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CLOUD BASED RADIO FREQUENCY IDENTIFICATION

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Abstract: In recent years, The internet of Things has provided opportunity to build powerful industrial system and application by using Radio Frequency Identification and wireless sensor devices. Along with the development of cloud computing, cloud based RFID is receiving more attentions of researchers. However, there are many schemes used for identification. In cloud based RFID, New technologies like Raspberry pi and Arduino controller (328) is used. The basic idea is that RF tag is identified by RF-ID module (EM-18). Then information is transferred to Arduino controller through LCD. Arduino controller send information to Raspberry pi and it is communicate with the internet (Google spread sheet) where information has already been entered. Raspberry pi checks the information whether it is of same RF tag or not and if yes then it send feedback in positive way to LCD through arduino controller.

Keywords: IoT, Cloud computing

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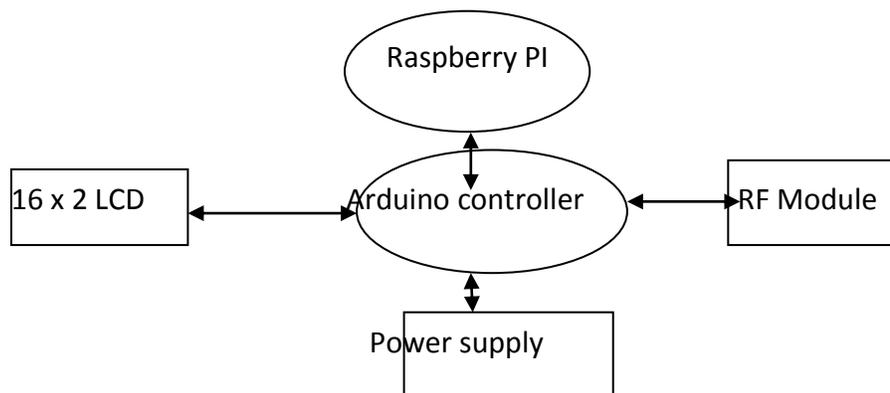
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INTRODUCTION

Now a day's the internet of things as a new network communication technology has a fast rapid growth. It symbolizes the forthcoming revolution in the field of information technology. Along with the development of cloud computing, cloud based identification is receiving more attentions of engineers. With the trend going on, everything is going to be connected to the internet and its data will be used for various progressive purpose, creating not only information from it but also knowledge. Internet of Things becoming so pervasive that it is becoming important to integrate it with cloud computing. Some characteristics of various technologies is easily established. But some characteristics like requirement of security, handling of large data volume, speed of response that will give challenges to research in this specific area. These kinds of challenges provide motivation to select this kind of problem for research. So to compete these kinds of challenges Raspberry pi and arduino controller is the best solution for identification.



In this project new technology like Raspberry pi and arduino controller (328) is used. In this RF tag is identified by RF-ID module. Then the information in the RF tag is transferred to arduino controller through LCD. Then arduino send information to Raspberry pi and it is communicate with the internet (Google spread sheet) where information has already been entered. Raspberry pi checks the information whether it is of same RF tag or not and if yes then it send feedback in positive manner to LCD through arduino. In this project it is required to interface with LCD to arduino and LCD to RF module. Raspberry pi (mini computer) of model B+ is used and operating system is Linux. Programming language for arduino is C and for Raspberry pi it is python.

Raspberry pi communicate with the internet (Google spread sheet) and data is globally send to internet. This is the method of centralize data using internet protocol. This is very secure method of online retrieval of information.

literature review on platen of injection molding machine

1) *Cloud based RFID Authentication, Wei Xie, Lei Xie, Chen Zhang , Quan Zhang , School of Electronic science& engineering, National University of defense Technology,Changsha,China*

Along with the development of cloud computing, cloud base RFID is receiving more and more attentions of researchers. However there is no research in which cloud computing is applied to RFID authentication schemes. Most current works lay emphasis on functionalities, lacking consideration about security and privacy. Classical RFID authentication schemes fail to meet the special security and privacy requirements of cloud based RFID. The basic postulates of traditional backend-sever-based RFID authentication.

In this a virtual private network agency is suggested to build secure backend channels and to provide readers with anonymous access to the cloud. The cloud data base is structured as an encrypted hash table. The first cloud based RFID authentication protocol preserving tag/ reader privacy to data base keepers is proposed. Comparing with classical schemes, the proposed scheme has advantages in deployment cost Saving, pervasiveness of authentication, scalability of a tag.

2) *IOT as a methodological concept ,Nima bari*,Ganapathy Mani*,Simon Berkovich georg Washington university Washington DC ,USA*

Nowadays, we are witnessing formation of a new technological marvel: Internet of Things. This construction is able to combine in a particular operational entity all the bits and pieces of the world around us. Thus, why could not this unique establishment present the long-sought essence in the Nature of Things? The two pillars of modern fundamental science—relativity and quantum mechanics—are just approximate descriptions of some properties of such a constructive possibility.

The machinery of the physical world develops on a cellular automaton model employing as the transformation rule the mechanism of distributed mutual synchronization with the property of fault-tolerance. This infrastructure yields traveling wave solutions that exactly correspond to the spectrum of the stable elementary particles of matter with an upper bound on the propagation speed. On top of the considered cellular automaton infrastructure there appears a

secondary formation that constitutes the mechanism of the Holographic Universe that is the basis for the Internet of Things.

The holographic activities determine all the quantum mechanics properties of the physical world including the nonlocality entanglement. For living systems the arrangement of the Internet of Things elucidates the most puzzling biological capability of morphogenesis that otherwise cannot find any reasonable explanation. In this paper, we present the world view of internet of things and the application of this methodology from geospatial computing to physics. We give specific details on applying IoT concept to geospatial analysis in various fields from agriculture to medicine. We also provide detailed analysis of the profound impact of internet of things on our physical world which is a vital knowledge when it comes to geospatial research. We present calendar variation of quantum world which can be used for geospatial data gathering by fine tuning the equipment based on the time of the year.

3) *Internet of things support for Ipv6, Lu Kai, Department Of Information Engineering, Hainan Technology & Business college, Haikou, china.*

At present, the internet of things as a new network communication technology has rapidly shifted from concept to application under cloud computing virtual storage computing platform. It symbolizes the forthcoming revolution in the field of information technology industry. The internet of things develops rapidly which helps to speed up the transition from IPv4 to IPv6. The author studied internet of things under a new generation of Internet network environment, and proposed to mix the static binding, SLAAC, DHCPv6, and SLAAC with DHCPv6, four kinds of IPv6 addressing strategy methods and the verification method for the legality of the source address.

Based on these four kinds of methods, we can realize the authenticity and reliability for IP address between each node communication with a small network cost, and the four kinds of methods highlight the performance advantage of internet of things in the factor of network cost, safety, reliability, and energy etc.

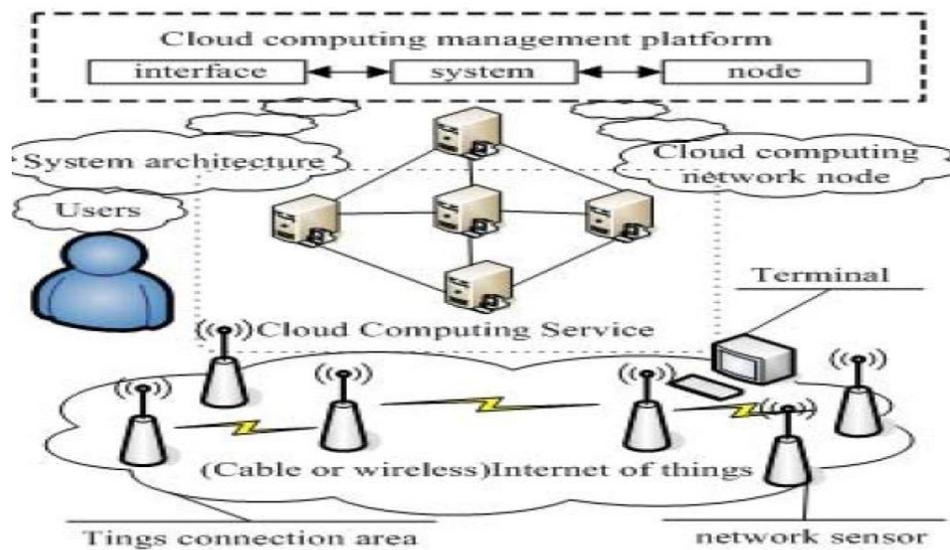


Figure 1. Internet of things under cloud computing platform system structure

- 4) *Emerging of new service-oriented approach based on IOT*, Mikhail M. Komarov, Department of Innovations & business in IT, National Research University Higher School of Economic, Moscow, Russia.

The article is viewing basic notions of the Internet of the Future: Internet services, Internet of things and cloud computing. Due to advances in technology and the rapid growth of online services, social networks and mobile applications a significant number of new and inventive web-based service models have been introduced. There are many discussions and definitions of the Web 3.0, some resources claim to work according to that concept definitions. Although online resources and services are having an impact on more traditional way of doing business, there are new technological issues raised by the Internet of Services and Internet of Things aspects with their influence on customer interactions.

In this also resources for Internet of Services customers are explained. Author is focused on the applicability of Internet of Services and Internet of Things for the business purposes under the new concept – social web of things as another step of globalization.

- 5) *Integrating IOT and Cloud computing and issues involved*, Mohammad Aazam, Imran khan, Aymen Abdulla Alsaffer, Eui- Nam Huh, Innovative Cloud and security Lab., Department of Computer Engineering, Kyung Hee University, Suwon, South Korea. Dept. of Wireless Networks & Multimedia services Institute Mines-telecom, Telecom sudparis 91011 Evry Cedex, France

With the trend going on in ubiquitous computing, everything is going to be connected to the Internet and its data will be used for various progressive purposes, creating not only information from it, but also, knowledge and even wisdom. Internet of Things (IoT) becoming so pervasive that it is becoming important to integrate it with cloud computing because of the amount of data IoT's could generate and their requirement to have the privilege of virtual resources utilization and storage capacity, but also, to make it possible to create more usefulness from the data generated by IoT's and develop smart applications for the users. This IoT and cloud computing integration is referred to as Cloud of Things in this paper. IoT's and cloud computing integration is not that simple and bears some key issues. Those key issues along with their respective potential solutions have been highlighted.

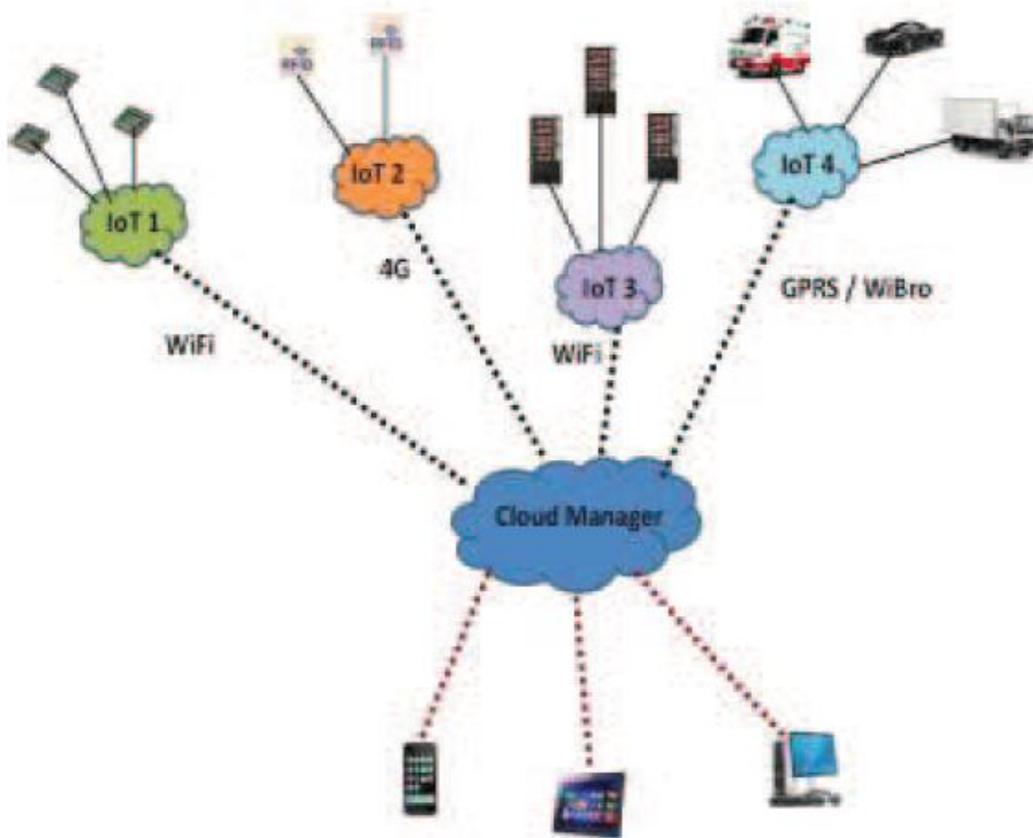


Figure 2. IoT's and cloud – data communication

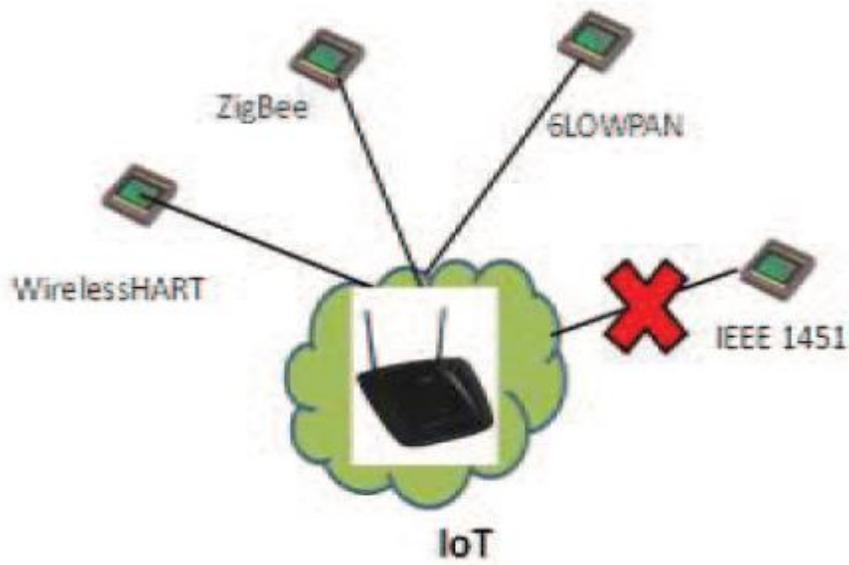


Figure 3. Protocol support

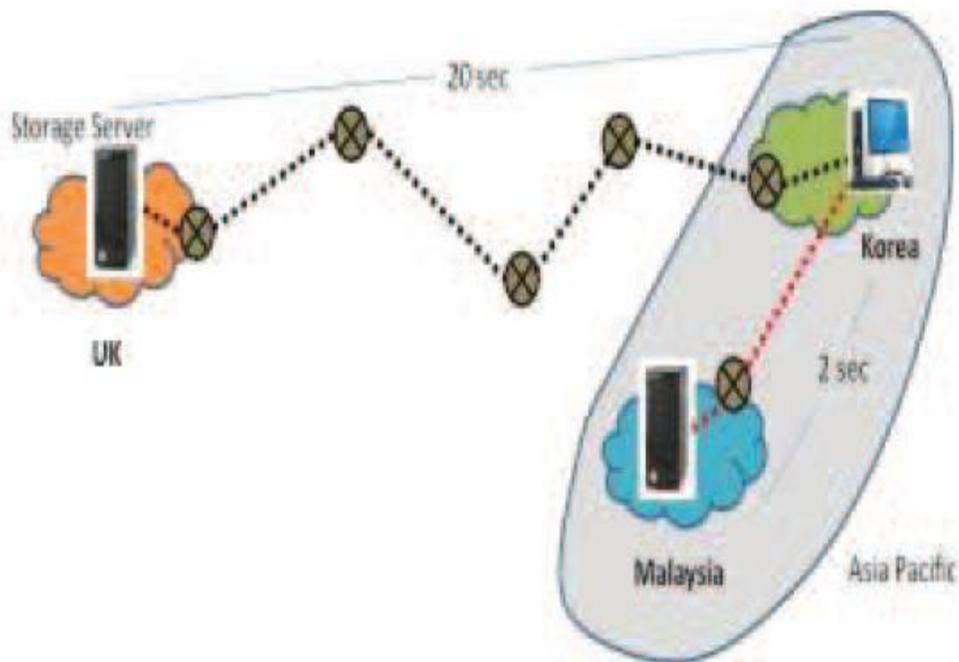


Figure 4. Location of data storage on the cloud

CONCLUSION

In this project, hardware used like Raspberry pi and arduino controller both are unique for cloud computing and retrieval of information. Advantages like fast speed of response and large data can be retrieved makes it unique project. This is the method of centralize data using internet. This is very secure method of online information identification.

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