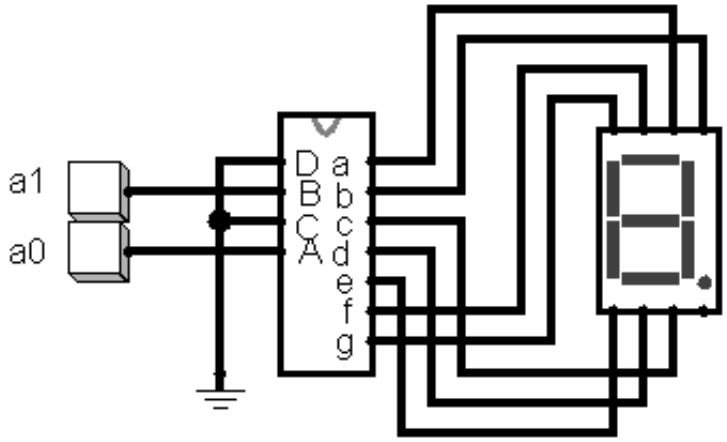
Lab Report 3

—

CPE282 Fall 2020

Brennen Green

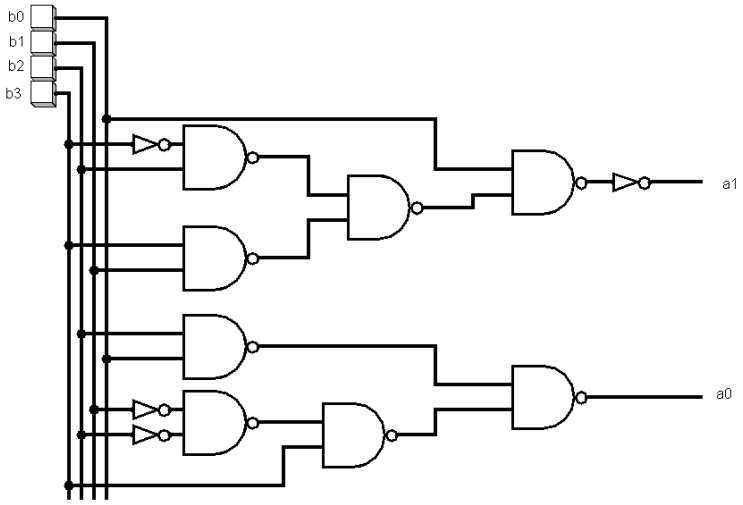
BCD to Seven Segment Display



** There should be a 200 Ω resistor between every pin a-g and the 7-segment display. I could not find this feature in logisim.*

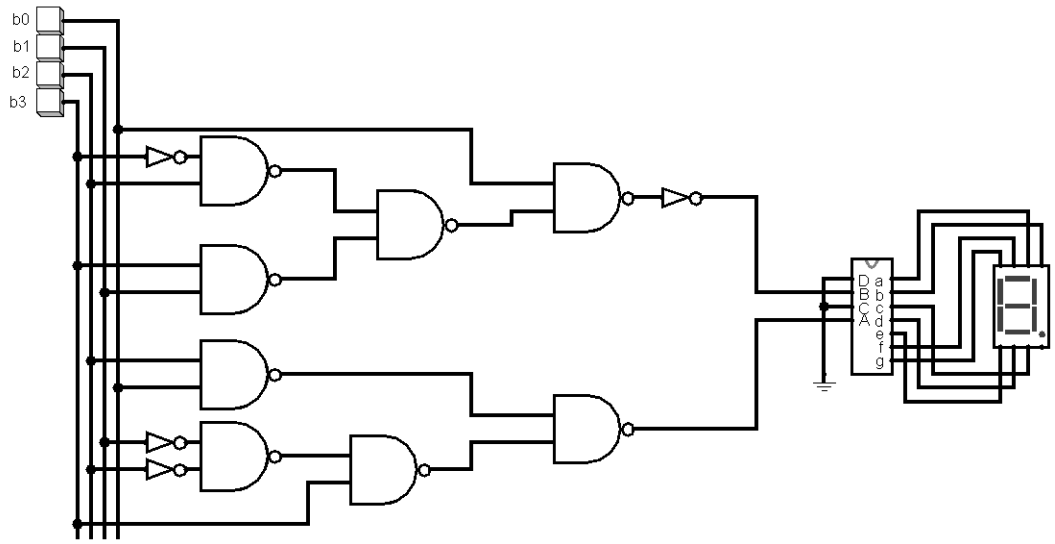
This design went very smoothly and followed my prelab design spot on. One weird thing that came up however was that when I plugged in my *first* 7-segment display it worked initially, got very hot, then started glitching out. I had my lab TA review this and we couldn't find an issue (resistors were being used). We ended up ditching that original display and hooking up a new one and all of the problems were solved! Other then that there were no big issues with this design, it made things a lot simpler than desiging a driver by hand. The one thing to note is that my prelab design did have a slight error in that it did not pins D and C on the BCD. We fixed this in my final design.

Black Box Logic



Once again this design went really smoothly. After having discovered the amazing use of the 74LS04 inverter chip last lab wiring these circuit up became a lot easier. I didn't have to deviate from my prelab design what so ever. However, it was noted that there is a more optimal solution if the goal were to be as optimal as possible.

Final Design



In all this lab went really smoothly and I enjoyed it. Despite the weird event that occured with my 7-segment display burning me originally everything else went according to plan. I've discovered that these integrated circuits such as the BCD make life a lot easier!