



INTERNATIONAL JOURNAL OF PURE AND APPLIED RESEARCH IN ENGINEERING AND TECHNOLOGY

A PATH FOR HORIZING YOUR INNOVATIVE WORK

RFID BASED E-HEALTH CARD

VAIBHAV M. KHANZODE¹, GAURAV N. LANDGE¹, SATISH V. BAVISKAR¹, AKSHAY M. BANSOD¹, KISHOR G. RAUT¹, SHIVAJI S. BHENDE, PROF. PIYUSH DHANDE²

1. DEPT OF EXTC, DRGITR, AMRAVATI.
2. Asst. Professor (DRGIT&R Amravati)

Accepted Date: 15/03/2016; Published Date: 01/05/2016

Abstract- Today in India there is no such system which would maintain the medical data of patients centrally. All the data of the patient is maintained in files and every time the patient has to carry his medical file with him. Now the problem with system is that if the patient is at the remote location then he cannot access his documents. Hence we have come up with a solution which would help patients to maintain their files centrally on the cloud and can be accessed anywhere in the world. In our system a RFID card would be issued to every patient for maintain the integrity of the data. At that time the doctor would enter all the basic details of the patients such as age, blood group contact details etc on the server. Now this data would be stored onto the server. The doctor would examine the patient and all his diagnosis would be stored onto the server. Now if the doctor prescribes any kind of medical test to the patient then that details would also be maintained on the server. This system can also useful in the medical test, billing system and updating of the information is done on cloud server centrally.

Keywords: Health, Privacy, RFID, Zig bee ARM7



PAPER-QR CODE

Corresponding Author: PROF. PIYUSH DHANDE

Access Online On:

www.ijpret.com

How to Cite This Article:

Piyush Dhande, IJPRET, 2016; Volume 4 (9): 757-761

INTRODUCTION

Radio Frequency Identification (RFID) [1] is a state of the art technology that uses electromagnetic fields attached to a tag to identify objects. These tags are typically used for product tracking and product identification. RFID is a growing trend in the health care industry, driven by a greater emphasis on patient safety than has ever been seen before. RFID technology can help ensure that every patient is treated properly and that patients get the services they pay for. There are two common types of RFID tags, active and passive. Active tags are more expensive, because they have an internal power source and allow two way flow of information, from tag to server and back. Active tags can transmit over 100 feet. Passive tags are less expensive, but must be activated by an outside power source. They are shorter in range than active tags, and only transmit data from RFID to server. Radio frequency identification (RFID) has been used in a number of practical applications, such as improving supply chain management, tracking household pets, accessing office buildings, and speeding up toll collection on roadways. RFID is used to automatically identify people, objects, and animals using short range radio technology to communicate digital information between a stationary location (reader) and a movable object (tag).[1]RFID technology can be used to track products in a manner similar to using bar codes for product identification, but RFID also carries additional benefits.

In this paper, we focus on RFID technology integrated with the process for medicine error reducing, patient (and inpatient) safety enhancement, and health care management. In particular, the issues of performance efficiency, system security and user privacy will be thoroughly investigated. We intend to deliver a patient privacy-aware e-Health system based on passive RFID technology and cloud to simultaneously enhance system efficiency and patient privacy. Cloud computing is a conceptual model. Based on user's needs, data are stored in a super computer through the internet to be processed. And users can access shared resources conveniently (e.g. the internet, server, storage, application, and service) and can achieve rapid configuration and deployment with the least management possible. The Cloud system would be helpful for old age people as they do not have to carry files with them. Moreover as the database is central the information can be accessed anywhere in the world. This enables you to access the patients information even if he is away from his native place. Moreover in case of road accidents or railway accidents the doctor is unaware of the patients previous history. In such a situation the system would be very beneficial as the system would provide the necessary information like blood group, sugar level etc, to the doctor. Modern information technology is increasingly used in healthcare with the goal to improve and enhance medical services and to reduce costs. In this context, the outsourcing of computation and storage resources to general IT providers (cloud computing) has become very appealing. E-health clouds offer new possibilities, such as

easy and ubiquitous access to medical data, and opportunities for new business models. However, they also bear new risks and raise challenges with respect to security and privacy aspects. Embracing cloud technology in healthcare may be the answer to enabling healthcare organizations to focus their efforts on clinically relevant services and improved patient outcomes. Additionally, it may reduce and even remove the burden of infrastructure management.

RFID Technology:

Recently, it has been known that the popularization of technology for automatic identification (Auto-ID) in industry, trade and academic, become the focus of several researches. This interest meets the emerging demands in the automation process, which creates the need for more efficient applications to obtain and control information. The RFID technology (Radio Frequency Identification) is used for automated identification of objects. The superiority demonstrated by this technology in relation to other existing identification systems, presents two main characteristics: it has identification fields and it does not need a direct view to the object. These aspects are the motivation for choosing this technology in the development of the system which is described in this paper. A direct view or contact is not necessary, contributing to [1]. The increase of the usability level.

Thus, this facilitates the process of reading, and the identification fields allow patients data storage, such as: allergies, blood type and exam results.

Block diagram:

CLIENT

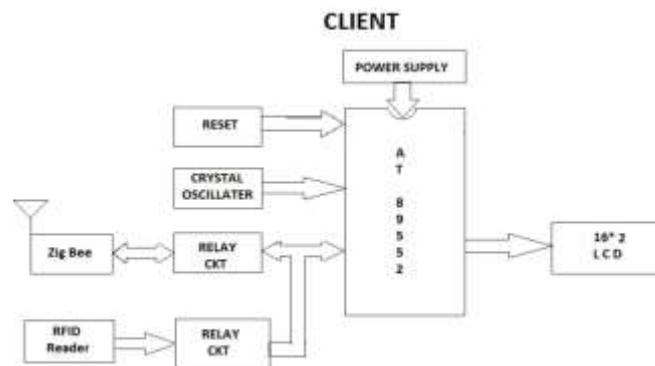


Fig.1 Block diagram of client

A client part consist of Following components:

RFID Reader: The reader is used to read the RFID card which having the unique no of each. Whenever we swap the card the RFID reader read the unique no which is in the RFID card And gives it for the further operation.

Zig Bee:zigbee is wireless trans receiver which is used here for the sending of the data to the server, when the RFID reads the particular number from RFID card it sends to to the server via zig bee to identify either the number is valid and then its send back if it is valid via zig bee so its work here as a trans receiver.

AT89S52:The 89S52 has 4 different ports each one having 8 input/output lines providing a total of 32 I/O lines. Those ports can be used to output DATA and order do other devices or to read the state of sensor , or switch . most of the ports of the 89S52 has dual functions meaning that they can be used for two different function. The first one is to perform I/O Operation and the second one is used to implement special functions.

SERVER

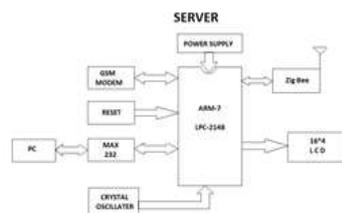


Fig. 2 Block diagram of server

ARM 7:

ARM is family of instruction set architecture for computer processor based on reduced instruction set computing (RISC) architecture development by British company ARM holdings. Over the last few years, the ARM architecture has become the most popular 32-bit architecture in the world, with wide range of ICs available from various IC manufacturers. ARM7 & Cortex series is largest success of ARM. ARM processors are embedded in products ranging from cell/mobile phones to automotive braking systems. A worldwide community of ARM partners and third-party vendors has developed among semiconductor and product design companies, including hardware engineers, system designers, and software developers.

CONCLUSION:

The hospital automation has emerged with several demands, many of those devoted to information systems. This work presented solutions that use RFID technology as a mechanism of interaction between users and the system. The use of smart cards and RFID tags improved the operational processes, because the solution proposed implemented the development of the system by changing the form of interaction with the user, but ensuring the same data entry. Thus, some problems have been solved, especially improving the quality and control of the automation of the clinical laboratory. Part of it is already installed. Now we are in the process of training and installing the second part of the system (patient control and check in/out)

REFERENCES

1. S K Mishra, Deepak Gupta, Jagdish Kaur ,“Telemedicine in India: Initiatives and vision”,9th International Conference on Ehealth Networking Applications and services, Taipei, pp. 81-83, 19-22 June 2007.
2. Ehealth Magazine, source <http://ehealth.eletsonline.com/2013/06/govt-to-launch-nationalhealth-portal>.
3. <http://uidai.gov.in/what-is-aadhaar.html>.
4. http://negp.gov.in/index.php?option=com_newslatest&view=content.
5. Gp Capt (Dr) Sanjeev Sood (2012), “Aadhaar opening up of new vistas in Healthcare”, Ehealth Magazine, January 2012, pp50.
6. Smith E. Eloff JHP (1999) Security in health care information systems-current trends, International Journal of Medical Informatics, 54:39-54.
7. Agarwal R, Kini a, LevFevre K, Wang A, Xu Y and Zhou D (2004) Managing Healthcare Data Hippocratically Proc. Of ACM SIGMOD Intl. Conference On Management of Data.
8. L. Rostad and O.Edsberg(2006), “ A Study of Access Control Requirements for Healthcare Systems Based on Audit Trails from Access logs.” In Proc. Of 22nd Annual Computer Security Applications Conference, Miami, Florida.