Welcome to my Presentation

Presentation on Digital Logic Design

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Outline

- Question
- Explanation
- Table 1
- Table 2
- Table 3
- Table 4
- Final Table
- Circuit

My Question is 3

- Implementation of the following Boolean function with one 4 x1 multiplexer and external gates.

$$F(A,B,C,D) = \sum(1,3,4,11,12,13,14,15)$$

Explanation

- Connect inputs A and B to the selection lines.
- The input requirements for the four data lines will be a function of variables C and D.
- These values are obtained by expressing F as a function of C and D for each of the four cases when AB = 00, 01, 10, and 11.
- These functions may have to be implemented with external gates.

Table 1

INPUT				OUTPUT	
A	B	C	D	F	
0	0	0	0	0	AB=00 F=D
0	0	0	1	1	
0	0	1	0	0	
0	0	1	1	1	

Table 1

INPUT				OUTPUT	
A	B	C	D	F	
0	1	0	0	1	AB=01 F=$C'D'$ =$(C + D'$
0	1	0	1	0	
0	1	1	0	0	
0	1	1	1	0	

Table 1

INPUT				OUTPUT	
A	B	C	D	F	
1	0	0	0	0	AB=10 F=CD
1	0	0	1	0	
1	0	1	0	0	
1	0	1	1	1	

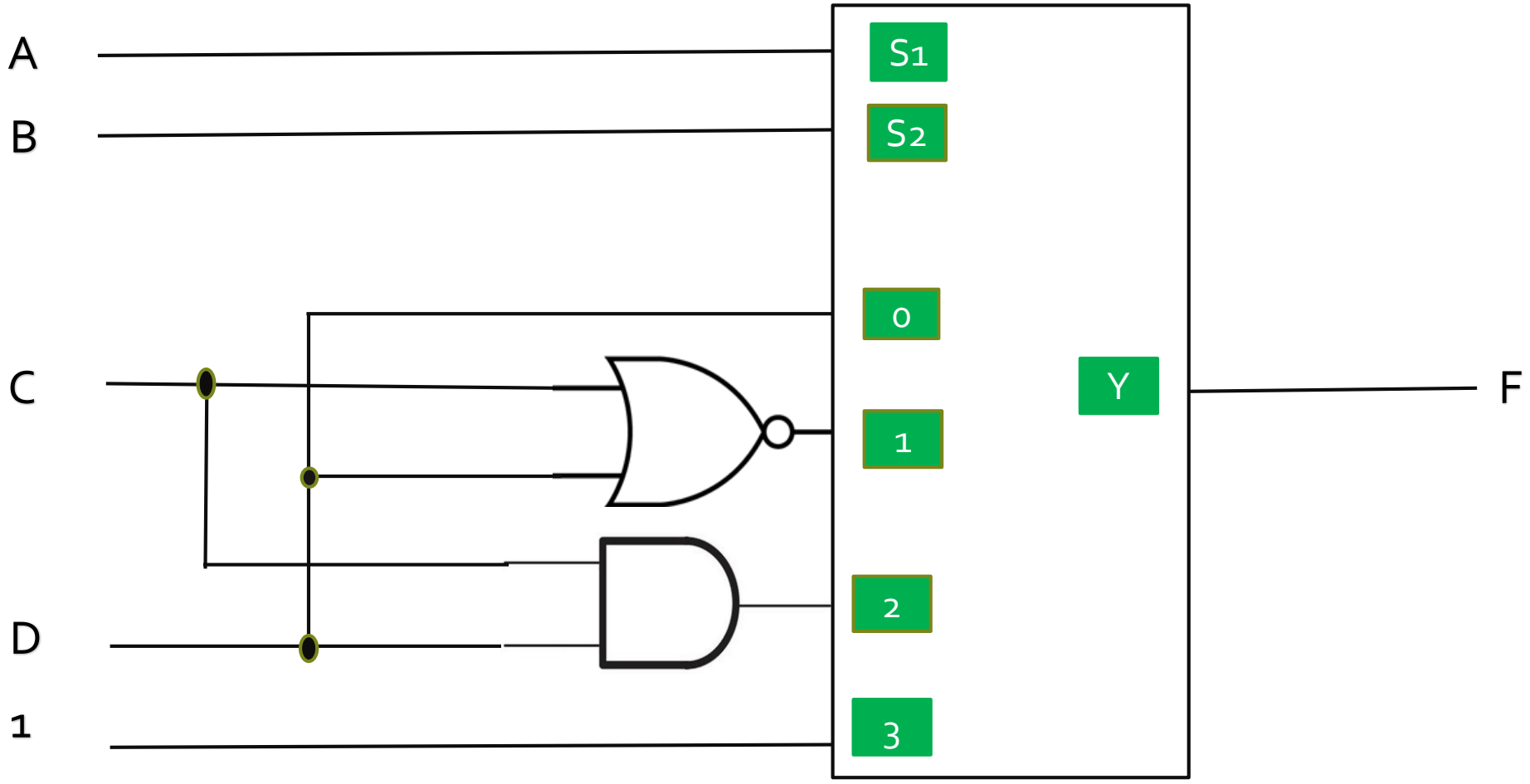
Table 1

INPUT				OUTPUT	
A	B	C	D	F	
1	1	0	0	1	AB=11 F=1
1	1	0	1	1	
1	1	1	0	1	
1	1	1	1	1	

Final Table

OUTPUT				INPUT	
A	B	C	D	F	
0	0	0	0	0	AB=00
0	0	0	1	1	F=D
0	0	1	0	0	
0	0	1	1	1	
0	1	0	0	1	
0	1	0	1	0	AB=01
0	1	1	0	0	$F=C'D'$
0	1	1	1	0	$=(C+D)'$
1	0	0	0	0	
1	0	0	1	0	AB=10
1	0	1	0	0	F=CD
1	0	1	1	1	
1	1	0	0	1	
1	1	0	1	1	AB=11
1	1	1	0	1	F=1
1	1	1	1	1	

Circuit



Thank You