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

Team ID : PNT2022TMID42440

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SCENARIO

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

PHASE

STEPS TO IMPLEMENT

OBJECTIVE OF THE PROJECT

CHALLENGES DURING IMPLEMENTATION

OPPORTUNITIES

PHASE

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

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

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

Increasing water pollution in oceans, lake, and river triggers worldwide demand more advanced methods in monitoring systems

Remove the solid waste from water and remove the turbidity in the water.

Seperate the water into soluable and disoluable

his Wireless Sensor Network (WSN) is suitable for monitoring physical and chemical water characteristics in remote areas

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

Its constitute varies from 0 to 14 pH

Mathematically pH is referred to. pH = - log [H+].

Turbidity train sensor is victimised to measure the clarity of element or muddiness utter in the water

. Irrigate is visibly at levels above 80 NTU

The normal temperature of the people is (25 -30) ° C

pH values also process the solubility of elements and compounds making them cyanogenetic

The system should be reliable and scalable

To measure water parameters such as pH, dissolved oxygen, turbidity, conductivity, etc.using available sensors at a remote place

IoT devices use various types of sensors to collect data about turbidity, temperature, pH, conductivity, etc. of river water continuously

Due to the limitation of the budget, we only focus on measuring the quality of river water parameters.

To simulate and evaluate quality parameters for quality control

The data visualization application runs on client devices such as Smart phones, laptops and desktops

A rain garden is a constructed area which collects rainwater from roofs, pipes and driveways etc

Drinking water is also wasted by many of us at homes, even if unintentionally.

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

Water used to wash vegetables often just goes down the drain

If the acquired value is above the threshold value comments will be displayed as "BAD".

To send SMS to an authorized person routinely

If the acquired value is lower than the threshold value comments will be displayed as "GOOD"

It continuously senses the values of pH, temp, turbidity

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.

Animals and birds are drinking river water

River water is essential for human being.

In the proposed architecture, each water reservoir will be attached with a sensor node equipped with a set of sensor probes capable of measuring the parameters like pH, turbidity etc.

The consequence of turbidity is a reduction in water clarity, aesthetically unpleasant, decreases the rate of photosynthesis, increases water temperature.

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

Improvement and restoration of soil quality and thus, raising productivity rates

Ease and convenience of usage

If sampling is the sole way that water quality is checked, there is unfortunately always the prospect of human error

supply and securing of clean and sufficient drinking water for the population

reducing the impact of natural hazards (especially in the context of climate change)

provision and securing of access to sanitation

enhance product quality and reduce risks.

To treat the water to reduce or remove contamination that could be present to the extent necessary to meet the water quality targets

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.

If the river water is polluted then animals and birds cannot able to drink water.

Polluted water is not essential for human being

In the PH level of the river water matches to the PH level oh the pure water then the water is good to use.

pH, Conductivity, Salinity and Temperature can be measured/monitored using the principal of multi parameter electrode

Amperometric membrane can monitor free chlorine (Cl2 + HOCl + OCl-) or total chlorine (free chlorine + combined chlorine)

the collection of sensor data, including low-quality raw data. This brings additional challenges when it comes to understanding and monitoring water quality.

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

Intelligence-enabled IoT offers a way to address problems such as these

Every laboratory has a limit of the number of samples it can analyze in a particular period, say a day or a week

[Description of a positive moment]

[Description of a positive moment]

Despite, good features and reliability cost of instruments for testing water quality may become a hindrance for Boards

Many water testing laboratories face technical difficulties

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

pollution maker due to acid rain

Thefting of sand from Riverside may cause the river to dry fast

Because of throwing dust it will create some mess smell

water pollution may cause disease

This causes harm to organisms living in the river water.

it will affect the ecosystem this water is harmful for drinking this causes harm to organisms living in the river water.

To assemble data from various sensor nodes and send it to the base station by the wireless channel

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.

This causes come to organisms living in the river water

Also increasing river water temperature affect the living organism

In this research, we monitor the physical and chemical parameters of water bodies.

To simulate and evaluate quality parameters for quality control.

To send SMS to an authorized person routinely when water quality detected does not match the presetstandards, so that, actions be taken.

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 use the detector to easily identify our device

Our device is miniature compared to other devices

We include sensor for detection of PH level of the water

Here we used temperature sensor to detect the temperature of the water

We need high precision components for quality testing.

Belief Rule Based (BRB) system and is also compared with standard values.

Water quality monitoring has gained more interest among researchers in this twenty-first century

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

Chlorine dioxide tablets can kill germs, including Cryptosporidium, if you follow the manufacturer's instructions correctly

Ultraviolet light (UV light) can be used to kill some germs.

The sun's rays can improve the quality of water. This method may reduce some germs in the water

It is used in agricultural field for testing the river water quality

Used in the industrial purpose

It help people to become conscious against using contaminated water as well as to stop polluting the water