EENG 348: Digital Systems

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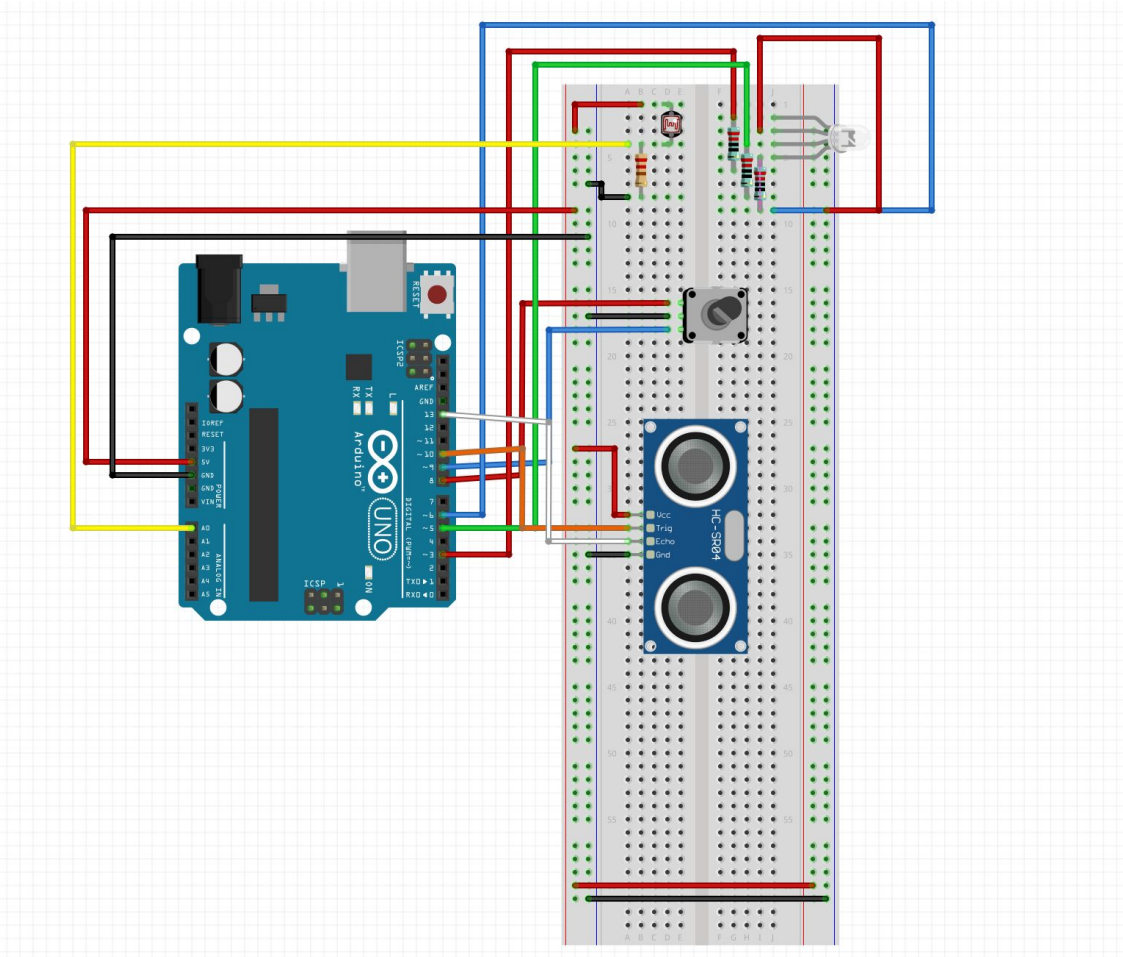
Lab 3 - Part 2



In part 2, we modified our approach to powering the LED by setting the anode always to high and then modifying the intensities of the channels by setting them low. (Please see testing.txt.) Current limiting resistors were placed at each end of the color channels as a safety precaution. The overall brightness of the LED was still dependent on the light exposed to the photocell. (Please see commented code.)

The intensities of the red and green channels were dependent on the distance measured by an ultrasonic range finder. The Arduino first sent a pulse to the trigger pin to initiate the measurement, and then the pulse returned by the echo pin was recorded. This pulse was interpreted as the time for which the pulse returned was high. This time was translated into the distance travelled by the ultrasonic wave using the speed of sound at room temperature. The greater the distance measured, the greater the intensity of red displayed and the lesser intensity of green displayed.