

OPEN ACCESS INTERNATIONAL JOURNAL OF SCIENCE & ENGINEERING

IoT BASED ELECTRICITY METER AND BILLING SYSTEM

Nehal Dhumal¹, Shahid Shaikh², Zaid Baig³, Jeevan Jawalkar⁴, Mr. Sandesh Pawaskar⁵

KJEI'S Trinity College Of Engineering and Research Pune-412207, Maharashtra, India 1,2,3,4,5

Abstract: The current system of taking the reading of meter is manual where person have to go physically and should take the image of meter reading then he have to add the reading according to that bill is generated. Due to this the time required to this is more. The main objective of the project is to develop IOT based meter system and load control through GSM. Electricity board sends employees to take reading of meter every month which is costly and time consuming task. The proposed system provides an efficient system to avoid this problem. The electricity board and user can get the bills via GSM. The board will get reading hourly/daily/weekly/monthly. The controller takes reading from meter and sends to server via GSM.

KEYWORDS: GSM, IoT.

I INTRODUCTION

The billing process of electricity board should be faster and efficient to generate bills and give it to customer so that the customer can pay bills earlier. The process of board should be time efficient and straightforward to take actions. However the billing process of electricity board is time consuming, costly and error-prone. By wasting time and money current system makes board inefficient and slow. In general, networks are form by connecting multiple computers through the LAN. To control and monitor the activities of network form the admin office is very easy job but what? In that case how do you going to control and monitor the network? Instead of depend on any third person for the information about the network we developing the new android application through which we can easily monitor the network. The communication between particular client and the admin is achieved through a central monitoring server, our goal is to develop an integrated software application that will help network admin to remotely monitor network through android phone. The communication between the client and the android phones is done through the server.

II LITERATURE SURVEY

Embedded Laboratory Environment Monitor System This framework exhibits a presentation of an installed processor-based lab environment screen framework and its outline for equipment and programming. This framework goes for noshing checking an assortment of constant information. This framework accomplishes the keen administration of research facility. By wired or remote means, the lab checking framework can speak with PC. [1]

Design and Implementation of Open Computer Lab Monitoring and Management system. This depends on sensor in which checking is done through implanted sensor in framework. Yet, we are actualizing the framework on LAN without utilizing sensor. We are including the idea of message sending; summon giving, and so forth. [2]

The issues confronted in PC research facilities is inadequate with regards to cognizance for administration and institutionalized administration, lacking means for executing and keeping up, no institutionalized procedure, no record for programming and equipment design and change too, furthermore changing setup arbitrarily. Our undertaking will help in lessening these issues. [3]

III PROPOSED SYSTEM

Today system is exceptionally basic necessity from little business to corporate area. In Windows organizing utilizing the system Places application we can without much of a stretch search each PC which is associated with LAN. Yet, now and again the prerequisite is distinctive, assume we need to duplicate, erase, rename or introduce application on each PC which is associated. There is one disadvantage with windows organizing. We need to play out these operations on every PC physically. Implies we need to search every PC one by one and after that play out these same undertaking on each

PC over and over. This procedure is extremely long, exhausting, and furthermore tedious. So the answer for this issue is our venture i.e. System Command Execute. When we begin this venture it shows every one of the PCs which are associated. At that point we have put some regular errand in our undertaking like, duplicate a document, make an envelope, erase a record, erase an organizer, rename a document, introduce application, shutdown, begin a specific application, printing, message passing and some more. After that simply select any charge from the rundown and after that that chose summon is executed on every PC which is in system. So there is no compelling reason to play out this operation physically on every PC.

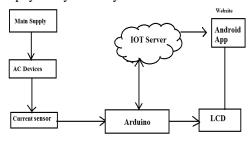


Figure 1: Architecture Diagram
IV APPLICATION

- This is used in applications such as if consumer gets faulty bill he has to go to Electricity Board office to correct it.
- Also as customer is getting message of bill printing can be avoided to reduce paper wastage

V ADVANTAGES

- Collect meter reading data accurately and without manual interference and errors.
- Proven solutions with guaranteed results.
- Ready to integrate solution reducing the time-to-market.

VI CONCLUSION AND FUTURE WORK

Electricity billing process using IOT is the framework which is introduced in this paper is for time efficient and cost efficient. The LAN Monitoring framework is the framework which screens the framework which associated in LAN. Framework Introduced in this paper is far superior to existing framework and is cost pro client. Executive can screen the LAN system, which gives overseer to do different assignments same time while observing

REFERENCES

[1] H. G. Rodney Tan, C. H. Lee and V. H. Mork, "Automatic Power Meter Reading Systems Using GSM Network", IEEE, 8th International Power Engineering Conference, pp. 465-469, 2007.

- [2] Ashna K., Sudhish N. Gorgre, "GSM Based Automatic Energy Meter Reading System With Instant Billing", IEEE International conference held at Kottayam, pp.65-72, 2013.
- [3] Tian Yew Lim and Tat Wai Chan, "Experimenting Remote Kilowatt Hour Meter Reading Through Low Voltage Power Lines At Dense Housing Estates", IEEE Transactions on Power Delivery vol. 17, Issue 3, pp. 708-711, Jul 2002.
- [4] A. Ali, N. A. Razali, N. H. Saad, N. Vitee, "Implementation Of Automatic Meter Reading Using Radio Frequency Module", IEEE International Conference on Power and Energy (PEcon), pp. 876-879, Dec 2012.
- [5] Subhashis Maitra, "Embedded Energy Meter- A New Concept To Measure The Energy Consumed By A Consumer And To Pay The Bill", Power System Technology and IEEE Power India Conference, 2008.
- [6] Najmus Saqib Malik, Friedrich Kupzog, Michael Sonntag, "An Approach To Secure Mobile Agents In Automatic Meter Reading", IEEE, International Conference on Cyberworlds, Computer Society, pp. 187-193, 2010.
- [7] Guilin Zheng, Zhifu Zhang, "Intelligent Wireless Electric Power Management And Control System Based On Zigbee Technology", International Conference on Transportation, Mechanical, and Electrical Engineering (TMEE) Changchun, China, pp.11201124, December 16-18, 2011.
- [8] S. Pritee Mahajan, Sneha Tatia, and Prachi Jadhav, "Smart Meter: An IOT Based Smart Meter for Live Electricity Monitoring and Bill Payment", Electronics and Telecommunication Engineering department, SPPU, NBN Sinhgad School of Engineering Ambegaon (bk).
- [9] A. Vijayarajet, "Automated EB Billing System Using GSM and AD-HOC Wireless Routing", International Journal of Engineering and Technology Vol.2 (5), 2010,343-347.
- [10] "Field Survey Of Smart Metering Implementation Using A Simple Random Method: A Case Study Of New Juaben Municipality In Ghana", Power Africa, 2017 IEEE PES.