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Intelligent Water Level Management for Domestic Application Using GSM

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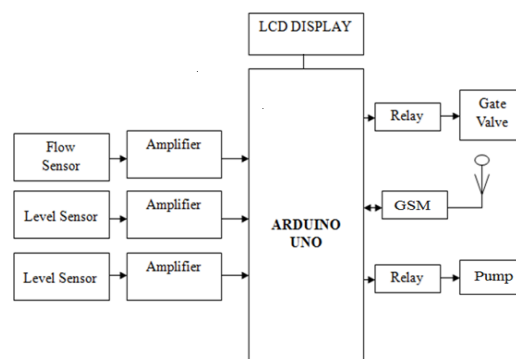
ABSTRACT: Water source is necessary and an important factor in domestic usage and farm production and is a key of our quality of life as well. Water Level Management system is an innovative system which will automatically monitor the level of liquid and will prevent it from overflowing. And it will check the upper and lower tank water level and then if the water level is low in the upper tank the motor will automatically on and pump the water from lower tank to the upper tank. Then the water level is filled in the upper tank the motor will off automatically the process will be continued regularly. Then the LCD screen is used to display the status of the level of liquid in the upper and underground tank. This project is used to cover the parameters water like, flow level, level of water, GSM modem, Relay, Pump. All these parameters are covered to save water and to avoid wastage of water.

KEYWORDS: Water level, Flow sensor, Arduino, GSM Module, level sensor, pump.

I. INTRODUCTION

Water is a precious substance found on the earth, and about 70% of the earth's surface is covered by water. However, only 10% of the water is available for human use-(drinking). Most of the water part is present in the ocean, which is difficult to consume due to its saline properties. In the last few years, unprecedented growth in water demand has become a serious concern. The growing demand for water supplies has met a significant challenge facing many countries around the world. Various factors, such as increasing population, urbanization, and climate change, have further depleted water resources. Therefore, water conservation and resource management become crucial factors for human survival. However, due to the continuous increase in water usage, water management is currently a major challenge for both governments and private water companies.

II. BLOCK DIAGRAM





Float sensors in the upper tank will identify the level of water. Global Service Modem (GSM) is used to send SMS to consumer and service provider. Arduino is used to control the entire unit of hardware and is very simple to use. Relay is used to control high voltage circuit with the help of low voltage signals. LCD display is used to displays the water level in both upper and lower tanks and also displays the water flow. These all components are connected with the Arduino.

III. WORKING

First the sensor senses water in the tank. We are using a float sensor here, if the water level is lower than the float sensor will sense it and sends the information to the Arduino which will assess the information and then the pump will on automatically and the water will be filled in the tank and then if water will fill again the float sensor will send information to the Arduino, then the pump will off automatically. In Both the upper and lower-level water tank the water will low then the sensors will deducted the water level and send it to the Arduino then it will send to GSM board it will send the message to the user and will also be displayed on the LCD screen.

IV. PROPOSED SYSTEM

The working of our Proposed System is the parameters are water level is monitored and controlled using different sensors and GSM. The water flow level is monitored by flow sensor. The water Level is checked by level sensor. All these parameters are monitored by mobile using GSM modem. The prime objective of the proposed study is to present a practical framework for implementing robust water management mechanisms for preserving water resource and ensuring effective utilization of water supply among humans. The contribution of the proposed system is also to ensure the construction of cost-efficient and less complicated implementation.

V. SIMULATION

Proteus Design Suite (designed by Lab center Electronics Ltd.) is a software tool set, mainly used for creating schematics, simulating Electronics & Embedded Circuits and designing PCB Layouts. Proteus ISIS is used by Engineering students & professionals to create schematics & simulations of different electronic circuits.

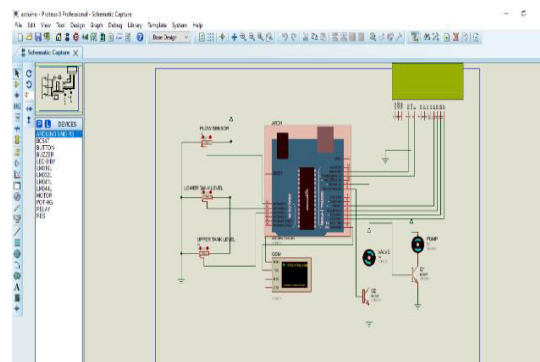


Figure 2.Simulation of Proposed Method

VI. HARDWARE IMPLEMENTATION

GSM based Water Level Monitoring system is an innovative system which will inform the users about the level of liquid and will prevent it from overflowing. To demonstrate this the system makes use of containers, where the ultrasonic sensors placed over the containers to detect the liquid level and compare it with the container’s depth. A 12 V transformer is used for power supply in this system. The LCD screen is used to display the status of the level of liquid in the containers. The liquid level is highlighted as coloured to show the level of liquid present in the container with the help of a web page to the user. Thus, this system helps to prevent the wastage of water by informing about the liquid levels of the containers.



VII. CONCLUSION

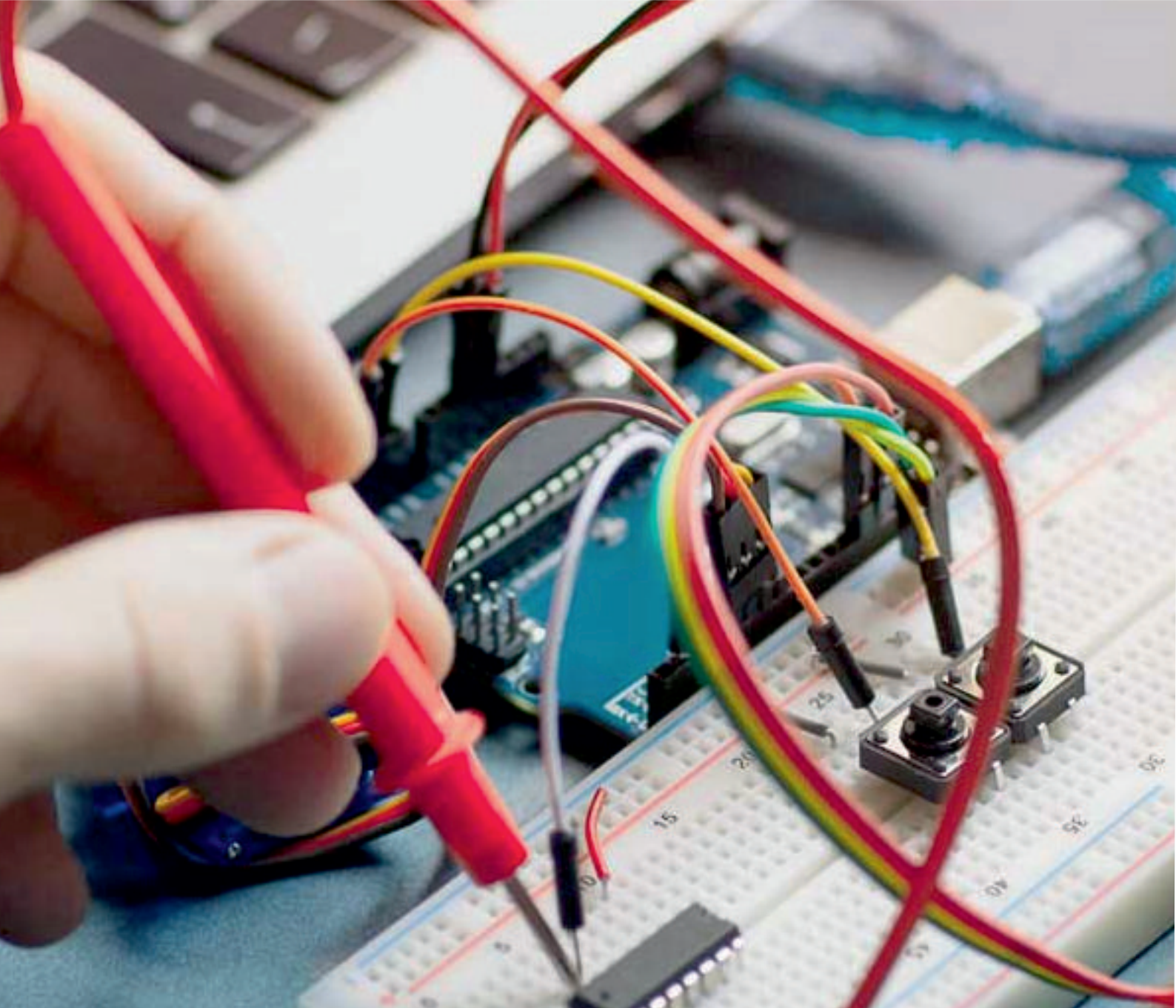
Water is one of the most valued things for all living beings on earth. If there was no water there would be no life on the earth. But unfortunately, a large amount of water is being wasted by uncontrolled use. Some water level monitoring and control systems are also offered so far but most of the method has still some disadvantages. We tried to overcome these disadvantages and implemented an efficient System. Water is one of the most valued things for all living beings on earth. If there was no water there would be no life on the earth. But unfortunately, a large amount of water is being wasted by uncontrolled use. Some water level monitoring and control systems are also offered so far but most of the method has still some disadvantages. We tried to overcome these disadvantages and implemented an efficient System.

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