Real-Time River Water Quality Monitoring and Control System

PNT2022TMID36752

SCENARIO	PREREQUISTE	PROJECT FLOW	WORKING	BENEFITS	OUTCOME
Testing and Experimenting with various water sources					
Steps What does the person (or group) typically experience?	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.	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.	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.	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.	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.
Survey Details What interactions do they have at each step along the way? • Existing Systems • Polluted percentage • Need for the project	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	To check water quality by analyzing the parameters such as temperature,pH and conductivity, and so on.	If the acquired value is above the threshold value automated warning SMS alert will be sent to the agent.	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.
Goals & fulfillments	Customer requires the system consist of	The main aim is to develop a system for continuous	The sensed data will be stored in the cloud	The customer requiresa low cost system for real time	The issue is that the traditional method, such

	several sensors is used to measuring physical and chemical parameters of the water.	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	or local storage will be implemented using the sensed parameters for the customer to predict the water quality .	water quality monitoring and controlling using IoT. By these sensors, water contaminants must be detected.	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
Advantages	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 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 .	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.	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.	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
Disadvantages	Customer felt that The system is less effective as sensors are installed very deep inside the water and their positions are fixed.	The sensors which work on power source may often required to be replaced in case of malfunctioning.	Mounted Sensors may get damage during natural disasters and often by aquatic animals.	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	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	Customer can analyse data continually and instantly alert users to changes in the system, reducing the need for unreliable and expensive sampling.	Customer no need to compromise the water quality by the presence of infectious agents, toxic chemicals, and radiological hazards	The system has wide application and it is usable and affordable by all categories of users.