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Water Motor and Water Quality Management Using Wifi and Blynk App

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Abstract: ***As population is bound to expand and water is being used at the utmost level of exploitation, groundwater level is diminishing rapidly, the planet might face water emergency soon. India is an agrarian country, farmers rely upon groundwater, however to their needs and satisfaction the predictability of rainfall and a suitable weather is quite flawed. So they are compelled to dig borewells to a prominent depth and conclusively rely upon it. Larger part of individuals living in metropolitan regions are subjected to borewells as there could be no other option for water. The progressions in innovation like Internet of Things, Cloud computing, Big Data, Internet facility can be utilized to plan a framework to screen these gigantic significant borewells to beat impediments like low quality drinking water, expanded labor prerequisites, irreversible harm caused to inadequately checked public motors. Plan and advancement of checking pH, turbidity in the water and observing motor temperature and momentum in borewells would be of extraordinary use. Additionally borewells are not midway checked prompting sudden breakdown of the motor. Borewells are the indispensable source of water for individuals in a large portion of the towns and practically all urban areas to achieve their essential prerequisites of a day. The framework has two sensors for to be specific turbidity and pH sensor to check water quality and temperature sensor and current sensor for motor monitoring, Ardunio model and , Single microcontroller chip, a wifi chip, MpH sensor, is utilized to send the information of different borewells to a solitary unit. Subsequently by this framework it is feasible to monitor n number of borewells in a municipality somewhat in one mobile application***

Keywords: M pH sensor, Turbidity sensor, Temperature sensor, Flow sensor, Ardurino model, WI-FI module.

I. INTRODUCTION

In the 21st century, there were lots of inventions, but at the same time were pollutions, global warming and so on are being formed, because of this there is no safe drinking water for the world's pollution. Nowadays, water quality monitoring in real time faces challenges because of global warming limited water resources, growing population, etc. Hence there is need of developing better methodologies to monitor the water quality parameters in real time[1]. The water quality parameters pH measures the concentration. of hydrogen ions. It shows the water is acidic or alkaline. Pure water has 7pH value, less than 7pH has acidic, more than 7pH has alkaline. The range of pH is 0-14 pH. For drinking purpose it should be 6.5-8.5pH. Turbidity measures the large number of suspended particles in water that is invisible. Higher the turbidity higher the risk of diarrheoa,collera. Lower the turbidity then the water is clean. Temperature sensor measures how the water is, hot or cold. Flow sensor measures the flow of water through flow sensor. The traditional methods of water quality monitor involves the manual collection of water samples from different locations To avoid all those current technologies which will applicable to reduce in the sense conserve the energy in future. Here current technology Internet of things (IOT) Involve and to conserve the energy. Because Internet of things is defined as "Everyday things get connected for smarter tomorrow". With the help of IOT trends we can conserve the energy.

II. LITERATURE SURVEY

1) This paper by Dr.C.Navaneethan and Dr.S.Menatchi gives a clear description about the water level monitoring.Now a days the scarcity of water has increased due to increase in population in order to control its use we must know the correct usage of water to which it best fits for. By using current technology IOT(Internet of things) we can predict the correct level of water.The scope of this paper is to make smart phones more efficient by embedding it with IOT technology with which we can monitor water level through android app.The objective of this paper is to monitor or predict the water level by the help of ultrasonic sensor placed inside the water tank connected with MCU node ESP8266 (consisting of WiFi-module) through Ardunio system to blynk app.The ultrasonic sensor measures the distance between the tank's top and remaining water (in meters) and checks the result with the certain water limit specified by user ,if the resultant value is less than the water limit the sensor notifies the ardunio.uno data uploaded to cloud storage through node MCU and the blynk app will get the notification.

2) The paper written by vaishnavi v. D(so and so name) extensively discusses the water quality[**1**] monitoring system based on IOT. The researchers have tried to solve the water pollution issue by the method of IOT (internet of things). Surveying the physical and chemical parameters of water, the resources required to conduct this operation consists of several sensors. Basing from ph sensor, turbidity sensor, temperature sensor, flow sensor, Arduino model and wifi module cloud computing and data can be viewed [**2**]. Everything connected to the core controller, Arduino model. The ph sensor is the measure of the acidity or alkalinity of that solution. The logarithmic scale having values from 0-14 with a neutral point being 7. Operating on 5V supply making it compatible to use with the interface of Arduino. Turbidity sensor by the name indicates that it is manifested for the usage or measuring of cloudiness of water. It hinders the light required by submerged aquatic vegetation. Also it annexes in surface water temperatures above normal to absorb the heat from the sunlight it can save 90% communication[**3**]. A digital type of water sensor which accurately reads how cold or hot the water is. Coming to the flow sensor is basically used to measure the flow of water, the three main elements it's wored into is plastic valve body, a motor and hall effect sensor.

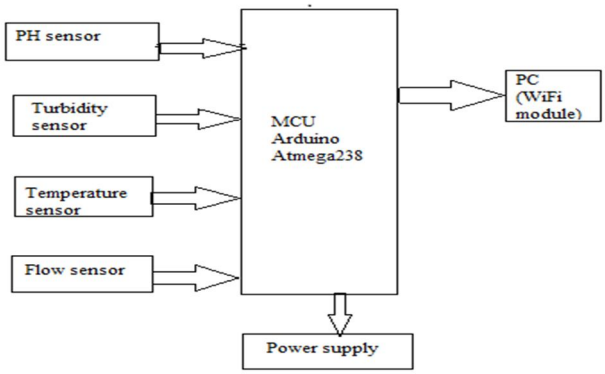


Fig: Block Diagram Of The Poject

3) The study by Prasanna Lakshmi, Vasavi Mounika, Veda Sri Prangna, MR. K. Vikas renders the study on Smart Water Tank: an IoT based Android Application. The proposed system measures water level in real-time and helps the user to monitor the water tank remotely using android application. Consisting of 4 basic components that support the working of the application. The Arduino UNO, It is an IoT stage which has an outside Wi-Fi module that can associate with internet via hotspot utilizing its SSID and Password. It can be programmed to implement logic statements to necessity of the undertaking of project. The next is NodeMCU (ESP 8266), It is a Wi-Fi module which can connect to internet via hotspot by using its SSID and Password. It can be programmed to implement logic statements as per requirement of the project. They are using this to connect android application with Arduino. The third, Blynk – Android Application Blynk is a Platform with iOS and Android apps to supervise or control Arduino, Raspberry Pi and the likes over the Internet. It is a digital dashboard where a graphic interface is built for the project by simply dragging and dropping widgets. The fourth being Ultrasonic Sensor, used to generate ultrasonic sound waves which are bombarded on the surface of water. This sensor embeds of a speaker which emits an ultrasonic sound wave and a mic which detects that particular sound wave. As there is no contact of water with sensor, the probability of the long life of the sensor increases.

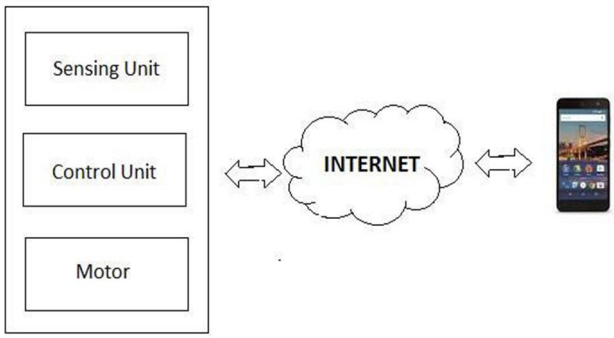


Fig: Block Diagram

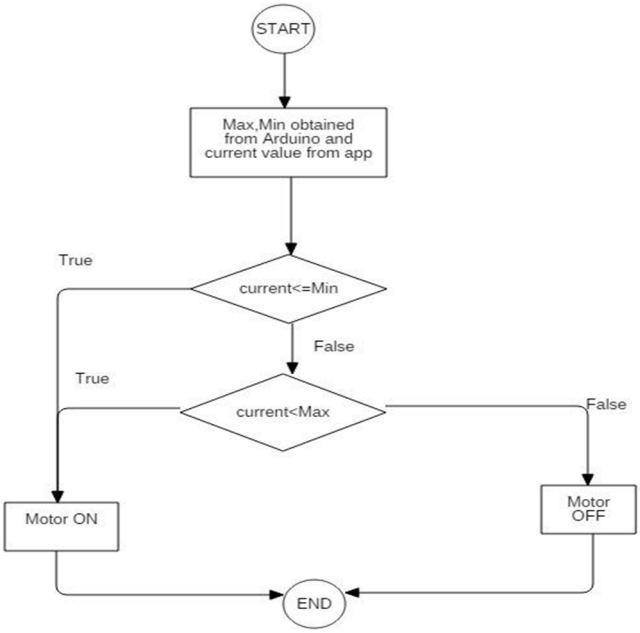


Fig: Flow Chart of Logic in Arduino UNO

4) The paper by Farmanullah Jan, Nasro Min-Allah, Dilek Düstegör provides the analysis of IOT based smart water quality monitoring. Recent techniques, trends and challenges for domestic applications. This study introduced an audit on IoT-based answer for quality observing of domestic water [4-9]. The research gives props to mainly these points: turbidity, oxidation reduction potential, temperature, pH, electrical conductivity. Initially, it presents the freshwater crisis, including its starting point, contamination, consumption of underground water, and seawater desalination. It likewise subtleties the water quality list suggested by WHO, ordinarily utilized water quality file parameters, and WHO suggested safe cutoff points for drinking water. Besides, it subtleties advancement of water checking from customary to brilliant water observing. For our solace, it briefly explains an average IoT based water quality checking framework. Thirdly, it presents a complete overview of contemporary IoT-WQMS domestic water. In this worry, numerous basic boundaries (e.g., sensors, cloud administration, UI, and door) are talked about and analyzed. Moreover, each article is additionally appraised utilizing our proposed observational rubric, which depends on WHO norms of drinking water. Fourthly, top to bottom specialized conversation and investigation are offered connected with IoT-WQMS. At long last, authors additionally proposed a bunch of helpful suggestions to plan an efficient IoT-WQMS for domestic water. To finish up, this study would certainly benefit the exploration local area intrigued by brilliant water surveying, (e.g., sensors, cloud services, user face and gateway). As a future work, it will be fascinating to investigate ideal planning of smart quality checking framework, investigating ideal versatile sensors' innovation, use of secure and solid IoT servers, and formulating strong plans alleviating potential security breaks.

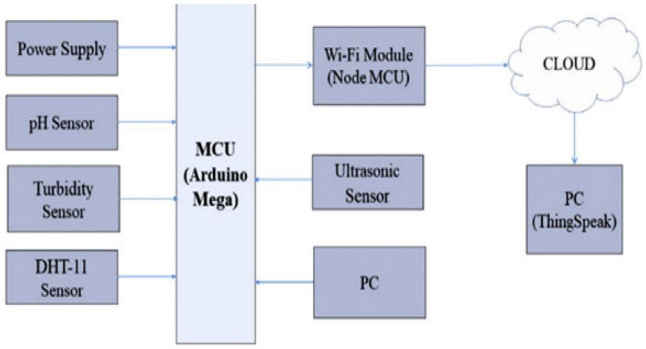


Fig: Block diagram of the system proposed in [10]

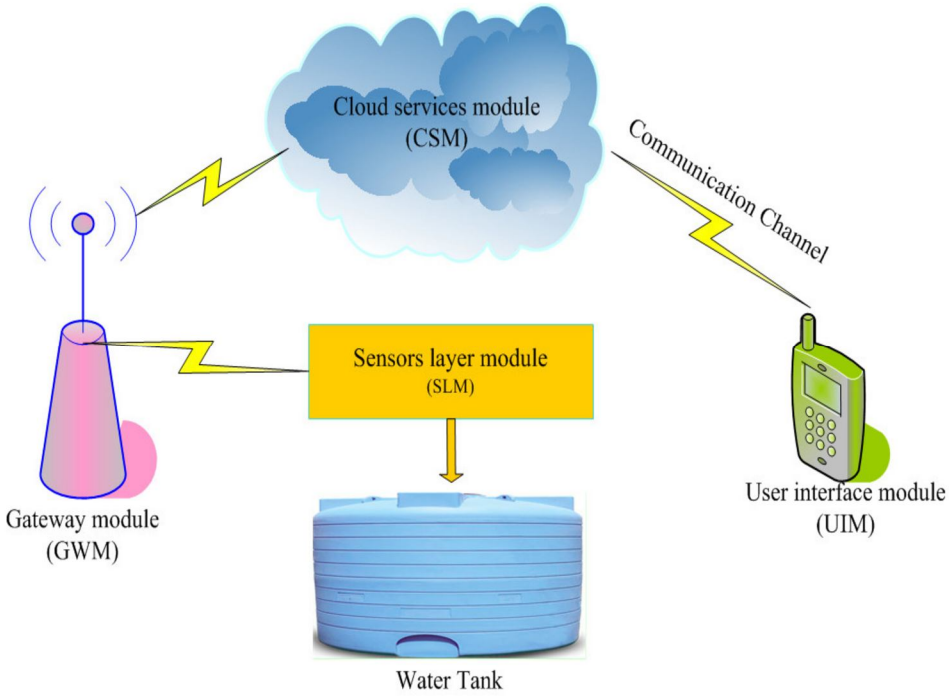
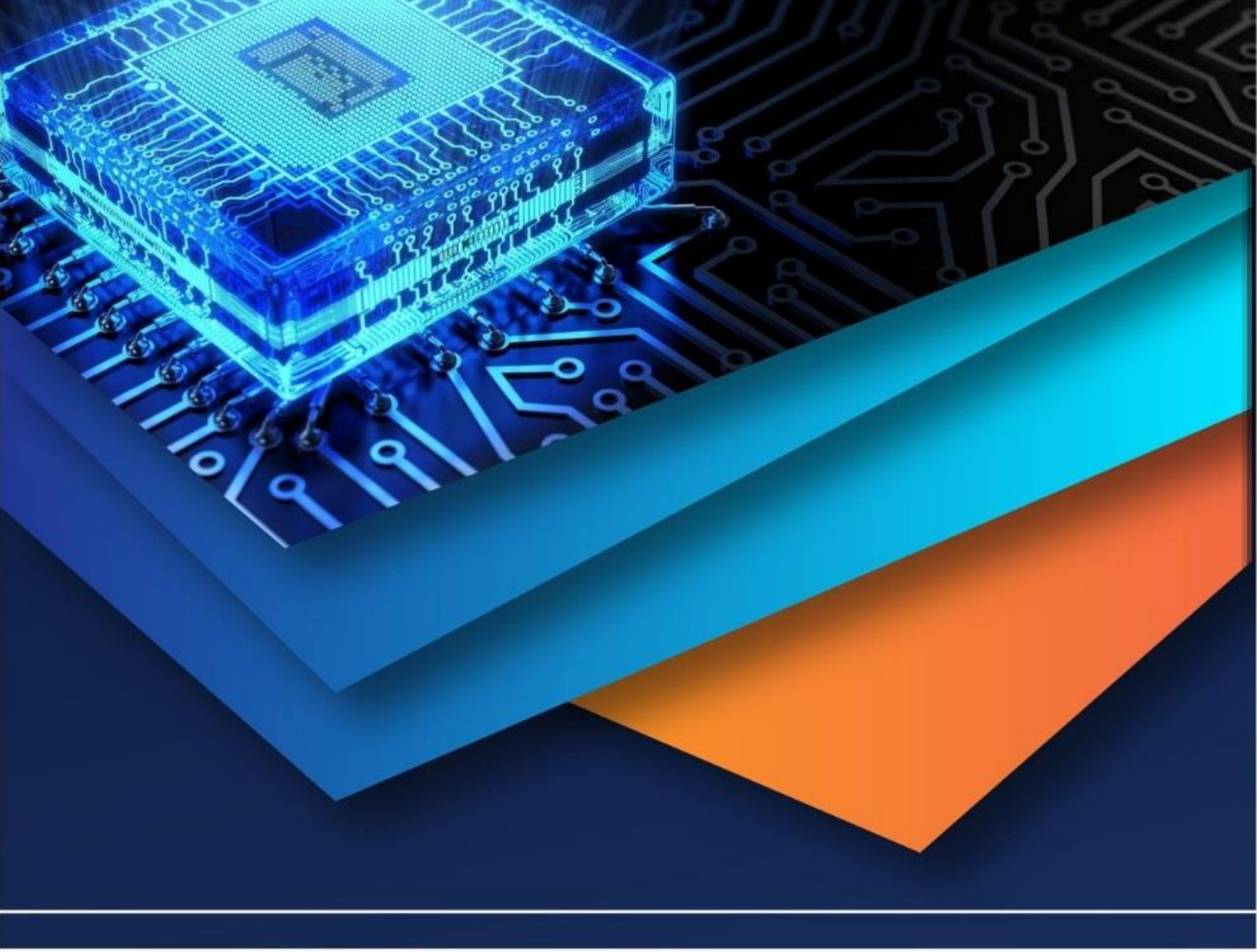


Fig: High level IoT-WQMS model.

REFERENCES

[1] Nikhil Kedia, Water Quality Monitoring for Rural Areas- A Sensor Cloud Based Economical Project, in 1st International Conference on Next Generation Computing Technologies (NGCT-2015) Dehradun, India, 4-5 September 2015. 978-1-4673-6809-4/15/$31.00 ©2015 IEEE
[2] Jayti Bhatt, Jignesh Patoliya, Iot Based Water Quality Monitoring System, IRFIC, 21feb,2016
[3] (SECON), 978-1-4673-1905-8/12/$31.00 ©2012 IEEE.
[4] Ahmed, U.; Mumtaz, R.; Anwar, H.; Mumtaz, S.; Qamar, A.M. Water quality monitoring: From conventional to emergingtechnologies. Water Sci. Technol. Water Supply 2020, 20, 28–45. [CrossRef]
[5] Adu-Manu, K.S.; Tapparello, C.; Heinzelman, W.; Katsriku, F.A.; Abdulai, J.D. Water quality monitoring using wireless sensor networks: Current trends and future research directions. ACM Trans. Sens. Netw. 2017, 13, 1–41. [CrossRef]
[6] Banna, M.H.; Imran, S.; Francisque, A.; Najjaran, H.; Sadiq, R.; Rodriguez, M.; Hoorfar, M. Online drinking water quality monitoring: Review on available and emerging technologies. Crit. Rev. Environ. Sci. Technol. 2014, 44, 1370–1421. [CrossRef]
[7] Water Crisis|World Water Council. Available online: https://www.worldwatercouncil.org/en/water-crisis (accessed on19 May 2021).
[8] Min-Allah, N.; Farooqui, M.; Alwashmi, A.; Almahasheer, S.; Alsufayyan, M.; Altulaihan, N. Smart monitoring of water tanks in KSA. In Proceedings of the 2018 International Conference on Computational Science and Computational Intelligence, CSCI 2018, Las Vegas, NV, USA, 12–14 December 2018; pp. 1044–1047.
[9] Damor, P.; Sharma, K. IoT based Water Monitoring System: A Review. Int. J. Adv. Eng. Res. Dev. 2017, 4, 1–6.



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