IOT BASED SMART WATER SYSTEMS

Introduction:

Smart Water Management is the activity of planning, developing, distributing and managing the use of water resources using an array of IOT Technologies which are designed to increase transparency and make more reasonable and sustainable usage of those water resources.With the increase in water consumption due to an increase in the human population, there are growing concerns of water scarcity .Besides the general concerns of freshwater scarcity for drinking purpose, there are rising concerns for scarcity of water for agricultural purposes. In order to tackle the challenges of water scarcity, an effective water management system is vital. The water management system can help detect water leaks in a smart home by analyzing water levels during different hours of the day. One of the main reasons for the low adoption of smart water management system is its high cost. In recent years, with the advent of the Internet of Things (IoT) for smart cities, the cost has come down significantly. Internet of Things is a system of connected devices with the ability to transmit data. Devices in an IoT ecosystem can transfer data without human interaction thereby making them ideally suitable for real-time water level monitoring. Use of IoT platforms provides easy access for remote monitoring and control.

Related work:

The water management system can be broadly classified into two main categories namely water level monitoring systems and water quality monitoring systems. Water level monitoring system are those systems that attempy to measure in real-time the water level of a water reservoir using sensors .The water quality monitoring system attempts to measure various water quality parameters like pH,conductivity,TDS,etc.value in the water by using different sensors.

Proposed IoT based smart water management system:

In this section, we propose an architecture for a smart water management system keeping in mind the key analysis of various techniques discussed earlier. The proposed system is an IoT based real-time smart water management system that will record water level as well as water quality parameters. The proposed

system consisting of programs written in popular programming languages like python will be running in the controller e.g. Raspberry Pi.

Conclusion :

A water management system is the need of the hour for smart cities and campuses. The use of IoT devices for the water management system is becoming increasingly prominent. The availability of low-cost sensors connected to IoT devices has fixed the challenges of measuring water quality. In this paper, various components of IoT based water management systems were presented along with the in-depth survey of all existing smart water management systems.