

ENR 325 Assignment #8

Due: 11/7/25 10:00 pm

Welcome back to CMOS! To refresh your memory:

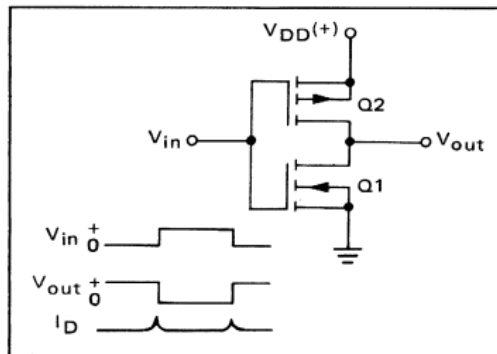
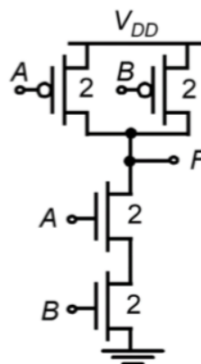


FIGURE 1-4 – TYPICAL COMPLEMENTARY INVERTER

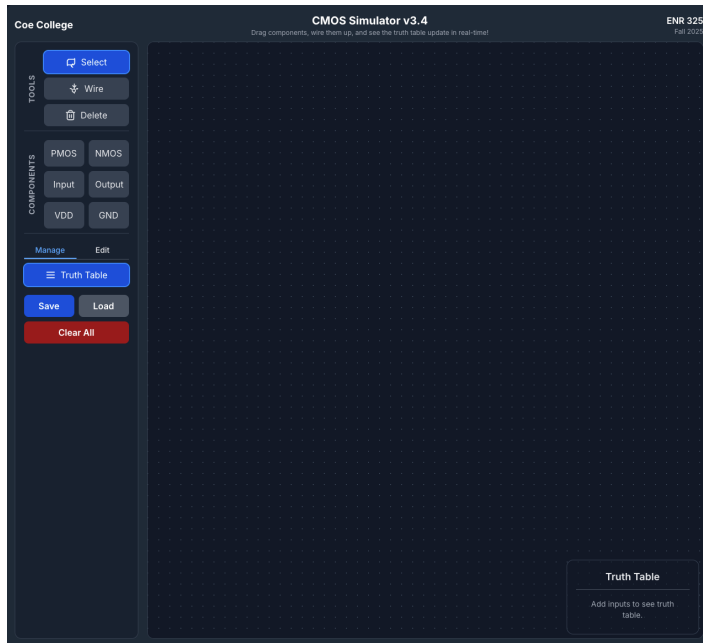
Why CMOS is good: low power consumption. This is a NOT gate, or inverter.

With one more step, we can do a NAND gate:

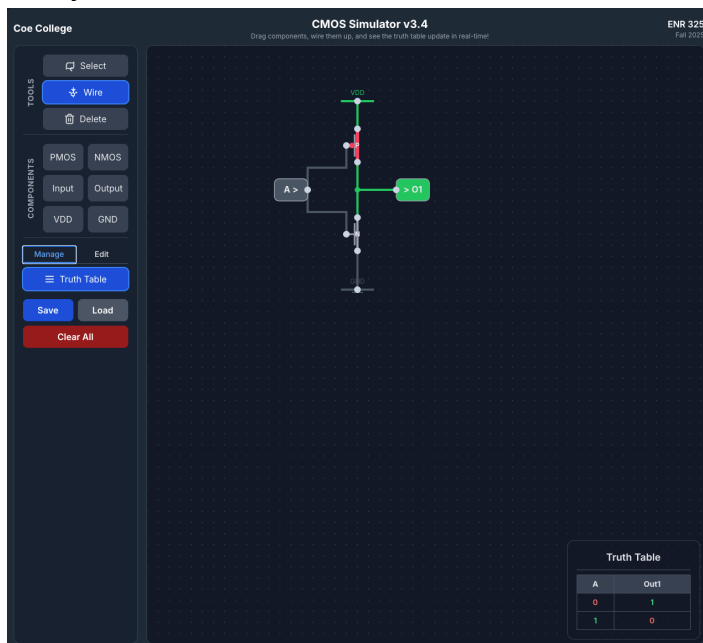


I vide-coded a html page on the github, so you can actually make these:

Go to link: <https://xlicoe.github.io/CMOS-demo/>



And you can build an inverter and check its truth table in real-time:



For detailed step by step tutorial, go to <https://github.com/xlicoe/CMOS-demo> and check the read me file.

Task 1: Try to build all the rest of the logic gate with CMOS in this webpage. As a prove-of-work, send me a screen capture of the finished gates. You can also save and load all the design file.

Notes: the answers are just one google away. But I am asking you guys to make those gates on your own. Here're all the hints you need:

Inverter truth table	
Input	Output
A	NOT A
0	1
1	0

NAND gate truth table		
Input		Output
A	B	A NAND B
0	0	1
0	1	1
1	0	1
1	1	0

NOR gate truth table		
Input		Output
A	B	A NOR B
0	0	1
0	1	0
1	0	0
1	1	0

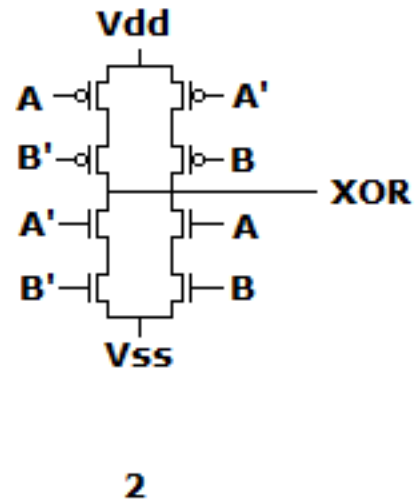
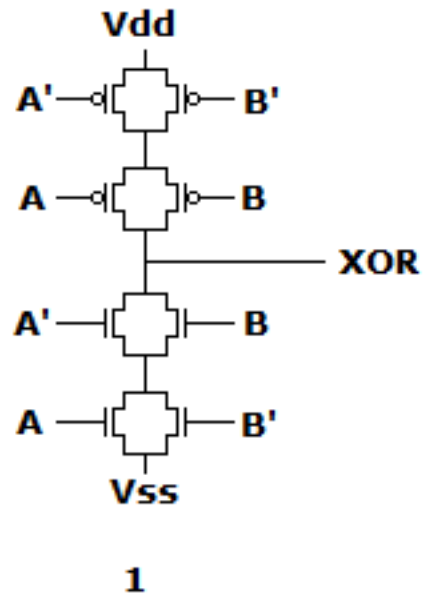
AND gate truth table		
Input		Output
A	B	A AND B
0	0	0
0	1	0
1	0	0
1	1	1

OR gate truth table		
Input		Output
A	B	A OR B
0	0	0
0	1	1
1	0	1
1	1	1

XOR gate truth table		
Input		Output
A	B	A XOR B
0	0	0
0	1	1
1	0	1
1	1	0

See if you can build everything ONLY with the help of truth table.

XOR might be tricky, so here's some additional help:



Or maybe this?

