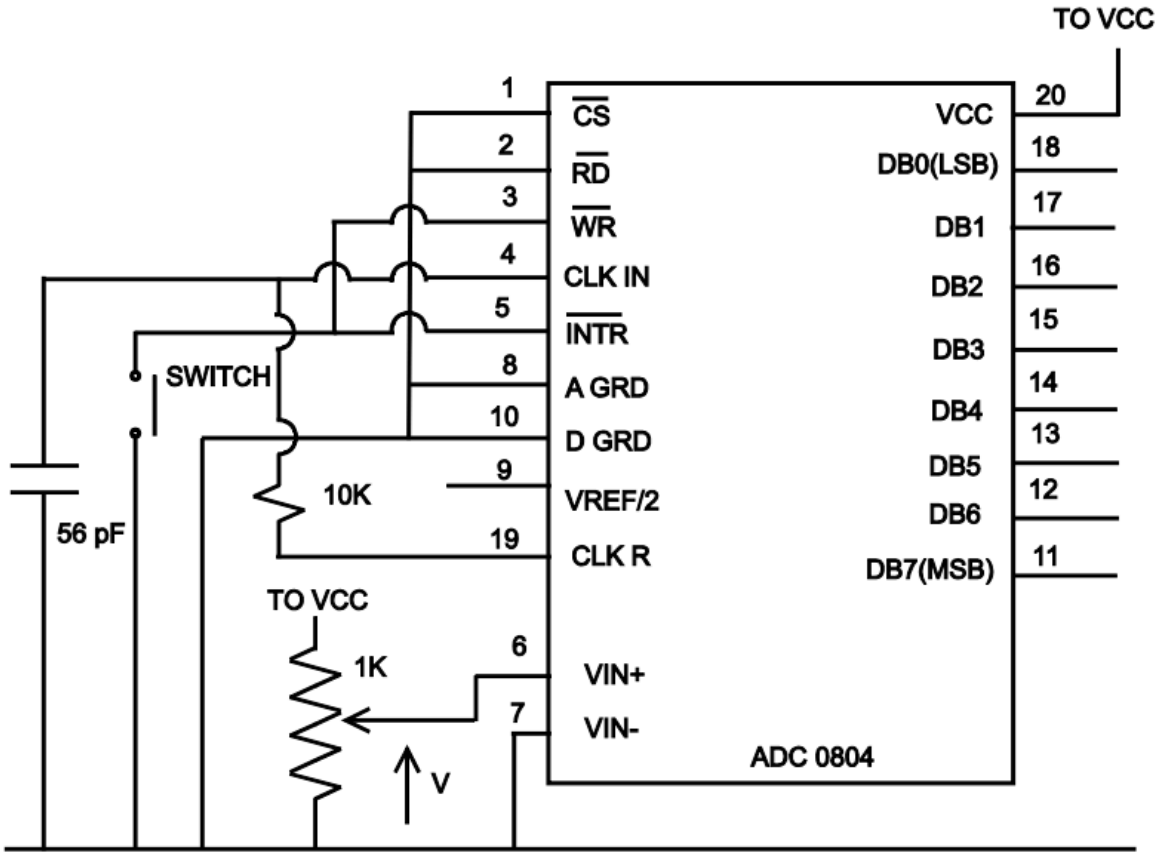
ECE 182 Lab #8 Analog to Digital Conversition
Day of Submission: 10/31/2025
Name of student: Frank Tamburro

Circuit and Schematic



- Theoretical vs Experimental
- 56pF vs 55.86pF
- 10Kohm vs 9.8563Kohm

Equations for Theoretical Basis

$$V_{analog} = D \times \frac{5}{256}$$

Results and Calculations

$$V_{analog} = D \times \frac{5}{256}$$

Digital = 5 $V_{analog} = 5 \times \frac{5}{256} = 0.09765V$

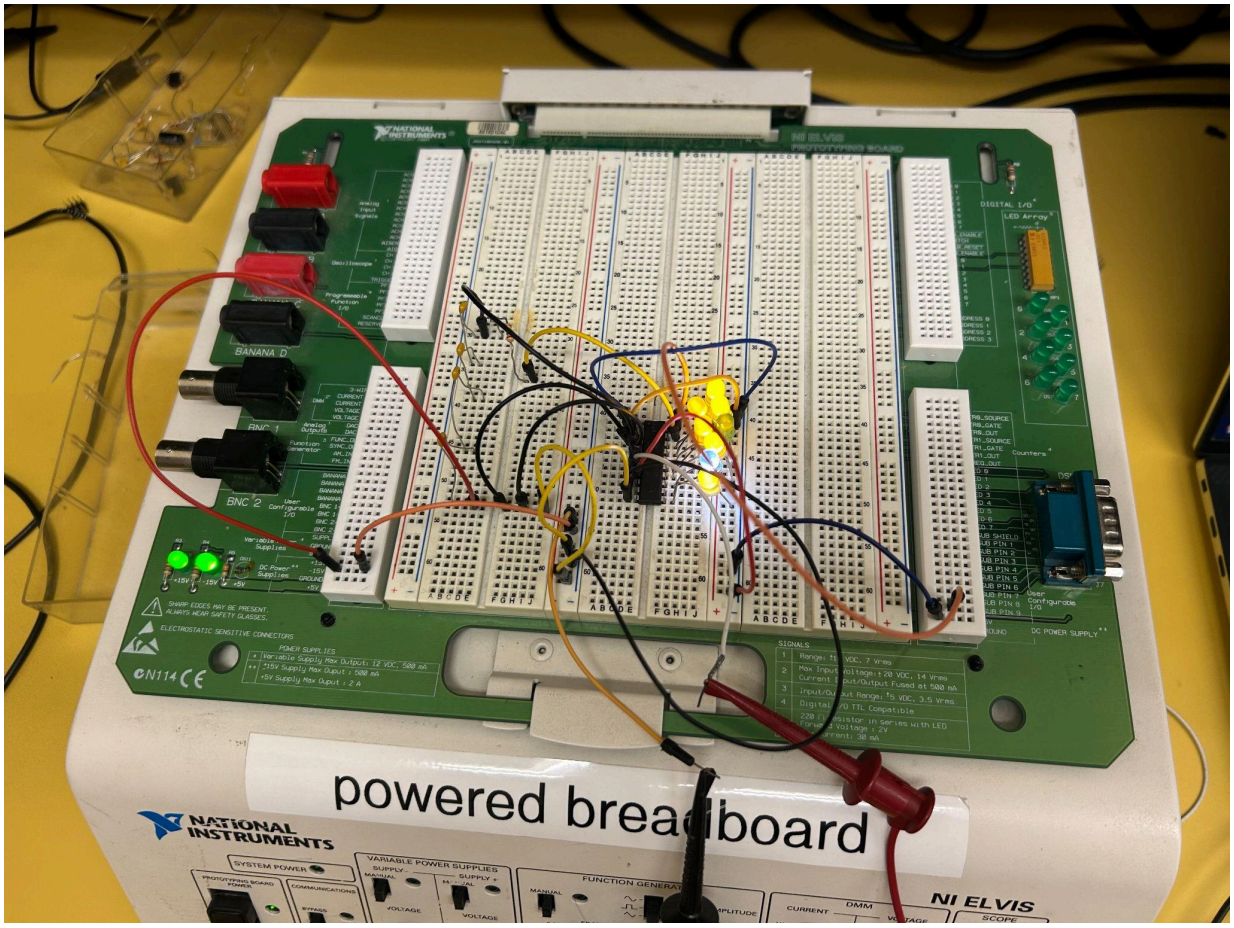
Digital = 13 $V_{analog} = 13 \times \frac{5}{256} = 0.2539V$

Digital = 33 $V_{analog} = 33 \times \frac{5}{256} = 0.64453V$

Digital = 81 $V_{analog} = 81 \times \frac{5}{256} = 1.58203V$

Digital = 123 $V_{analog} = 123 \times \frac{5}{256} = 2.4023V$

Circuit on Breadboard with Operational LEDs



Summary

In this lab, an ADC0804 was used to convert an analog input voltage into an 8-bit digital output. The circuit was built according to the provided schematic, and measured component values, such as the 56 pF capacitor and 10k ohm resistor. These resistor and capacitor values closely match their theoretical values. The LEDs connected to the output pins would turn on but wouldn't really change bits when varying the voltage input. Although we didn't get the output we wanted, we were successful in making the circuit operate. Overall, the lab demonstrated circuit implementation and highlighted how analog signals can be accurately digitized for digital systems.