

ECE-301-204

Lab8 Multiplexers

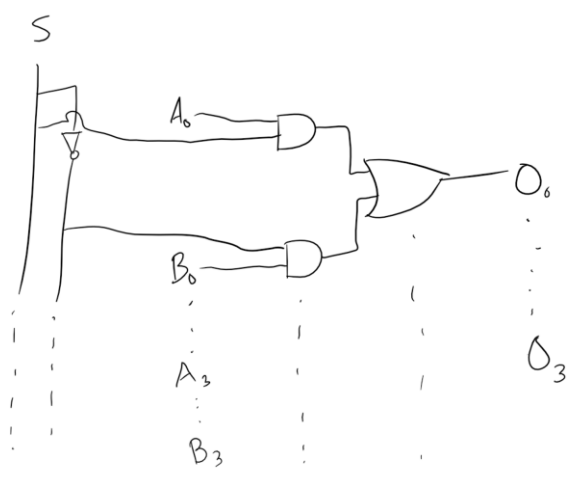
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Objective:

To understand the operation of an 8x1 multiplexer and design and verify the correct operation of a 4x2 MUX.

Preparation:



Material and Equipment:

- ET-1000 Trainer
- Wires
- Breadboard
- AND Gates, NAND Gates, NOT Gates, OR Gates

Laboratory Data:



Above is the experimental 4x2 MUX with two sets of inputs of 4, a signal, and 4 outputs. The way the experiment told us to hook up the inputs was by putting ones to the even numbered A data inputs and zeros to the odd numbered A data inputs and ones to the odd numbered B data inputs and zeros to the even numbered B data inputs. When the signal has a value of “1” the even numbered A data inputs are triggered as well as the odd numbered B data inputs...but since A is lined to signal value “1” and B is lined to signal value “0” only LEDs 0 and 2 are lighting up because the signal value is “1” triggering the A data inputs to be represented.

Comments and Conclusions:

Designing a multiplexer from scratch was not that hard. The most annoying part is that we had to use 4 NAND gates because our lab kit only supplied us with 4 out of the 8 needed AND gates. We also see in this experiment how we can select certain things we want to appear and what we don't. Say having a conditional statement such as an “if” statement. “If this light up” then “else don't light up”. We can see that this type of circuit can be used for situational things such as that.