

PROGRAMMABLE LED INDICATOR

Although IC CD4017 is a decade counter, it can be used in a variety of ways. In this circuit it has been used to program a bicolour LED indicator in 10 different modes which can be selected with a single push-button switch.

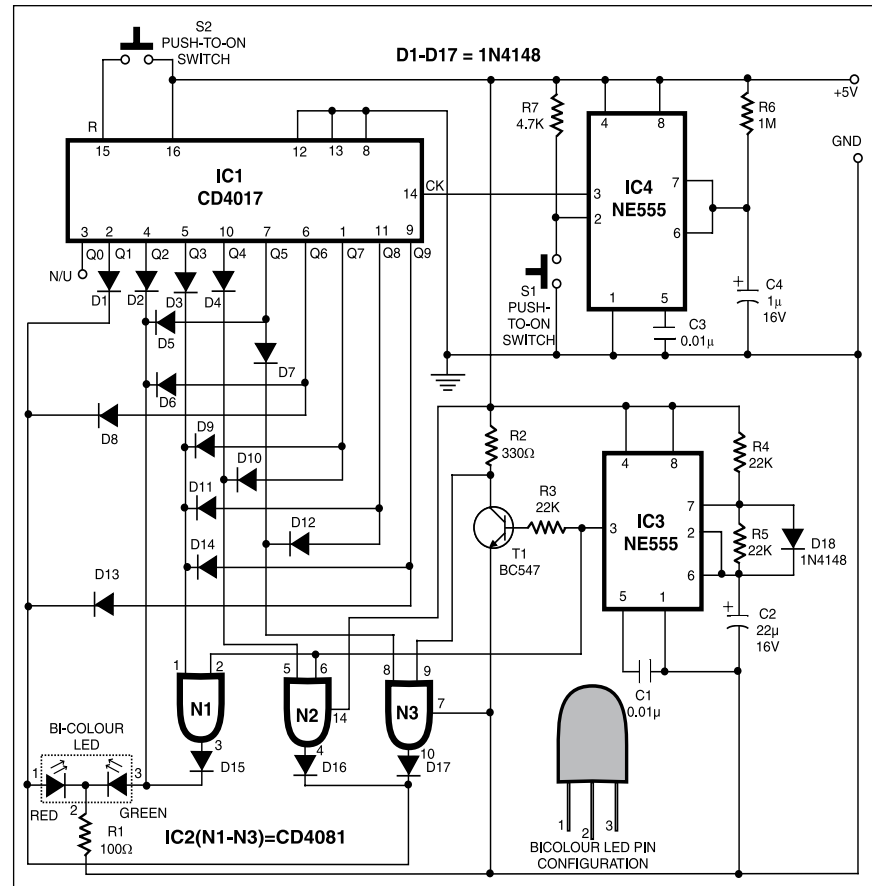
IC3(555) is used in astable mode to generate square wave and transistor T1 is used to obtain its complementary waveform. IC2 CD4081 is a quad 2-input AND gate. These AND gates and the diode matrix form the logical part of the circuit. IC4 (555) is configured as a monostable flip-flop which provides a single clock pulse to IC1 CD4017 for changing the mode by depression of push-to-on switch S1. The use of IC4 avoids switch debouncing problem which causes multiple makes/breaks.

TABLE I

Mode	Operation
0	Off
1	Red ON
2	Green ON
3	Blinking Green-Yellow-Green-Yellow...
4	Blinking Red
5	Blinking Yellow
6	Blinking Green
7	Yellow ON
8	Blinking Red-Yellow-Red-Yellow...
9	Blinking Red-Green-Red-Green...

Switch S2 is included for resetting the circuit. Instead of just one bicolour LED you can use an array of bicolour LEDs in conjunction with two driver transistors.

The bicolour (RED and GREEN) LED has three legs. The middle terminal (pin2) LED is the common cathode pin which is grounded when a positive voltage is ap-



plied to pin1, it emits red light. Similarly, when positive voltage is applied to pin3, it emits green light. And when positive voltage is simultaneously applied to its pin1 and 3, it emits yellowish light.

Power supply used is +5V regulated. Various modes of this circuit are summarised in Table I.

Outputs of IC1 can also be selected through a 10-way rotary switch connected to Vcc. Now IC1 can be eliminated. Different indications can be activated for different functions of a device.

Construction is very easy and total cost of this circuit is less than Rs60. Current consumption of the circuit is less than 100mA.