**REAL TIME RIVER WATER QUALITY MONITORING AND CONTROL SYSTEM**

ABSTRACT:

Current water quality monitoring system is a manual system with a monotonous process and is very time-consuming. This paper proposes a sensor-based water quality monitoring system. The main components of Wireless Sensor Network (WSN) include a microcontroller for processing the system, communication system for inter and intra node communication and several sensors. Real-time data access can be done by using remote monitoring and Internet of Things (IoT) technology. Data collected at the apart site can be displayed in a visual format on a server PC with the help of Spark streaming analysis through Spark MLlib, Deep learning neural network models, Belief Rule Based (BRB) system and is also compared with standard values. If the acquired value is above the threshold value automated warning SMS alert will be sent to the agent. The uniqueness of our proposed paper is to obtain the water monitoring system with high frequency, high mobility, and low powered. Therefore, our proposed system will immensely help Bangladeshi populations to become conscious against contaminated water as well as to stop polluting the water.

LITERATURE SURVEY:

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This literature survey work has been conducted in the field of smart water quality parameter monitoring systems to reduce the time required in the traditional approach of water quality monitoring, and for real time monitoring.

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The proposed Internet of Things (IoT) based System in this paper provides real-time notifications to the culturist and helps in preventing the pond parameters from fluctuating to a dangerous level that affects the mortality rate of the organism.

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The water environment quality was measured, and water quality problems were pre-warned to prevent further spread of pollution, improve the scientificity and efficiency of water quality monitoring and management, and provide relevant departments with response strategies and management measures.

**ARCHITECTURE DESIGN :**

pH sensor

PC(wifi module)

MCU Arduine

Tubidity sensor

Power suply

Flow sensor

Temprature sensor

CONCLUSION:

Real-time monitoring of water quality by using IoT integrated Big Data Analytics will immensely help people to become conscious against using contaminated water as well as to stop polluting the water. The research is conducted focusing on monitoring river water quality in real-time. Therefore, IoT integrated big data analytics is appeared to be a better solution as reliability, scalability, speed, and persistence can be provided. During the project development phase an intense comparative analysis of real-time analytics technologies such as Spark streaming analysis through Spark MLlib, Deep learning neural network models, and Belief Rule Based (BRB) system will be conducted [20- 27]. This research would recommend conducting systematic experimentation of the proposed technologies in diverse qualities of river water in Bangladesh. Due to the limitation of the budget, we only focus on measuring the quality of river water parameters. This project can be extended into an efficient water management system of a local area. Moreover, other parameters which wasn’t the scope of this project such as total dissolved solid, chemical oxygen demand and dissolved oxygen can also be quantified. So the additional budget is required for further improvement of the overall system.

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