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Experiment - 9
LOGIC GATES

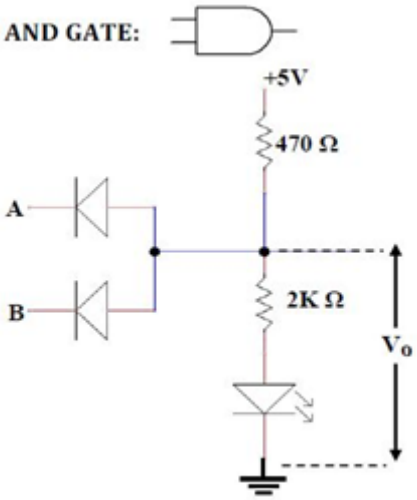
AIM: To verify the truth tables of NOT, AND and OR gates using Diodes and Transistor.

COMPONENTS: Diodes, Transistor, Resistors and LED, DC Power supply, multi-meter.

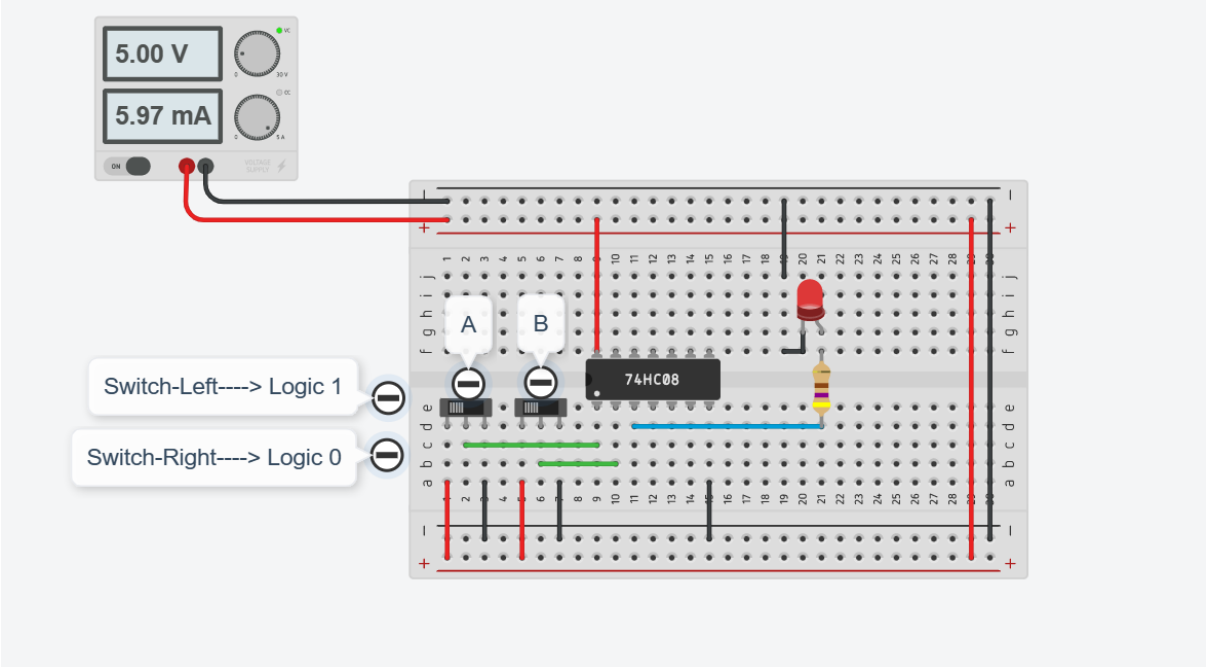
Simulation tool: https://www.tinkercad.com/
Use this link to simulate the circuit diagrams which are shown below for NOT, AND, and OR gates.

PROCEDURE:

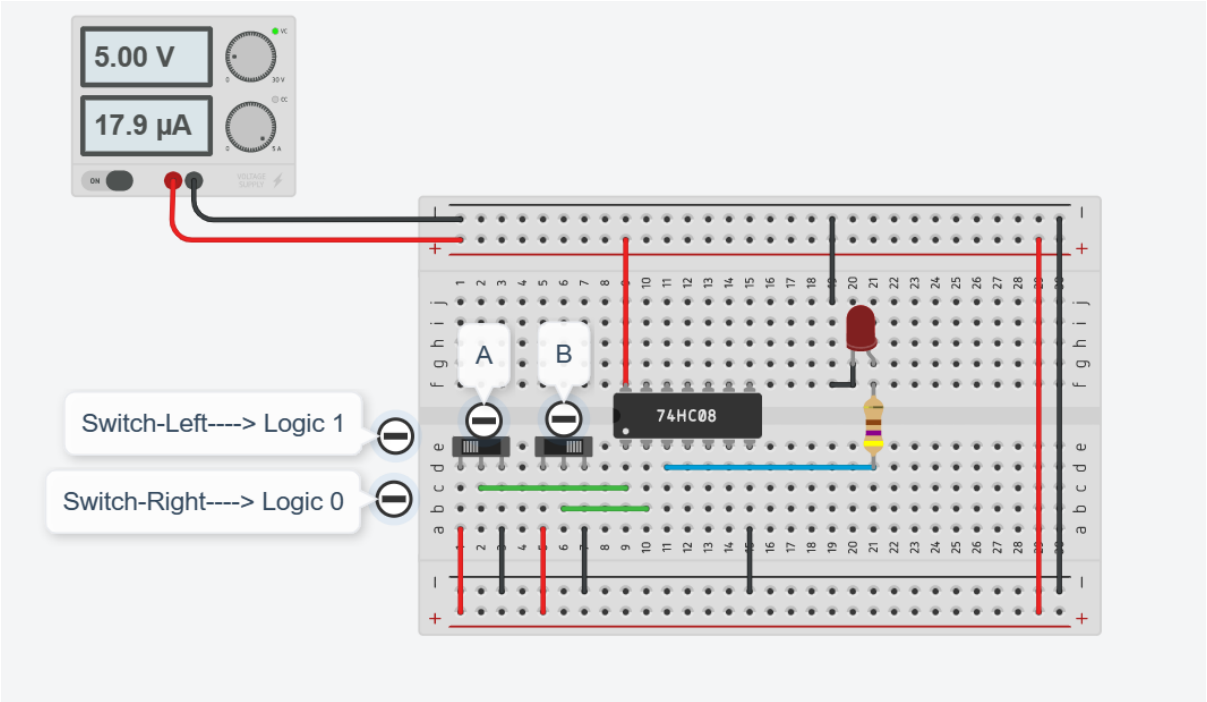
1. Use components and make the circuit connections as per the circuit diagram shown below.
2. Turn on power to your experimental circuit.
3. Apply all four possible combinations of input voltages at A and B, Record the output voltage and status of LED.
4. For each input combination, note the logic state of the output, as indicated by the LED (ON = 1; OFF = 0), and record that result in the table.
5. Compare your results with the truth table of a logic "NOT"/ "AND"/"OR"/ operation.
6. Submit the worksheets in to LMS along with the image of simulation.



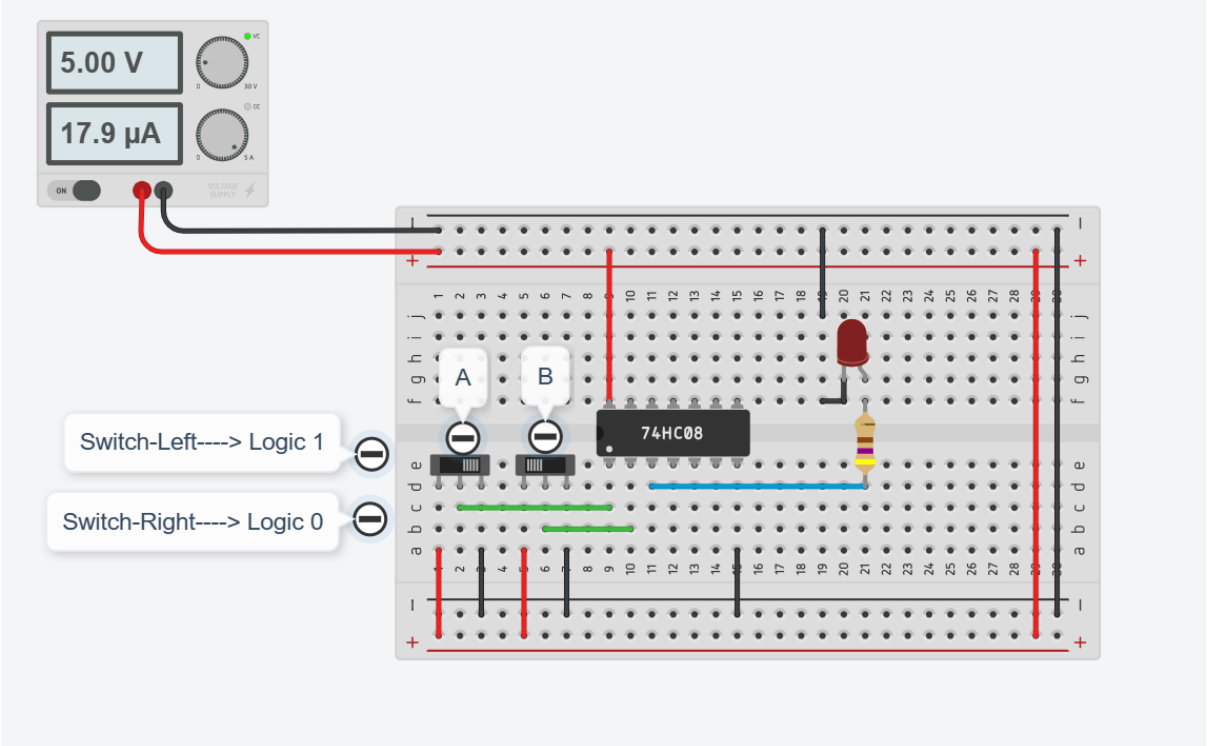
A = 1 AND B = 1 ; LED - 1 (Glow)



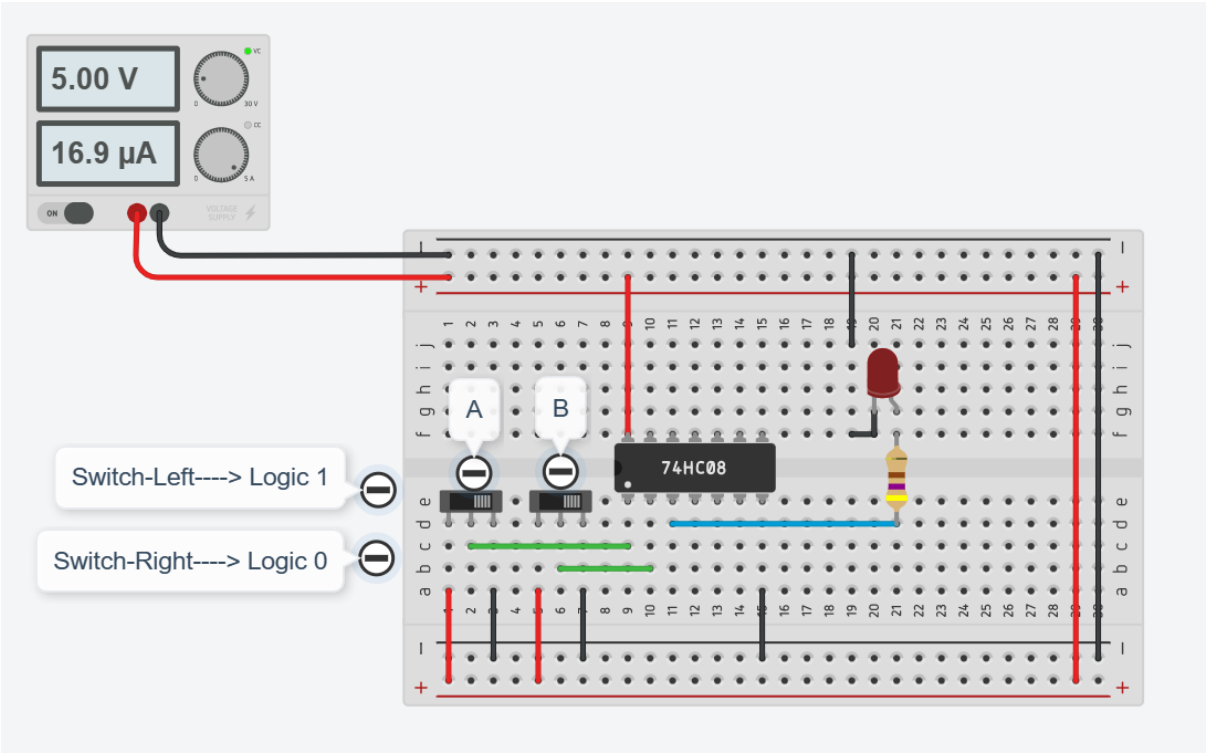
A = 1 AND B = 0; LED - 1 (Didn’t Glow)

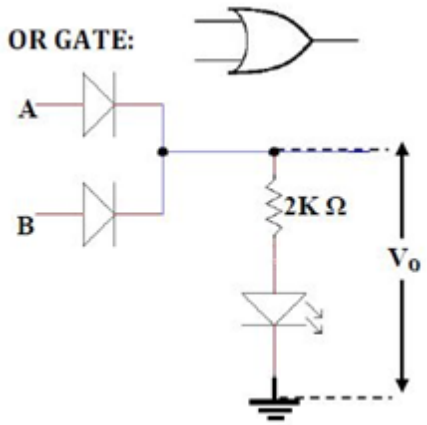


A = 0 AND B = 1; LED - 1 (Didn’t Glow)

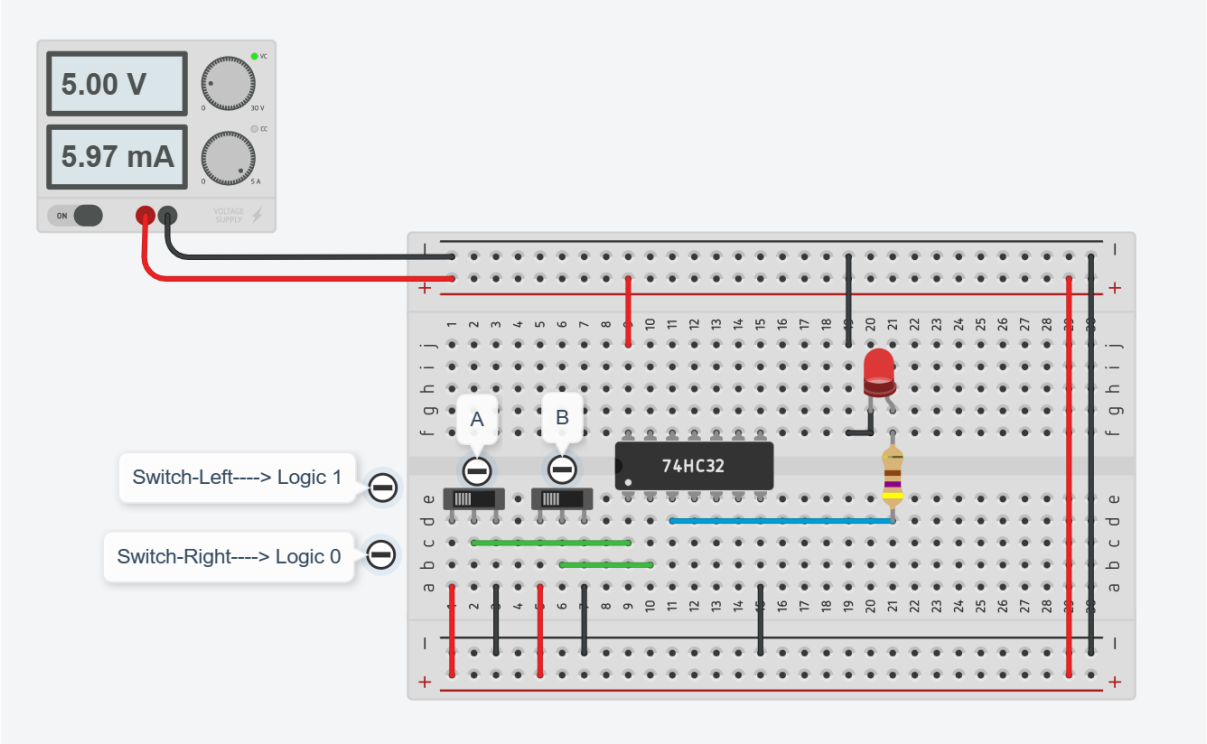


A = 0 AND B = 0; LED - 0 (Didn’t Glow)

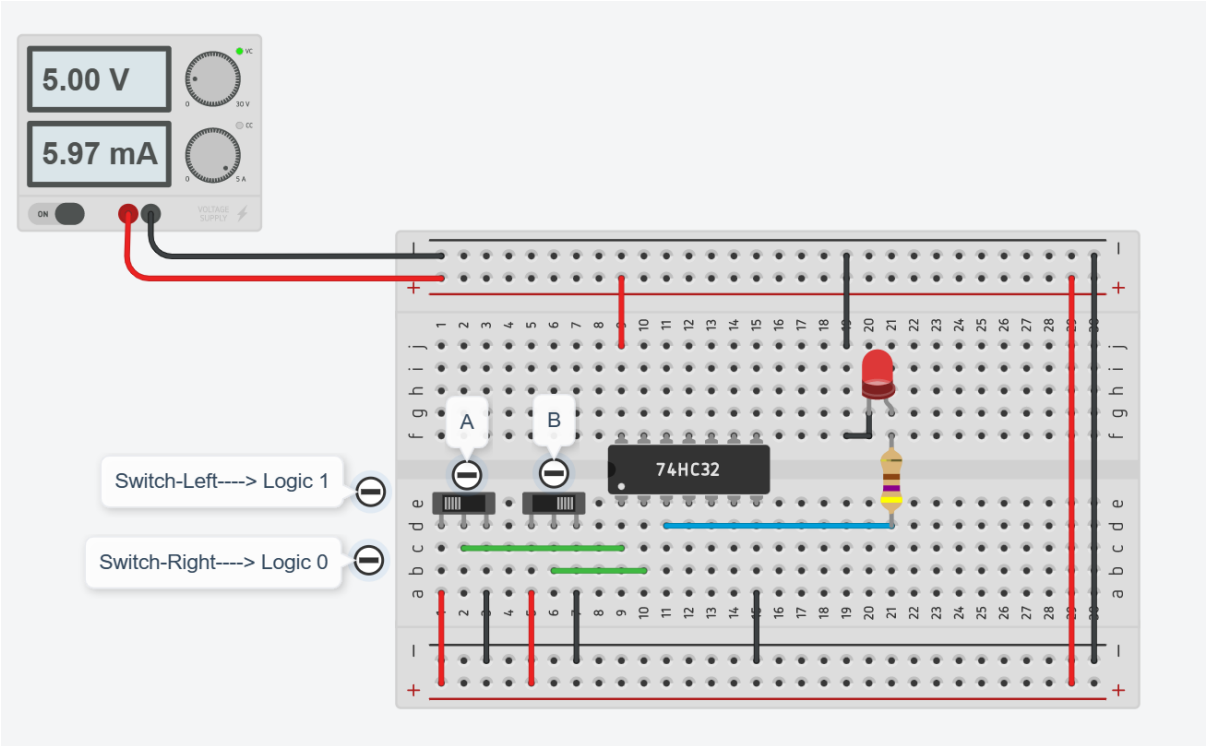




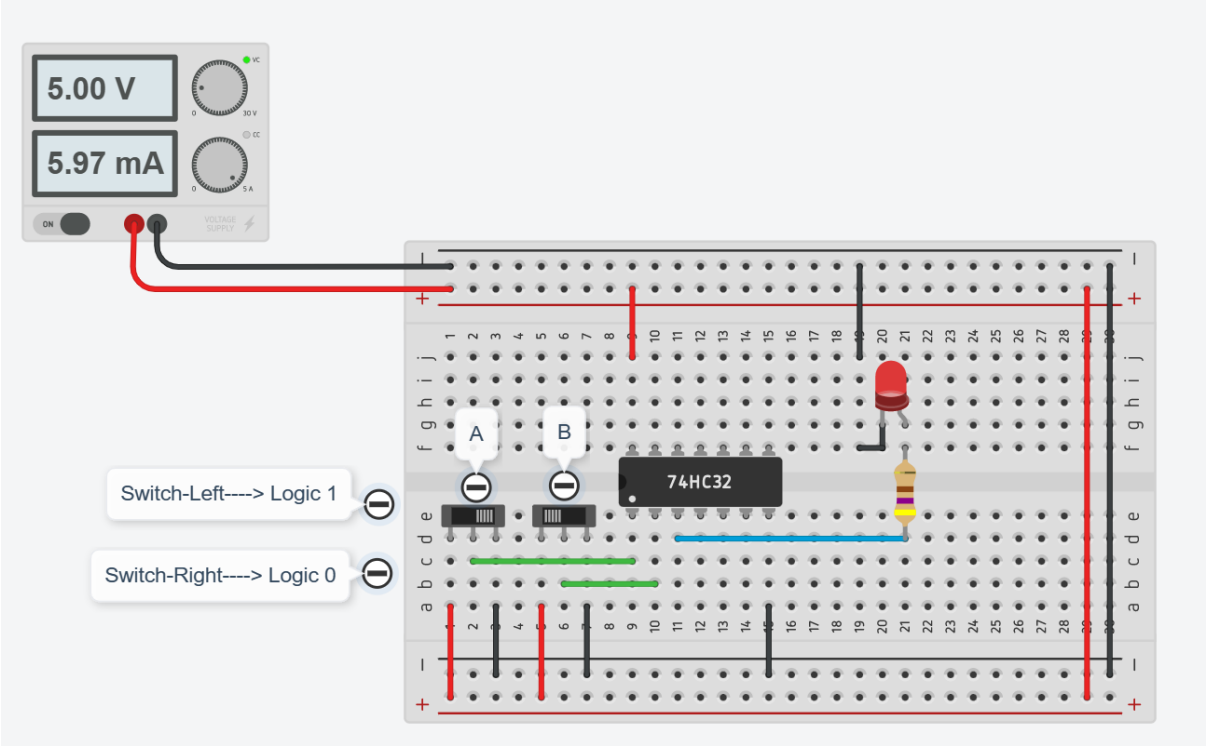
A = 1 AND B = 1 ; LED - 1 (Glow)



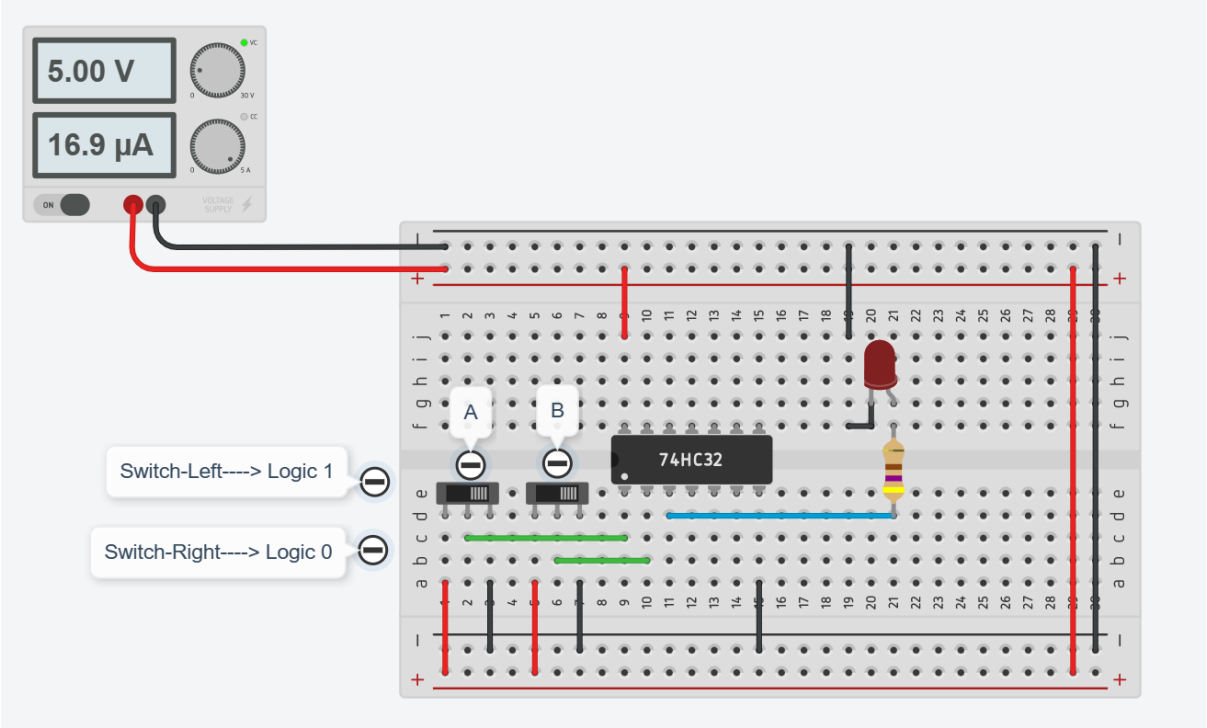
A = 1 AND B = 0 ; LED - 1 (Glow)

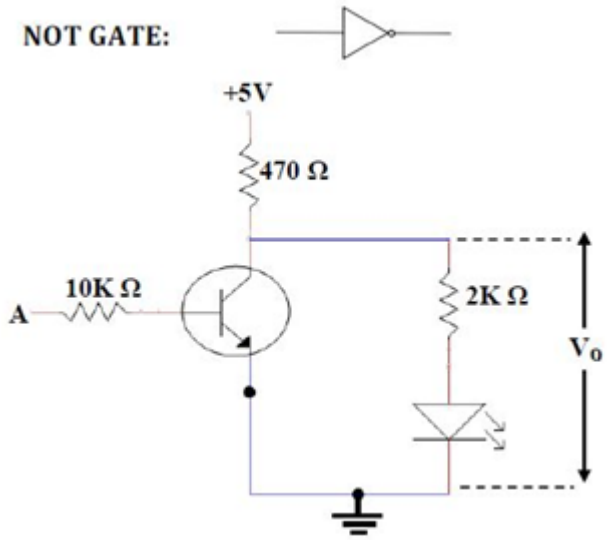


A = 0 AND B = 1 ; LED - 1 (Glow)

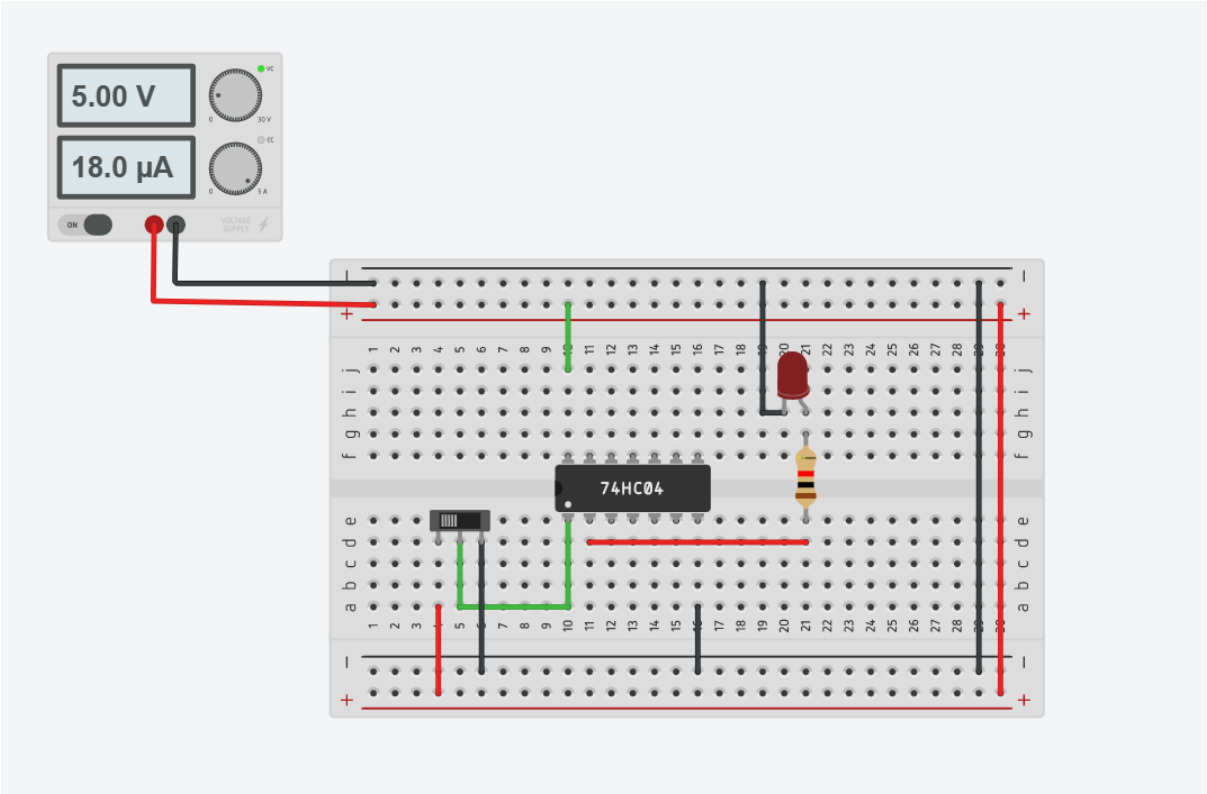


A = 0 AND B = 0; LED - 0 (Didn’t Glow)





A = 1 LED - 0 (Didn’t Glow)



A = 0 LED - 1 (Glow)