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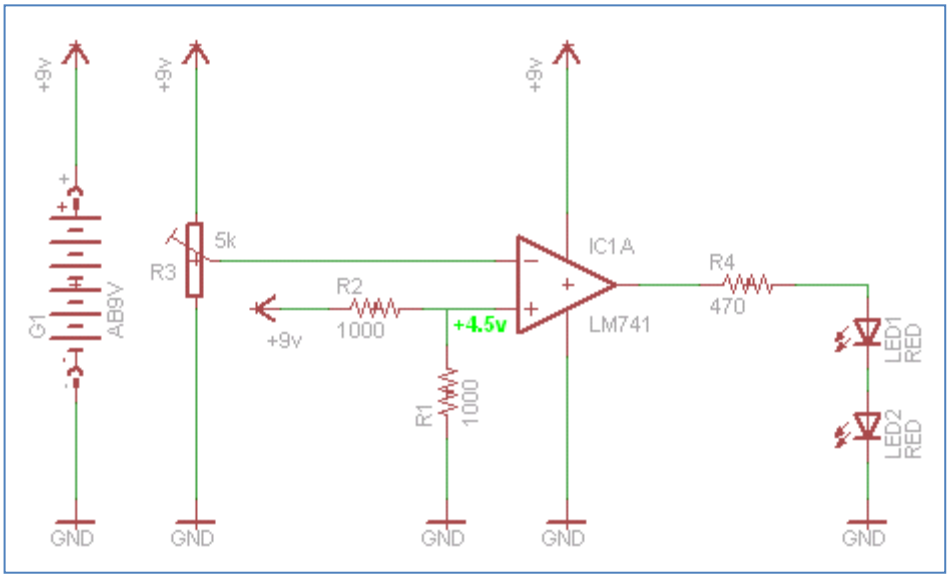
Introduction To Modern Electronics – Lesson 8: The OpAmp

SCHEMATICS

The following schematic material is meant to go with the online lesson found here:
http://www.pyroelectro.com/edu/basics/opamp/

DIODE EXPERIMENT SCHEMATICS

In this lesson, we performed an experiment where we built a comparator out of the LM741 Op-Amp. The proper circuit diagram for that circuit is below:



When the 5kΩ trimpot (R3) is varied, it outputs a different voltage to the – (inverting input) side of the opamp. When it becomes larger than +4.5v the LEDs will turn off because it is larger than the input at the + (non-inverting) side of the op-amp. The two resistors R1 and R2 form what is called a "voltage divider" meaning that the +9v is divided down to a smaller value, in this case +4.5v.

When the – (inverting input) side of the op-amp is lower than +4.5v the LEDs will turn on, thus creating the other half of the comparator circuit. The comparator's only goal in life here is to see if the – (inverting input) is larger or smaller than the + (non-inverting input).

ADDITIONAL INFORMATION

To ask questions about anything found in this schematic please head on over to the forums located at:
http://www.pyroelectro.com/forums/