ISSN (Print) : 2320 – 3765
ISSN (Online): 2278 – 8875

International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Website: www.ijareeie.com

Vol. 7, Issue 9, September 2018

IOT Based Smart Wireless Sensor Network For Industrial Automation:A Review

Deepali A. Wavre[1], V.N.Bhonge [2]

P.G. Student, Department of E&TC, SSGMCE Shegaon, Maharashtra, India[1]

Associate Professor, Department of E&TC, SSGMCE Shegaon, Maharashtra, India[2]

ABSTRACT: With advancement of Automation technology, life is getting more straightforward and less demanding in all perspectives. In this day and age Automatic systems are being favoured over manual framework. With the fast increment in the number of users of internet over the past decade has made Internet an integral part of life, and IoT is the most latest and rising internet technology. This system proposes an internet based industry automation system that enables a single industry administrator to control industry appliances easily utilizing ARM7 processor and IOT. This proposed system takes into consideration automation of industrial loads to accomplish computerization over internet. This utilizes IOT for the web serve interface and ARM7 processor to process and run circuit loads. User is permitted to send commands for machines/load switching over internet utilizing IOT from anyplace on the planet over internet. The ARM7 processor captures these instructions via net over wifi connector. Presently the ARM7 processes got information to remove user common. Subsequent to getting commands it displays it on LCD display. Additionally it switches the loads on/off based on received commands to achieve user desired output. The system hence accomplishes industry automation over IOT utilizing ARM7 processor.

KEYWORDS: Arm7, internet of things (IOT), GSM, LCD, Relay.

I. INTRODUCTION

Automation is one of the increasing needs with in industries. Automation decreases the human efforts by replacing the human efforts by system which are self operated , The Internet is one method for the developing platform for automation, through which new advancement are made through which on effortlessly monitor too control the system utilizing internet. As we are making utilization of internet the system becomes system and live data monitoring is also possible utilizing IoT system.

IOT can be depicted as connecting everyday objects like smart-phones, Internet TVs, sensors and actuators to the internet where the devices are intelligently linked together enabling new forms of communication between things and people and between things themselves.

Here this system proposes a internet based industry automation system that enables a single industry operator to control industry appliances easily utilizing ARM7 processor and IOT. This proposed system allows for automation of industrial loads to achieve automation over internet. We utilize IOT for the web serve interface and ARM7 processor to process and run circuit load.

User is permitted to send commands for machines/load switching over internet utilizing IOT from anyplace in the world over internet. The ARM7 processor captures these commands by net over wifi connector. Presently the ARM7 processes received information to extract user commands. Once you have commands it displays it on LCD show. Likewise it switches the loads on/off based on received commands to accomplish user desired output. The system in this way achieves industry automation over IOT utilizing ARM7 processor.

II. MOTIVATION

The new time of technology has reclassified communication .The most majority these days approach mobile phones and in this manner the world in reality has turned into a global village. At any given minute, a particular individual can be reached with the mobile phone. But the use of cell phone can't simply be limited to sending SMS or starting conversations. New developments and ideas can generate from it that can additionally upgrade its capabilities.

ISSN (Print) : 2320 – 3765
ISSN (Online): 2278 – 8875

International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Website: www.ijareeie.com

Vol. 7, Issue 9, September 2018

Advances, for example, Infra-red, Bluetooth, and so on which has developed in recent years goes to show the very fact that improvements are in fact possible and these improvements. Have eased our life and the manner we stay. Remote management of a several home and office appliances is a subject of developing interest and in recent years we have seen numerous systems giving such controls.

III. LITERATURE REVIEW

Our proposed device allows for automation of business masses to achieve automation over net. We use IOT for the web serve interface and ARM7 processor to manner and run circuit hundreds [1].
Implementation of web server utilizing Raspberry Pi for intelligent monitoring is new method to monitor a industrial environment which designed here for the real time implementation[2].a raspberry pi running with Linux OS coded with C++ program that recovers the temperature and in addition humidity readings and these values are sensed and sent to the internet[3].
Personal Computer based temperature monitoring and control system utilizing virtual instrumentation, Lab VIEW. Data acquisition is an crucial position in industry so that you can make certain the excellent of service. Temperature sensor measures the temperature and produce corresponding analog sign which is similarly processed by way of the microcontroller. The simulator acquires information from the microcontroller through Ethernet port. The facts can be displayed on the LCD in microcontroller and PC monitor Automation and control can be done with the help of control hardware [4]
we are developing a system which will automatically monitor the industrial applications and produce Alarms/Alerts or take intelligent decisions using concept of IoT. IoT has given us a promising method to build powerful industrial systems and applications by using wireless devices, Android, and sensors [5].
The proposed system is having centralized controller, sensors and relays. Centralized module is the main unit that collects the data from plant sensors and gives this data to the end user utilizing GSM communication. Additionally at whatever point required it control the production automatically by switching the relays and actuators. The ARM7 LPC2148 is utilized as monitoring and controlling unit for various parameters [6].
we can interface website page and server through gateway. The common gateway Interface (CGI) is a standard for interfacing external applications with data servers, similar to HTTP or Web servers. A plain HTML document that the Internet daemon retrieves' is static, which implies it, exists in a constant state: a text file that doesn't change. A CGI program, then again, is executed continuously, with the goal that it can output dynamic information [7].
We are developing a system which will automatically monitor the industrial applications and generate Alarms/Alerts or take intelligent utilizing idea of IoT. This system likewise helps us take some essential decision from any purpose of the world inside web network. Wifi shield is being utilized to go about as service point amongst network and interfacing network [8].
This paper combines the idea of Raspberry Pi industrial workstation and industrial Automation utilizing IoT. The system utilizes the raspberry pi as controller and server, the programming is done in the python dialect. The website page is outlined in HTML, JQuery, Ajax and Cup as structure for rendering the HTML template in python. All sensor information are gathered through raspberry pi. All the utilization full information are get to remotely through internet of thing platform [9].

ISSN (Print) : 2320 – 3765
ISSN (Online): 2278 – 8875

International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Website: www.ijareeie.com

Vol. 7, Issue 9, September 2018

III. BLOCK DIAGRAM

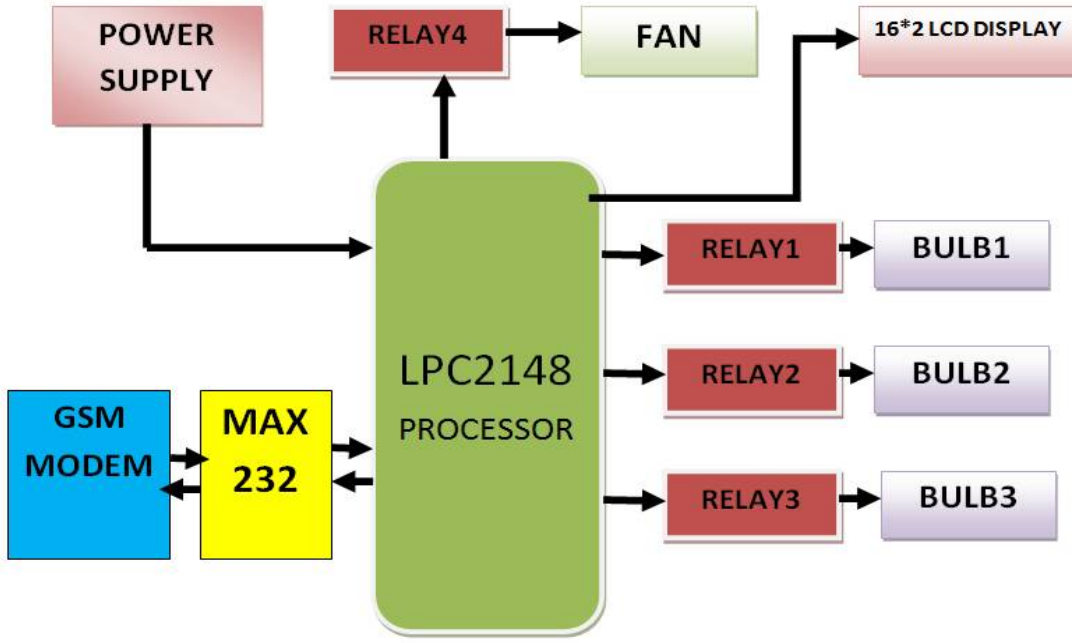

Fig.1 Block diagram of a system

V. HOW THE SYSTEM CAN WORK

The diagram shows the element involve in our system. The need voltage of 5v for arm7 processor is equipped from the ability offer unit so crystal rectifier can glow indicating that the system is prepared to be used. Then for shift load on/off the user has got to send the command from anyplace within the world through net. Through wireless fidelity the ARM7 method or capture these command and process there on to extract the need user command for shift the load. Extract command it then show it on LCD and per user command it then switches the load. For shift the various appliances connected we tend to use the relay driver circuit. To achieve the automation the user has got to initial send the command to arm7 processor through net. The electronic equipment we've got to power the control unit and certify it's operating properly or not. And when these following step are going to be happen. The user sends the command for the receiver.GSM receiver receives that command sent by the user over net.GSM receiver decodes the sent mail yet as sends the rules to the microcontroller (ARM7). Microcontroller problems the command and relying upon that it switches the load on/off.

ISSN (Print) : 2320 – 3765
ISSN (Online): 2278 – 8875

International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Website: www.ijareeie.com

Vol. 7, Issue 9, September 2018

VI. FLOW CHART

VII. CONCLUSION

In this system could control industrial devices utilizing the wired controls as well as with the assistance of internet of Things which is the developing innovation in recent times we effectively controlled the industrial devices utilizing the IOT interface. This can be helpful to different industrial applications where machines should be controlled from distant places. This system responds to the controls sent as well as monitor gadget on local display for on and off and can perform similar tasks repeatedly reducing human efforts.

REFERENCES

[1] Esha Gandotra, Suvidha Kohli, Shavaya Gupta, Rohan Slathia, "IoT based Industry Automation using Arm7" Vol. 6, Issue 5, May 2017.
[2] Pranesh Naik, Ujwal Harode, Oct.-2016 "Raspberry Pi and Iot Based Industrial Automation", Volume-4, Issue-10, Oct.-2016.
[3] M.Lavanya, P. Muthukannan, Y.S.S. Bhargav, V. Suresh, 6 June, 2013 "Iot Based Automated Temperature And Humidity Monitoring and Control", Volume 2 Issue 6 June, 2013 Page No. 1988-1991.
[4] S.Rajesh Kumar, S.Rameshkumar, "Industrial Temperature Monitoring and Control System through Ethernet LAN".
[5] Bhosale Kiran Uttam, Galande Abhijeet Baspusaheb, Jadhav Pappu Shivaji, Prof.Pisal.R.S, "Industrial Automation using IoT" Volume: 04 Issue: 06 June-2017.
[6] Sampat S. Pawar, P.C. Bhaskar, "Design and Development of ARM based Real-Time Industry Automation System using GSM" 02 Issue: 05 Aug-2015.
[7] Ojaswini Vijay Duragkar, Prof.P. V. Gawande, "Design and Implementation of Industrial Automation System By Using Internet Of Things (Iot) " Volume: 03 Issue: 05 May-2016.
[8] Ashwini Deshpande, Prajakta Pitale, Sangita Sanap, "Industrial Automation using Internet of Things (IOT)" Volume 5 Issue 2, February 2016.
[9] H. K. Merchant D. D. Ahire, "Industrial Automation using IoT with Raspberry Pi ".
[10] Li Da Zu, Internet of Things in industries: A Survey"IEEE transaction on Industrial on Industrial informatica,Vol. no, November 2014.
[11] ARM Datasheet.