Smart water management

Introduction:

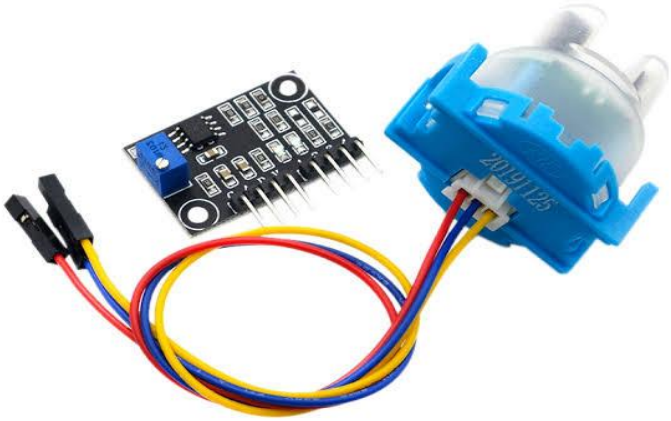
Internet of Things has been associated with cities, smart homes And also to manage traffic system.A unknown fact that about Internet of things technology is also application across many other Fields in our everyday life. Another such area where the internet of Things technology can play a major role in water management. IOT is evolving fast and latest innovation occurring in wireless Technology and embedded technology. This work focuses on a Solution for water management in colleges, building and Commercial area with the help of IOT. Water is precious and Supply the needs to be regulated. To maintain the water in a proper way, should prevent the Overflow of water in tanks and usage of the water in proper Manner. In traditional days there is no proper maintenance of Water. In conventional tanks there is need of human being to ON/OFF the motor. In this paper the automated system is Introduced which is used to save the human work and cost. In this System the motor is automatically ON/OFF by using level sensor. The usage of water is observed by the water flow sensor.

Related work

Many researches are working in the field of IOT and its Application. One such application is Smart Water Management. The researchers are creating a system which can indicate level of Water in tanks, usage of water in water,quality monitoring suchas Turbidity sensor, PH sensor, salt sensor in the water tanks to know Contamination, alkaline nature and salts in the water which causes Diseases to living beings. Another work presented an IOT system Which is capable of detecting and displaying level of water in the Storage tanks and used for managing and planning use of water.

COMPONENTS

Turbidity sensor



How does a turbidity sensor work?

A turbidimeter works by sending a light beam into the water to be tested. This light will then be scattered by any suspended particles. A light detector is placed at a 90 degree angle to the light source,and detects the amount of light that is reflected back at it.

Water flow sensor

The HC-SR04 ultrasonic module is a module that can provide Noncontact measurement within the range of 2cm to 400cm with An ranging accuracy that can reach 3mm. It works on the principle Of echolocation. The ultrasonic sensor as a trigger and an echo Pins. The Arduino provides a high signal of 10microseconds to This pin. The sensor is trigged, it send out a 840khz to the surface Of the water. On getting to the surface of the water, the wave is Echoed back to the sensor and the Arduino reads the echo pin to Determine the time spent between the triggering and receiving of The echo.

PH sensor

How does pH level sensor work?

The sensor works by comparing the electric potential of a pH-sensitive system to the potential of a stable reference system.

Conclusion:

According to this system, proposed architecture becomes more Autonomous with quick transmission of data by using IOT. The Main advantage in IOT is, even when clients are not in the node Network, data will be sent, whenever a client is connected with That node, they can able to see the data which has been sent Already.

Smart water management can reduce the overflow of water in Tanks and provide the usage of water in liter per hour in real time.This system is cost effective. This enables the efficient use of Water.Thus it reduces the wastage of water. This project can be Further enhanced by using the results of this present project. The Turbidity sensor is placed in the water tank to know quality of Water which is helpful to know that chemicals in the water. The PH sensor is also placed in water tank to know the nature of water In tanks in which is suitable for drinking or not for living beings in Real time by using IOT