

LED chaser circuit / Sequential LED flasher using 4017 IC and 555 timer

Explanation of Circuit's Working:

The 555 timer IC is configured to work in astable mode. Which means, the output from the 555 timer changes continuously between high (Supply Voltage) and low (0V). In other words, if you connect an LED between the output of 555 timer and ground, the LED flashes/blinks continuously.

This pulsing output from the 555 timer is connected to the clock input of 4017 IC (a decade counter). It has 10 output pins and we have connected an LED to each output. By default, the first output pin is on/high and the rest are off. Each time the clock input pin of 4017 IC detects a rise in voltage (from low to high), it turns off the current output and turns on the next sequential output. This swapping of outputs which looks like the LED's are chasing each other, continues until the last LED and then the output resets back to the first LED.

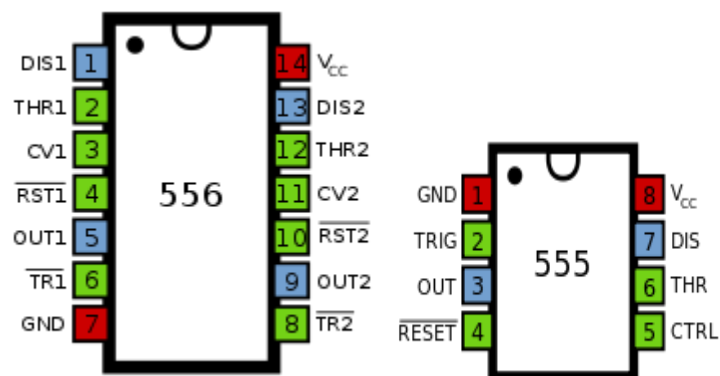
For this LED chaser circuit, we have used all the 10 outputs of 4017 IC. But if you wish to make an LED chaser circuit with less than 10 LED's, you can do the same by connecting the LED's starting from U0. Let's say you wish to build this circuit with 4 LED's, you need to connect an LED to each of U0, U1, U2, U3 and leave the rest.

Components Required:

1. 555 Timer IC
2. CD 4017 IC
3. LED Lights x10
4. Resistors: 470R, 1K, 47K
5. Capacitor: 1uF
6. Breadboard
7. Lot of Breadboard Connectors

8. Power Supply: (5-15)V

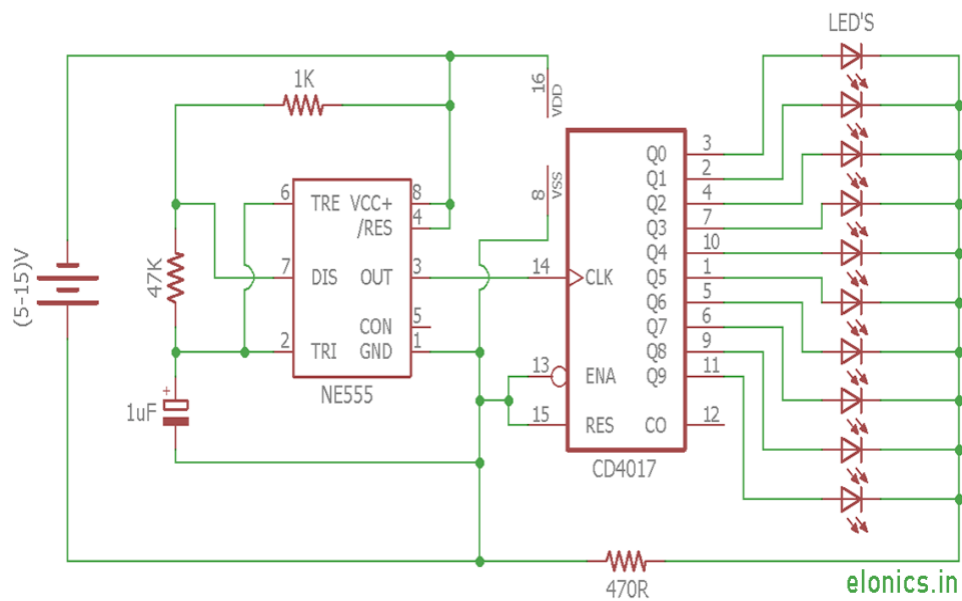
555 timer IC: The **555 timer IC** is an [integrated circuit](#) (chip) used in a variety of [timer](#), pulse generation, and [oscillator](#) applications. The 555 can be used to provide time delays, as an [oscillator](#), and as a [flip-flop element](#).



Pinout of 556 dual timer (14 pins)

Pinout of 555 single timer (8 pins)[

Circuit diagram:



LED CHASER SCHEMATIC

Output :

