ELC 2137 Lab 02: Transistor Logic Gates

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Summary

Gates are made up of switches (on/off). How you connect them determines the type of gate; Transistors are voltage-controlled switches, so we can hook gates together.

Q&A

1. What logic operation does it implement? it's AND gate

Results

Table 1: Logic/truth table for the Final gate

A	B	LED
0	0	0
0	1	0
1	0	0
1	1	1

Figure 1: This is the Circuit Demonstration Page 1.

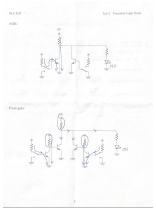


Figure 2: This is the Circuit Demonstration Page 2.

Code

Table 2: Logic/truth table for the Final gate

A	B	LED
0	0	0
0	1	0
1	0	0
1	1	1

Circuit Demonstration Page

Student names: Yitian Wang

Instructor Initials

Pushbutton "Or Gate" RSB

Transistor Not gate RSB

Transistor Nor gate RSB

Transistor unknown gate BSS

Diagrams

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

Inverter:

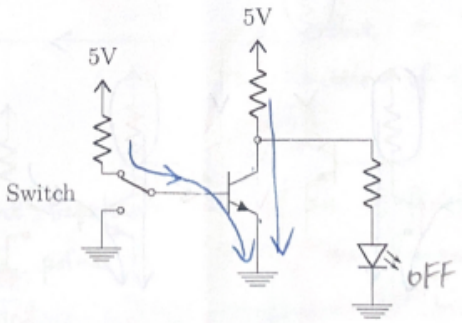
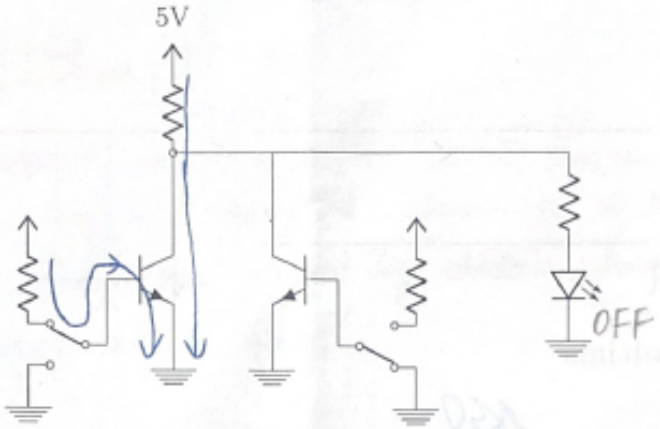


Figure 3: This is the Circuit Demonstration Page 1.

NOR:



Final gate:

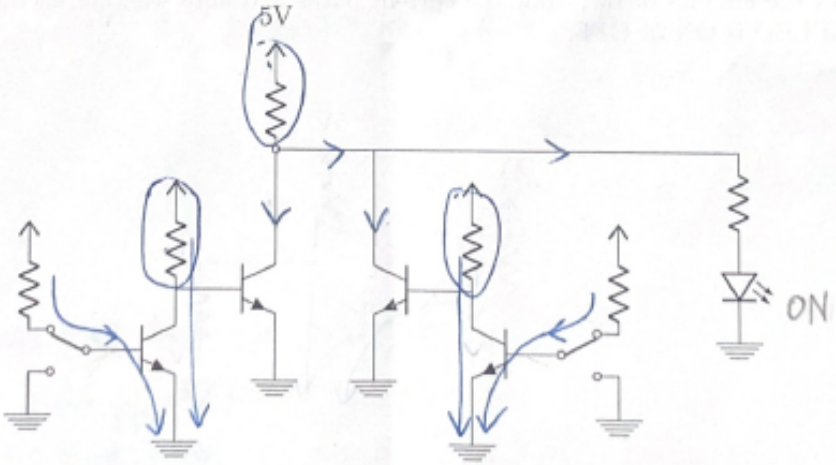


Figure 4: This is the Circuit Demonstration Page 2.