EC450 HW 5 Writeup

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For this assignment we recorded a photo-resistors resistance for our analog input. A photo-resistor changes the resistance depending on the amount of light it receives. The more light shined upon the photo-resistor the less resistance occurs across the photo-resistor. The vice-versa is true as well as the less light there is, the more resistance occurs across the photo-resistor. We used a setup that recorded the voltage across the photo-resistor. Using the voltage, we could calculate the proportional resistance and determine whether it was dark or light depending on the calculated resistance. The Master Board records the value of the calculated resistance and sends it to the Slave Board over an SPI connection. Depending on the value the Slave Board received, the Speaker would emit tones.

The system was setup with the Master Board calculating and recording the data which is then transmitted through an SPI connection. However since SPI can only transmit 8bits, we scaled the recorded value to fit 8 bits. Doing so allowed a proper transmission to the Slave Board so it could then emit tones based on the data transferred.