

# Water level Management Framework using IoT

Amit Yadav<sup>1</sup>, Mitali Patil<sup>2</sup>, Princia Koli<sup>3</sup>, Mahendra Patil<sup>4</sup>

Atharva College Of Engineering

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### \*Corresponding author:

Amit Yadav

e-mail: 213amityadav@gmail.com

## Abstract

*These days all interchanges are finished utilizing the web, this idea is known as the Internet of Things (IoT). Things in IoT can be anything or everything that we use in our day by day lives. Also, in this task, the thing is a water tank. So why water tank? Essentially water level in the tank gets decreased and it should be filled again before the tank gets totally unfilled. During the time spent filling the water again we for the most part neglect to close the valve of the siphon, because of which the water can be over flown and get squandered. This the explanation we proposed the savvy framework for water level administration. Our idea uses an arduino that can give checking level of the water tank. That arduino will on and off the pump automatically so the water isn't overflowed and squandered. We are utilizing float sensors which will detect the level of the water.*

## 1. INTRODUCTION

The net has become a necessity for the world system. With the internet, people can talk with one another successfully and quickly. With web individuals from different areas viably can connect with masses from another terrain. The web isn't just interfacing people nevertheless, things can similarly talk with various articles. That thought is known as Internet of Things. The thought Internet of Things (IoT) is the place article can move data over the web without anticipating that human should human or human to PC joint effort [1]. A Things in IoT can be a thing that we use reliably, for instance, heart install checking, a sensor that can remind driver when tire pressure is low, a garbage would that have the option to will enlighten a customer when the case is full. Web of things is solidly associated with the machine to machine correspondence. By using arduino, data from sensors can be checked and controlled remotely by methods for the Web. Later on Internet of Things is used to get all kind of data from the sensor, so the data can be used to analyse the promote, offer data to the association for reference when making a thing, and some more. The liquid tank is something we use step by step to hold water before being used for washing, washing articles of clothing etc. At whatever point it is used, the water in the holder must be reduces and we have to finish it off with the water with the objective that it might be reused by other people who will use it later. During the time spent filling the water generally, we have to hold on for the water in the water container to be full. That is a great opportunity to hold

up we every now and again fail to close siphon or valve when filling the water container considering the way that a chance to keep things under control for the water to be full is so long and normally we dormant to interruption and leave the siphon or on the other hand valve. So when we fail to close the siphon or valve and the water container is getting full, this is the time that water is overflowed and gets wasted.

## 2. METHODS AND EQUIPMENTS

For the design of this hardware we have used Arduino simply link with GSM module for IOT applications, float sensors are used as water level sensors, PH sensors are used to detect the purity level of the water.

## 3. PROPOSED SYSTEM

In this venture the water levels in the water tanks are identified by utilizing terminals and this data is send to the higher specialists of the general public utilizing GSM (Global System for Mobile correspondence) module. In GSM the correspondence is completed as SMS. In this task, client can get data about the water level of both the tanks (Upper tank and lower tank) everything will work automatically (because of float sensor) ones the system is running. The system can be control manually like if the tank is full then the client can turn off the siphon by sending the solicitation of PUMP OFF. So also he can turn on the siphon by sending the PUMP ON demand. The client will receive an SMS from the system in the end of the day how many times the PUMP was ON/OFF, In the end of the month the

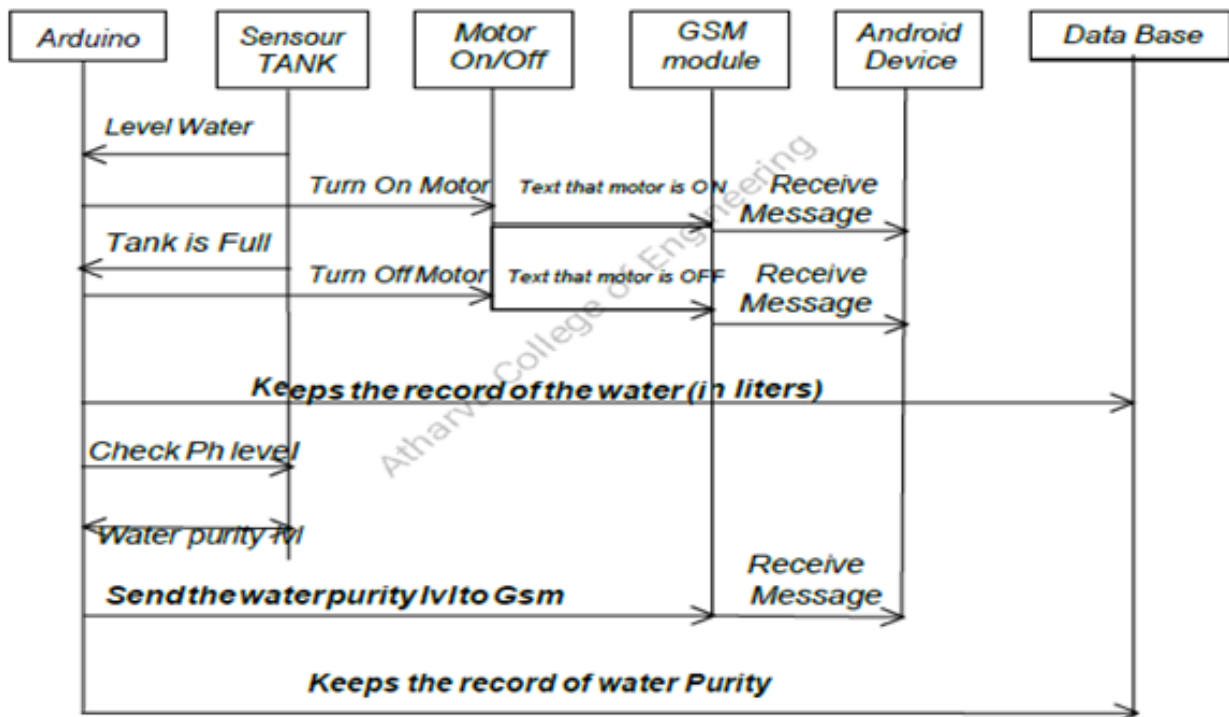


Figure 1: Sequence Diagram.

client will receive an overall SMS saying the total count of the PUMPS were ON/OFF.

#### 4. 4. LITERATURE REVIEW:

Taking care of water assets is perhaps the most concerning issue nowadays because of uncontrolled loss of accessibility of new water. The seriousness of the water spill happens in light of flood of the water tanks [4]. Typically water estimations was finished by hand, however it won't work everytime on account of certain troubles considering present realities hard to get to the estimation site, Human mistake and so forth [3]. In a significant number of the cases, the water tanks are controlled naturally by an administrator/engine. Where the water keeps on flooding until the Motor is turned off[4]. The Internet of Things (IoT) idea is an idea there the item can transmit information over the web without requiring somebody face to face to individual in the PC cooperation. The web has become a need on the planet and nowadays water is one of the most fundamental needs of every living being in this whole world [1]. And according to the internet 97% of the water is in the oceans and rivers. That means that only 3% of the water is available like a fresh water and from this 3%, only 1% of the water is available for use [4]. Yet, tragically an enormous amount of water accessible spill's because of uncontrolled use and misuse of the water assets [4].

The fundamental motivation behind this venture is to structure or constructed a framework that could quantify the water level naturally utilizing Arduino. Which will lessen the human endeavours and furthermore send the proper outcomes as SMS on client's telephone [3] [2]. Here various sensors are utilized to check the Purity level of water coming inside the tank. What's more, it likewise records the measure of water utilized in the whole day and show the outcome on the Arduino. The water tank has two levels and at each level there are sensors put which will detect the water level. These levels are low and high. The engine will be (turned ON) in the event that it is Low. What's more, the engine will be (turner OFF) on the off chance that it is high. The GSM module is utilized to send the yield of this sensors [2].

#### 5. SEQUENCE DIAGRAM

In the sequence diagram, the objects according to their time of execution are listed below. The sequence diagram deals with how the user will flow through the system sequentially and what are the processes that will take place. The objects interact with each other by sending messages to each other.

#### 6. PROS AND CONS

This framework is helpful regarding sparing water and to keep a beware of the everyday utilization of water so the there is no overabundance utilization of it. It likewise calls

attention to the pH level of the water to check its virtue level. The main burden can be the issue in the system as we require a steady system to send messages.

## 7. FUTURE SCOPE

The project is not limited to water it can be used for any substance that is in a liquid form. With few changes in the system like sensors needed to be added as per the liquid. In future we can expand the system to solid or gaseous state as well, many components need to be changed but the concept will remain the same.

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## AUTHORS



Mr Amit Yadav has obtained Diploma in Computer Engineering in 2017. He is currently pursuing Bachelors in Engineering from Atharva College of Engineering.



Ms Mitali Patil has obtained Diploma in Computer Engineering in 2017. She is currently pursuing Bachelors in Engineering from Atharva College of Engineering.



Ms Princia Koli has obtained Diploma in Computer Engineering in 2017. She is currently pursuing Bachelors in Engineering From Atharva College of Engineering



Mr Mahendra Patil working as an assistant professor at Atharva College of Engineering. He is currently pursuing his PhD in Computer Science.