Public Water Supply Grid Monitoring To Avoid Tampering & Water Man Fraud using IOT

[1] Dr.B.Shadaksharappa, [2] M Lorate Shiny, [3] Nirosha S V*, [4] Sunethra C*, [5] Sunitha N*

[1] HOD & Vice Principal, [2] Asst. Professor, Dept. Of Computer Science & Engineering, SSCE, Bangalore

[3, 4, 5] UG Scholars, Dept of Computer Science and Engineering, SSCE, Bangalore

Abstract— In urban areas the water supply to residence and commercial establishments are provided at a fixed flow rate. There are incidents of excess water drawn by certain customers/users i.e., water will be released unofficially which is considered as water theft. In this project it is proposed to develop an embedded based remote water monitoring and theft prevention system by taking the data of water supply at the consumer/user end. The overall objective of a distribution system is to deliver wholesome water to the consumer at particular area and in sufficient quantity and achieve continuity and maximum coverage at affordable cost. To attain this objective the organization has to evolve operating procedures to ensure that the system can be operated satisfactorily, function efficiently and continuously as far as possible at lowest cost.

Keywords: LCD, Microcontroller, Logic Level Converter.

I. INTRODUCTION

With the continuous economic growth the water demand of enterprises is also increasing .The monitoring of water resource for these enterprises can prevent the occurrence of stealing water and leakage water effectively. In existing system urban water is supplied to home with man power which takes more time. Therefore the monitoring system of urban water supply has aroused extensive attention in recent years

II. EXISTING SYSTEM

In existing system, urban water is supplied to the home with the help of some man power. The person in charge will go to the place and then open the valve to that particular area. Once the time is over the person will go again to that place and close the valve. This type of operation needs man power. People may take excess water for their personal use with the help of motor or some other equipment. Due to this many people will not receive sufficient water for their use. The theft can be prevented only when any public inform the officials about the theft. But the possibility of public is informing to higher officers are rare. So the theft prevention or one who does the theft is difficult to identify in the early methods.

III. PROPOSED SYSTEM

The overall objective of a distribution system is to deliver wholesome water to the consumer at particular area and in sufficient quantity and achieve continuity and maximum coverage at affordable cost. Here we are using AT89S52 as

our controller and also few sensors are arranged to detect the presence of water in that particular pipeline. As logic level converters are used to detect the water flow. This project uses regulated 5V, 500mA power supply. 7805 three terminal voltage regulator is used for voltage regulation. All the details will be shown in the web server using IoT module connected to the controller

IV. METHODOLOGY

Here we are using AT89S52 as our controller and also few sensors are arranged to detect the presence of water in that particular pipeline. As logic level converters are used to detect the water flow .Water should be released as per the instructions by officials i.e., for example alternate days of supply is provided and only during specific period of time but not daily.All the details will be shown in the web server using IoT module connected to the controller. So that the authorities can take necessary action in case of misuse. This is an advanced, trouble-free, fit and forget system for water board. By using all these malfunctioning can be avoided. This project uses regulated 5V, 500mA power supply. 7805 three terminal voltage regulator is used for voltage regulation. Bridge type full wave rectifier is used to rectify the ac output of secondary of 230/12V step down transformer.
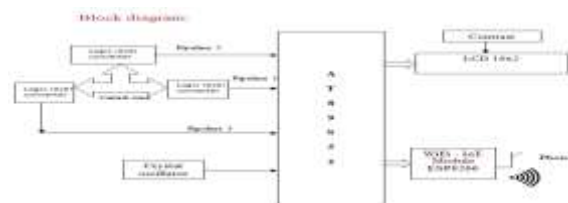

Fig 1 Block Diagram

Fig.2 Model Setup

a)   Advantages:

- Used to monitor the water supply
- Used to find and avoid the water theft
- Avoids wastage of water
- Reduces time
- Reduces man power

V. RESULT

The wastage of water is saved by delivering wholesome water to consumer by providing equal amount of water using the technique logic level converter and the sensor are used to detect the water presence in the pipeline and updates the information in the website and app using IoT. So that authorities can take action in case of misuse.

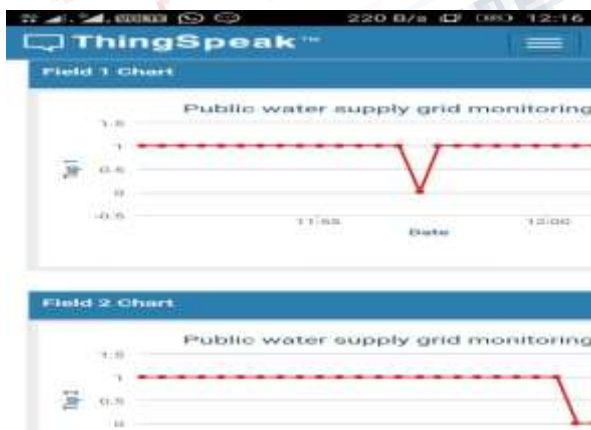The fig(3 & 4) graph represents the duration of water flow.

Fig 3 Shows duration of water flow in tap 1 & 2

Fig.4 Shows duration of water flow in tap 3

VI. CONCLUSION

The automated system implemented into the water distribution network insures the update of the refurbished water supply urban utilities; it offers new ways of monitoring and optimized exploitation of the water resources and technological equipments the use of embedded operating system µC makes this system more coherent and concise. This automated system not only used to monitor the water supply but also used to find and avoid the water theft.

a.   Scope of future work:

This project idea can be implemented in Industrial Areas as well as in each house in the Apartments.

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