

CS 3651: 555 Oscillator Lab (Blinkenlights)

Name(s): _____

Learning Objectives:

1. Learning how to use a 555 Oscillator.
2. Applying knowledge about how RC circuits work to control the speed of the oscillation
3. Learning how to read circuit schematics, and identify problems with circuits on the Internet.
4. Learning how to synthesize multiple examples into a single working circuit.

Step 1: You have been given a 555 (or 556) IC. Find it's spec sheet and figure out which pins are which. List the pins you will be using with their number and function:

Step 2: You can find many circuit examples on the Internet that show how to use a 555 timer IC to flash an LED. (Three are included on the other side of this paper.) Identify any problems with these circuits (annotate the circuit on the back of the page) and then draw the simplest circuit that you think is correct and will work.

Step 3: Build the circuit you have sketched. Due to limited supplies of capacitors, you may need to use a 33 micro Farad capacitor instead of the capacitor rating that you would like. To compensate, you may need to modify one or more resistor values. Which resistors will you need to change? And will you need to make them larger or smaller? Why?

Step 4: Demonstrate your blinkenlights circuit to the TA or instructor.

Reference Circuits from the Internet (May have problems! If you find any, mark them!):

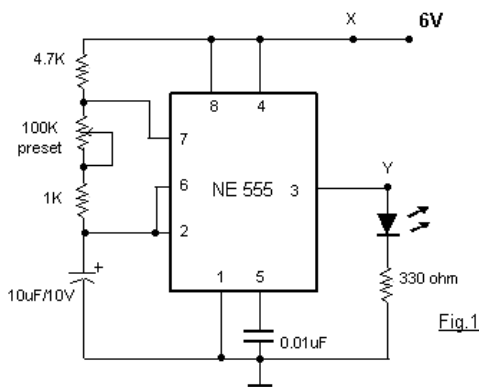


Fig.1

Setup for alternating flasher (see text for more information):

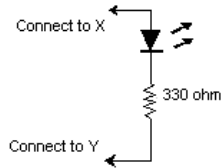


Fig.2

