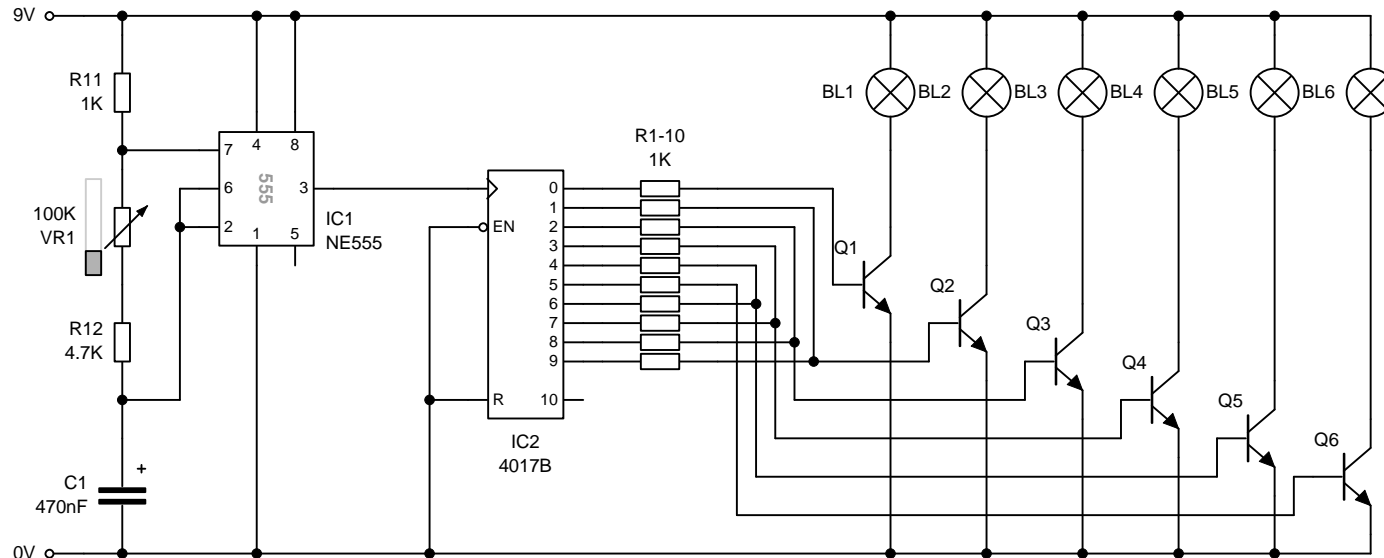


SIMPLE LIGHT BOUNCER

by Phil Townshend - 2007



This circuit will produce a bouncing light effect with a slight trail. This is caused by the filaments of the bulbs cooling down relatively slowly. The same effect can be achieved with LEDs instead of bulbs but you would need to add capacitors to produce the trail effect.

The 555 IC forms a standard astable circuit using VR1 to alter the speed of the chase. IC2 is a decade counter/divider which means every time a low-to-high pulse occurs on the clock input, the next consecutive output goes high with the preceding one going low. This happens continuously. The last 4 outputs are OR'ed with outputs 1 to 4 to give the effect of the chase going back in reverse.

The transistors used (Q1 to Q6) are 2N3704 types which have around 600mA output capability and a gain of around 100. This means only about 6mA base current which is about the maximum a standard CMOS IC will deliver. The bulbs used are 6.5v 300mA types or thereabouts. Take care not to exceed the output of the transistors.

A good alteration would be to use Darlington transistors as drivers and use 12v car bulbs, about 12W should produce a good effect. You will have to increase the power supply to 12 volts of course.