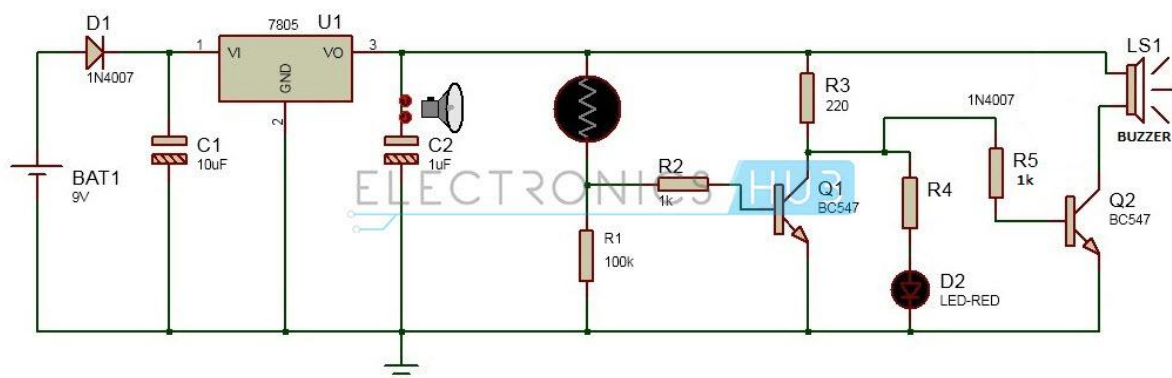


AIM: To design Electronic Eye Controlled Security System using LDR as the main sensor.

APPARATUS:

Sr. No.	Equipment	Specifications	Quantity
1.	Resistors	220 Ω ,1K Ω ,100K Ω	2,2,1
2.	Regulator	7805	1
3.	PN Diode	1N4007	1
4.	Capacitors	1 μ F, 10 μ F	1,1
5.	Transistors	BC547	2
6.	LDR	50-100 K Ohms	1
7.	Buzzer	-	1
8.	LED	RED	1
9.	Bread Board	-	1
10.	Connecting Wires	-	-
11.	DC Battery	9 V	1

CIRCUIT DIAGRAM:



WORKING PRINCIPLE:

- The main principle of the circuit is to ring the door bell when there is any person at the entrance. In order to detect a person, an LDR is used as the sensor. Light on the LDR determines whether a person is present or not. When there is any object at the entrance, LDR is in dark and buzzer starts ringing and the LED starts glowing.
- This circuit can be divided into two parts. One is the power supply and the other is the logic circuit. In the power supply circuit, a 9V supply from a battery is converted to the 5V. The logic circuit operates the buzzer and an LED when any shadow falls on the LDR.
- Power supply circuit consists of battery, diode, regulator and capacitors. Initially a 9V battery is connected to the diode. Diode used here is a simple P-N junction diode of 1N4007 series. In this circuit, 1N4007 is connected in the forward bias condition.
- The logic circuit mainly consists of Light Dependent Resistor, transistors, a buzzer, an LED and a few passive components. A 100K Ω resistor is connected in series to the LDR in a voltage divider fashion. Light dependent resistor will have resistance in mega ohms when it is placed in the dark. This resistance value will decrease gradually when it is placed in the light. Thus, there is a variation in the series resistances.
- When the LDR is in dark it has high resistance and produces the logic high value at the output. When the LDR is in light, the resistance value of the LDR decreases and at the output it gives logic low voltage.
- The output of the voltage divider is fed to a transistor which inverts the input from the LDR. The second transistor drives the buzzer. The diode is placed for protection.
- Buzzer used here is a 5V magnetic buzzer. It has two pins at the output. One pin is connected to the supply and the other pin is connected to the Collector of the second Transistor. LED is used for indication only. When the output from the first transistor is high, the buzzer starts ringing. Led is also turned on.

APPLICATIONS:

- This can be used in doorbell circuits.
- This can be used in the garage door opening circuits.
- Electronic eye can be used in security applications.

CONCLUSION:

Electronic Eye Controlled Security System using LDR was designed and its applications were studied.

