



Project topic

Automatic Room Light Switch

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INTRODUCTION

The operation of the project is automatic on and off, of the room light. When the door of the rooms are opened and closed, the circuit turns On the switches of the room using relay. When the door opens and closes for the second time, the circuit turns off the light by turning off the relay.

EQUIPMENT 1:

REED SWITCH

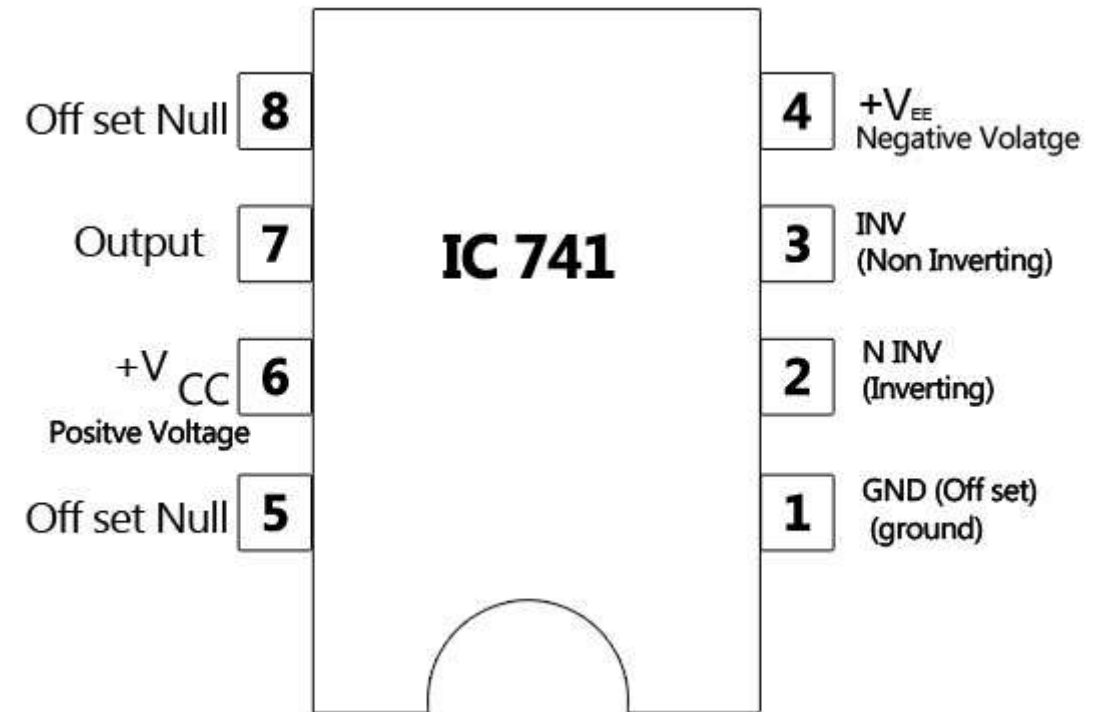
The element which is used to detect the opening and closing of the door is a reed switch.



EQUIPMENT 2:

IC 741

The circuit uses IC 741 op-amp as a comparator arranged such that its output is high by default when the door is closed.



EQUIPMENT 3:

IC 4017

*Let us now introduce you a new IC named IC 4017. It is a **CMOS** decade counter cum decoder circuit which can work out of the box for most of our low range **counting** applications. It can **count** from zero to ten and its **outputs** are **decoded**.*



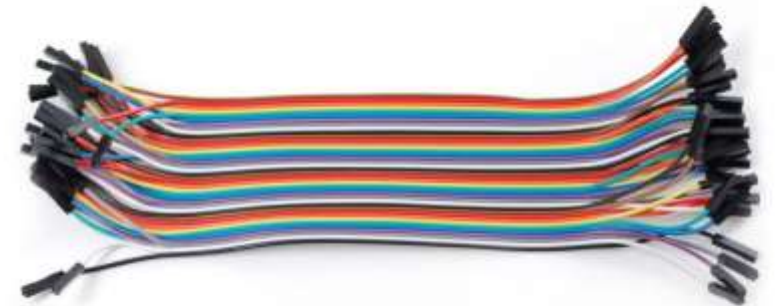
EQUIPMENT 4: RESISTORS



A **resistor** is a passive two-terminal electrical component that implements electrical resistance as a circuit element. In electronic circuits, **resistors** are used to reduce current flow, adjust signal levels, to divide voltages, bias active elements, and terminate transmission lines, among other uses.

EQUIPMENT 5: JUMP WIRE

*A jump **wire** is an electrical **wire** or group of them in a **cable** with a connector or pin at each end which is normally used to interconnect the components of a **breadboard** or other prototype or test circuit, internally or with other equipment or components, without soldering.*

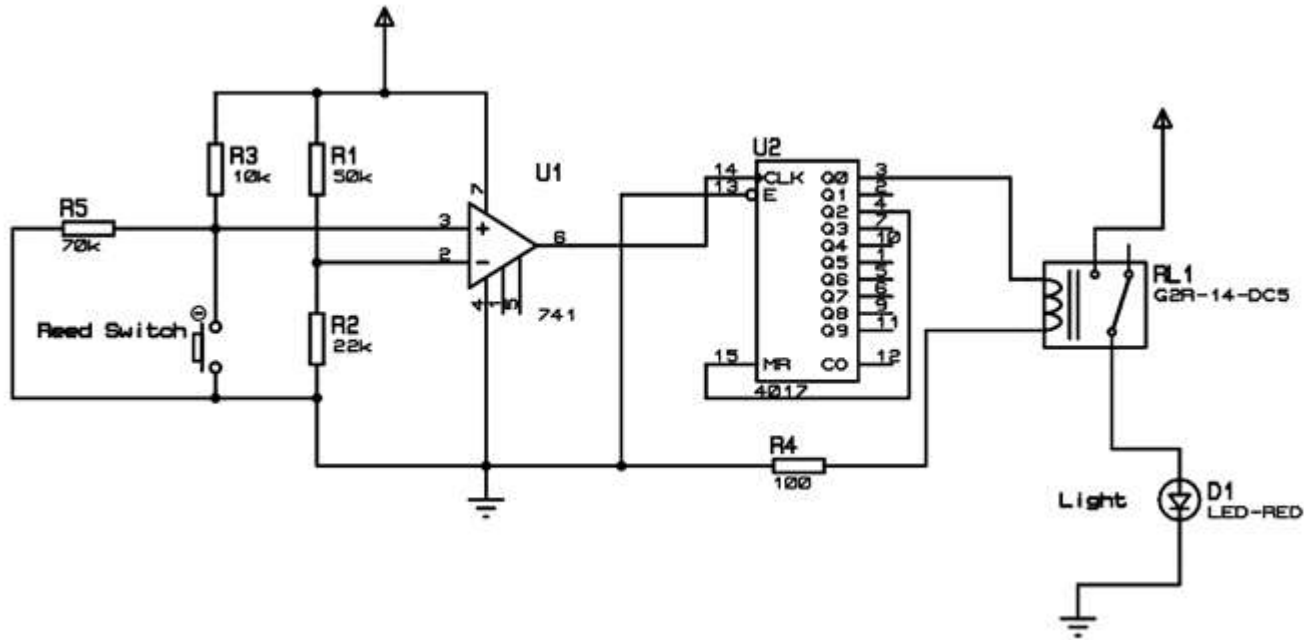


EQUIPMENT 6: BATTERY

*An electric **battery** is a device consisting of one or more electrochemical cells with external connections provided to power electrical devices such as flashlights, smartphones, and electric cars*



CIRCUIT DIAGRAM



ADVANTAGE

We turn On the lights in our room when we enter it and turn them off when we leave. We sometimes forget to turn Off the lights after leaving the room.

By automating this, There are many advantages like, the person need not care to turn On the light always when he is using the room . The circuit which we are doing does it automatically for that person. Also, the person need not turn it off after using the room . There is no fear that he forgets to turn it Off. The circuit is also designed to consume lesser power so that the circuit can be used in any household or public room without worrying about the power bills.

THANK YOU