Project Title: Real-Time River Water Quality Monitoring and Control System

Customer Journey Map

Team ID: PNT2022TMID06691

SCENARIO

Browsing, booking, attending, and rating a local city tour

PHASE	STEPS TO IMPLEMENT	OBJECTIVE OF THE PROJECT	CHALLENGES DURING IMPLEMENTATION	OPPORTUNITIES
Testing the quality of the water	**Measuring the PH, temperature and required parameters**	**Monitoring and controlling the water quality**	**Seperation of dirty and pure water and recyle them**	**Altering the authorities, if the water quality is not good**

PHASE

Steps to implement the project. Easy Representation to the user.

STEPS

- How to implement
- Methods for implementation
- Description of the components

Depending on the quality of water, it may either be a source of life and good health or a source of diseases and deaths	Its constitute varies from 0 to 14 pH	The system should be reliable and scalable	A rain garden is a constructed area which collects rainwater from roofs, pipes and driveways etc	If the acquired value is above the threshold value comments will be displayed as 'BAD'.
Increasing water pollution in oceans, lake, and river, triggers worldwide demand more advanced methods in monitoring systems	Mathematically pH is referred as, pH = - log [H+].	IoT devices use various types of sensors to collect data about turbidity, temperature, pH, conductivity, etc. of river water continuously	Bleach comes in different concentrations. Check the label of the bleach you are using to find its concentration before you start to disinfect water	Adding a pinch of salt for each quart or liter of boiled water
Remove the solid waste from water and remove the coluroess if the water.	Turbidity train sensor is victimised to measure the clarity of element or muddiness utter in the water	To simulate and evaluate quality parameters for quality control		It continuously senses the values of pH, temp, turbidity
Seperate the water into soluable and disoluable	. Irrigate is visibly at levels above 80 NTU	To measure water parameters such as pH, dissolved oxygen, turbidity, conductivity, etc.using available sensors at a remote place	Due to the limitation of the budget, we only focus on measuring the quality of river water parameters.	The data visualization application runs on client devices such as Smart phones, laptops and desktops
hic Wireless Sensor Network (WSN) is suitable for monitoring physical and chemical water characteristics in remote areas	The normal temperature of the people is (25 -30)°C			Drinking water is also wasted by many of us at homes, even if unintentionally.
The pH parameters are difficult to measure accurately as it deals with the very small amount of ionic concentration thus need a sensitive sensing device for its detection	pH values also process the solubility of elements and compounds making them cyanogenetic			Water used to wash vegetables often just goes down the drain
				To send SMS to an authorized person routinely
				If the acquired value is lower than the threshold value comments will be displayed as 'GOOD'
				when water quality detected does not match the preset standards, so that, necessary actions can be taken

OBJECTIVES

The main purpose of the project

If the river water qualities in correct level groundwater level increase.	In the proposed architecture, each water resource will be monitored by a sensor node equipped with a set of sensor probes capable of measuring the parameters like pH, turbidity etc	improvement and restoration of soil quality and thus, raising productivity rates	If sampling is the sole way that water quality is checked, there is unfortunately always the prospect of human error	enhance product quality and reduce risks.
Animals and birds are drinking river water	The consequence of turbidity is a reduction in water clarity, aesthetically unpleasant, decreases the rate of photosynthesis, increases water temperature.	Ease and convenience of usage	supply and securing of clean and sufficient drinking water for the population	To treat the water to reduce or remove contamination that could be present to the extent necessary to meet the water quality targets
River water is essential for human being.	Usually, its present use to perceive the temperature of the life, if we site the device wrong the conductor electrode and placed into the H2O	reducing the impact of natural hazards (especially in the context of climate change)	provision and securing of access to sanitation	To ensure safe drinking-water through good water supply practice
				Improve customer service. Make sure employees are trained in quality.
				primary goal of quality improvement is to improve outcomes
				For an indicator to be effective it must provide a true measure of a component of the ecosystem

CHALLENGES

what are challenges available during the implementation phase.

If the river water quality is not good then the groundwater will be decrease.	In the PH level of the river water matches to the PH level oh the pure water then the water is good to use.	the collection of sensor data, including low-quality raw data. This brings additional challenges when it comes to understanding and monitoring water quality.	Every laboratory has a limit of the number of samples it can analyze in a particular period, say a day or a week	Despite, good features and reliability cost of instruments for testing water quality may become a hindrance for Boards
If the river water is polluted then animals and birds cannot able to drink water.	pH, Conductivity, Salinity and Temperature can be measured/monitored using the principal of multi parameter electrode	In many regions in the world, raw data sets related to water quality cannot be obtained directly, mainly due to various regulations and data protection laws	[Description of a positive moment]	Many water testing laboratories face technical difficulties
Polluted water is not essential for human being	Amperometric membrane can monitor free chlorine (Cl2 + HOCl + OCl-) or total chlorine (free chlorine + combined chlorine)	Intelligence-enabled IoT offers a way to address problems such as these	[Description of a positive moment]	According to the guidelines given by the World Health Organization (WHO), water quality samples should be stored in low temperatures

PAIN POINTS

What are the problem that user has to face.

Chemical waste products from industrial process or discharge into river	Because of throwing dust it will create some mess smell	it will affect the ecosystem this water is harmful for drinking this causes harm to organisms living in the river water.	This causes come to organisms living in the river water	To simulate and evaluate quality parameters for quality control.
pollution maker due to acid rain	water pollution may cause disease	To assemble data from various sensor nodes and send it to the base station by the wireless channel	Also increasing river water temperature affect the living organism	To send SMS to an authorized person routinely when water quality detected does not match the presetstandards, so that, actions be taken.
Thefting of sand from Riverside may cause the river to dry fast	This causes harm to organisms living in the river water.	The environment around consists of five key elements e.g., soil, water, climate, natural vegetation, and landforms. Among these water is the utmost crucial element for human life.	In this research, we monitor the physical and chemical parameters of water bodies.	Real-time monitoring of water quality by using IoT-integrated system will immensely help people to become conscious against using contaminated water as well as to stop polluting the water

OPPORTUNITIES

what are the future scope for this project

Used in the agricultural for cultivation and other purposes	We include sensor for detection of PH level of the water	Belief Rule Based (BRB) system and is also compared with standard values.	Chlorine dioxide tablets can kill germs, including Cryptosporidium, if you follow the manufacturer's instructions correctly	It is used in agricultural field for testing the river water quality
We use the detector to easily identify our device	Here we used temperature sensor to detect the temperature of the water	Water quality monitoring has gained more interest among researchers in this twenty-first century	Ultraviolet light (UV light) can be used to kill some germs.	Used in the industrial purpose
Our device is miniature compared to other devices	We need high precision components for quality testing.	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	The sun's rays can improve the quality of water. This method may reduce some germs in the water	It help people to become conscious against using contaminated water as well as to stop polluting the water