



## Automatic Water Level Controller

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### ABSTRACT

*This is Arduino based automatic water level controller and indicator project. Here, we tend to live} planning to measure the water level by exploitation facilitate of ultrasonic sensors. The ultrasonic sensors use the principle of "echo". Once sound waves square measure transmitted, they once hanging any obstacle come. So, by exploitation this principle we will calculate the time of travel for outgoing also as returning. By calculation we will calculate the gap. Here we tend to use this idea in our project. The motor pump mechanically activates once the water level is low. Truly there's lots of beverage crisis in Bharat and conjointly in alternative countries. These days we want to preserve water at any price. In India, we will see many homes as overhead tanks and that they stick with it overflowing water. It wastes lots of water also as electricity. If we don't do something on this matter then we will face vast insufficiency of water. During this project, I'm planning to implement automatic water level controller in order that we tend to not have to be compelled to manually activate and OFF the motor. The device mechanically monitors the water level and therefore triggers the relay that successively triggers the motor. This helps in reducing wastage of water also as electricity. This conjointly reduces men as we tend to not got to operate it manually.*

**Keywords:** *Automatic, Ultrasonic sensor, Relay, LCD*

### LLITERATUREREVIEW

- Design and Development of Automatic Water Flow Meter (International Journal of Computer Science, Engineering and Applications (IJCSA) Vol.3, No.3, June2013)
- This analysis paper by RiaSood, ManjitKaur, HemantLenka emphasizes on the necessity of water level controller in irrigation in agriculture. It says that each crop needs need completely different quantity of water and this may be done by exploitation automatic water level controller which can additionally facilitate in reducing wastage of water. Here they use a method to live flow of rate of water in irrigation pipelines. It uses a Hall impact sensing element to live the speed flow. G1/2 Hall impact water flow sensing element is employed as a sensing unit with a rotary engine rotor within it whose speed of rotation changes with the various rate of flow of water. Automatic Water Level Controller with Short Messaging Service (SMS) Notification (International Journal of Scientific and Research Publications, Volume 4, Issue 9, September 2014)

This analysis paper by SanamPudasaini, AnujPathak, SukirtiDhakal, city Paudel presents a system of Associate in Nursing automatic water level controller with SMS notification. SMS notification was additional to automatic controller system so water is managed by user throughout load shedding. 2 systems work synergistically; automatic level controller system and SMS system. The program was developed in Arduino program developing

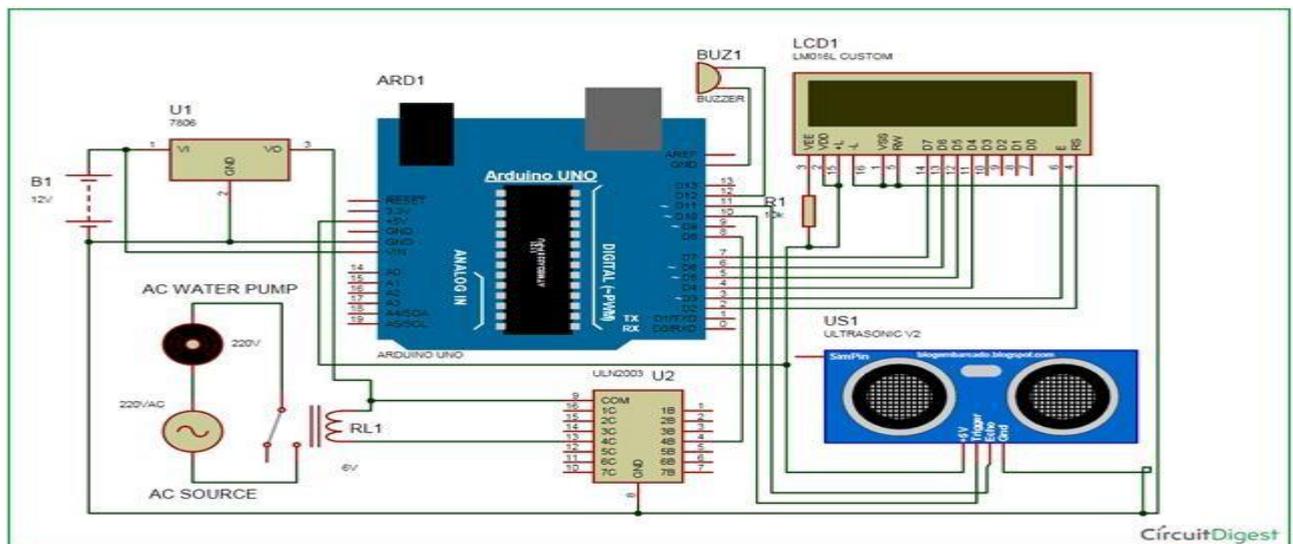
surroundings and uploaded to the Microcontroller .

Water level within the system is controlled mechanically. The controller operates on electric battery power. Whenever the system encounters empty level and therefore the standing of load shedding, the SMS notification is distributed to the user. The system can automatize the method by inserting one sensing element unit within the tank that may sporadically take measurements of the water level and can management the motor automatically. This method eliminates the efforts of individuals for daily filling of the tank and checks for overflow

- Automatic Water Level Control System (International Journal of Science and Research(IJSR))

This analysis paper by Asaad Ahmed MohammedahmedEltaieb , Zhang Jian Min involves coming up with and development of automatic water level system had exposed to the higher method of software system and hardware design that blends along for the interfacing functions. The system employs the utilization of advance sensing technology to observe the water level. It uses Arduino and uses relay to manage motor. Once we pour water within the beaker, the water comes in-tuned with the wire and tells the extent of water within the tank. Consequently, they need showed the extent of water on LCD display and uses relay to show ON and OFF the motor

## II.ARDUINOLAYOUT



## III.WHY USE WATER LEVELCONTROLLER?

- **SavesPower**

By exploitation our project, we are able to save power. I will be employed in places wherever there's downside of Load Shedding. Because it is mechanically controlled, it limits the number of electricity. As nowadays energy conservation is that the utmost would like, exploitation one in every of these devices is beneficial.



- **SavesMoney**

Now, as we all know that automatic water level controller conserves power, it saves cash still. Water regulation is optimized exploitation this device which means wastes electricity and wasted water is unbroken at a minimum. this protects a large quantity of cash alongside workforce.

- **WorksAutomatically**

The utmost advantage of water level controller is that it will work on its own. It's owing to relay and timer switches that there's no have to be compelled to operate them manually. This suggests that tons of human work is reduced.

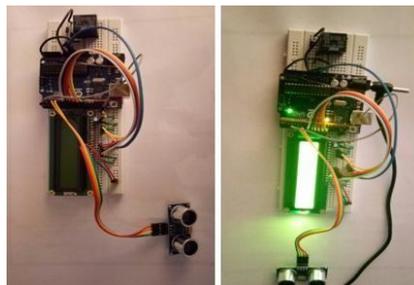
- **MaximizesWater**

Additionally, water usage will be maximized with a water level controller. Often, water pumps get additional use throughout the center of the day. A water level controller is useful as a result of it mechanically provides additional water throughout the middle of the day and less water at night. As a result, water remains at its appropriate level at all times.

#### IV.METHODOLOGY

- Ultrasonic sensor module's trigger and echo pins are directly connected to pin 5 and 6 ofArduino.
- Relay is connected to pin A5 of Arduino board. We define ON\_THRESHOLD as 30 and OFF\_THRESHOLD a10.
- A 16X2 LCD is connected to pins 13, 12,11,10,9,8 of Arduino Uno.
- LCD display shows the water level and status of the motor.
- When empty water level reaches at distance about 30 cm then Arduino turns ON the water pump by driving relay. And now LCD will show "LOW Water Level" "Motor turned ON", and Relay turns ON triggering themotor.
- When empty water level reaches at distance about 10 cm then Arduino turns OFF the water pump by driving relay. And now LCD will show "High Water Level" "Motor turned OFF", and Relay turns OFF triggering themotor.

#### V.SNAPSHOTS OF OUR PROJECT





### VI.CONCLUSION

- This project has achieved the most objectives. Moreover, this project concerned coming up with and development of automatic water level system had exposed to the higher approach of software package and hardware design that blends along for the interfacing functions. The system employs the employment of advance sensing technology to notice the water level. This system is very beneficial in rural as well as urban areas.
- It helps in the efficient utilization of available water sources.
- If used on a large scale, it can provide a major contribution in the conservation of water for us and the future generations.

### VII.FUTUREWORK

Automatic water level observance system contains a sensible scope in future particularly for agriculture sector. There square measure any areas wherever we'd like water level controller. It may well be agricultural fields, overhead tanks. We are able to build this project wireless by victimization NRF transmitter and receiver. We are able to conjointly add local area network defend in order that we are able to get all the knowledge victimization mobile phones and management it consequently.

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