ELC 2137 Lab #3: Adders

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Summary

In this lab we developed circuits that implement a given logic function, described the operation of half, full, and ripple adders, and we developed a moderately complex circuit on a breadboard using standard electrical parts. We also tested and verified the operation of each circuit.

Q&A

Table 1: Half Adder Truth Table

A	B	C	S	Decimal
0	0	0	0	0
0	1	0	1	1
1	0	0	1	1
1	1	1	0	2

1. Which gates could we use for combining the carry bits? Either an XOR or AND gate.
2. Which one should we use and why? Although we can use either XOR or AND, XOR is an overall better gate to use considering the fact that it is more efficient.

Results

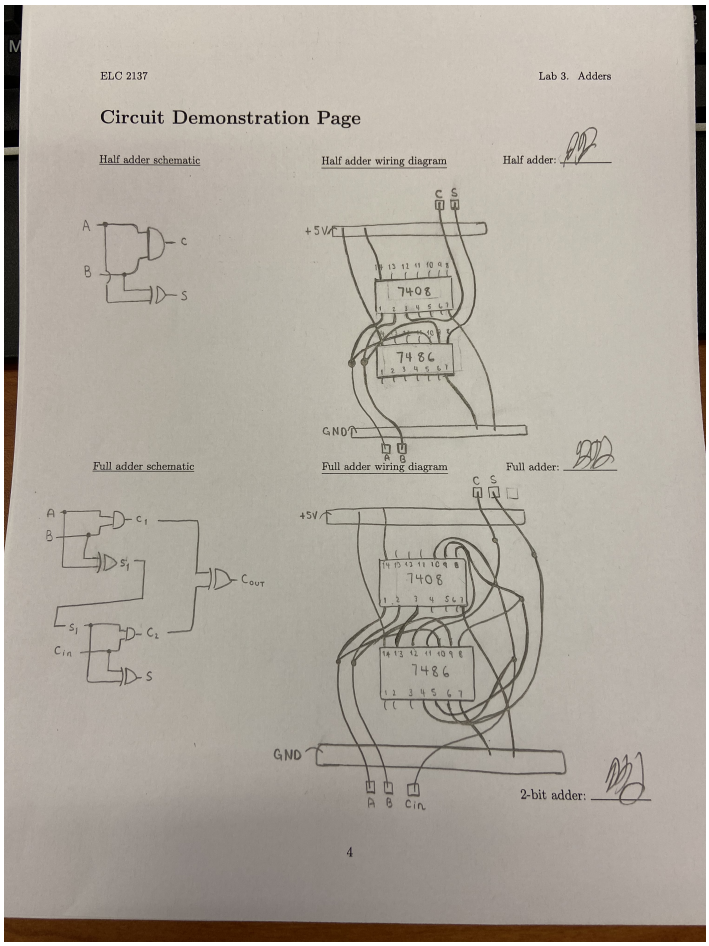

Figure 1: This is the Circuit Demonstration Page.

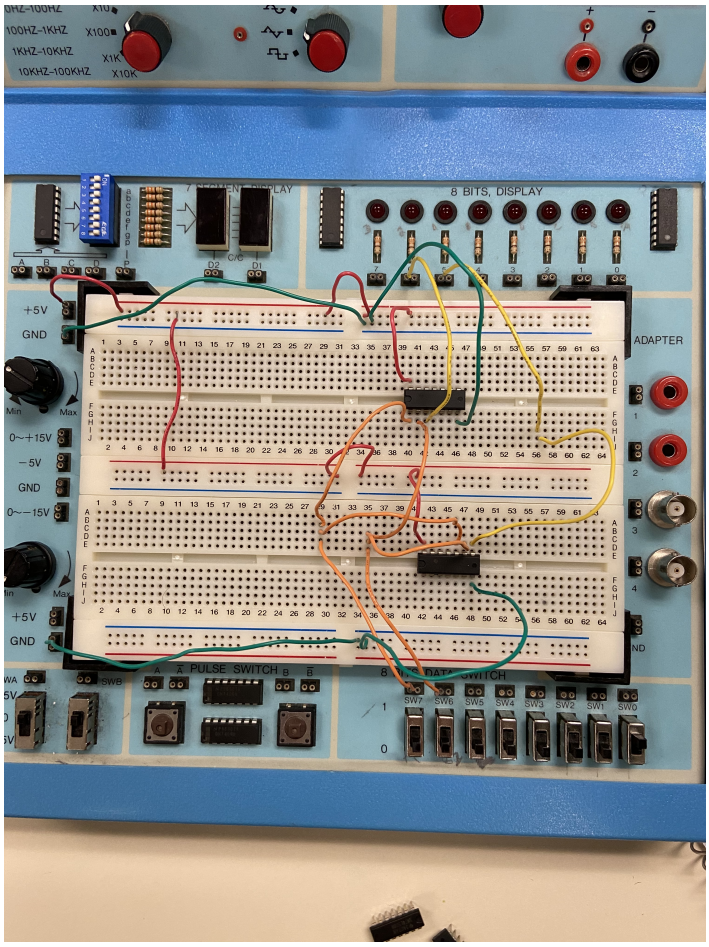

Figure 2: This is the Half Adder.

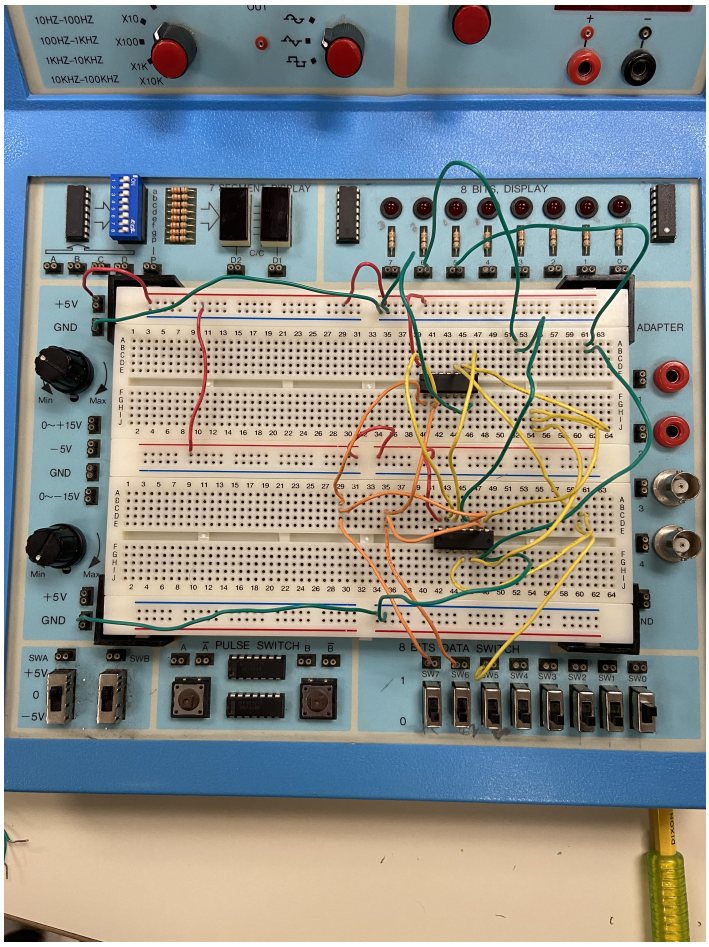

Figure 3: This is the Full Adder.

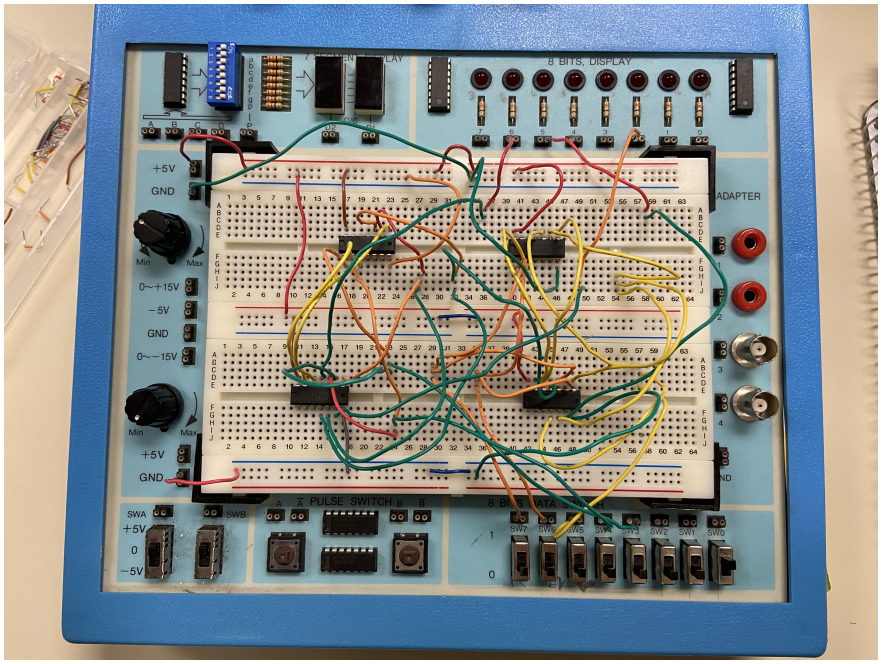

Figure 4: This is the 2-bit Adder.