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Department of Electronics and Communication Engineering

HX8001 - PROFESSIONAL READINESS FOR INNOVATION, EMPLOYABILITY AND ENTREPRENEURSHIP

REAL-TIME RIVER WATER QUALITY MONITORING AND CONTROL SYSTEM

Domain of the Project :Internet Of Things
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Objectives

- The main aim is to develop a system for continuous monitoring of river water quality at remote places using wireless sensor networks with low power consumption, low-cost and high detection accuracy.
- It help to overcome the issues faced in traditional method and more effective.

Abstract

- The polluted water can causes various diseases to humans and animals, which in turn affect the life cycle of the ecosystem. The traditional method of testing turbidity, PH and temperature is to collect samples manually and then send them to laboratory for analysis.
- Nowadays, the smart solutions are getting more and more significant these days with innovation in sensors, communication and IOT technology.
- The system consist of several sensors used to measure the physical and chemical parameter of the water. Finally, the sensor send data can be viewed on internet using WI-FI system.

Introduction

- There is need of developing better methodologies to monitor the water quality parameter in real time.
- Pure water has 7pH value, less than 7pH has acidic, more than 7pH has alkaline. The range of pH is 0-14pH. For drinking water it should be 6.5-8.5pH.
- Turbidity measures the large number of suspended particles in water that is invisible. Higher turbidity causes diarrhea and cholera. Lower turbidity causes when the water is clean.
- Temperature sensor measures how the water is hot or cold.

Literature Survey

TITLE	AUTHOR & YEAR	JOURNAL NAME	REMARKS
IoT Based Real-time River Water Quality Monitoring System	Mohammad Salah Uddin Chowdury & 2019	Advances in Wireless and Mobile Communications	It only focus on measuring the quality river water parameters. This project has been extended to efficient water management system of local area.
Real-Time Water Quality Monitoring System	Subhasish Chatterjee & 2018	International Research Journal of Engineering and Technology (IRJET)	Monitoring of real time quality of Water from reserve tank of house and colony makes use of PH, turbidity and temperature sensor with Raspberry Pi and existing Cloud system for data analytics.

Literature Survey

TITLE	AUTHOR & YEAR	JOURNAL NAME	REMARKS
Real-Time Water Quality Monitoring System using Internet of Things	Brinda Das & 2017	International Journals of Electrical and Computer Engineering (IJECE)	Performance modeling in different environment is important to study in future because different kind of monitoring application requires different arrangement during system installation.
Real-Time Water Quality Monitoring System	Yashwanth Gowda K.N & 2020	International Journal of Engineering Research & Technology (IJERT)	The design and demonstration of a prototype remote, automatic, portable, real time, and low cost water quality monitoring system is described. Microcontrollers, LCD are used to achieve.

Literature Survey

TITLE	AUTHOR & YEAR	JOURNAL NAME	REMARKS
Internet of things enabled real time water quality monitoring system	Geetha S & 2017	International Journal of Engineering Research & Technology (IJERT)	The paper presents a detailed survey on the tools and techniques employed in existing smart water quality monitoring systems. Also, a low cost, less complex water quality monitoring system is proposed.
Smart Water Monitoring System for Real-Time Water Quality and Usage Monitoring	K. V. Suma &	Institute of Electrical and Electronics Engineers (IEEE)	Monitoring of Turbidity, PH & Temperature of Water makes use of water detection sensor with unique advantage.The system can monitor water quality automatically, and it is low in cost and does not require people on duty.

Literature Survey

TITLE	AUTHOR & YEAR	JOURNAL NAME	REMARKS
An IoT based Real-Time Monitoring of Water quality system	Najiya Naj & 2020	Asian Journal of Convergence in Technology	The proposed system's main aim to implement smart water quality monitoring in a planted tank. This system will check the quality and features of water in real-time. As the monitoring of water quality is an important factor to keep the life of aquatic plants and animals healthy and safe.
Water Quality Monitoring System Based on IOT	Dr. M.A Gaikwad & 2017	Advances in Wireless and Mobile Communications	It keeps the embedded devices in the environment for monitoring enables self protection to the environment. To implement need to deploy the sensor devices in the environment for collecting the data and analysis.

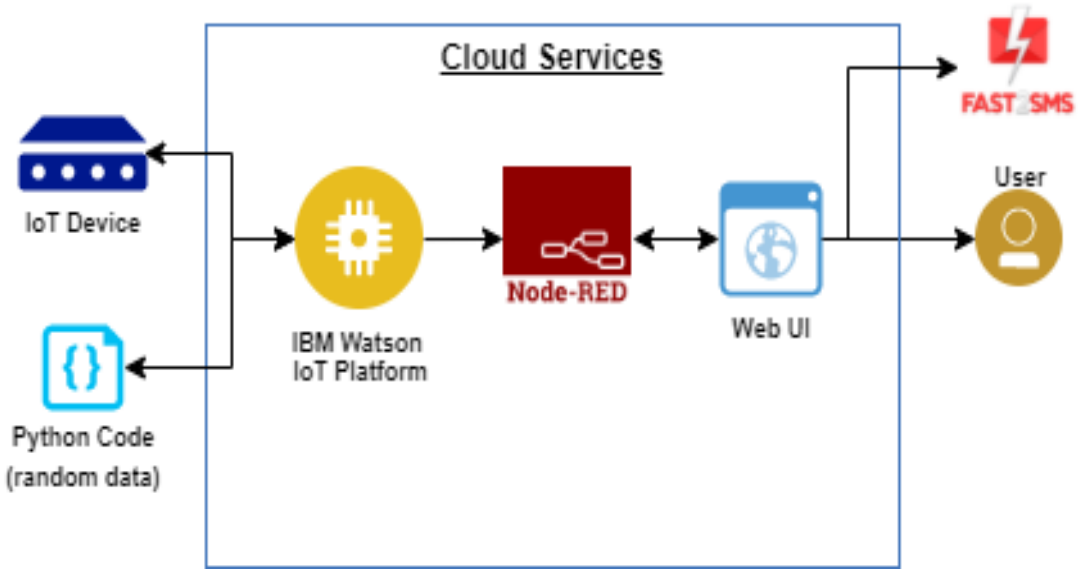
Literature Survey

TITLE	AUTHOR & YEAR	JOURNAL NAME	REMARKS
Water Quality Monitoring	Spoorth G.B & 2020	Indonesia journals of Electrical engineering and computer Science	Monitoring of Turbidity, PH & Temperature of Water makes use of water detection sensor with unique advantage and existing GSM network. The system can monitor water quality automatically, and it is low in cost and does not require people on duty.
The Real Time Monitoring of Water Quality in IoT Environment	Pradeep kumar M & 2016	International Journal of Innovative Research in Science	The system has good flexibility. Only by replacing the sensor and changing the relevant software programs, this system can be used to monitor other water quality parameters.

Problem Identification

- Ensuring safe water supply of drinking water is big challenge for modern civilization.
- The conventional method of testing water quality is to gather samples of water manually and send to the lab to test and analyze. This method is time consuming, wastage of man power, and not economical.
- In this project we have determined to develop an examining system to find the real time pH, turbidity and temperature of water using sensors with the help of microcontroller the data are collected and provided to user through WI-FI.

Block Diagram



References

1. Kalpana, M. B., and M. Tech Student. "Online monitoring of water quality using raspberry Pi3 model B." International Journal of Innovative Technology and Research 4.6 (2016): 4790-4795.
2. Chandanapalli, Suresh Babu, E. Sreenivasa Reddy, and D. Rajya Lakshmi. "Design and deployment of aqua monitoring system using wireless sensor networks and IAR-Kick." Journal of Aquaculture Research and Development 5.7 (2014).
3. Huan, Juan, et al. "Design of water quality monitoring system for aquaculture ponds based on NB-IoT." Aquacultural Engineering 90 (2020): 102088.
4. Ramesh, Maneesha V., et al. "Water quality monitoring and waste management using IoT." 2017 IEEE Global Humanitarian Technology Conference (GHTC). IEEE, 2017.
5. Zailani, Mohd Faiz Bukhari Bin Othman. "Evelopment of smart fish farming using IoT Using Wasted Warm Water Energy." (2018): 155- 163.

References

6. Muhammed ali Mazdi & Janice Gillispie “8051 Microcontroller & embedded system” 3rd edition pearson.
7. R.M. Bhardwaj, “Overview of Ganga River Pollution”, Report: Central Pollution Control Board, Delhi, 2011
8. Satish Turken, Amruta Kulkarni, “Solar Powered Water Quality Monitoring System using Wireless Sensor Network”, IEEE Conf. on Automation, Computing, communication, control, and compressed sensing, pp281-285, 2013
9. Steven Silva, Hoang N Ghia Nguyen, Valentina, Tiporlini, Kamal Alameh, “Web based Water Quality Monitoring with Sensor Network: Employing ZigBee and WiMAX Technology”, 36th IEEE Conf. on Local Computer Networks, 2011
10. Sridharan, S. (2014) Water Quality Monitoring System Using Wireless Sensor Network. International Journal of Electronic Communications Engineering Advanced Research,3,399-402

Questions & Discussion

THANK YOU