ELC 2137 Lab 2: Transistor Logic Gates

Jake Simmons and Haonan Jin

January 27, 2020

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

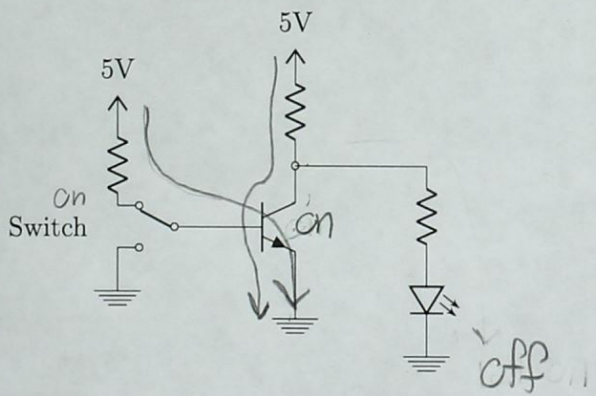
Pushbutton "Or Gate" _____ Transistor Not gate _____

Transistor Nor gate _____ Transistor unknown gate _____

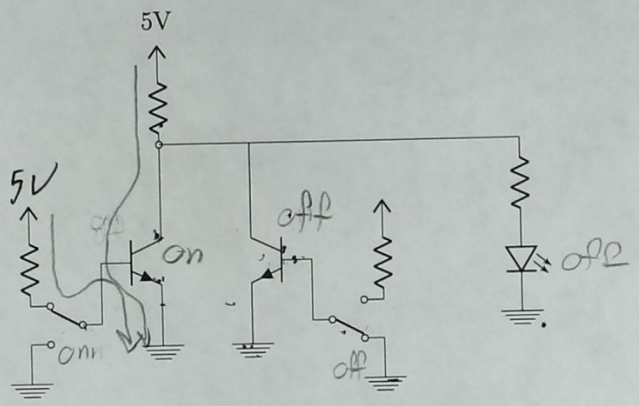
Diagrams

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

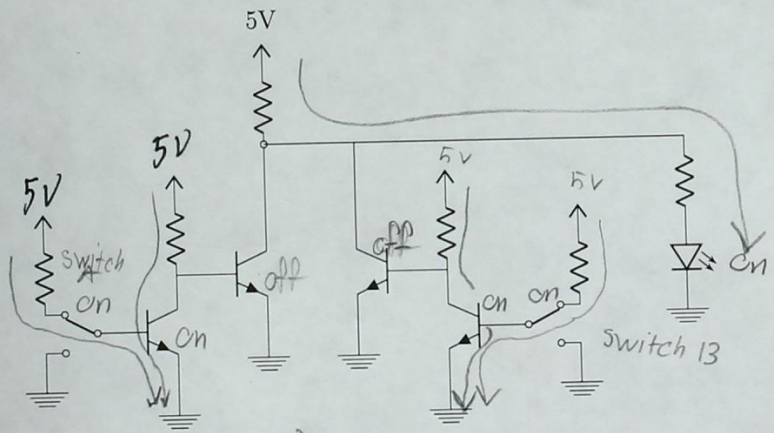
Inverter:



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