Real-Time River Water Quality Monitoring and Control System

ABSTRACT:

Water pollution is one of the biggest fears for the green globalization .In order to ensure the safe supply of the drinking water the quality needs to be monitor in real time. The conventional method of monitoring involves manual collecting water sample from different locations and tested in the laboratory consuming more time .Therefore, there is a need for continuous monitoring of water quality in real time monitoring of water quality in IOT(Internet Of Things)and control it.In this system quality parameters are measured using different sensors such as PH, turbidity, temperature.

KEYWORD:

IOT(Internet Of Things), PH sensor, Turbidity sensor, Temperature sensor.

INTRODUCTION:

In the 21st century, there were lots of inventions, but at the same time were pollutions, global warming and so on are being formed, because of this there is no safe drinking water for the world's pollution. Nowadays, water quality monitoring in real time faces challenges because of global warming limited water resources, growing population, etc. Hence there is need of developing better methodologies to monitor the water quality parameter in real time. Systems for water quality monitoring are required for activity analysis and their impact on nature of the power plants, mining sector, oil industry, etc. Basically, determination of water quality relies on estimation of values of some important and indicative parameters. For example, the water quality depends on the water temperature, activity level, water flow and presence of volatile organic compounds. Although there are well known and widely used methods for measurement of these parameters with appropriate sensors, design of electronic systems for environmental monitoring is not often straightforward. There are more engineering challenges, some of them are that the application require highly reliable and accurate sensors with the reduced level of maintenance, long lifetime, fast response time, high sensitivity and high selectivity. With an introduction of IoT in the modern world, many problems

Project Objective:

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. Also it assures low cost efficient water quality monitoring and control over river water Since its battery operated,it is much safer for the locality and people to use the river water that has low rate of electrical shocks as the battery is completely insulated and rechargable so that the system is continuous. By using this product people can predict ,analyse the hardness of water and also the factors like temperatureand turbicity of water for having a safe drinking and water with better consistancy for house hold purposes.Since water is an essential compound in our daily basis intake of it in an healthy manner is provided by our cost efficient quality monitoring and control system which is market affordable and greatly life saving factor for people using 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. It is also vital for the persistence of other living habitats. Whether it is used for drinking, domestic use, and food production or recreational purposes, safe and readily available water is the need for public health .

So it is highly imperative for us to maintain water quality balance. Otherwise, it would severely damage the health of the humans and at the same time affect the ecological balance among other species . Water pollution is a foremost global problem which needs ongoing evaluation and adaptation of water resource directorial principle at the levels of international down to individual wells. It has been studied that water pollution is the leading cause of mortalities and diseases worldwide.

The records show that more than 14,000 people die daily worldwide due to water pollution. In many developing countries, dirty or contaminated water is being used for drinking without any proper prior treatment. One of the reasons for this happening is the ignorance of public and administration and the lack of water quality monitoring system which makes serious health issues.

In this paper, we depict the design of Wireless Sensor Network (WSN) that assists to monitor the quality of water with the support of information sensed by the sensors dipped in water. Using different sensors, this system can collect various parameters from water, such as pH, dissolved oxygen, turbidity, conductivity, temperature, and so on. The rapid development of WSN