

# ELC 2137 Lab # 2: Transistor Logic Gates

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January 30, 2020

## Summary

In this lab we described how logic gates are based on switches and how transistors behave like controllable switches. We also developed a circuit on a breadboard using standard electrical components, meanwhile also verifying the operation of a circuit.

## Deliverables

Table 1: Final Gate Logic/truth Table

Switch A	Switch B		A AND B
0	0		0
0	1		0
1	0		0
1	1		1

The logic operation that is implemented by the final gate is the AND operation due to the fact that both switches must be on in order for the LED to turn on as well. For an AND operator, an operator only returns a value of true if both of its operands are true.

## Circuit Demonstration Page

Student names: Megan Gordon Sebastian Lopez

### Instructor Initials

Pushbutton "Or Gate"

BH

Transistor Not gate

BH

Transistor Nor gate

BH

Transistor unknown gate

BH

### Diagrams

On each of the circuits below, draw the current paths and note whether each switch, transistor, and LED is ON or OFF.

Inverter:

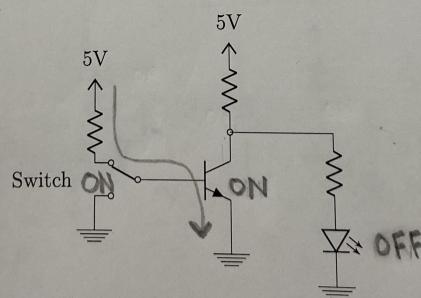
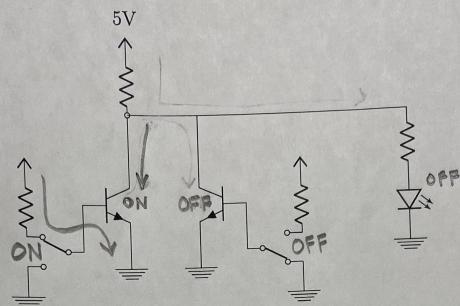


Figure 1: This is the picture of the Inverter Gate Diagram.

NOR:



Final gate:

