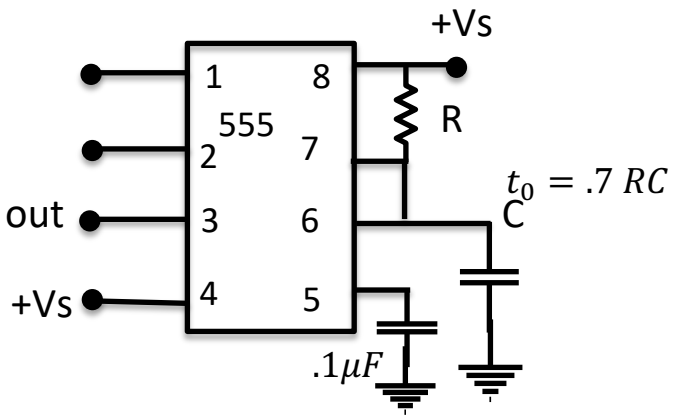
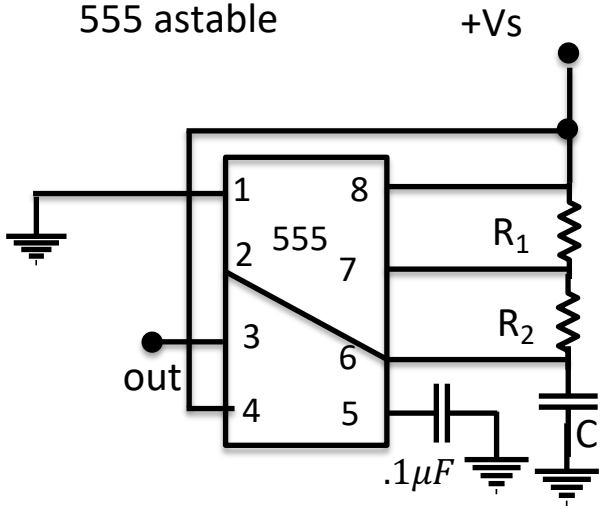
555 one shot



555 astable



$t_0 = .7C(R_1 + 2R_2)$

$duty - \text{cycle} = \frac{R_1 + R_2}{R_1 + 2R_2}$

Pin 1: -Vs
Pin 8: +Vs
Pin 2 (Trigger): Out HIGH if V < V_{CC}/3. Pin 2 controls pin 6. If pin 2 is LOW, and pin 6 LOW, output goes and stays HIGH. If pin 6 HIGH, and pin 2 goes LOW, output goes LOW while pin 2 LOW. Pin 2has a very high impedance (about 10M) and will trigger with about 1uA.
Pin 3 (Output): (Pins 3 and 7 are "in phase.") Goes HIGH (about 2v less than rail) and LOW (about 0.5v less than 0v) and will deliver up to 200mA.
Pin 4 (Reset): Internally connected HIGH via 100k. Must go below 0.8v to reset the chip.
Pin 5 (Control): voltage applied to this pin will vary the timing of the RC network (quite considerably).
Pin 6 (Threshold): HIGH if > 2 V_{CC}/3, make output LOW only if pin 2 is HIGH. Pin 6 has very high impedance (~10M) and will trigger with about 0.2uA.
Pin 7 (Discharge): Pin 7 is equal to pin 3 but pin 7 does not go high - it goes OPEN. When LOW it sinks about 200mA.

324 op amp

1 (o1)	(o4) 14
2 (i1-)	(i4-) 13
3 (i1+)	(i4+) 12
4 (V+)	(GND) 11
5 (i2+)	(i3-) 10
6 (i2-)	(i3+) 9
7 (o2)	(o3) 8