AN INNOVATIVE WATER SUPPLY SYSTEM

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ABSTRACT:

This paper reviews the challenges in water supply system, development and distribution of systems to manage water quality, leakages and contamination of drinking water in transmission network and managing pipeline network. Nowadays the wireless communication system is trending because of it's impact in the field of healthcare, agriculture, safety measurements where as it plays the decisive role for developing the monitoring of systems. Water distribution systems made up of networks of pipes which can be in poor states of repair that are buried beneath our streets and relatively inaccessible. So to manage these systems the reliable data is needed to understand and detect water losses due to leaks or burst events, abnormality in the control of water quality. In this paper, we present a system to monitor the supply of water by the implementation of IoT. We detect the leakage using flow meter. The usage and wastage of water is tracked by the sensors and an alerter is used to notify the user if there is any contamination in drinking water. This proposed water supplying monitoring system will help the users to track and manage the supplying system, to evacuate the residue of chlorine left where as to distribute water equally in all the places.

Keywords: monitoring system, IoT, water quality, Remote sensing.

INTRODUCTION:

Safety and security of drinking water distribution system is vital throughout the world. Nowadays water scarcity and pollution is one if the global problems, chemical wastes and oil spills are the major causes for this pollution. So to avoid and to conserve water some measures are to be taken. To avoid the problems like the contamination in drinking water, wastage of water due to the leakages in pipes, blocking in the pipes due to the residue of chlorine came with the flow of water. So an online monitoring system is proposed by us in this paper where we can easily observe the leakages present in pipelines with the help of sensors whether to repair the pipeline system or not. As well as a mechanism is introduced for the distribution of water in equal quantity all over the places. Parameters like potential hydrogen, oxidation, reduction, conductivity and temperature are measured by "The Smart Water Quality Monitoring System". The quality of water is measured and if it is contaminated an alert system is there to alert the user about the harm it can cause. The whole system is directed by the implementation of IoT by which the data are collected from the sensors through the internet or the wireless communication. Thus the different kinds of values are stored in software for future use and the collected data history the improvement of the water pipeline system can be done.We used flow meter and different types of sensor like ph sensor, chloride ion selective sensor for checking the chlorine level in water. Pipeline leakage

is a serious issue for water distribution so we used flow meter and using IoT we checking the status of the flow meter using web server where we plot a graph from getting the idea how flow meter work properly or not. The motive of this paper is to help in detecting water leakage in underground water supply and distribute the drinking water uniformly with continuously monitoring additionally we are using sensors for detecting chlorine and unwanted substances in the drinking water. We also implement IoT with these sensors for monitoring and purification. This process will help in purification water by collecting the waste water in a reservoir and purify it.

Methodology:

We all know that water is the main necessary thing in life. But in the village purifying water is a major issue so we firstly collect the water in reservoir then using a motor for separating bio waste and differentiate the bio-waste in this reservoir we implement the sensors and checking the sensors data via IoT but water distribution is a issue due to leakage in the pipe so we use flow meter so we check the flow of the water in the pipe and see it through iot on a web server where we check the flow meter status by plotting a graph.

Conclusions:

This project demonstrates a smart water quality monitoring system. GSM technology has been successfully implemented to send the alarm based on abnormality parameter of the water quality to the user. IoT for real time water monitoring should be an excellent contender for this system.

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