



Faculty of Engineering and Technology
Department of Electrical and Computer Engineering

ENCS 2110

EXP 4 Pre-Lab: Digital Circuits Implementation using Breadboard

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Section: 10

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✓ Build Full Adder using basic gates.

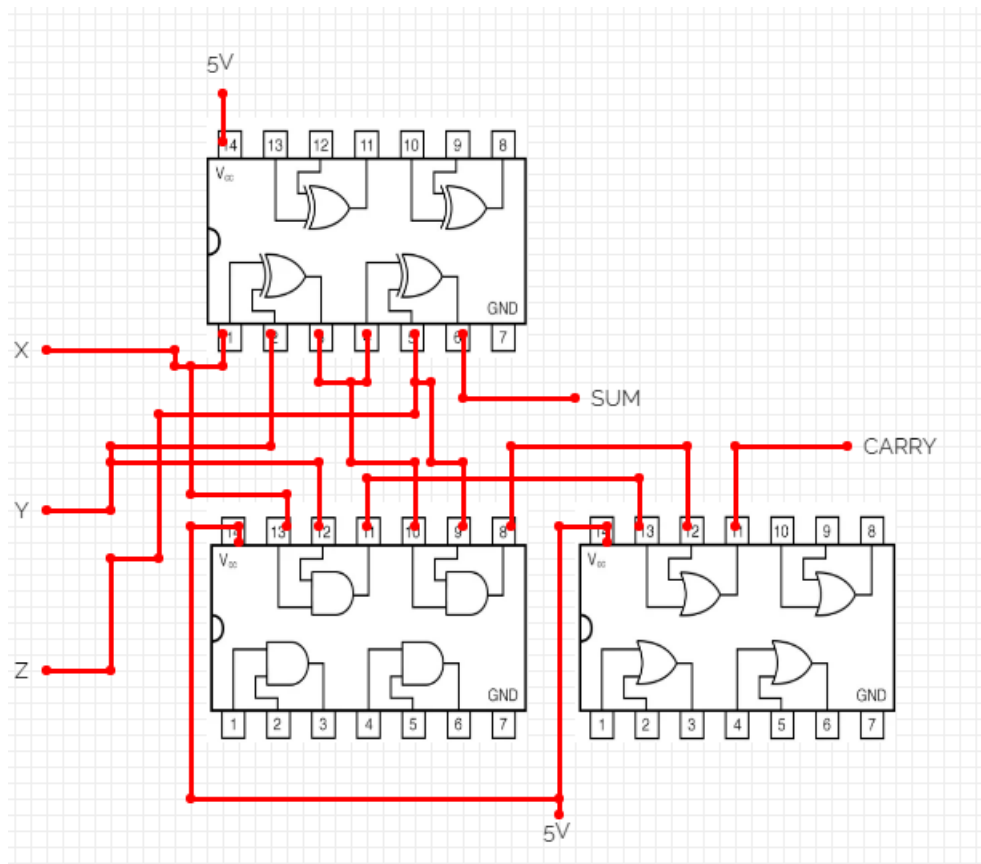
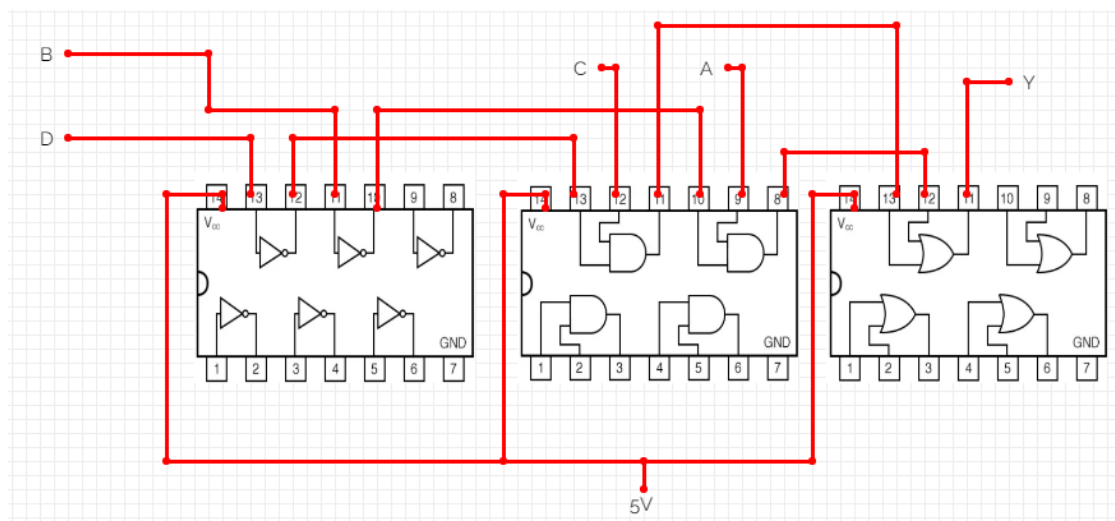


Figure 1: Full Adder

✓ Build the bellow circuit using universal gates.



- ✓ Build a 3x8 Decoder (active low) using basic gates.

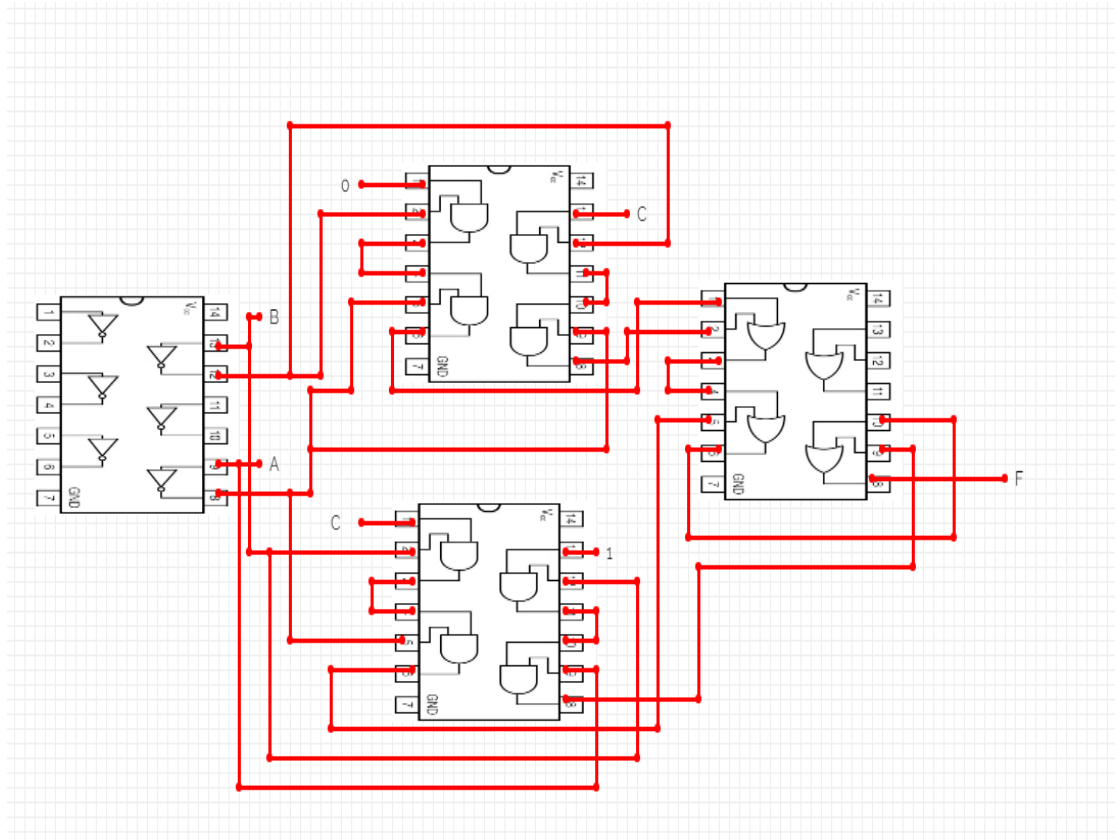


Figure 2: 3x8 Decoder

- ✓ Build an 8x1 Multiplexer using basic gates.

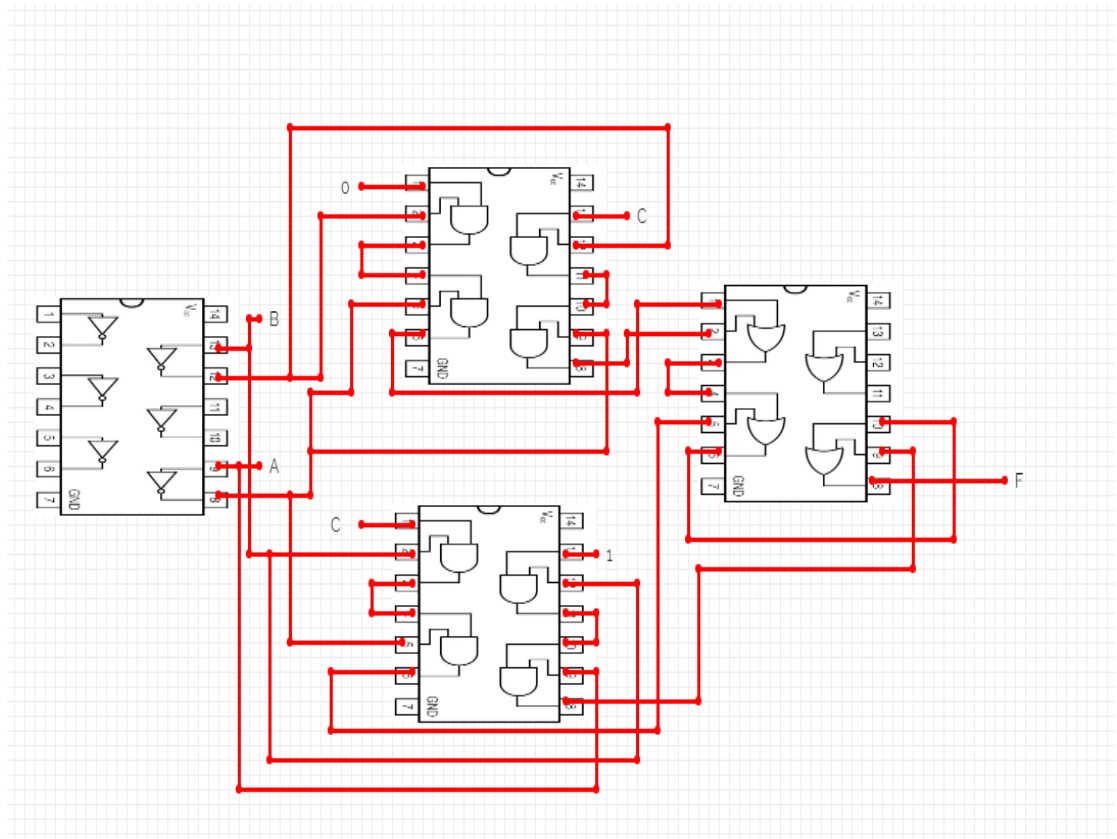


Figure 3:8x1 Multiplexer

- ✓ Use the just constructed 4x1 multiplexer to design a three-input network that gives 1 if the majority of its inputs are 1 and outputs a zero otherwise.

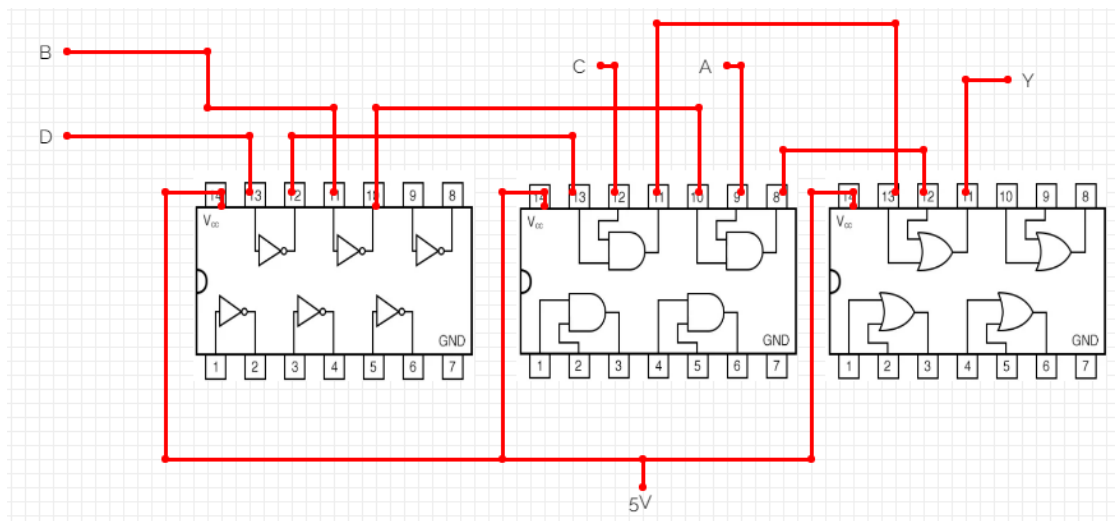


Figure 4:4x1 multiplexer

- ✓ Use the 2x4 decoder to implement a 2-input function that acts like an equivalence gate (XNOR): gives 1 on the output if both inputs are equal.

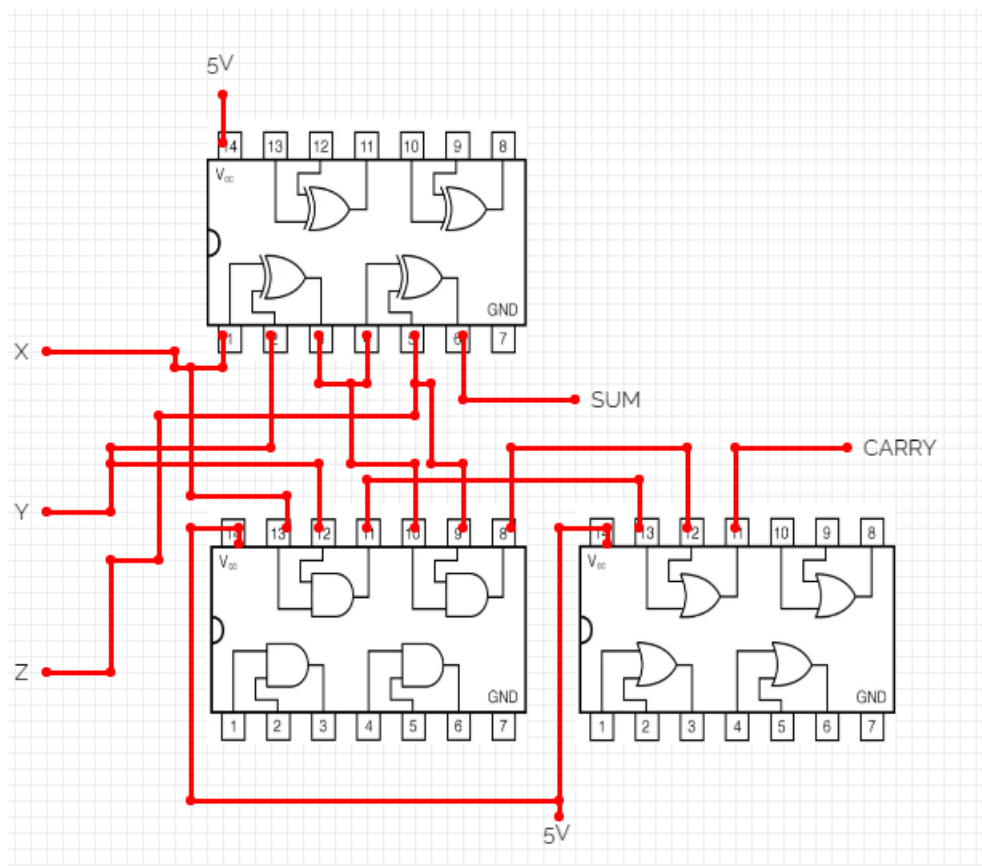


Figure 5:2x4 decoder