DATE: 17-October-2022
Team Id:PNT2022TMID51098
Project Title:Real-Time River Water Quality Monitoring and Control System

Scenario Testing and Experimenting Various water sources	**Prerequestie**	**Project Flow**	**Working**	**Benefits**	**Outcome**
Steps What does the person (or group) typically experience?	The simplicity with which real-time data can be collected, analysed, and handled thanks to the Internet of Things (IoT) and remote sensing technology allows for the acceleration of water resource purification efforts.	To monitor the water quality across a vast region, such as a lake, river, or aquaculture, you need a water monitoring system. According to the state of the world today, Internet of Things (IoT) and remote sensing techniques are utilised in a variety of study fields to monitor, collect, and analyse data from distant locations.	The recommended android application will be used to display the sensor data checked via the cloud, and alerts will be given to the user if the value exceeds the threshold value.	Can reduce the pollutants in water, reducing the risks associated with using unclean water for daily activities while ensuring the acceptable qualities of water.	The relevant authorities may take action to improve the water's quality so that it is more suitable for human use. High frequency, high mobility, and low power water monitoring system
Survey Details What interactions do they have at each step along the way? ■ **People:** Who do they see or talk to? ■ **Places:** Where are they? ■ **Things:** What digital touchpoints or physical objects would they use?	Remote monitoring and Internet of Things (IoT) technology can be used to access real-time data. With the aid of Spark streaming analysis through Spark MLlib, Deep Learning Neural Network Models, and Belief Rule Based (BRB) system, data collected at the separate site may be shown in a visual format on a server PC and is also contrasted with reference values	To evaluate many factors, like as temperature, pH, conductivity, and so on, in order to determine the quality of the water. We created a smart water monitoring system that can carry out all of these monitoring functions by taking into account all of these factors.	The agent will receive an automated warning SMS alert if the acquired value is higher than the threshold value.	The agent will receive an automated warning SMS alert if the acquired value is higher than the threshold value.	We only measure the characteristics that affect the quality of river water due to budgetary constraints. This project could be expanded into an effective municipal water management system.
Goals & motivations At each step, what is a person's primary goal or motivation? ("Help me..." or "Help me avoid...")	We only measure the characteristics that affect the quality of river water due to budgetary constraints. This project could be expanded into an effective municipal water management system.	We only measure the characteristics that affect the quality of river water due to budgetary constraints. This project could be expanded into an effective municipal water management system.	The user will be able to anticipate the water quality using the sensed parameters after the sensed data is implemented in the cloud or on local storage.	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 problem is that the conventional approach, which involves sending staff to each tank or river to gather data, is labor-intensive, lacking real-time information, and expensive in terms of equipment.
Positive moments What steps does a typical person find enjoyable, productive, fun, motivating, delightful, or exciting?	The problem is that the conventional approach, which involves sending staff to each tank or river to gather data, is labor-intensive, lacking real-time information, and expensive in terms of equipment.	A reconfigurable smart sensor interface device is essential for the construction of an efficient and successful water quality monitoring system in an Internet of Things environment.	The suggested system gathers the water turbidity and pH characteristics on a real-time basis from numerous distinct sensor nodes at a high rate.	IoT-based real-time water quality monitoring will greatly assist customers in developing a sense of responsibility towards drinking contaminated water and quitting water pollution.	The low-cost, widely-reaching water quality monitoring equipment was well received by the customer. Its longevity of operation, flexibility, and reproducibility were factors that contributed to its usefulness
Negative moments What steps does a typical person find frustrating, confusing, angering, costly, or time-consuming?	Due to the sensors fixed placements and extremely deep installation, the customer believed that the system was less effective.	In the event of malfunction, the sensors that are powered by a power source may frequently need to be replaced.	Mounted sensors may sustain harm from aquatic animals and during natural disasters.	The expense of upkeep is likewise extremely high. The expense to the regulatory body increases as a result.	Other sensors can be added to the system to assess other aspects of the water quality for specific applications.
Areas of opportunity How might we make each step better? What ideas do we have? What have others suggested?	The creation and testing of a prototype system for monitoring water quality remotely, automatically, easily, and cheaply	Monitoring is required to determine whether protection and restoration efforts are effective and to make sure that our waters can support the many diverse ways we use these resources.	Customers no longer need expensive and unreliable sampling since they can continuously analyse data and immediately inform users to changes in the system.	There is no need for the customer to jeopardise the water's quality by adding infectious agents, hazardous chemicals, or radiation risks.	The system is accessible to all user types, has a wide range of applications, and is reasonably priced.