

IOT Based Smart Water Meter

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ABSTRACT

Keywords: controller, flow sensor, Wi-Fi module.

INTRODUCTION

The humans are increasingly looking forward to use of new technologies to improve quality of life as well as reduce human efforts . Availability of clean water, its increasing demand from urbanization and growing population in cities, cost for management of water transmission, storage, treatment, distribution and billing for consumption are serious issues in underdeveloped and developing countries. The Smart Water Metering is to make a network of meters with sensors that are connected with computers or mobile phones, operated or monitored by suppliers. Smart Water Metering application of Internet of Things (IoT) need support of physical infrastructure, communication protocols, data storing and analyzing techniques having user-friendly interface. IoT has various types of protocols and communication structures for different applications. Smart water metering applications supports on different frameworks. The implementation of smart water metering under Grid eXchange Fabric (GXF) or Open Smart Grid Platform (OSGP) framework. OSGP is an Internet of Things (IoT) platform. It is designed to provide a common infrastructure over multiple smart applications to enable controlling and monitoring of various smart objects connected in the public space. OSGP provides a framework for the future smart grid. It provides high performance and reliability for future implementations under IoT. As it is an Open Source solution, anyone can use this framework to develop their own application using any smart devices with reduced time and cost.

FUNCTIONAL ANALYSES

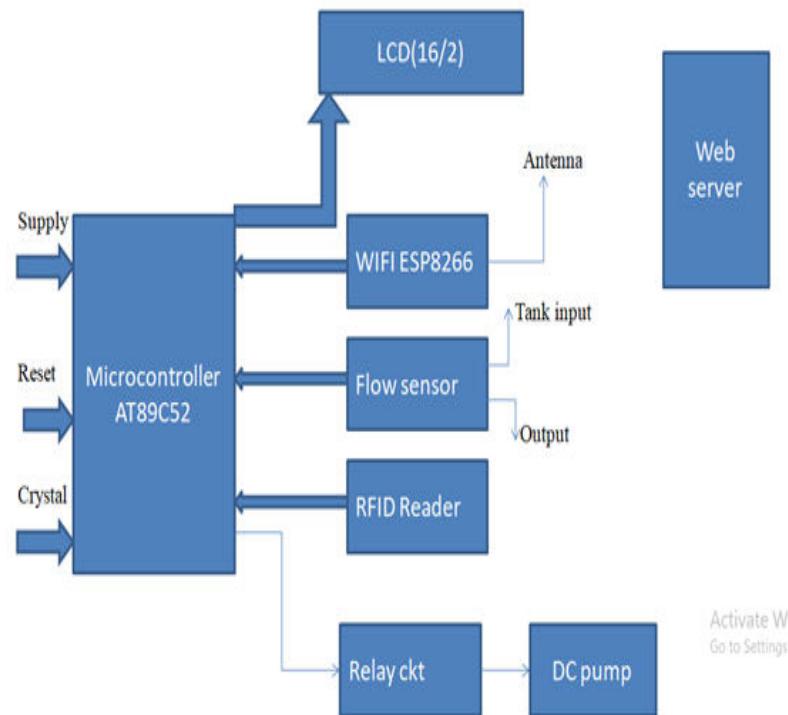


Fig. 1: Block Diagram

This is about cost-effective smart devices using RFID tags and system, here the status of water consumed is monitored using basic controller 89c51 through Internet, user can always keep an eye on the data through internet web and also manually. The smart water metering approach proposed differs from existing commercial methodologies by making use of low cost IoT hardware and server based storage. The proposed scheme reduces overheads on Utilities in handling meter reading and billing for water distribution in metropolitan and large urban conglomerates. The IOT is going to dominate the world within next few years. It presents an internet of things based real time monitoring using Wi-Fi module which makes the system cost effective and portable. It is used for monitoring use of water in domestic as well as industrial, agriculture etc. The main objective of IoT based Automatic Smart Water Meter is replacing the analog meter by smart meter. Also, the users can benefit from its feature like data storage

SYSTEM INTERFACE

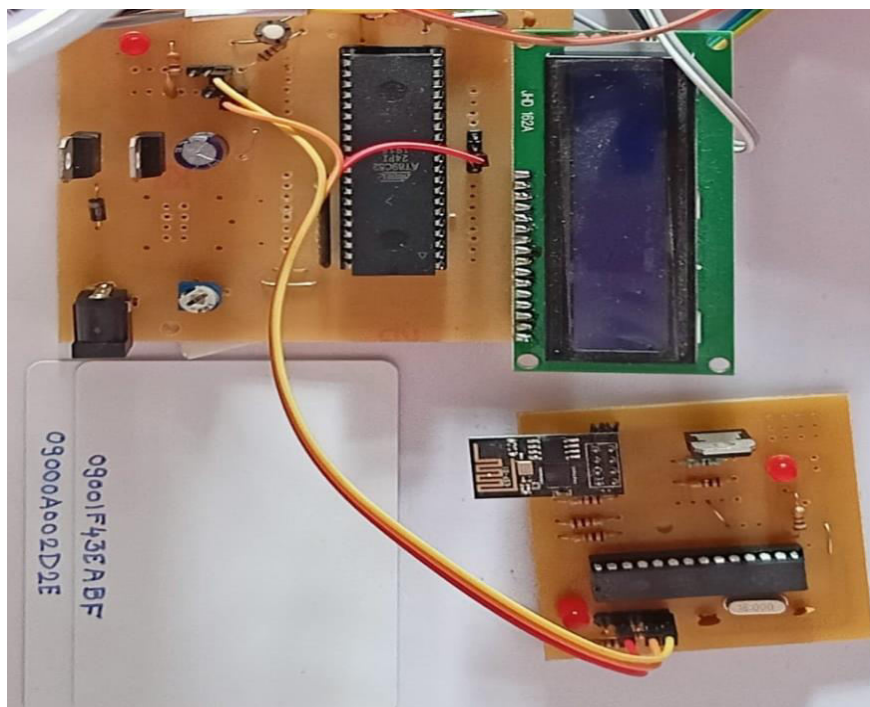


Fig. 2: Flow sensor and wifi interfacing

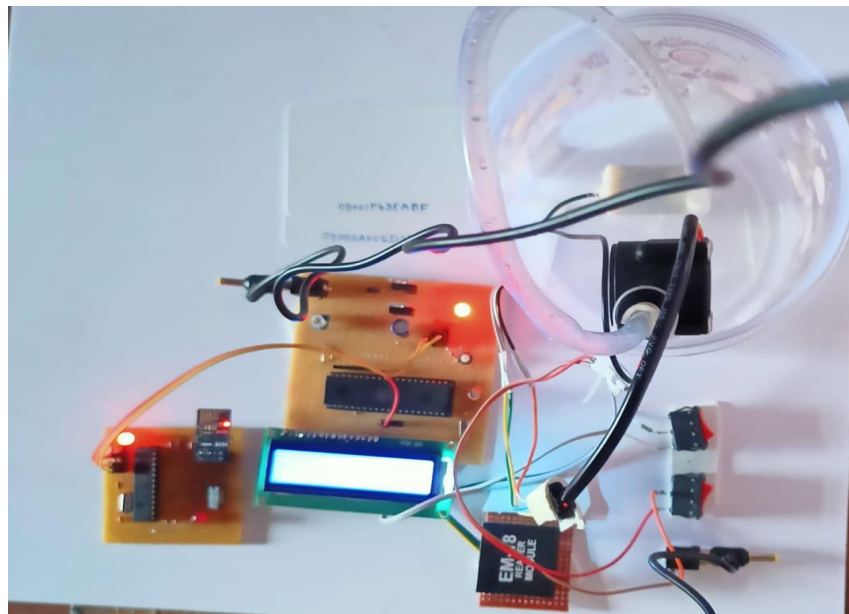


Fig.3: Result

HARDWARE AND SOFTWARE TOOLS

Hardware

1. Power Supply
2. Microcontroller
3. Flow sensor
4. LCD Display
5. Wi-Fi Module (ESP8266)

Software

1. Proteus for PCB design
2. Keil compiler microcontroller embedded c programming
3. Flash magic Web server HTML, PHP.
- 4.

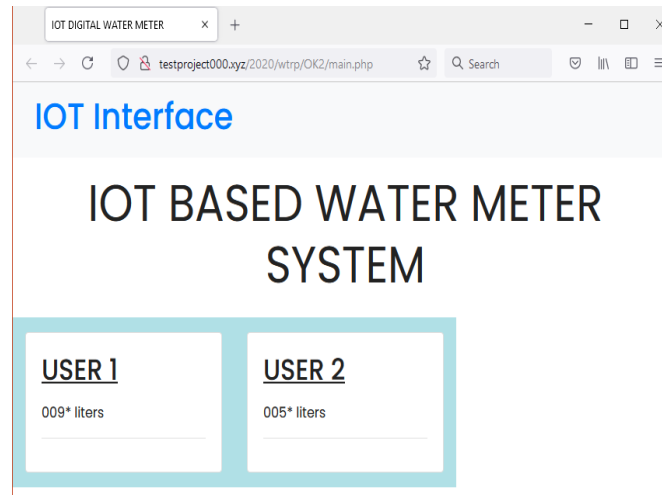
OBTAINED RESULTS:

Fig4. Result on Web Page

CONCULSION AND PERSPECTIVES

Water is one of the basic needs of human life which will become reason for the potential wars between countries which is predictable due to the ongoing disputes and Geopolitics is playing huge role in it. It is obvious to say that we need to save water for our future generations. Our project is small contribution to this initiative. With technology growing faster than ever whole world is moving towards automation and time has come to upgrade our domestic analog meters with more reliable and precise meter

REFERENCES

1. Cherukutota, Neeharika, and Shraddha Jadhav. "Architectural framework of smart meter reading system in IoT environment." Communication and Signal Processing (ICCSP), International Conference on. IEEE, 2016
2. Chauhan, Saurabh, et al. "IoTSuite: a framework to design, implement, and deploy IoT applications: demonstration abstract." Proceedings of the 15th International Conference on Information Processing in Sensor Networks. IEEE Press , 2016 Patil, Ravindra K., and Atul Oak. "A Review on Smart Grid Communication Application Layer Protocols."