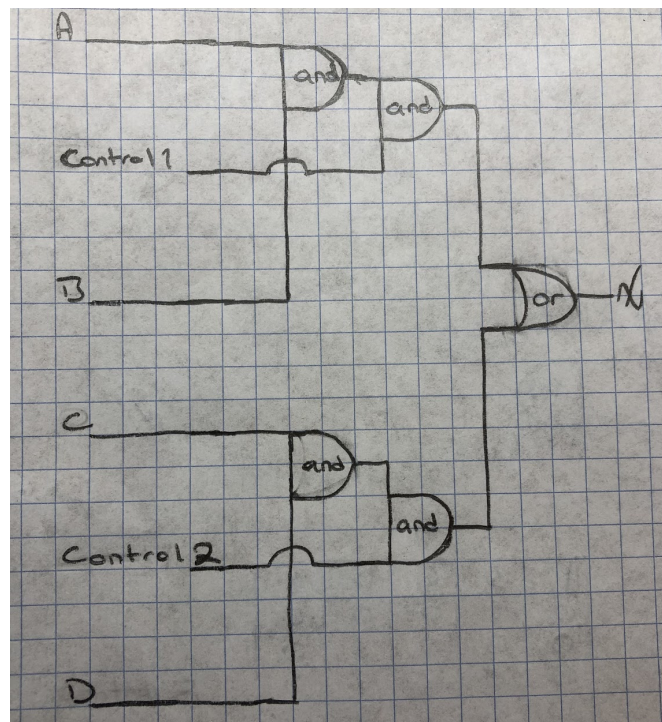


UNIVERSITY OF NEW HAMPSHIRE DEPARTMENT OF ELECTRICAL AND  
COMPUTER ENGINEERING

ECE401 – Perspectives in Electrical and Computer Engineering

FALL 2020



When  $(AB = 1 \text{ and } \text{Control1} = 1) \text{ or } (CD = 1 \text{ and } \text{Control2} = 1)$ ,  $x = 1$

Otherwise, if neither  $(AB = 1 \text{ and } \text{Control1} = 1) \text{ or } (CD = 1 \text{ and } \text{Control2} = 1)$ ,  $x = 0$

If  $AB = 1$  but  $\text{Control1} \neq 1$ , then  $(CD = 1 \text{ and } \text{Control2} = 1)$  must be true for  $x = 1$

If  $CD = 1$  but  $\text{Control2} \neq 1$ , then  $(AB = 1 \text{ and } \text{Control1} = 1)$  must be true for  $x = 1$

Truth Table:

Control 1	Control 2	A	B	C	D	X
0	0	0	0	0	0	0
0	0	0	0	0	1	0
0	0	0	0	1	1	0
0	0	0	1	1	1	0
0	0	1	1	1	1	0
0	0	1	1	1	0	0
0	0	1	1	0	0	0
0	0	1	0	0	0	0
0	0	0	1	0	0	0
0	0	0	1	1	0	0
0	0	0	0	1	0	0
0	0	1	0	0	1	0
0	0	1	0	1	0	0
0	0	0	1	0	1	0
0	0	1	0	1	1	0
0	0	1	1	0	1	0
0	1	0	0	0	0	0
0	1	0	0	0	1	0
0	1	0	0	1	1	1
0	1	0	1	1	1	1

0	1	1	1	1	1	1
0	1	1	1	1	0	0
0	1	1	1	0	0	0
0	1	1	0	0	0	0
0	1	0	1	0	0	0
0	1	0	1	1	0	0
0	1	0	0	1	0	0
0	1	1	0	0	1	0
0	1	1	0	1	0	0
0	1	0	1	0	1	0
0	1	1	0	1	1	1
0	1	1	1	0	1	0
1	0	0	0	0	0	0
1	0	0	0	0	1	0
1	0	0	0	1	1	0
1	0	0	1	1	1	0
1	0	1	1	1	1	1
1	0	1	1	1	0	1
1	0	1	1	0	0	1
1	0	1	0	0	0	0
1	0	0	1	0	0	0
1	0	0	1	1	0	0
1	0	0	0	1	0	0
1	0	0	0	0	1	0

1	0	1	0	1	0	0
1	0	0	1	0	1	0
1	0	1	0	1	1	0
1	0	1	1	0	1	1
1	1	0	0	0	0	0
1	1	0	0	0	1	0
1	1	0	0	1	1	1
1	1	0	1	1	1	1
1	1	1	1	1	1	1
1	1	1	1	1	0	1
1	1	1	1	0	0	1
1	1	1	0	0	0	0
1	1	0	1	0	0	0
1	1	0	1	1	0	0
1	1	0	0	1	0	0
1	1	1	0	0	1	0
1	1	1	0	1	0	0
1	1	0	1	0	1	0
1	1	1	0	1	1	1
1	1	1	1	0	1	1