Medical Data Transmission Using QR Code

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ABSTRACT:

Health records maintaining has become the most important part in today's medical field. While the time of emergency, it would be difficult for the doctor to know the previous health history of the patient to continue with further treatments. This project presents a health record system where a doctor can enter patients health and emergency information into our servers and it can be accessed by the doctor during the time of emergency. The main aim of this paper is to distribute patient's data securely in data servers and performing the Quick Response Code with cryptosystems to perform statistical analysis on the patient data without compromising the patient's privacy & give quick access to user.

Keywords: *Internet of things, Medical management, wireless sensor network, safety, Privacy protection, key distribution*

I. INTRODUCTION

In medical management, more and information technologies are applied to improve work efficiency. For example, the hospital information management system is used to carry out a patient's basic information and medical history, the wrist one-dimensional QR Code is employed to quickly read or input a patient's identity and so on.

In Proposed system we developed an web application, that uses a registration & login process to authenticate the user into his personal account where he provides all the personal details and information of his medical data. To stored patients details in database and generate quick response code, in quick response code patient's details are stored in cipher text format hence it provides better security for patient's health records.

2. PROBLEM DEFINITION

To overcome patient problem's, we implement this system using which user/patient will hide his/her information inside the QR code the system will smart card unique ID for patient access records at the time of treatment. And finally Insurance dept. Generate specific plan for patient's perspective.

3. MODULE DESCRIPTION

User login: For login to the system, user will enter the Username and password, if entered details are correct then the system will redirect him to home page otherwise it will show an error message.

Registration: The user will register to the system with normal information. At the time of registration, QR code will be auto generated and it will be provided to user's smart card.

Prediction system: In this proposed system, based on the analyses of the security shortcomings of medical management technology, we exploit the idea of applying Quick Response (QR) code to secure medical management and improve many medical management security through utilizing information security technology.

4. LITERATURE REVIEW

1. Interaction with medical data using QR-codes.

Authors: Krzysztof Czuszynski, Jacek Ruminski

Highlights: In this paper an application of QR codes to exchange of laboratory results is presented. The secure data exchange is proposed between a patient and laboratory and between Electronic Health Records and patient. Limitations: The interaction between professional healthcare and patient can be improved, since physician can receive a file with complete set of test results from the patient and comment them in reply.

2.Amplification of Hospital Healthcare and Data Management using QR codes

Authors: Paschou Mersini, Evangelos Sakkopoulos, Athanasios Tsakalidis

Highlights: In this work, they have described an integrated system, developed for use by the healthcare personnel within healthcare facilities, adapted to smart phones, tablets and handheld devices. Key goal is to facilitate doctors, nurses and the involved personnel throughout the facility, regardless of the existence of network connection in the area using a typical smart phone. Limitations: Disease prediction and medicine prescriptions by specific doctor is not being implemented.

4.Implementation of Doctor-Patient Interactivity System Based on Android

Authors: Ran Wei, Zhimin Yang

Highlights: It represent the interaction between patient and doctor based on Android. Its superb performance on mobile terminals makes it potential that patients area unit able to access the hospital server to get the mandatory suggestion about the symptoms and move with there own mobile terminals, whereas doctors will track patients whenever and where potential or build a diagnosing of alert depends on the observation knowledge from the hardware of mobile terminals. Limitations: System has lacking, such as in the monitoring module, when the objects in the camera changes in a large scope, the amount of coded data increases quickly which will affect the system efficiency decreases.

5.Secure Transmission Medical Data for Pervalent Healthcare System using Android

Authors: Sudha.G and Ganesan.R

Highlights: It is created for accessing the medical multimedia data of patients when the user is in mobility. The mobile have less memory to store a data. So to access the large database with security, we use the My Sql database in server system. This connectivity is create with the help of server program. It make certain authentication and security in accessing database. Limitations: The mobile application can be developed with context aware, adaptability, delay should be decreased.

2. PROPOSED SYSTEM

In this proposed system, based on the analyses of the security shortcomings of medical management technology, we exploit the idea of applying Quick Response (QR) code to secure medical management and improve many medical management security through utilizing information security technology. In this system mainly Blockchain technology is used. Here we add extra new features like blockchain technology in future it may prevent cyber attacks of hackers. We give nominee to user for accessing purpose.

3. ALGORITHMS

AES (Advanced Encryption Standard): Smart contracts are simply programs stored on a blockchain that run when preconceivedd conditions are met. They mostly used to automate the execution of an agreement so all participants can be quickly certain of the outcome. AES perform operations on bytes of data preferably than in bits. The block size is 128 bits, the cipher processes 128 bits of the input data at a time. Security strength was to be calculated important part in the competition. Planned to be released on a global, communal and royalty-free basis, the candidate algorithms were to be evaluated on computational and memory efficiency.

MD5: MD5 (message-digest algorithm) is a cryptographic protocol used for authenticating messages as well as content verification and digital signatures. MD5 algorithm stands for the message-digest algorithm. MD5 as an improvement of MD4, with advanced security purposes. The output of MD5 (Digest size) is always 128 bits. MD5 was developed in 1991 by Ronald Rivest.

Use Of MD5 Algorithm**:**

- It is used for file authentication.

- In a web application, it is used for security purposes. e.g. Secure password of users etc.

- Using this algorithm, We can store our password in 128 bits format.

Application Of MD5 Algorithm:

- We use message digest to verify combine of files/ authenticates files.

- MD5 was used for data security and encryption.

- It is used to Digest the message of any size and also used for Password verification.
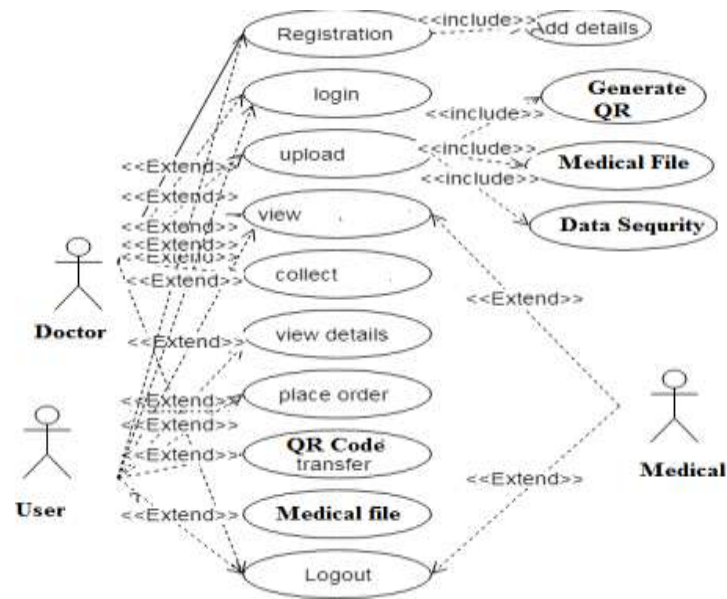
- For Game Boards and Graphics.
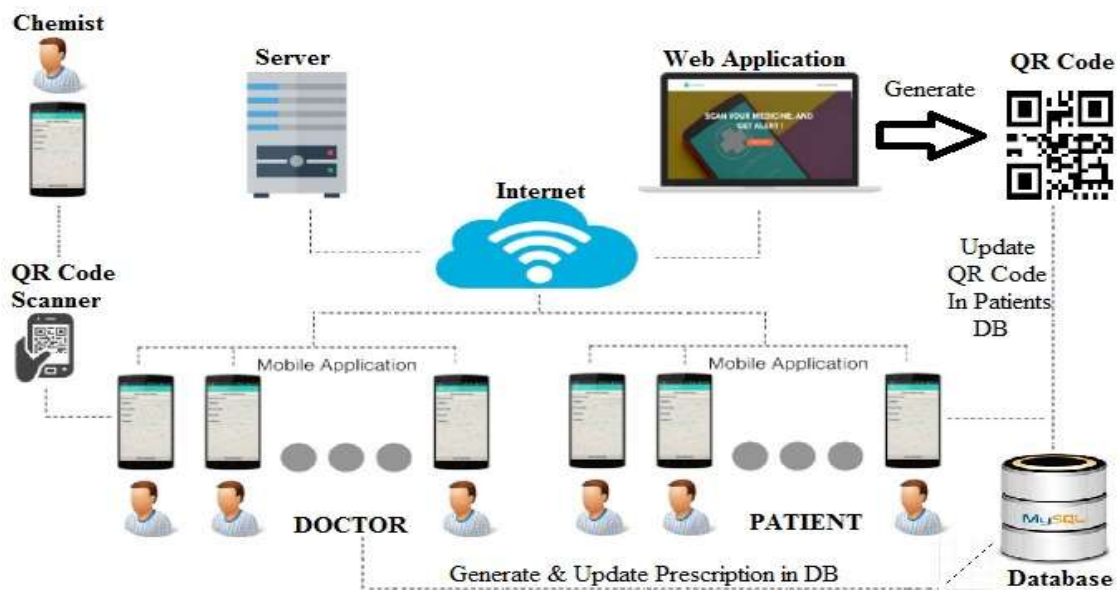
Advantages of MD5 Algorithm:

- MD5 is rapid and simple to understand.

- MD5 algorithm creates a strong password in 16 bytes format. All developers like web developers etc use the MD5 algorithm to secure the password of users.

- To combine the MD5 algorithm, relatively less memory is necessary.

- It is very easy and rapid to generate a digest message of the real message.

QR code: A QR code contains black squares arranged in a square grid on a white background, involving some curator markers, which can be read by an imaging device such as a camera, and processed using Reed–Solomon error correction until the image can be properly interpreted.
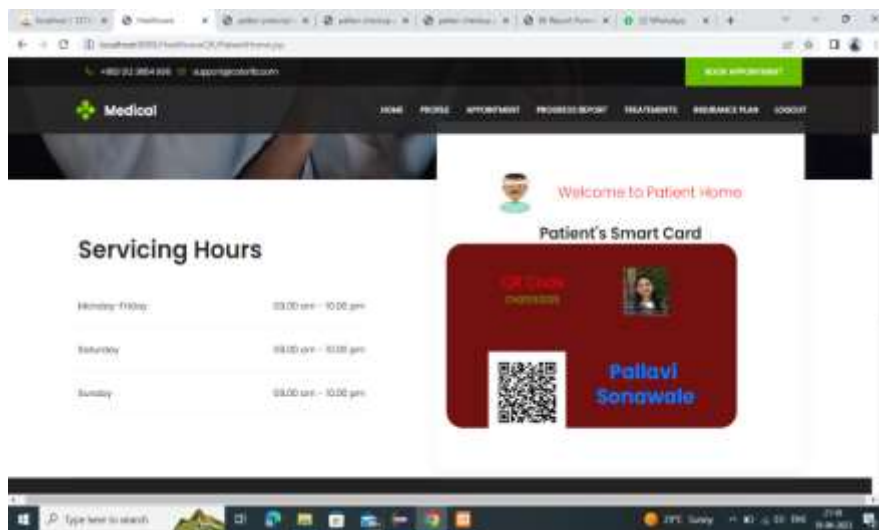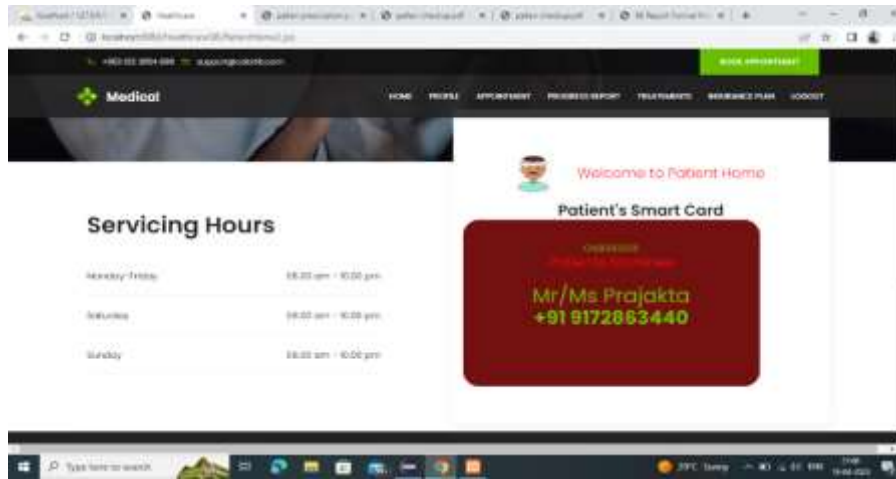
4. USE CASE DIAGRAM

5. ARCHITECTURE

6. RESULT

10. CONCLUSION

• In this system we implemented In medical management, more and information technologies are applied to boost work efficiency.

• In this proposed system, based on the analyses of the security lacking of medical management technology, we exploit the idea of applying Quick Response (QR) code to secure medical management and boost many medical management security through make use of information security technology.

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