WEEKLY REMINDER

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EFY TESTED

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This circuit reminds you of all the important tasks that are due on a specific day every week. So be it returning your library book, switching on your favourite TV programme, putting the dustbin out or cleaning the car, it automatically flashes an LED that very day to alert you of something to be done. The LED keeps flashing until you press the reset button. The circuit consumes very little power.

The circuit can count the days. The rising of the Sun is detected by a light-dependent resistor (LDR1). When the sun rises, the ambient light level reduces the resistance of LDR1. The voltage level at pin 13 of gate N4 goes low. Since the other input (pin 12) of gate N4 is high, its output also goes high. This is inverted by gate N10 whose output goes low to make counter IC3 advance by one count. This way each day is counted. Similarly, the counter advances by one every morning until it counts seven days.

In the morning of the seventh day, all the inputs of gate N9 become high, making its output low. The low output of gate N9 is inverted by gate N11 to trigger the pulse generator built around gates N5 and N7, and it produces a short-duration pulse to trigger the flip-flop built around gates N6 and N8. As a result, the output of the flip-flop goes high to enable the astable multivibrator built around gate N3. The astable multivibrator produces 2Hz frequency to flash LED1 as a reminder. LED1 flashes until you press reset switch S2 momentarily.

When the enable input (pin 8) of gate N3 is low, the output of the astable multivibrator remains high. Gate N2 inverts this high level into low and the transistor does not conduct. So LED1 doesn't flash when the astable multivibrator is disabled.

Counter IC3 also resets when the pulse generator triggers because its reset pin 11 is connected to the output of gate N11.

When the counter IC3 resets, its output becomes low and it's ready to begin day counting for the next week.

Suppose you require a reminder for four days. Then first cover the sensor and press increment switch S1 thrice momentarily and leave it. Now your reminder (flashing of LED1) starts after four days.

Assemble the circuit on a general-purpose PCB and enclose in a suitable cabinet. After assembling the circuit, proper setting is required. First of all, switch on the power. LED1 flashes. Press switch S2 to stop it from flashing. Cover LDR1 and press S1 several times until LED1 flashes again. The counter is now set at a count of 0 and is ready to start weekdays counting. Press S2 to stop flashing.

Do not uncover the sensor immediately after pressing S2. Else, the counter will register arrival of the next day and LED1 will flash after six days. To make it flash weekly on a particular day, keep the LDR1 in dark until night. ●

IC1(N1-N4) = CD4093   IC2(N9-N11) = CD4023   IC4(N5-N8) = 74HC00