Real-Time River Water Quality Monitoring and Control System

PNT2022TMID14744

**SCENARIO**

**Testing and Experimenting with various water sources**

**PREREQUISTE**

**PROJECT FLOW**

# WORKING

**BENEFITS**

# OUTCOME



Steps

The related authorities can take measures to boost the water quality which makes it more usable for human purpose.The water monitoring system with high frequency, high mobility, and low powered.

Can diminish the contaminants present in water, which in turn cut off the threats caused due to usage of unclean water for daily life, assuring the acceptable facets of water.

An android application recommended will be used to reveal the sensor values examined via cloud and warnings will be provided to user if the value outstrips the threshold value.

A water monitoring system is necessary to observe the water quality in a large area such as lake, river, and aquaculture. As per the current world situation, Internet of Things (IoT) and remote sensing techniques are used in heterogeneous areas of research for supervising, congregate and analyzing data from the remote locations.

Availability of Internet of Things (IoT) and remote sensing techniques mark the ease of congregating, analyzing and handling of real time data to further accelerate measures taken upon to purify the water resources.

What does the person (or group) typically experience?

Survey Details

To check water quality by analyzing the parameters such as temperature,pH and conductivity, and so on. By considering all these points, we designed a smart water monitoring system which can perform all these monitoring functions.

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.

What interactions do they have at each step along the way?

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.

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.

If the acquired value is above the threshold value automated warning SMS alert will be sent to the agent.

Existing Systems Polluted percentage Need for the project

Goals & fulfillments

The issue is that the traditional method, such as workers, needs to go to each tank or river to collect data and also labor-intensive, lack of real-time data and equipment costs is being resolved for the customer

The customer requiresa low cost system for real time water quality monitoring and controlling using IoT. By these sensors, water contaminants must be detected.

The sensed data will be stored in the cloud or local storage will be implemented using the sensed parameters for the customer to predict the water quality .

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 for the customer's need

Customer requires the system consist of several sensors is used to measuring physical and chemical parameters of the water.

Advantages

Customer was satisfied by low-cost water quality monitoring system has been developed for large area of coverage. Its applicability was attributed to its long duration operation, flexibility, and reproducibility.

Real-time monitoring of water quality by using IoT will immensely help customer to become conscious against using contaminated water as well as to stop polluting the water.

The effective and efficient system of water quality monitoring are critical implementation by a reconfigurable smart sensor interface device for water quality monitoring system in an IoT environment .

This project has successfully achieved its objective where water quality data (pH and temperature) can be monitored, stored in a database, and water pH levels can be controlled using IoT.

The proposed system collects the parameters of water pH, turbidity on the surface of water in real time basis with high speed from multiple different sensor nodes.

Disadvantages

Mounted Sensors may get damage during natural disasters and often by aquatic animals.

The sensors which work on power source may often required to be replaced in case of malfunctioning.

Customer felt that The system is less effective as sensors are installed very deep inside the water and their positions are fixed.

The maintenance cost is also very high. This leads to higher cost on the regulatory body.

To test more parameters of the water quality for some applications, other sensors can be included in the system.

Required Areas

The design and demonstration of a prototype remote, automatic, portable, real time, and low cost water quality monitoring system

Customer can analyse data continually and instantly alert users to changes in the system, reducing the need for unreliable and expensive sampling.

Monitoring is necessary to ensure that our waters can continue to support the many different ways we use these resources and to track whether protection and restoration measures are working

The system has wide application and it is usable and affordable by all categories of users.

Customer no need to compromise the water quality by the presence of infectious agents, toxic chemicals, and radiological hazards