

IoT Based Water Level Monitoring System for Lake in a Cloud Environment

S.Sheeba Rani^{1*}, S.Balakrishnan², V.Kamatchi Sundari³, K.C.Ramya¹

¹ Associate Professor, Department of Electrical and Electronics Engineering,

² Professor, Department of Computer Science and Engineering,

³ Professor, Department of Electronics and Communication Engineering,

^{1,2} Sri Krishna College of Engineering and Technology, Kuniamuthur, Coimbatore, Tamilnadu, India.

³ Prince Shri Venkateshwara Padmavathy Engineering College, Chennai.

Abstract

Water distribution is the way toward determining or evaluating the volumes of water accessible for, or utilized by, at least one "immoderate employments". In this lake the board setting this alludes to volumes of water utilized in the contributing catchment, utilized from the lake or repository itself, or discharged from the lake or supply for downstream use. Destructive utilizations are those which include expulsion of water from a waterway, lake or store, and along these lines incorporate water system, modern uses, and local water supply. In this paper, we propose a concept to build up a framework to monitor a water level of a water source from an inaccessible area in a lake. Continuous monitoring is done using the concept Internet of things (IoT) in a cloud environment via the wireless sensor nodes.

Keywords: Water allocation, monitoring, internet of things, cloud environment.

1. INTRODUCTION

As of late, the improvement of various Information and Communication Technologies (ICT) related to the production of ease little sensors have made it conceivable to screen numerous procedures. Remote sensor systems (WSN) [1] – [3] are an unmistakable precedent as they are frequently utilized for cultivating purposes. In latest years, the utilization of web and its applications has developed quickly. As everybody's work is subject to it, without web it would be troublesome. Just as Now daily's remote sensor systems are broadly utilized and these are low power gadgets

with a processor, stockpiling, control supply, and a handset and with at least one sensors. In this undertaking, we are going to join to these both with the end goal of to reach going to gather the information from water condition) and is shown on the site page utilizing remote systems. Web of things (IoT) [4] – [6] is a system of gadgets with nearby knowledge (sensors, lights, gas siphons), which share get to and control instruments to push and draw status and direction data from the arranged world.

Each living thing on earth needs water to endure. Human bodies are comprised of in excess of 60 percent water. We utilize clean water to drink, develop crops for nourishment, work plants, and for swimming, surfing, angling and cruising. Water is imperatively critical to each part of our lives. Observing the nature of surface water will help shield our conduits from contamination. Ranchers can utilize the data to help better deal with their territory and yields. Our nearby, state and national governments use observing data to help control contamination levels. By utilizing water observing framework, we stay away from the water wastage, control utilization and effectively avoid the water for our age.

Water is a standout amongst the most significant substances on earth. Individuals now days dependably need something that can make their life simpler. Water quality checking is amazingly valuable to keep the planet sound and reasonable. Numerous transmittable infections are water conceived. The vast majority of the new water assets situated close urban regions are debased because of the waste dumped by the people or the arrival of synthetic concoctions from assembling businesses. Overhead tank is one of the compartments used to store drinking water. It was seen that fundamental driver of disintegration in water quality is expected to regrowth of microorganisms in overhead tanks and the dissemination framework, consumption of pipe material, nonreplacement of old channels. There is a requirement for ceaseless ongoing persistent remote observing of water quality parameters inside the water framework as the centralizations of the contaminations lead to genuine wellbeing results. Nonetheless, in many regions, the customary methodology of water quality observing dependent on accumulation of water tests from various sources and consequent investigations in research centers is costly, tedious and does not permit synchronous and auspicious checking of the water quality.

2. RELATED WORK

Web based automation is an ongoing improvement in the modern division. The execution of modern procedure control is made conceivable by the utilization of Internet. Because of the advances in the Internet, the capacity to secure data and even to control gadgets at fingertips over the Internet is getting to be attractive to the overall population just as experts. This has really led to the idea called "Electronic Supervision and Control System". The Internet is currently giving another and progressively significant vehicle for appropriating data worldwide without time requirements, allowing data to be shown numerically and graphically on any customer stage. It permits end clients to get to the constant information and to control the instruments by means of an internet browser.

Water is an essential need of each individual. Everybody needs to spare the water. Commonly with absence of checking, flood of the water happens. Flood of tanks can happen due to this heaps of water squandered. Something else is a direct result of flood in the pipelines with more weight there is plausibility of pipeline harm. Spillage recognition is one more issue. Every one of these issues is a result of absence of observing, manual work and less labor. In this paper a study of Aurangabad city and field review have been done, to comprehend water supply circulation and related issues with the framework. In the wake of taking an overview they saw that all the work is manual and need a superior innovation to make appropriate dissemination [7].

Patil et.al [8] presented water level checking and the executives for lake water stockpiling hotspot for towns. All the more explicitly, they have presented the raspberry-pi as controller for water level detecting and controlling in a wired and remote condition. Moreover, it can show the measure of accessible water in the lake. This framework depends on GSM innovation. Additionally, mobile phones with relative high calculation power and high caliber graphical UI ended up accessible as of late. From the clients point of view it is required to reuse such profitable asset in a versatile application. At long last, paper has proposed a web and cell based observing administration convention for checking accessible water in lake.

This [9] framework was built up with the Autonomous Live Animal Response Monitor (ALARM) poisonous quality biosensor, meant to be situated in-stream for continuous observation. Alert is created at Victorian Center for Aquatic Pollution Identification and Management (CAPIM). The point is to build up an insignificant cost, remote water quality observing framework that screens the water conditions adjacently. The framework estimates a czof physiochemical parameters like saltiness, disintegrated oxygen, temperature, force level, pH, and electrical conduction, complete broke down solids, and red bull potential in crisp water. These parameters gives the present status of water conditions and help with recognizing contamination sources utilizing minimal effort sensors and open source equipment at lower cost.

Saima Maqbool et.al. [10] displayed how to screen the water dimension of water frameworks, for example, water tanks, streams, ground water table, and bore wells remotely. They likewise told that the best way to control the working of siphon consequently and remotely. It very well may be utilized to remotely screen the flood influenced territories remotely and data can be sent to versatile remotely. This framework is intended to screen the dimension of water with the assistance of water level sensors.

3. PROPOSED SYSTEM

Water, one of the incredible common assets ought to be used in legitimate structure. Be that as it may, an immense measure of water is being squandered amid day by day life because of absence of control. Our proposed framework certifications to gather great measure of usable water each day. This observing and controlling framework

utilizes day by day life gadget like PC or cell phone. Because of the reality of controlling remotely we presented a helpful remote mechanized controlling framework. This proposed electronic checking and controlling system can work with the current water controlling framework effectively as portrayed graphically in figure 1.

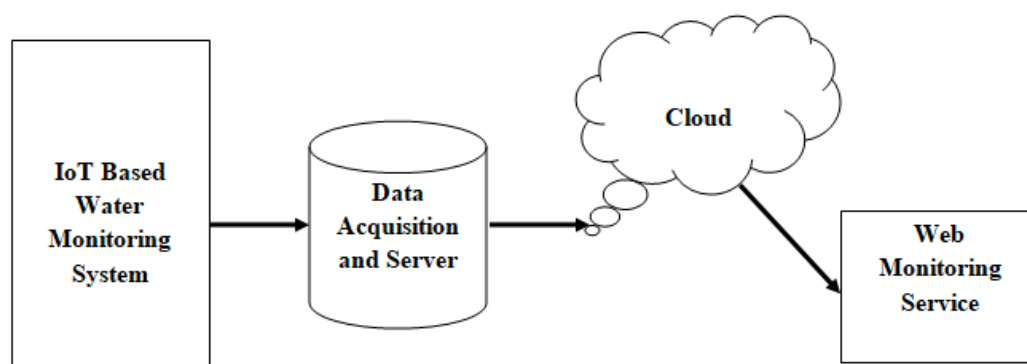


Figure 1: Proposed System

4. CONCLUSION

The advancement of innovation made ready to increment in originations like WSN, IoT, and 5G and numerous others. There are some major resources on the planet which may be essential to save life, yet with the headway in the age, a large portion of those sources are being exhausted or annihilated in a specific way. These trend setting innovations are when all is said in done misused to make our reality simpler. In any case, there are a great deal of these advancements that aren't nevertheless misused or given significance, which can be utilized to diminish the consumption of the common assets protecting the natural equalization and making the presence of our anticipated age simple and inconvenience free living condition. In this paper, we've made a programmed water utilization checking framework dependent on cloud in a lake which lets in plunging the consumption of the water.

5. REFERENCES

- [1] S. Balakrishnan, B. Persis Urbana Ivy and S. Sudhakar Ilango, 2018, "A Novel And Secured Intrusion Detection System For Wireless Sensor Networks Using Identity Based Online/Offline Signature", ARPN Journal of Engineering and Applied Sciences. November 2018, Vol. 13, No. 21, pp. 8544-8547.
- [2] S.Balakrishnan, Vinod K, B. Shaji. 2018, "Secured and Energy Efficient AODV Routing Protocol For Wireless Sensor Network", International Journal of Pure and Applied Mathematics, Vol. 119, No. 10c, 2018, pp. 563-570.
- [3] S.Balakrishnan, J.P.Ananth, L.Ramanathan, S.P.Premnath, 2018, "An

- Adaptive Energy Efficient Data Gathering In Wireless Sensor Networks”, International Journal of Pure and Applied Mathematics, Volume 118 No. 21, 2018, pp. 2501-2510.
- [4] Ranjeethapriya K, Susila N, Granty Regina Elwin, Balakrishnan S, “Raspberry Pi Based Intrusion Detection System”, International Journal of Pure and Applied Mathematics, Volume 119, No. 12, 2018, pp.1197-1205.
- [5] K. Dasaradharami Reddy, S. Mohanraju, A. Jebaraj Ratnakumar, S. Balakrishnan, “Querying and Searching of Friendship Selection in the Social IoT”, Jour of Adv Research in Dynamical & Control Systems. Vol.10, 11-Special issue, 2018, pp. 910- 914.
- [6] V. Anandkumar, Kalaivasan T R, S.Balakrishnan, “IoT Based Soil Analysis and Irrigation System”, International Journal of Pure and Applied Mathematics, Volume 119, No. 12, 2018, pp.1127-1134.
- [7] Pranita vijaykumar Kulkarni, M. S. Joshi, “IOT based water supply monitoring and controlling system”, International Journal of Innovative Research in Science, Engineering and Technology, Vol. 5, Issue 9, September 2016. Pp. 16152-16157.
- [8] Patil. K.N., Kadam Tushar, Sawant Swaranjali, Amange Shreya, “IOT Based Water Level Monitoring System For Lake”, International Research Journal of Engineering and Technology (IRJET), Volume: 04 Issue: 02, Feb -2017, pp. 1425-1427.
- [9] Aravinda S. Rao, Stephen Martial, JayavardhanaGubbi, MarimuthuPalani Swami, “Design of low-cost autonomous water quality monitoring system”, 2013, IEEE, pp. 14-19.
- [10] Saima Maqbool , Nidhi Chandra, “Real Time Wireless Monitoring and Control of Water Systems using Zigbee 802.15.4” 5th International Conference on Computational Intelligence and Communication Networks., 2013.

