QR CODE BASED PATIENT MONITORING SYSTEM

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Abstract - *In the last decade, Quick Response (QR) codes has become most popular in so many fields. We can see them on posters, magazine ads, websites, product packaging and so on. Using the QR codes is one of the most intriguing ways of digitally connecting consumers to the internet via mobile phones since the mobile phones have become a basic necessity thing of everyone. Quick Response (QR) codes are two-dimensional (2-D) barcodes that can contain information such as URL links (e.g. a link to YouTube video, website link) and text (e.g. contact details, product details). These square pattern codes consist of black modules on a white background. QR code generator is software that stores data (e.g. URL link, text, Google maps location) into a QR code. This encoded data can be decoded by scanning the QR code symbol with a mobile device that is equipped with a camera and QR code reader software.*

Key Words: **Quick Response codes, 2-D barcodes, QR code generator**

1.INTRODUCTION

Keeping results of medical, laboratory investigations in a hospital for a patient using traditional, paper form is complicated. Therefore it becomes difficult to maintain or search the history of data in the integrated form. It is of vital importance when a patient uses health services from different providers. In such situations a complete Electronic Health Records are often not available. Patients, who regularly obtain new laboratory results, are required to keep them ordered and to bring them for each visit in a consulting room.Quick response (QR) codes provide a rapid, easy, convenient, accurate, and automatic data collection method. With the increasing application and popularization of wireless communication and mobile device technology, two-dimensional barcode technologies have been employed for production, logistics, and sales. To apply the benefits of technology, we have applied QR code in health care systems.QR codes have a number of purposes; they are mostly used in manufacturing (e.g. product traceability, process control, inventory and equipment management), warehousing and logistics (e.g. item tracking), retailing (e.g. sales management), healthcare (e.g. medical records management, patient identification, equipment and device tracking), transportation (e.g. ticketing and boarding passes), office automation (e.g. document management), marketing and advertising (e.g. mobile marketing, electronic tickets, coupons, payments). QR code technologies have rapidly been developing.

2. PROBLEM STATEMENT

India majority of hospitals follow the manual paperwork method for keeping records. During the process of patient transfer the patient's medical information is vulnerable and susceptible to various degrees of integrity compromise. For example the medical record card may get lost hence losing all the important patient medical information. Most importantly, despite access by unintended recipients, the details on the medical record card are also prone to misinterpretation owing to illegible handwriting. All these problems may result in a breached security based on the lack of confidentiality, integrity and availability of the authentic patient medical information.

3. PROPOSED SYSTEM

In the current digital era, technology is ruling mankind. A little contribution of one, will take world to a higher level of living which makes them afford almost everything at ease. The world is at its extremes in upgrading itself to present technologies and innovations. Earlier it was difficult for people to afford a better education, transportation, occupation, a better reliable medical care because it costs high and heavy man power. Now, the evolution of technology comforts all classes of people to access many such services almost within no time and with less man power. To provide a better medical care to all categories of people, medical field is also in its path towards up gradation. An online medical service would enable people to the available quick, better, safe and secured medical treatment. The services helps doctors and receptionists to record day-to-day services provided to the people which would be stored for many years, that in turn helps people in cases of emergency.
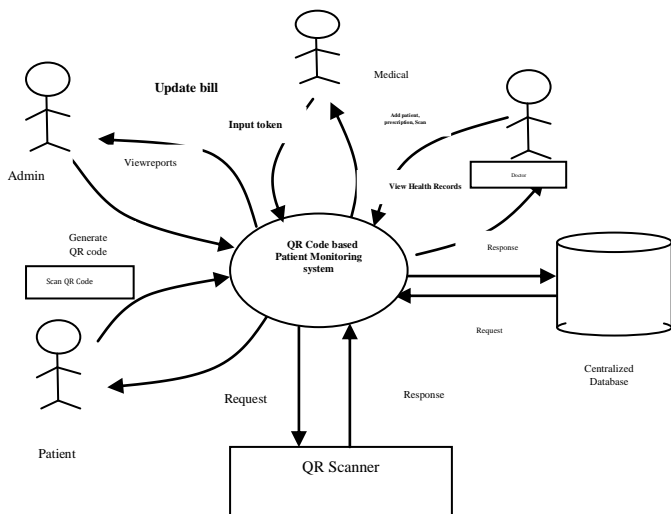
Fig 1. Architecture diagram

The above figure represents Architecture diagram .The admin will generate a QR code for the patients in order to computerize the process. The patients, medical and the doctor can send a request in order to scan whenever they require. The centralized database contains all the information relating to the scan and coding. The response will be given within no time. With the help of scanning they can view patient history, their health records etc. by the doctors as well as patients. The medicals can keep a upto date copy of the medicines issued to patients.
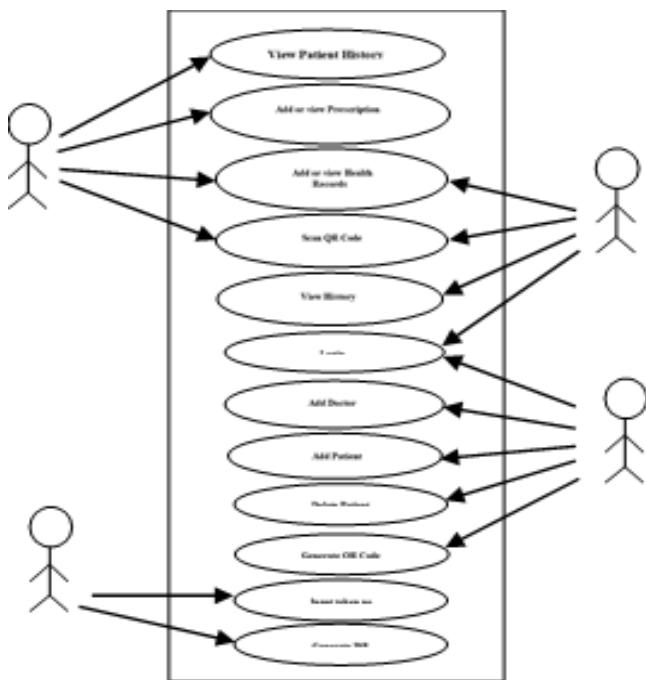
Fig 2. Use case diagram

4. RESULT AND ANALYSIS

The Fig 3 represents the login page of QR Code based Patient Monitoring System .When the user enters the system he will have to login with his credentials , so that he/she can view the information . There are four users of this system. They are admin, Doctor , Patient and phamacist. Users can login through their Username and password. If the user is not registered then he is redirected to Register page. The Fig 4 represents the Register page of QR Code Based Patient Monitoring System. The users has to register by providing their details such as user name, password, user type(admin or user), phone number, email and address. The admin has the right to add patient information and doctor details too.
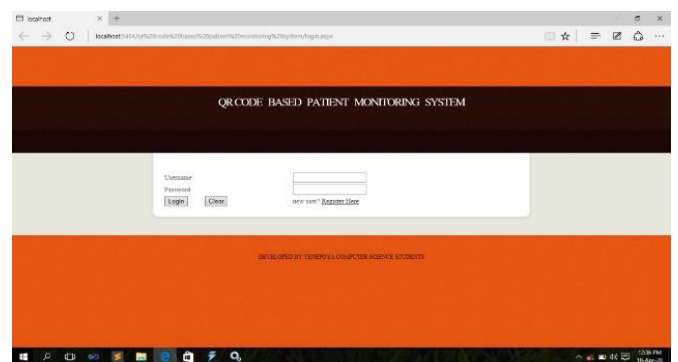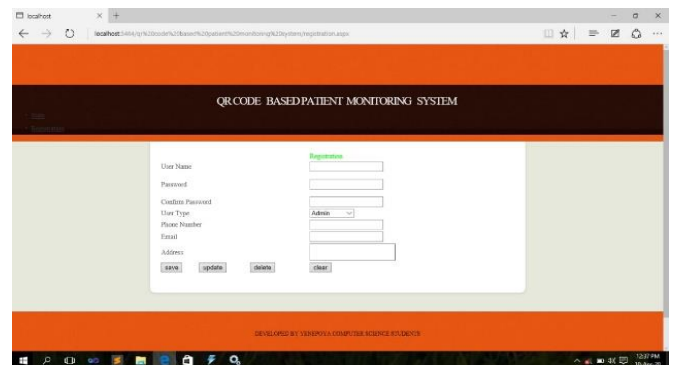

Fig 3: Login page of QR Code Based PMS

Fig 4: Register page of QR Code Based PMS

The Fig 5 represents Adding Health record, only admin has the right to add the patient details. The admin can add patient details by entering Patient name, document name, referred doctor and the file. The Fig 6 represents Generation of QR Codes. The admin can generate the QR Code for the patient when the file number of the patient is given along with the details such as name, gender, age, address, and this QR Code is given to the patient and also to the doctor , and they can scan the code whenever necessary to check the information of the patient.
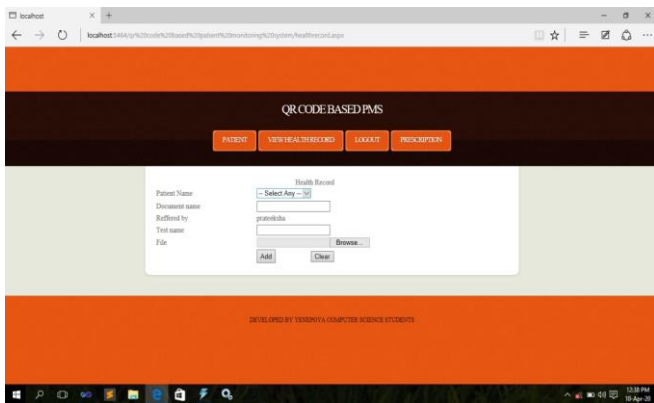
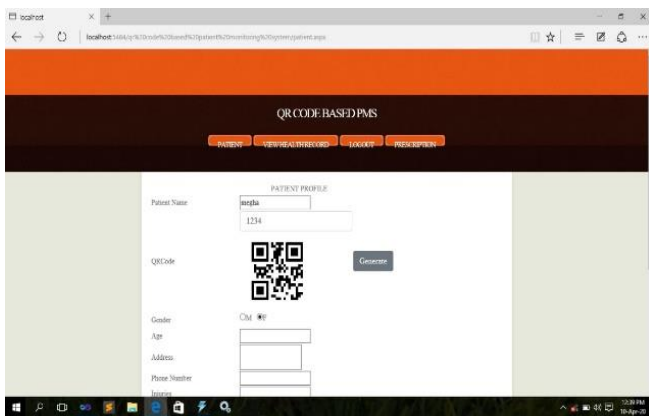Fig 5: Adding Health record in QR CODE Based PMS

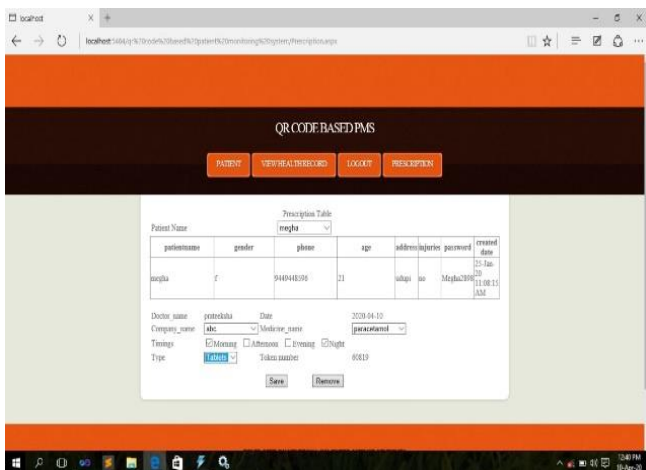Fig 6: Generating QR code for Patient in QR Code Based PMS

Fig 7: Generation of Prescription in QR Code Based PMS

The Fig 7 represents the Generation of the Prescription for the patient .The prescription is generated in the medical when the patient submits the unique number sent to his/her mobile through message , and then all the information about patient will display along with the Doctor's name . Then

chemist have to enter the medicine name, timings and then this prescription must be saved or updated and printed.
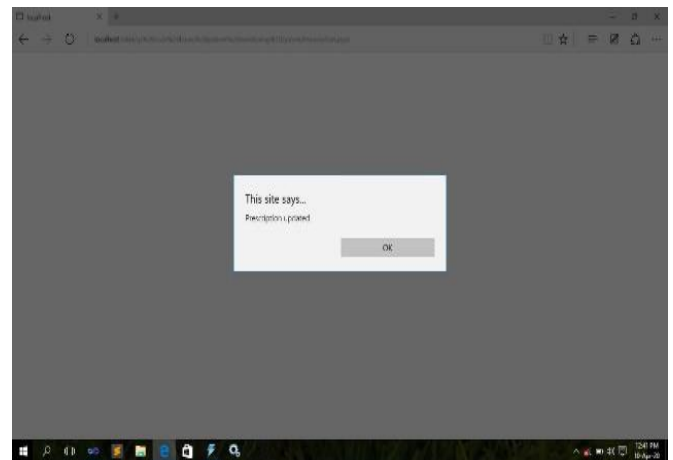

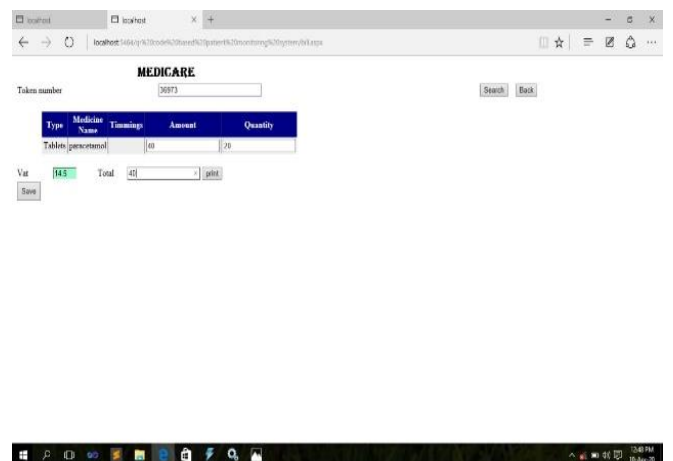Fig 8: Updation of Prescription in QR Code Based PMS

Fig 9: Printing the final Bill in QR Code Based PMS

5. CONCLUSIONS

In recent years, level of health has clearly increased. Depending on the traditional methods are highly complicated and time consuming and might also prone to human errors. Hence our project QR code based patient monitoring system made use of the QR code in the field of health .They are used to take a .They are used to take a piece of information from a transitory media and put it in to your cell phone. And most importantly it contains information that can be easily decoded at high speed hence helping in transmitting the sensitive patient information from one level of the health care delivery system to another .Therefore maintaining confidentiality, integrity and availability at the intended destination.

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