**IBM NAAN MUDHALVAN**

**SKILL UP**

**PROJECT TITLE:**

**SMART WATER MANAGEMENT SYSTEM**

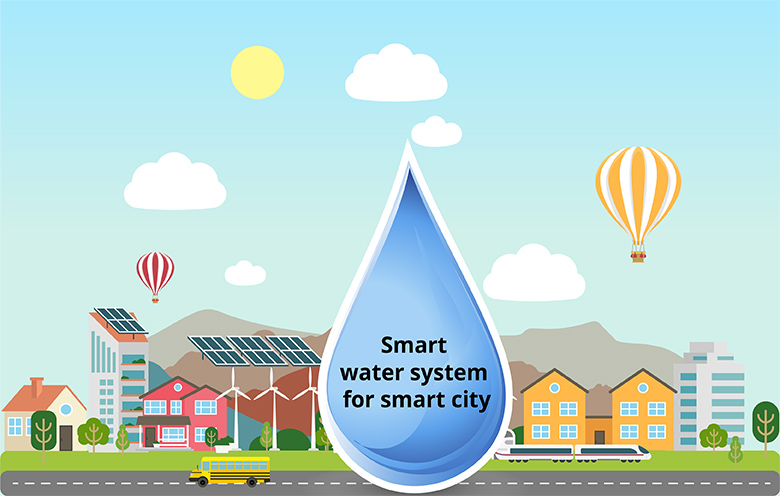
**COLLEGE: PERI INSTITUTE OF TECHNOLOGY**

**DEPT: ELECTRONICS AND COMMUNICATION ENGINEERING**

**DOMAIN: INTERNET OF THINGS (IOT)**

**Submitted By :**

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**PHASE-1 :**

* 1. **Abstract:**
* Water is one of the essential parts of life. Water pollution is one of the big problems to the world. In order to ensure the safe supply of the drinking and useful water for different purposes like agricultural, the water should be monitored. This document presents a design of a low cost system for real time monitoring of the water quality and quantity of water in IOT (internet of things). The system having of several sensors is used to measuring physical of the water. The parameters flow sensor of the water can be measured. The measured values from the sensors can be processed by the controller. The Arduino model can be used as a controller. Finally, the sensor data can be shown on internet using WI-FI system. A cloud server was configured as data saving and analysis. This data can be used in future research and development.
  1. **Introduction:**
* Currently drinking water is very prized for all the humans. In recent times water levels are very low and water in the lakes are going down. So it is too important to find the solution for water monitoring & control system. IoT is a solution. In recent days, development in computing and electronics technologies have triggered Internet of Things technology . This paper present a low cost water monitoring system, which is a solution for the water wastage and water quality. Microcontrollers and sensors are used for that system.
  1. **Project Definition:**
* The project involves implementing IoT sensors to monitor water consumption in public places such as parks and gardens. It employs advanced technology to monitor and provide immediate insights into water usage. This empowers individuals and industries to make informed decisions, leading to more efficient and sustainable water practices.
  1. **Objectives:**
* The objective of this project is to promote water conservation by providing real-time water consumption data to the public. This empowers individuals, communities, and industries to make informed decisions and take proactive measures to reduce water wastage and improve overall efficiency in water usage. By leveraging technology and data transparency, the project aims to foster a culture of responsible water management for a more sustainable future.
  1. **Public Awareness:**
* Raising awareness about smart water management is crucial for conserving this vital resource. It enables efficient water use, protects the environment, and supports climate resilience. By educating the public, we promote economic savings, reduce energy consumption, and mitigate water scarcity challenges. Responsible water management also ensures access to clean water, benefiting public health and quality of life. Moreover, it aligns with global efforts to address the growing water crisis and fosters a sense of social responsibility, contributing to the long-term sustainability of communities worldwide.
  1. **IoT Sensor Design:**
* In this project many components such as sensors, modules, power sources and so on are used. They are,
* **Sensors:**
* Flow Sensor
* Ultrasonic sensor , etc..
* **Connectivity:**
* Wi-fi module
* **Power Source:**
* Battery / Solar
* **Data Processing:**
* Data processing will send raw data to a central processing unit.
  1. **Integration Approach :**
* Integrating real-time water consumption data involves deploying IoT sensors strategically within the water supply network. These sensors collect continuous data on water usage, which is then transmitted to a central processing unit using a reliable communication protocol. This unit serves as the core for aggregating, parsing, and validating the incoming data. Real-time analytics are applied for instant processing, enabling prompt identification of consumption patterns.
* The validated data is stored in a structured database, and a user-friendly interface, such as a web-based dashboard or mobile app, is created for visualization.
* Security measures, including encryption and access controls, are implemented to safeguard data integrity. Thorough testing and documentation ensure the system's reliability, accuracy, and scalability, making it an efficient tool for water management and conservation efforts.
  1. **Conclusion:**
* Smart water management, enabled by IoT technology, revolutionizes how we monitor and conserve water. It provides real-time data, improves environmental sustainability, enhances public health, and strengthens communities. Ongoing collaboration, innovation, and investment are essential for a sustainable water future.