
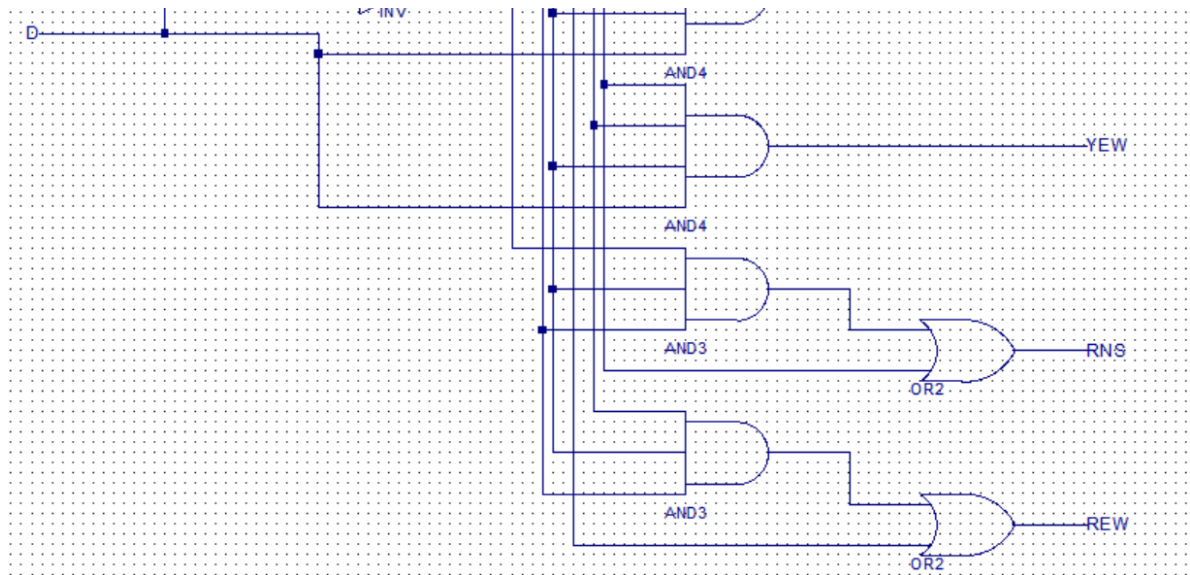


3-7





3-8

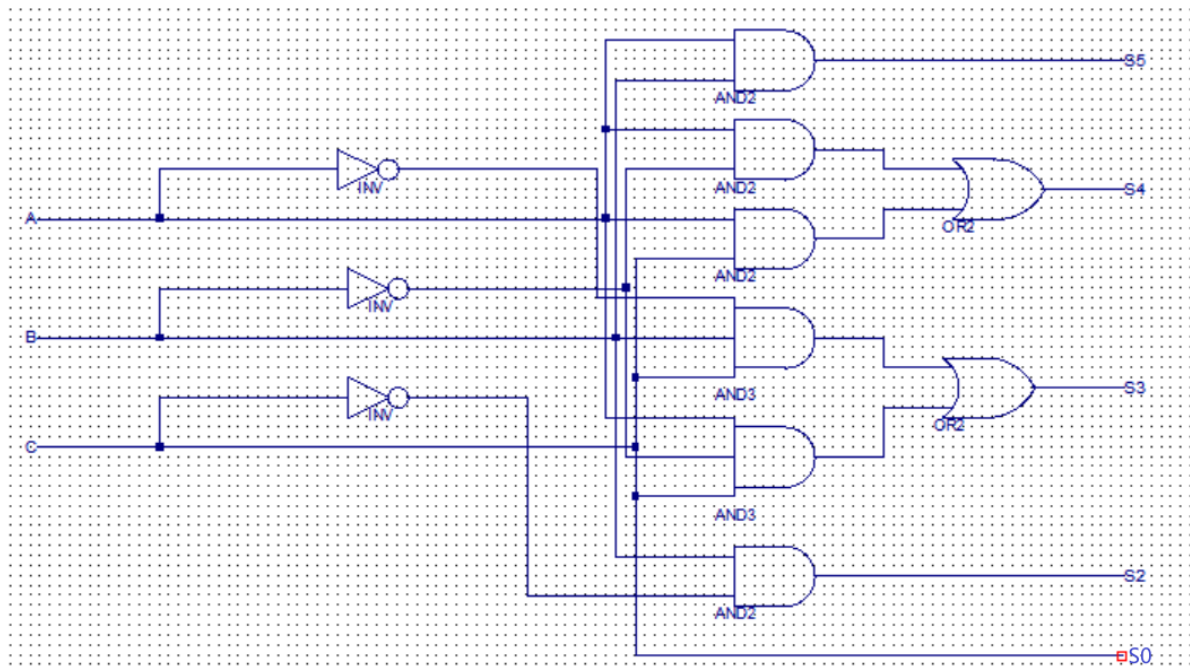
The truth table is

A	B	C	S5	S4	S3	S2	S1	S0
0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	0	1
0	1	0	0	0	0	1	0	0
0	1	1	0	0	1	0	0	1
1	0	0	0	1	0	0	0	0
1	0	1	0	1	1	0	0	1
1	1	0	1	0	0	1	0	0
1	1	1	1	1	0	0	0	1

We can have:

$$S0 = C, S1 = 0, S2 = \overline{B}C, S3 = \overline{A}BC + A\overline{B}C, S4 = A\overline{B} + AC, S5 = AB$$

So the circuit will be:



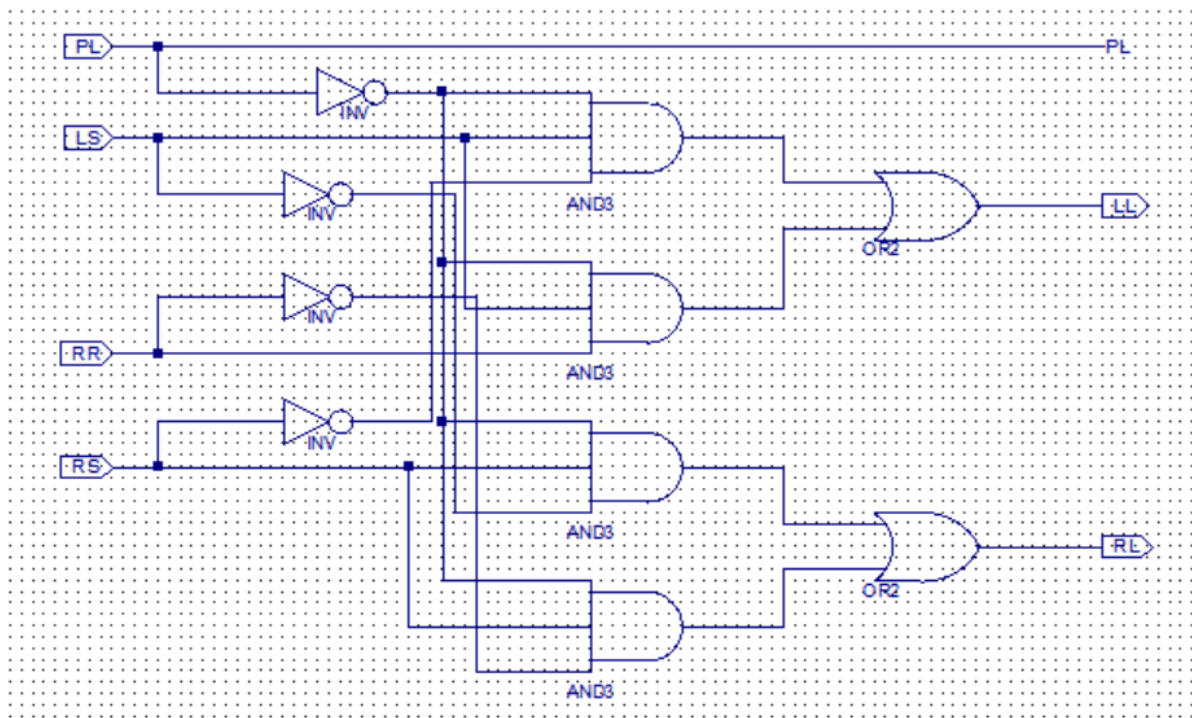
3-11

(a)

PS	LS	RS	RR	PL	LL	RL
0	0	0	0	0	0	0
0	0	0	1	0	0	0
0	0	1	0	0	0	1
0	0	1	1	0	0	1
0	1	0	0	0	1	0
0	1	0	1	0	1	0
0	1	1	0	0	0	1
0	1	1	1	0	1	0
1	X	X	X	1	0	0

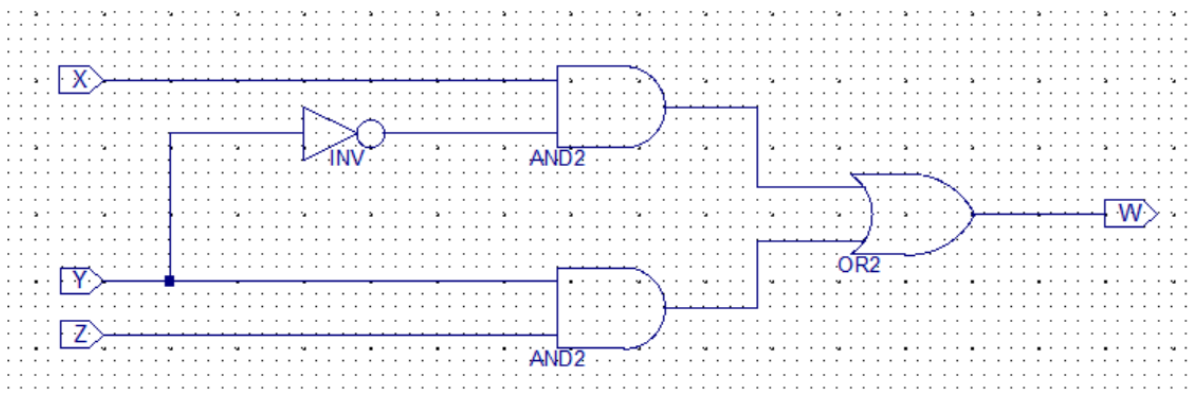
X represents 1 or 0, the last row specifies the case that "If there is a car in the car pool lane, PL is 1".

(b)

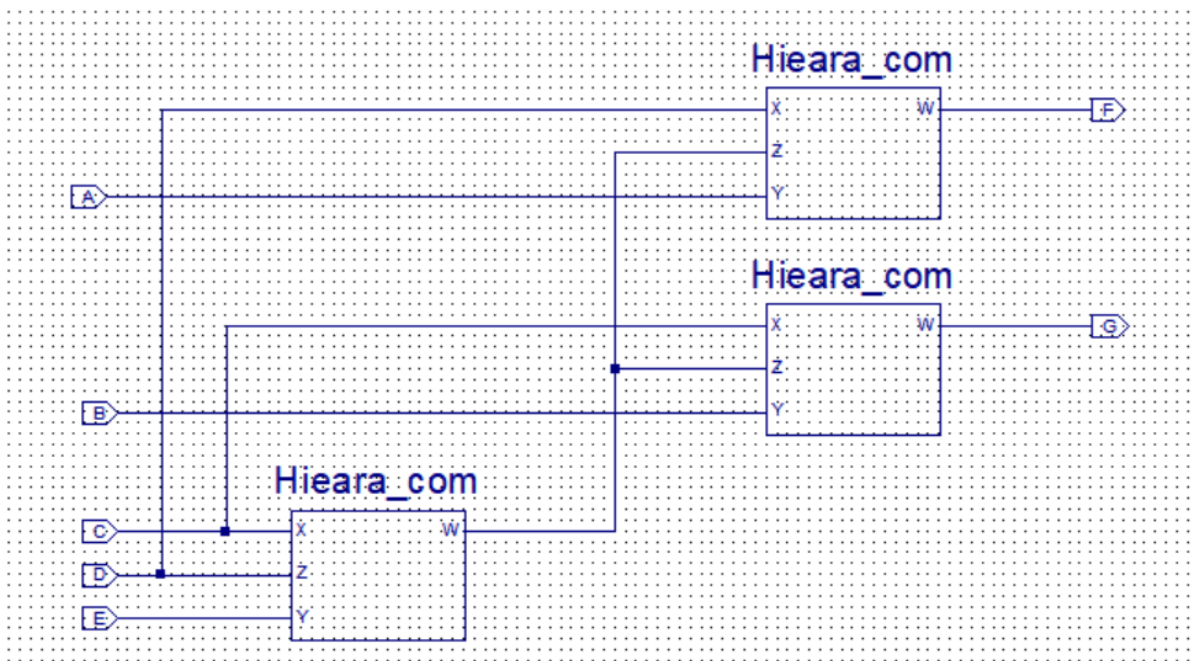


3-13

Hierarchical component:



The final circuit:



3-14

