

# IOT BASED WIRELESS WATER LEVEL INDICATOR AND CONTROLLER

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**Abstract** - The drinking water crisis in India is reaching alarming proportions. It might very soon attain the nature of global crisis. Hence, it is of extreme importance to preserve water. In home-based water tank, the one problem is very common to us that the control of water level of overhead tank, as a result the wastage of water is increasing day by day. By using the concept of embedded systems and IoT we can solve the above-mentioned daily problem and thereby can save gallons of water which will be very much useful in today's modern world.

**Key Words:** IoT, Arduino UNO, Wi-Fi Module, HC SR-04

## 1. INTRODUCTION

[1] Water scarcity and water wastage is an increasing problem in India. In this project we have tried to provide an aid to this problem. Embedded systems are nowadays playing a vital role in Engineering design process for efficient analysis and effective operation. [2] Due to time complexity in electronic aspects embedded systems have become a major part of our daily life. Now a days Internet of Things is everywhere and is taking control rapidly so by using Internet of Things (IoT) we can remotely access the levels of water in the overhead tanks and can remotely turn off or on the motor. By using Ultrasonic sensor, we can detect the water level in the tank. By using an app (android based) we can control the motor. The traditional way of seeing the level of water in the tank and then controlling the motor is time consuming

## 2. LITERATURE SURVEY

### 2.1 Arduino UNO

[3] The Arduino Uno is an open-source microcontroller board based on the Microchip ATmega328P microcontroller and developed by Arduino.cc. The board is equipped with sets of digital and analog input/output (I/O) pins that may be interfaced to various expansion boards (shields) and other circuits.

The board has 14 digital I/O pins (six capable of PWM output), 6 analog I/O pins and is programmable with the

Arduino IDE (Integrated Development Environment), via a type B USB cable or by an external voltage between 7 and 20 volts

### 2.2 IoT

[4] Internet of Things (IoT) term represents a general concept for the ability of network devices to sense and collect data from around the world, and then share that data across the Internet where it can be processed and utilized for various interesting purposes. The IoT is comprised of smart machines interacting and communicating with other machines, objects, environments and infrastructures

### 2.3 Android Application

[5] By using android application, it is easy to monitor and control water tank Also the android app can be installing on multiple devices and observe the level of water in the tank

### 2.4 Ultrasonic sensor

[6] An ultrasonic sensor transmits ultrasonic waves into the air and detects reflected waves from an object. There are many applications for ultrasonic sensors, such as in intrusion alarm systems, automatic door openers and Backup sensors for automobiles

## 3. BLOCK DIAGRAM & CIRCUIT DIAGRAM

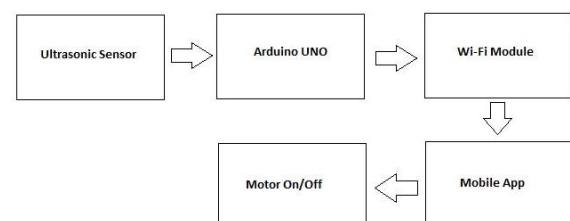


Fig -1: Block diagram

The above is the block diagram for IoT based water level indicator and controller

The following is the circuit diagram of the IoT based water level indicator and controller

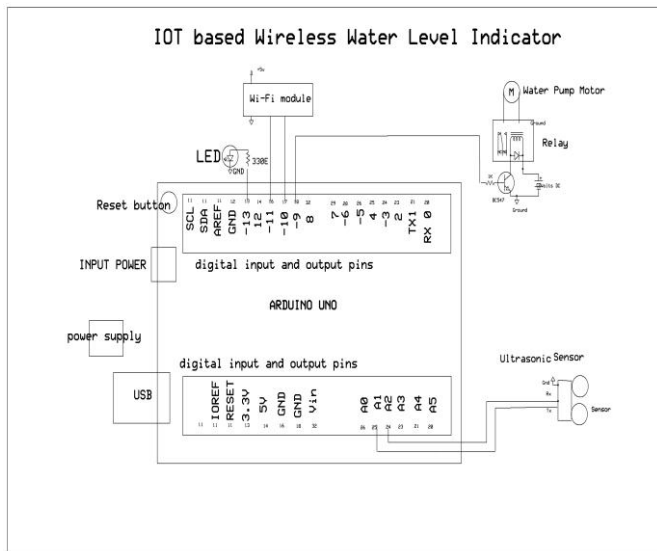


Fig -2: circuit diagram

#### 4. METHODOLOGY

In this paper, we will introduce a method of using IoT for indication and controlling of a water motor by using an android application which is an open source. In the overhead tank we place an ultrasonic sensor and it is connected with Arduino UNO and also with a Wi-Fi module. This Wi-Fi module is used to connect the Arduino board with the mobile application. By uploading the code into Arduino board and powering it, first the Ultrasonic sensor will take the reading or level of the tank and sends it to the application via Wi-Fi module, user by entering appropriate commands in the application window can get the level of water tank and if the user desires to turn on the motor, it can be done by giving an appropriate command in the application window. By this way we can communicate with motor and can turn off or on the water motor without wasting the time.

#### 5. CONCLUSION AND FUTURE SCOPE

This paper implements an IoT based water level indicator and controller which is very easy to setup and use in our day to day life with less amount of time and we can also save lot of water and electricity.

The future expansion of this project can be done by wirelessly which is the main Arduino board can be divided into receiver and transmitter blocks by using a transceiver module.

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