ELC 2137 Lab 2: Transistor Logic Gates

Jake Simmons and Haonan Jin

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Summary

The purpose of this lab was to build and explore the behviors of logic gates. We first built an OR Gate, second a Not Gate and third a Nor Gate. The last logic gate was a combination of two Not Gates and a single Nor Gate.

Q&A

1. What logic operation does the Final gate implement?
   (a) The logic operation that the Final gate implements is an And Gate.

Results

Table 1: Truth Table of the Final gate.

A	B	Led
0	0	0
0	1	0
1	0	0
1	1	1

Circuit Demonstration Page

Student names: Jake Simmons Haonan Jin

Instructor Initials

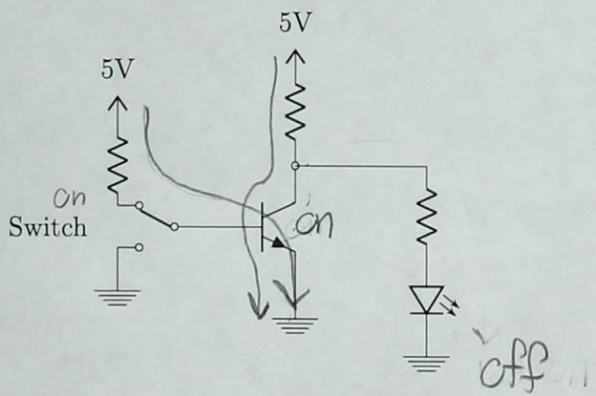
Pushbutton "Or Gate" _____ Transistor Not gate _____

Transistor Nor gate _____ Transistor unknown gate _____

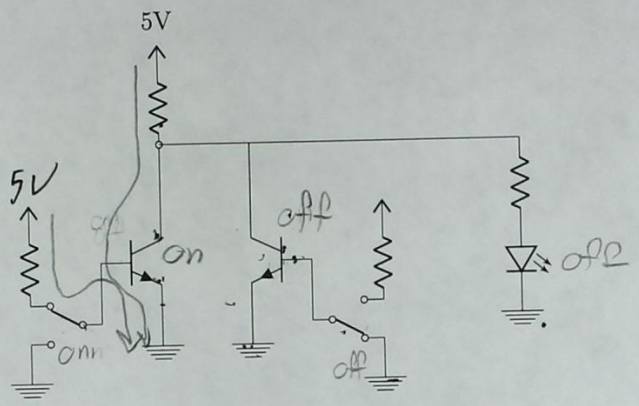
Diagrams

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

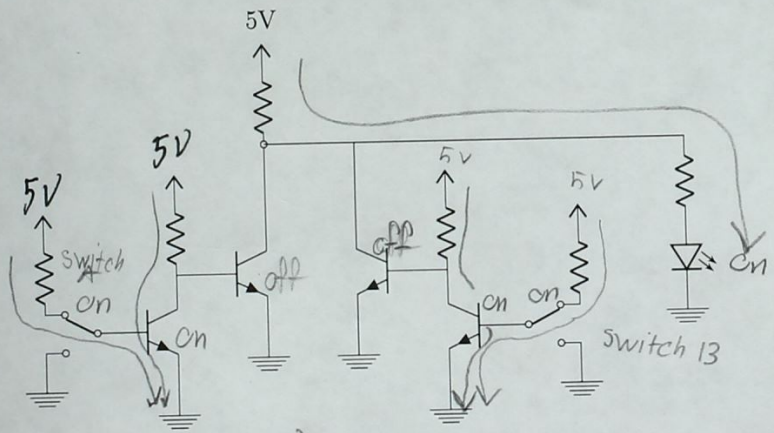
Inverter:



NOR:



Final gate:



A	B	~A	~B	Led (NOR)
0	0	1	1	0
0	1	1	0	0
1	0	0	1	0
1	1	0	0	1

Figure 1: Schematics and drawing of current path for each logic gate

Code