



DLD

MINI

PROJECT

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WATER

LEVEL

INDICATOR

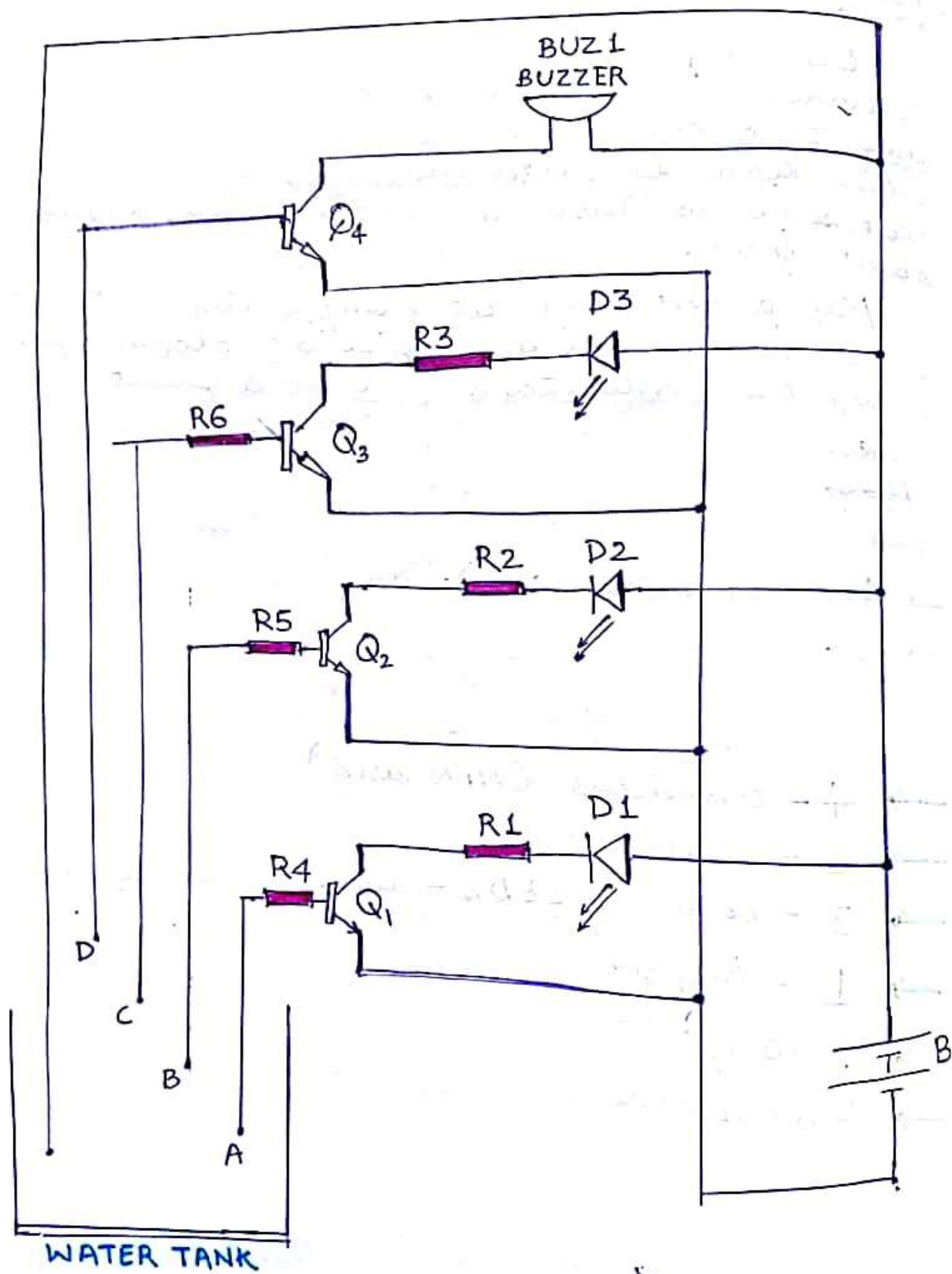
INTRODUCTION:-

Especially in regions, where people have individual water pumps at their homes, water tank overflow is a common problem, which leads to water wastage. Though there exist some solutions, but not everyone knows about them.

AIM :-

- My project aims at using electronics to detect water level and raise an alarm upon getting the water tank full or a preset level.

CIRCUIT DIAGRAM :



WORKING :

Here, we are using Transistor (NPN) as a switch. Initially, there is no voltage applied to the base of transistor Q_1 and the Transistor is in OFF state and no current is flowing through collector and emitter and LED is OFF.

When the water level reaches to point A in the tank, the positive side of the battery gets connected to the base of Q_1 through water. So, when the positive voltage has been applied to the base of transistor Q_1 , it gets into ON state and current starts flowing from collector to emitter. And RED LED glows.

You can see the resistors (R_1, R_2, R_3) at the base of each transistor, which is used to limit the maximum base current. Generally, a transistor gets its ON state fully when a voltage of 0.7V is applied to the base. There are also resistors (R_4, R_5, R_6) with each of the LEDs, to drop the voltage across LEDs, otherwise LED may blow up.

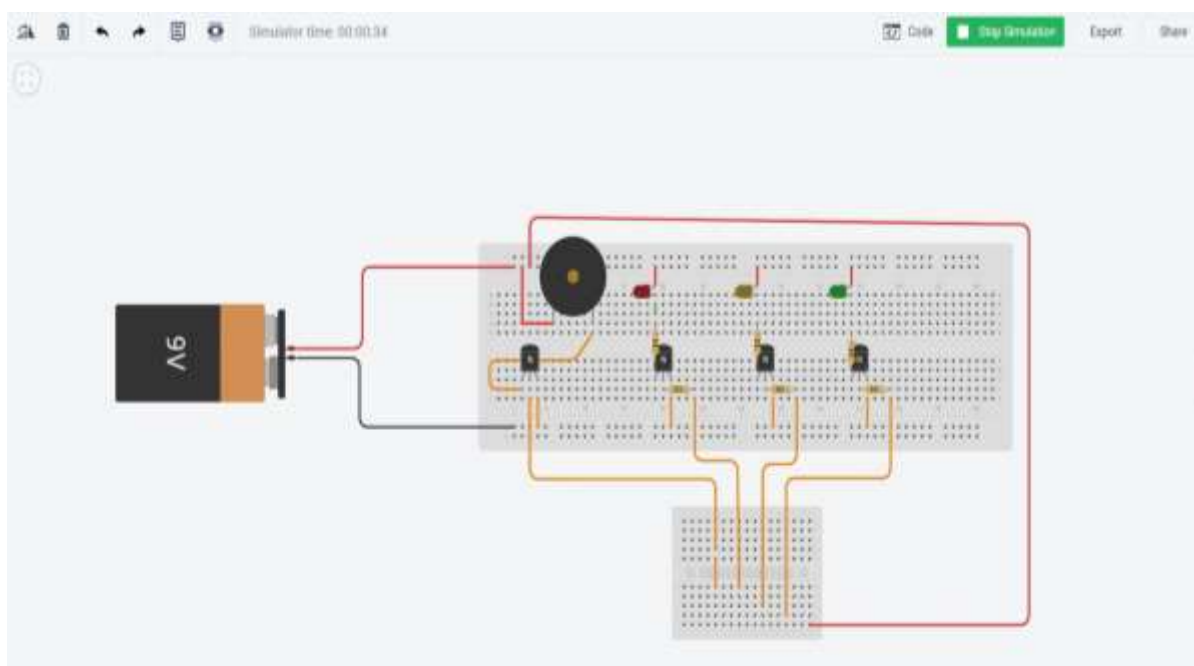
Same phenomenon happens when water level reaches to point B, a positive voltage gets applied to Transistor Q₂, it gets ON and current started flowing through YELLOW LED, and LED glows. With same principle, GREEN LED glow when water level reaches to point C. And finally Buzzer beeps when water level reaches to D.

SIMULATION :

* The **blue wire** in the lower mini breadboard indicates the **water level**.

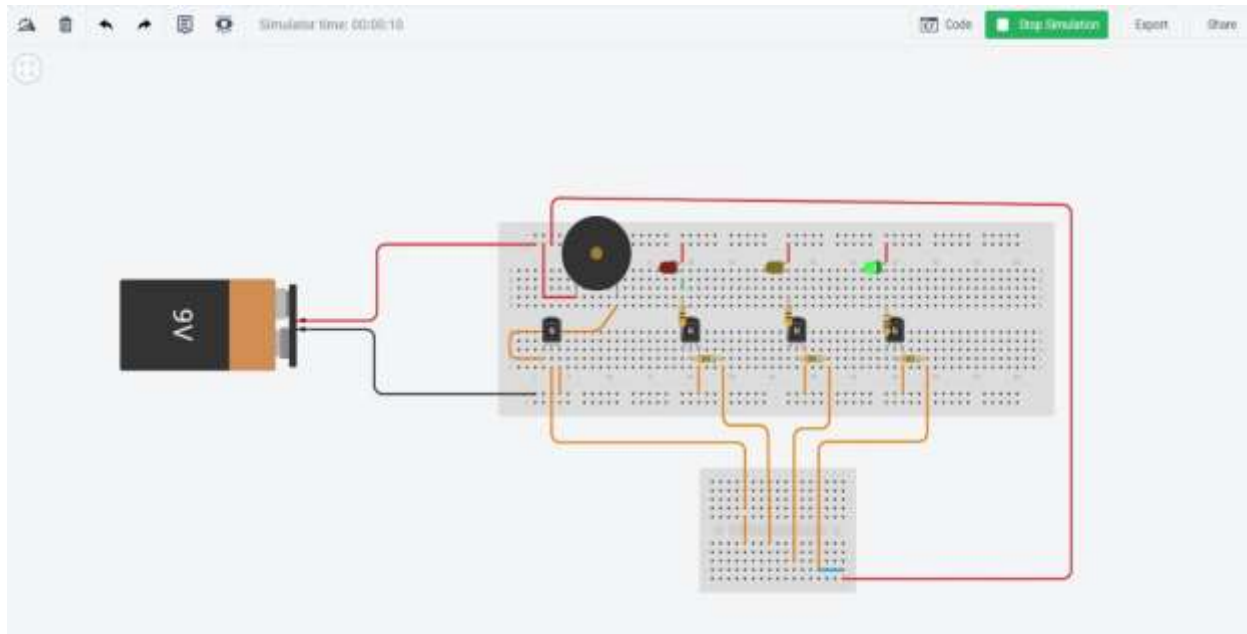
CASE 1) NO WATER

In this case , no current flows in the circuit .



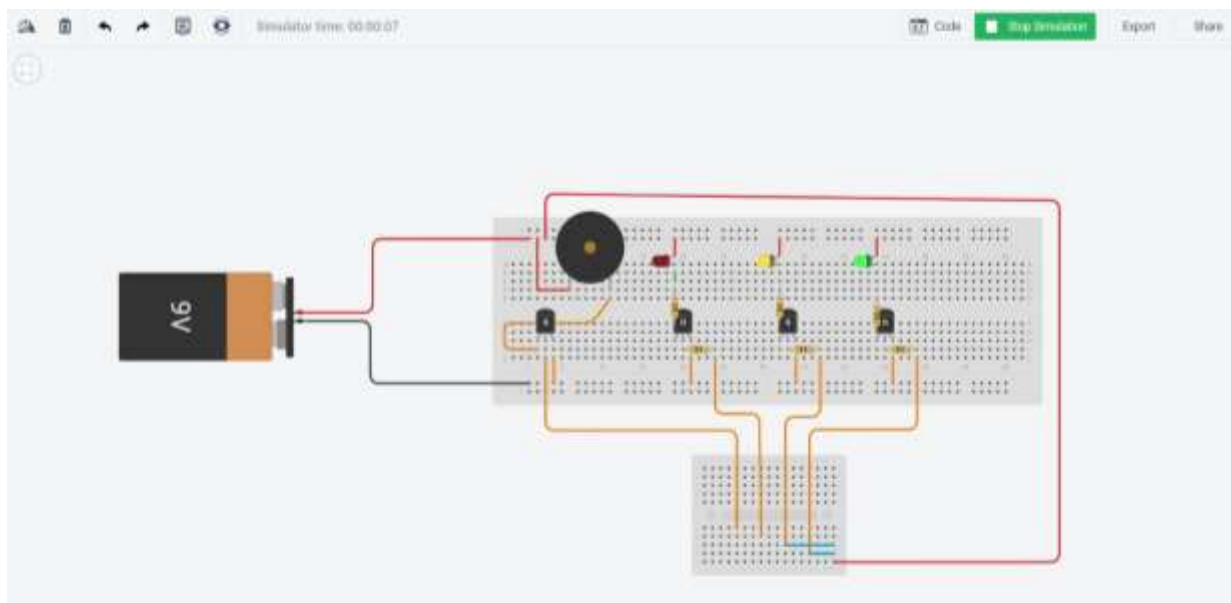
CASE 2) 25% WATER FILLED

In this case , green led glows .



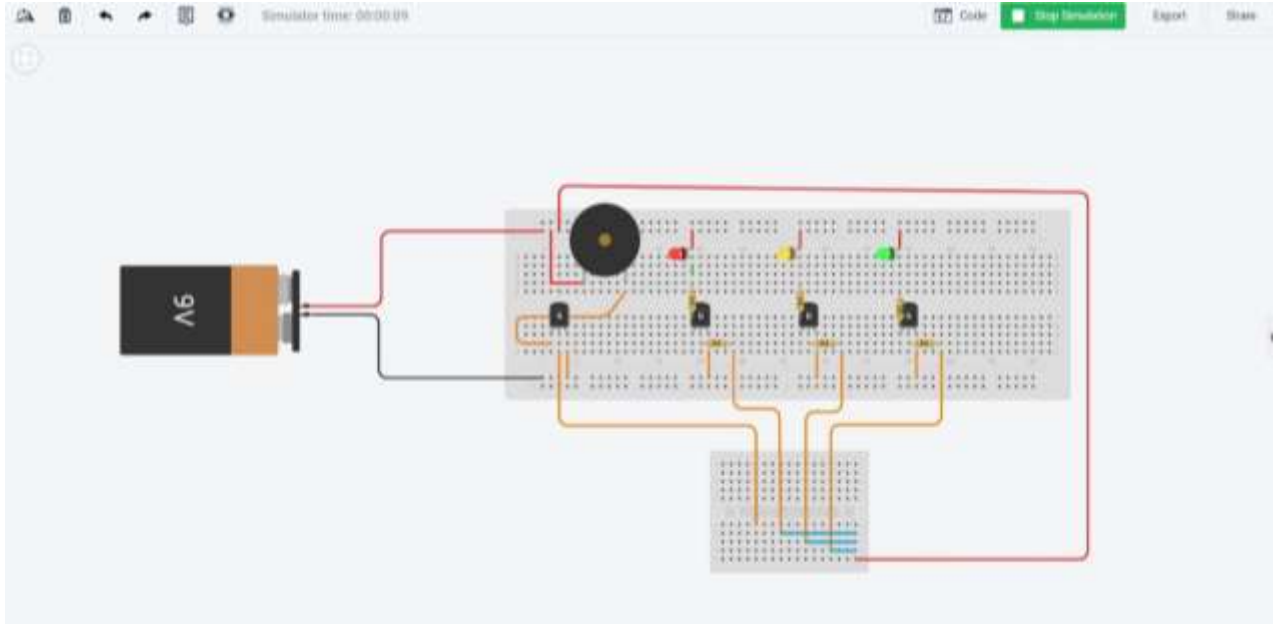
CASE 3) 50% WATER FILLED

In this case , yellow led also glows .



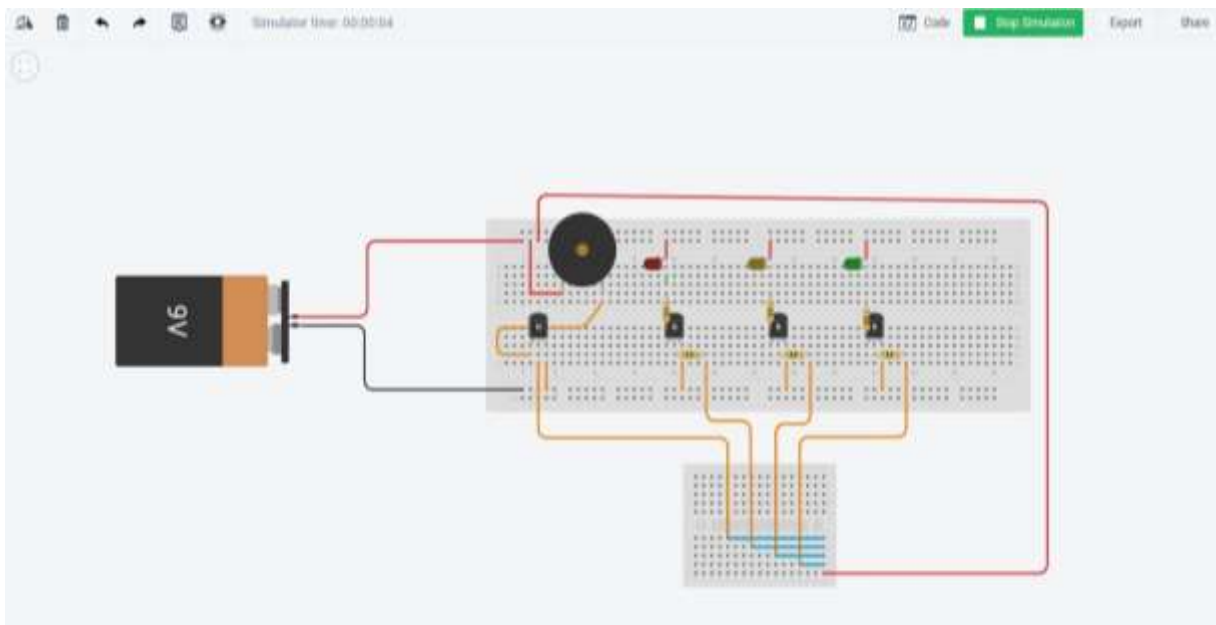
CASE 4) 75% WATER FILLED

In this case , red led also glows .



CASE 5) 100% WATER FILLED

In this case ,((((buzzer)))) buzzes.



RESULTS :-

We learnt making a simple water level indicator using transistors, resistors and LEDs. This can be used to reduce water wastage in homes.

Further, it can be connected to water pump to turn it off when water rises above a certain level. Similarly, turn it on when there is no water in tank.

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