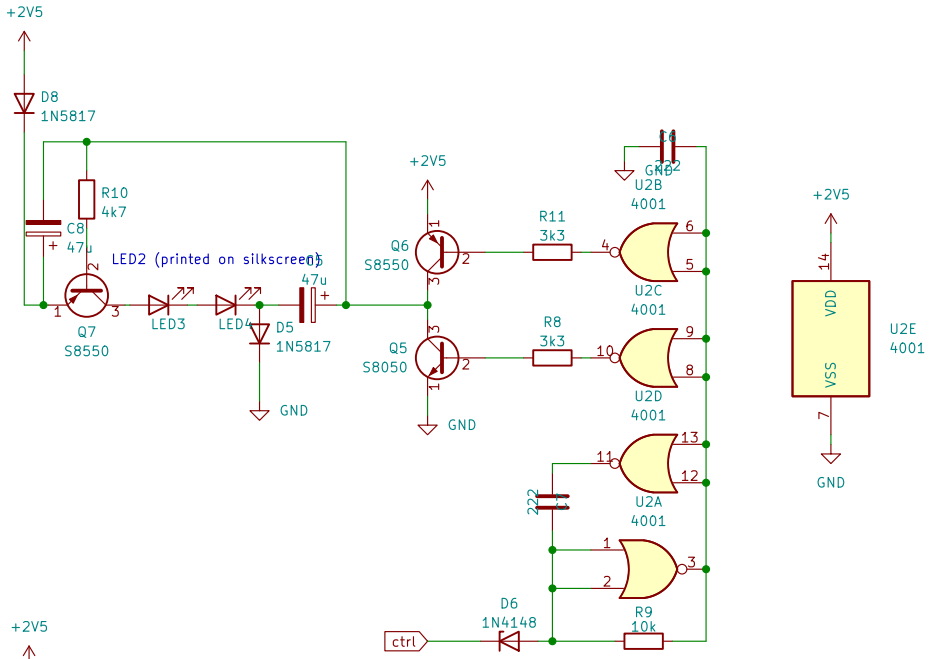
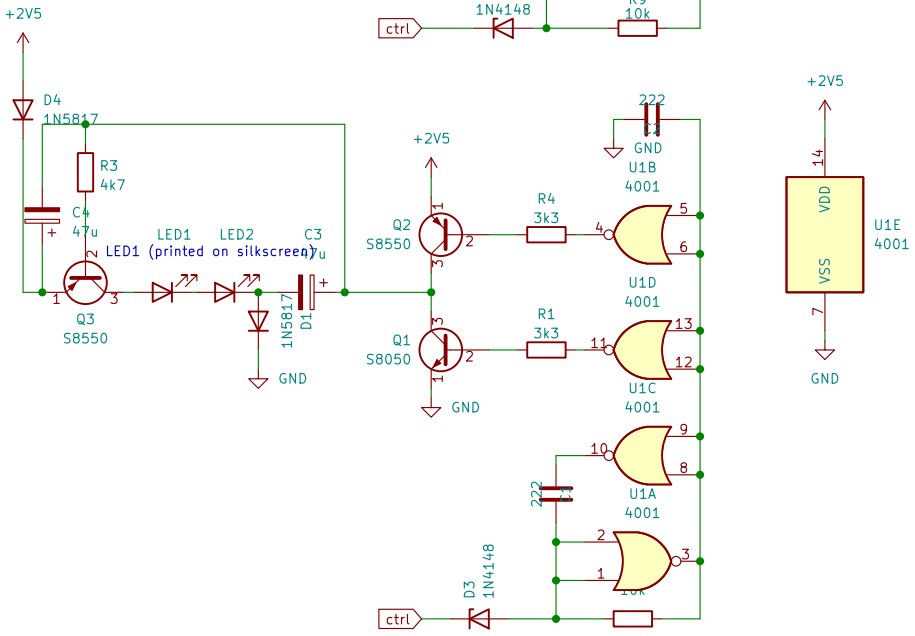
NOR gate: (0, 0) -> 1 (all other combinations yield 0)





BATT1

Unconnected. Open.

BATT2

4x1.2V Ni-Cd batteries connected in two and two parallel. Should yeild 2.4V at full charge.

There is a sliding connector on the BATT2 positive side.

There is a left and a right side identical to each other. The explanation below applies to the other side aswell.

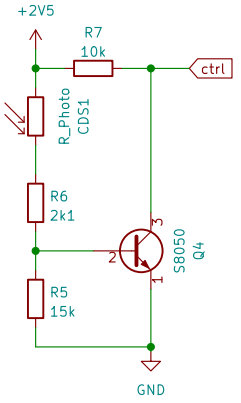
Explanation:

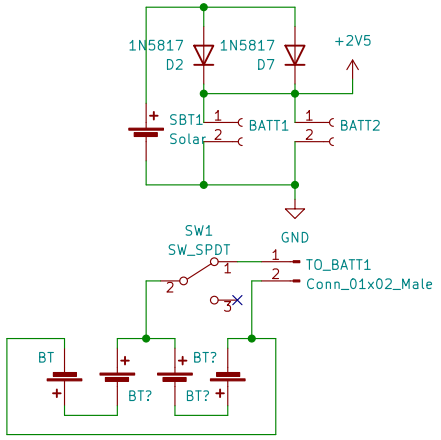
Photoresistor resistance goes down as light shine upon it. This causes the base of Q4 to go up, which causes ctrl to go low. This is a truth value of 0 to the nor gate and outputs 1. Which passes then though another set of nor gates and outputs 0.

The nor gates then outputs low, which causes Q1 to be non-conductive, and Q2 to be on. This means the base of Q3 is high, and no current passes as the V_BE is close to 0V.

On the other, in darkness, the resistance of the photoresistor goes to its nominal value (probably 10k) and ctrl goes high. This gives 0 out at the first set of NOR gates, and 1 at the second.

This means Q1 will be on. This gives a V_BE at Q3 of less than -0.7V turning it into saturation. The LEDs will then be lighting.





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