ECE1008 (SENSORS & CONTROL SYSTEMS) EXPERIMENT – 4

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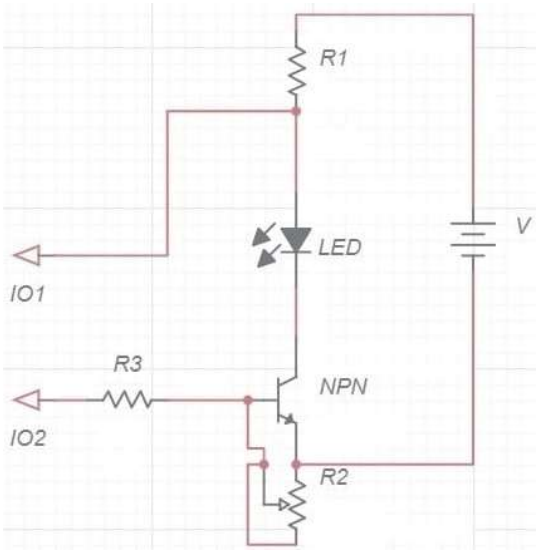
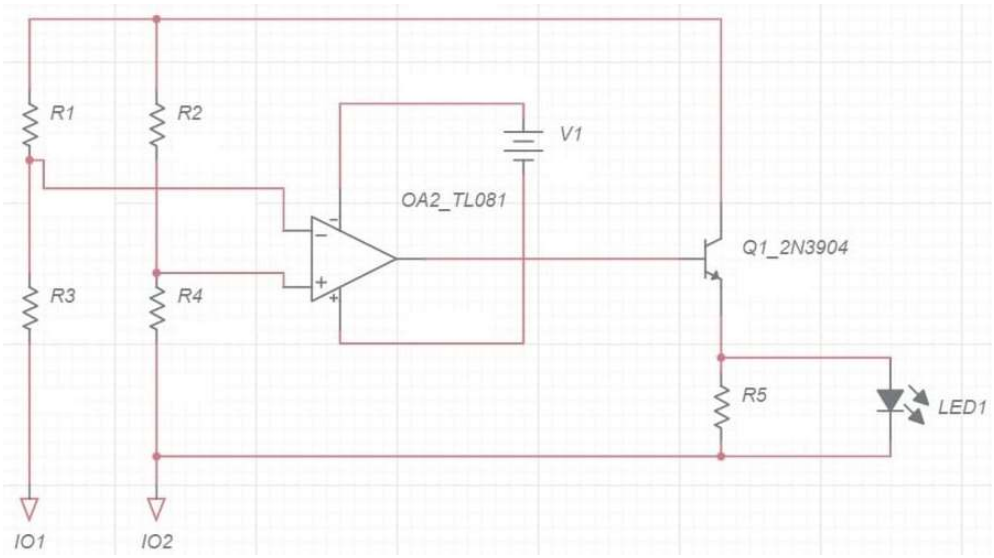
Aim –
To design a circuit for water presence with water sensor.

Materials Required –
Bread board, connecting wires, relay, water sensor, transformer, LED

What is water sensor ?
Water sensor detects the presence of water & when placed in locations where water should be present, it gives output accordingly

Circuit diagram –





Procedure:

Without Relay:

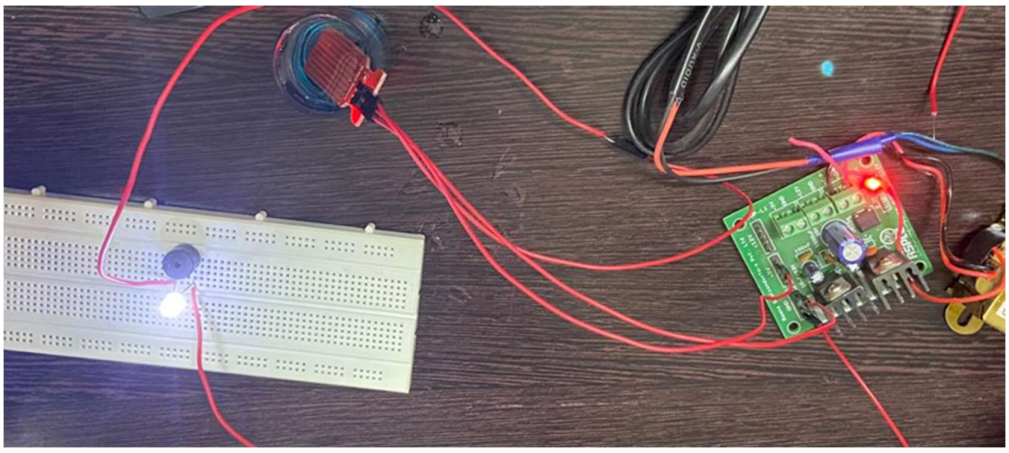
1. Connect the positive pin of water sensor to 5V of transformer and negative pin of transformer to ground.
2. Connect source pin of sensor to positive of LED or buzzer.
3. Connect negative pin of LED or buzzer to ground.
4. Switch the power supply.
5. Now keep the water sensor into water. If the LED glows or the buzzer sounds, it means that water is touched by the sensor.
6. The glow of the LED or the sound of the buzzer continues until the water dries off from the circuit or whenever the water is not present in the sensor.

With Relay:

1. Now attach relay to the circuit.
2. Positive of sensor to 5V transformer, positive of relay and positive of LED or buzzer.
3. Negative of sensor to ground and negative to relay.
4. Source pin of sensor is connected to source pin of relay.
5. COM pin of relay to negative of LED or buzzer.
6. Switch on the power supply.
7. Now keep the water sensor into water, if the LED glows or buzzer sounds, it means water is touched to the sensor.
8. The glow of the LED or the sound of the buzzer continues until the water dries off from the circuit or whenever the water is not present in the sensor.

Working of Water Sensor**:**

The more the water the sensor is immersed in, the higher the output voltage in the signal pin. The sensor has a series of ten exposed copper traces. Five are power traces and five are sense traces. These traces are interlaced in parallel so that there is one sense trace between every two power traces. These traces are not connected unless they are bridged by water when submerged.



Applications:

It can be used in water tanks to control the water level, automatically turn ON/OFF pumps, can be used in factories, commercial complexes, apartments, home.

Conclusion:

Whenever the water touches the sensor the LED glows or the buzzer sounds.