

SMART E-HEALTHCARE MANAGEMENT SYSTEM.

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ABSTRACT

A person's medical history is made up of different pieces of information that tell the entire story about that individual's present and past health. These components of information may come from multiple different sources, but by combining them into single document or folder, we can assure that these crucial records are easily accessible to yourself and your health care provider. Hence it is very essential to develop a system that can store and manage your information in a precise manner. This project aims in sending alert messages for doctor's appointment date and time to the patient mobile phone using GSM modem. Here we get the alerting message from the GSM modem (SMS Message). The project consists of PIC microcontroller interfaced with input and output modules like RFID reader, GSM modem, RTC module, LCD, buzzer and PC interfacing using USB to TTL converter device. When the patient shows the respective RFID tag to the reader, the reader identifies the details from the tag like his/her name, age, family details, address, past medical history, past reports and prescribed medication and also the details of date and time of last visit and the next visit for doctor on to the PC HyperTerminal window.

Keywords: *GSM module, USB to TTL converter, PIC micro controller, RFID tag, Hyper Terminal Window .*

1. INTRODUCTION.

Technology is being used everywhere in our day to day life to fulfill our requirements. We can not only increase the pace of life but also increase security with excellent ideas to make use of such technology. One of the ideal ways of using technology is to deploy it to sense serious health related problems so that efficient medical care can be provided to the patient in precise time. This idea to provide effective health service to patients has given birth to the project RFID based E-Health card monitoring system with wireless interfacing to mobile phone using GSM modem.

Automation is the most often spelled term in the field of electronics. The hunger for automation has brought many revolutions in today's technology. One among the technologies which had greater developments is radio frequency identification communications. The result of this is the

RFID smart cards which are capable of transmitting a unique identification number. This number transmitted by the RFID is read with the help of a RF reader.

Most hospitals store patient medical data that cannot smoothly be shared with other systems because of disparate data types. We propose an RFID-based integrated system that will aggregate health-related data across more hospitals according to perceptible standards, it will make it accessible for emergency departments in hospitals and public health officials. In this project we provide the patient's information to the Doctors. Although considerable growth is made in enhancing the sharing of patient medical data among healthcare providers, professionals still need to address the issue of efficient electronic medical records. In critical situations, distinctly with comatose, coherent and unaccompanied patients, providing emergency physicians with a patient's accurate medical data and history could be well be the change between life and death. The RFID technology has penetrated the healthcare sector due to its excessive functionality, low cost, high dependability and easy-to-use proficiency. As the present paper demonstrates, our major aim is to design an RFID-based system design and data model that would provide excellent way to perform essential information management for emergency care across hospitals and country boundaries.

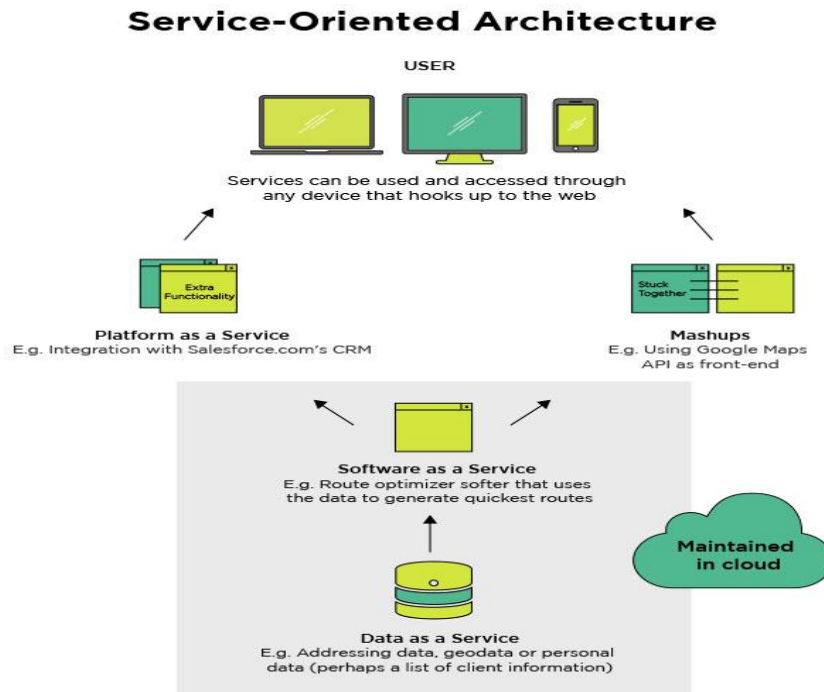
1.1 Hardware.

The RFID card is scanned by the RF card reader, the data from the card is send to the controller for validation if the ID. The microcontroller sends data serially to the computer through UART serial communication port, now the data related to the identification number is fetched from the cloud server and displayed on the hyper terminal device, also the data can be updated and is remotely accessible making the system flexible.

1.2 Web-based Data Management.

Cloud computing is the growing technology can be used to build up a composite network to improve the system. Therefore in this paper we introduce a model of designing a flexible e-healthcare management system based on Cloud storage and Service Oriented Architecture (SOA). Cloud and SOA are becoming more popular nowadays. However, their applications are employed in this area and desired to appear various period stringent also workable conditions.

Cloud storage is a model of data storage in the form of digital data stored in logical pools, the storage spans multiple server i.e servers at different locations and the physical environment is basically owned and hosted by third company.



2. PROPOSED SYSTEM.

GSM MODULE – GSM MODULE is used to establish a communication link between controller and a system. It is an architecture used for mobile communication for computer, with the use of GSM module we can easily send SMS to the patients mobile.

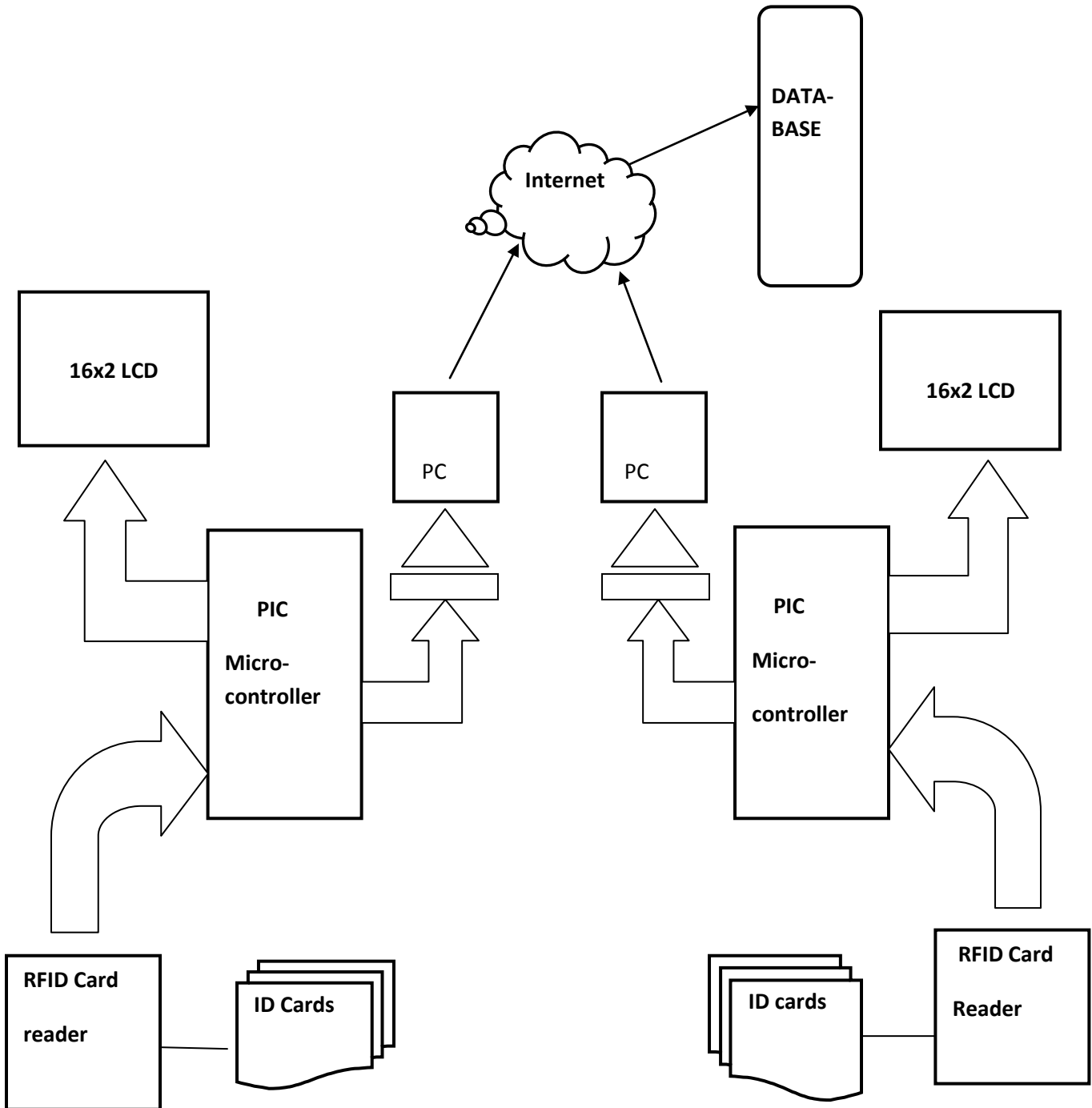
DATABASE MANAGEMENT-- To deal with the handling and assembling the data of patients we use a Database management system software such as SQL server. DBMS is designed to allow the creation, definition, update a query and administer data.

PIC-MICROCONTROLLER – The easily available PIC family of microcontroller is used to interface the RFID reader with the controller and the data from the reader can be easily sent to the computer using serial communication port.

EM-18 RFID MODULE -- The EM-18 RFID module one of the common module used for radio frequency identification purpose .The EM-18 module generates and radiates RF carrier signals of frequency 125khz from the coils. When the passive RFID is brought into the field it gets charged from it, hence producing electromagnetic field and by changing modulation current through coils the tag sends back the information to the reader.

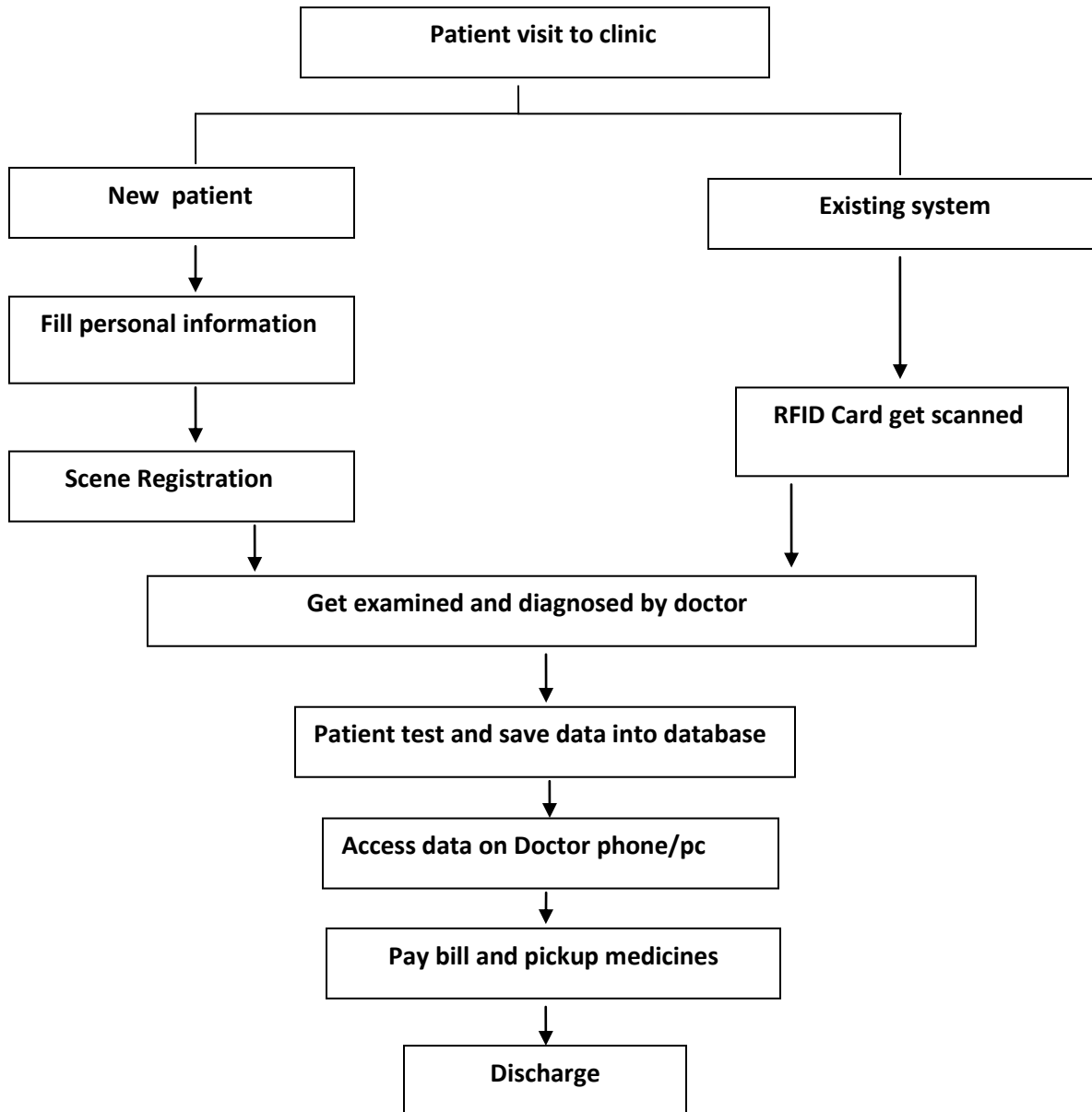
16X2 LCD – The LCD is used for the display of the ID number associated with the card, if the card is not valid the message is displayed on the LCD as LCDs are economical also easily programmable and have no limitation of displaying special & even graphical characters (unlike in seven segments), animations etc

- **BLOCK DAIGRAM**



- **ADAPTIVE ALGORITHM:**

FLOW CHART



3. CONCLUSION

RFID technology is reliable with new capabilities as well as an efficient method to collect, manage, disseminate, store, and analyze information. It not only eradicates manual data entry but also inspires new solutions. Basically changes how processes are managed and how businesses operate. RFID's attributes give greater automated tracking capability than current technologies, and thus produces the opportunity to reduce labor, enhance inventory management and generate higher-up market intelligence, causing lower operational costs and increased overall revenue generation. RFID is not an alternate of Bar code but it is a technology offering various features. RFID offers highly reliable data retrieval in harsh environments.

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