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Research Article

HOSPITAL INFORMATION MANAGEMENT USING ANDROID

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Abstract

The main role of creating this application is to reduce the waiting time of appointment for hospitals and to propose a real time capturing system for patient supplies using Quick Response (QR) code in a Android smart phone. Standard image codes like one-dimensional barcodes and two-dimensional codes with black and white patterns identifies a product for its value and basic features but does not authenticate it, moreover not every product that is identified, is used for authenticating manufacturer's warranty .In particular, we concentrate on the cases where the memory entries and their associations form a binary Hamming space or an infinite square grid. Particularly, we focus on minimizing the number of input clues needed to retrieve information with small uncertainty and present good constructions some of which are optimal .In this paper, we propose an integrated system, developed for use by the healthcare personnel within hospitals, adapted to Smartphone's, tablets and handheld devices. Most of the hospitals in India do traditional manual paper work to maintain the records which becomes burdensome. Though it works efficiently most of the time but compromises time and space. The proposed system which is based on android platform facilitates doctors and the involved personnel's throughout with the facility. The proposed application and its backend system maintains an access to patient's current status as well as previous history previous diagnoses and specification of allergies. Additional features include updates about progress of the patient, encryption of the private reports for confidential diseases. Also we integrate a Quick Response (QR code) for accessing medical related data of the patient using a smart phone or a tablet be used by the facility itself or anyone else certified.

I. Introduction

During recent years, there are major developments in the adoption of Code such as: The directive by International Air Transport Association (IATA) for airports worldwide to adopt 2D bar code for passenger boarding. The adoption of

QR Code for patient identification by two leading hospitals in Singapore and all hospitals in Hong Kong. The use of 2D bar codes/micro codes for various applications in the other sectors. The use of QR code with mobile phones in Japan and Korea. Examples of such applications are: Large scale QR Codes on buildings to enable users to use mobile phone to scan the QR Code to retrieve information about the companies that are operating inside the buildings.

The remainder of the paper is organized as follows, we discussed a literature survey in section II, the architecture model in section III, the proposed system in section IV, organization of work in section V, implementation in section VI, results and discussion in section VII, conclusion in section VIII, future enhancement and reference follows.

II. Literature Survey

1. List of this applications, which describes about dictionaries of diseases, medical procedures, organs 3D operations and so on.

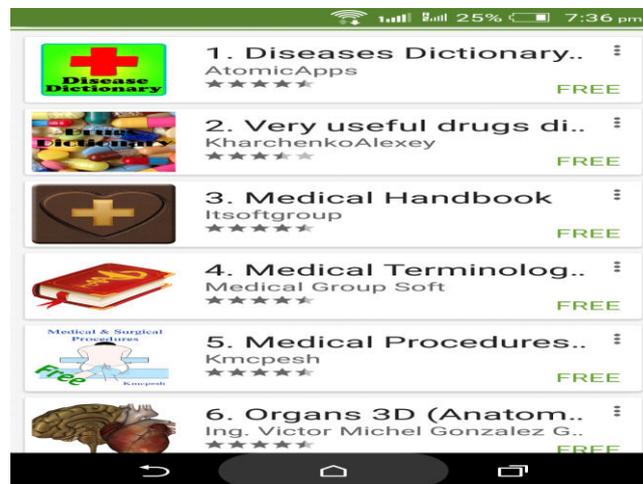


Fig 1: Apps such as dictionaries about diseases and symptoms.

2. List of this applications, which describes about a medical equipment, medical calculators, medical formulas and so on.

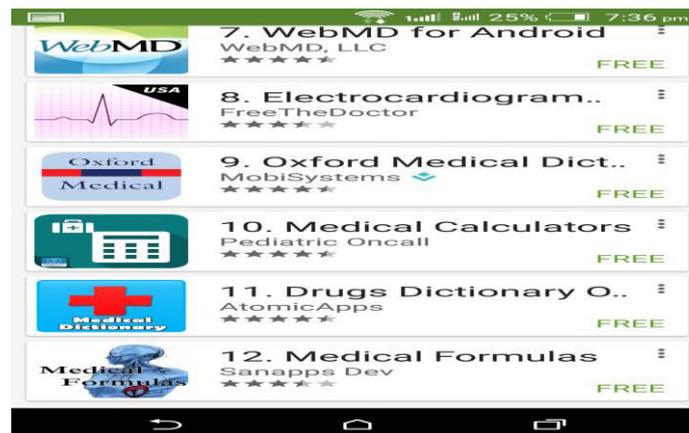


Fig 2: Apps about the calculators and formula.

2. List of this applications, which describes about a medical conditions, medical instruments and so on.

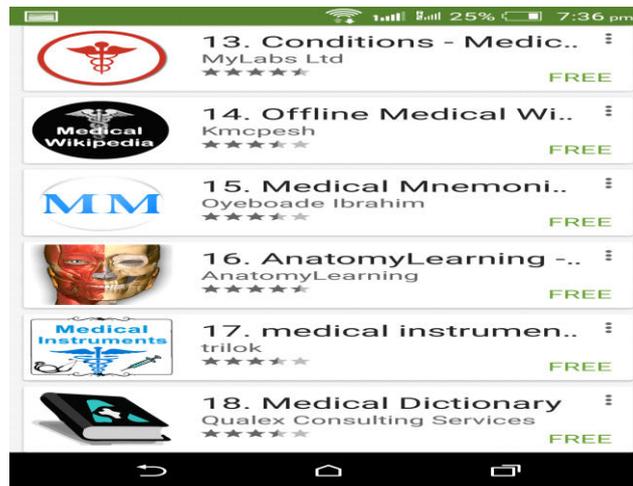


Fig 3: Apps about the medical instrument.

Nitish Soman, Ulhas Shelke, Shahanawaj Patel [1] proposed a system for examination pattern using smart phones and QR code in which for each question paper, QR code is generated and students scan the code to generate the question on their mobile screen. Students then answer the question on their screen and send the results to server. The purpose of a QR Code based examination system is to automate this process and it is easy to scan the QR code and get a question paper to answer on the mobiles. The limitation of this system is student must be equipped with mobile or a QR scanner device. Tasos Alexandridis, Paulos Charonyktakis, Antonis Makrogiannakis, Artemis Papakonstantinou, and Maria Papadopouli [2] proposed a system for information sharing, Forthroid on android a QR code based Information Access System for Smart Phones. The Forthroid uses QR codes, which are two-dimensional barcodes that can encode various types of information. designed and evaluated and it is a location-based system, that enables users to obtain multimedia information about specific points of interest using their mobile phones and provides users with services related to physical objects. The Forthroid can be easily deployed and used in indoor and outdoor environments, such as museums, campuses, and metropolitan areas. Already in several Metropolitan areas, such codes have been placed, e.g., in stores, at the entrance of buildings to provide floor plan information, on walls for announcing upcoming events. It is easy to scan a QR code with the help of mobile phones and user can get the details, whatever that is encoded in the code and the user will be provided with the message like identification of shop, direction, link of the websites, any multimedia information and this system is widely used in many places but user dont know about the QR code purpose, due to lack of user's knowledge this system have not reached on the user and each user must be equipped with a mobile phone to scan the QR code. Shanta Sondur [3], proposed a system for payment system in mobile system, In this system, multiplexing and demultiplexing algorithm are used for

recognizing QR code image using smart phones to provide various services that can recognize the authenticity of any product. So QR code verifies products by capturing it through the smart phone, then decodes and sends it to the server for authentication. The customer forwards the selected product list to the server that enables the consumer to decide based on the products authenticity. A simple scan captures the desired information and the Decoded data can be stored in the server and can be viewed by the cashier and customer can easily detect the QR code image in the mobile itself. System software failure may cost more delays and a light beam might be refracted by water particles suspended in the atmosphere, resulting in focus distortion. In laser scanning, durability and cost are the two disadvantages and a barcode becomes scratched or crumpled the reader may not be able to read it.

II. Architecture Model

Fig.4 depicts the system Architecture and flow of user and server and interconnection of the user and server and generation of QR code It organized in a way that supports reasoning about the structure of system which comprises system components, the externally visible properties of those components, the relationships (e.g. the behavior) between them Architecture as shown in Fig 4 represents the overall process of our proposed system.

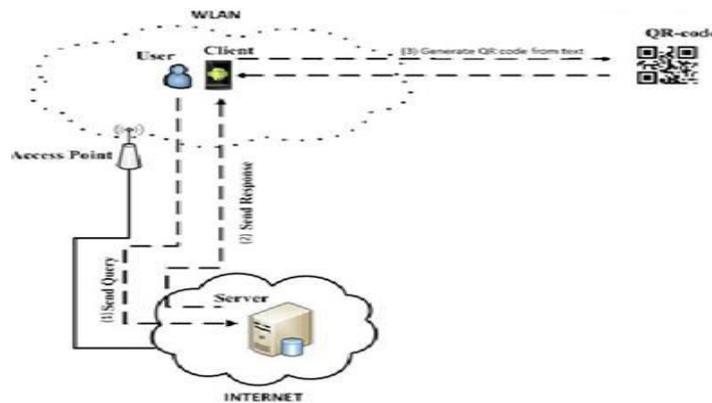


Fig. 4: System Architecture.

III. Proposed System

In the proposed system, providing a platform where a user can login to the application and make appointment with multiple services like hospitals, restaurants, spa. The first time user has to sign up with the application and then can access the application with his unique user id and password. The user can select the service and enter the details and purpose of the appointment with the predefined time slots and dates, at the end the user is provided with a QR code, which contains the user name, mobile number, place and time of the appointment.

A. Advantage of proposed system:

- The appointments are made instantly.

- The appointment can be fixed whenever the user are free and no additional effort is needed.
- The users can make themselves ready for appointment in hand.
- The user who claim the appointment can be verified with details at the venue with which the appointment is made.

IV. Organization of Work

B. Module Description

There are 4 modules in this application listed as below.

- Selection of Service
- Fixing Appointment
- Cancel Appointment
- QR Based Verification

C. Selection Of Service Module

Select the service as desired by the user such as specialty clinics, beauty parlors/spa, restaurants. User can check for the available centers on selecting each type of service .User selects the desired center to fix an appointment.

D. Fixing Appointment Module

After selecting the service, check for availability if available, enter the user details and fix an appointment. If there are unfilled fields user must enter the user details again.

E. Cancel Appointmnet Module

To cancel an appointment user should login and check the history of upcoming appointments and cancel the appointment Once again to fix the appointment user could check for other dates and can use the fix appointment module.

F. QR Code Based Verification Module

On fixing an appointment QR code is generated which contains all the user appointment details. On authentication user is granted access to the service, else the appointment is cancelled.

V. Implementation

A. Hardware Requirements

The Processor used in hardware requirement is Intel i3, the RAM used as 2 GB, the Hard Disk used as 250 GB, the Mobile Device is used an Smart Phones with internet connection

B. Software Requirements

The Front End is used as Eclipse Kepler IDE, the Back End is used as SQL YOG, the Operating system is used as Android, the Version used as 2.1 and above, the Documentation Tool : MS Word 2010.

C. System Development

Input Design

Input Design is the process of converting user- originated inputs to a computer based format. Input Design is one of the most expensive phases of the operation of computerized system and is often the major problem of a system.

Output Design

Output Design generally refers to the result and information that are generated by the system from any end users, output is the main reason for developing the system and the basis on which evaluate the usefulness of the application. The output is designed in such a way that it is attractive, convenient and informative. Services designed in Java with various features which make the web page output more pleasing and the client is designed using XML. As the outputs are the most important sources of information to the users, better design should improve the system's relationships with us and also will help in decision making.

VI. Results and Discussion

The final outcome page consist of the followings such as application start up page which provide the user ID and the password .Once when the user login the application some of the features are available such us appointment registration, QR code generation, application history page , cancellation page etc., The user can make their appointment in an easy way.

Application Startup Page:

This page provides user name and password this is the start up page for this application.

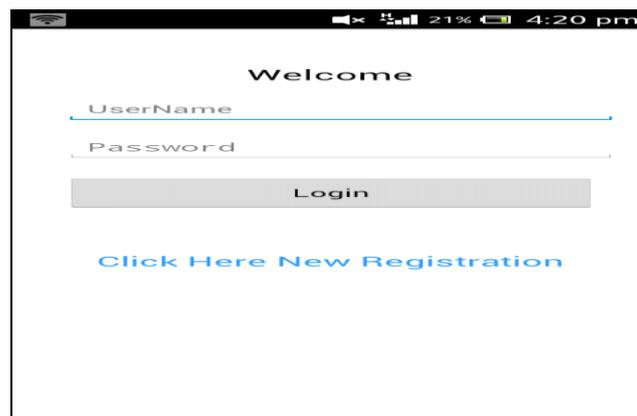


Fig.5: login

Login page provide the personal information about the user such as name, mobile no, address etc.,

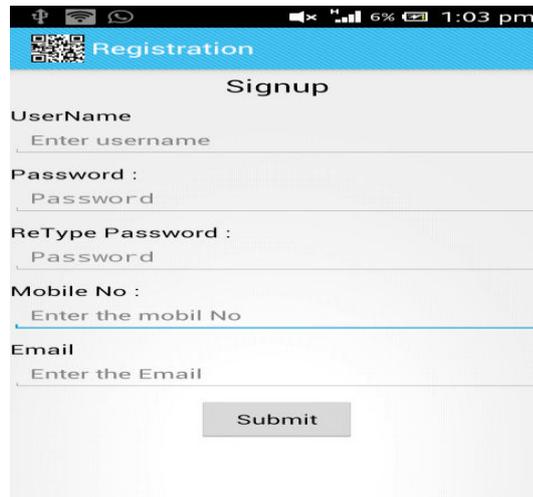


Fig.6: sign up.

Sign in page provides various functions such Appointment fixing, generation of QR code etc.

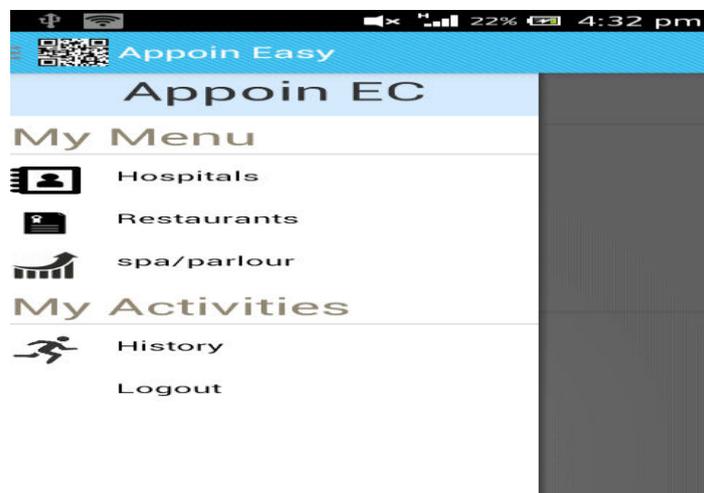
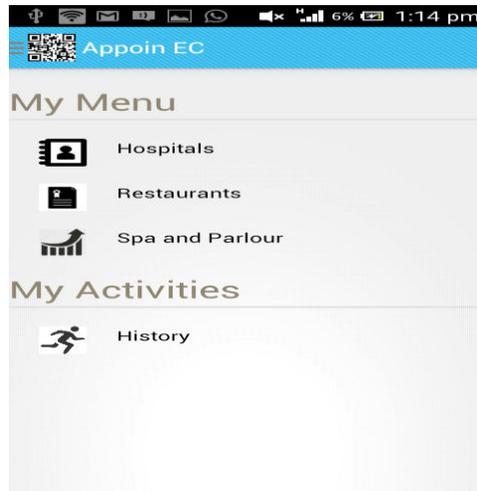


Fig.7: Menu.

A. Application Appointment Registration Page

The patient can register there appointment in this page , this makes the user easy and saves time.

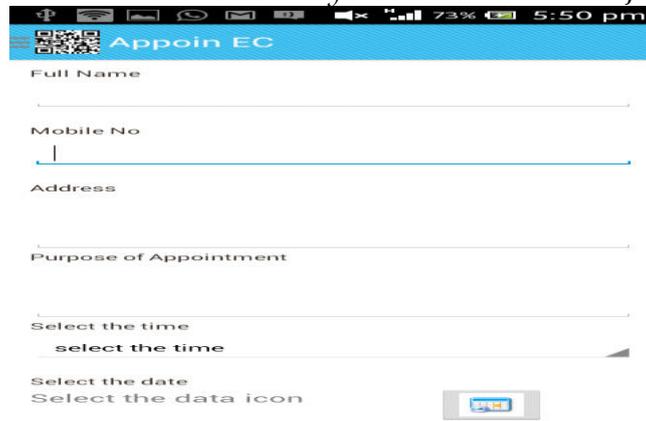


Fig.8: appointment fixing

B. Application QR Code Generation Page:

Once when the user login this application QR code page will be generated, this page is used for the safety purpose for the users.

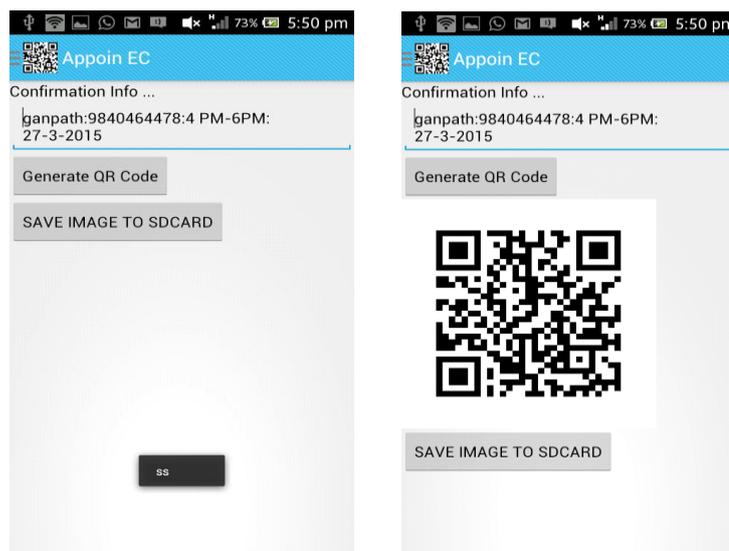


Fig.9: QR code generating.

C. Application History Page

The entire history of the patients details are feed in this page. The user can see it any time they need.



Fig.10: History page.

D. Cancellation

When the user doesn't want his or her appointment in a particular day or time, then he or she can cancel it .

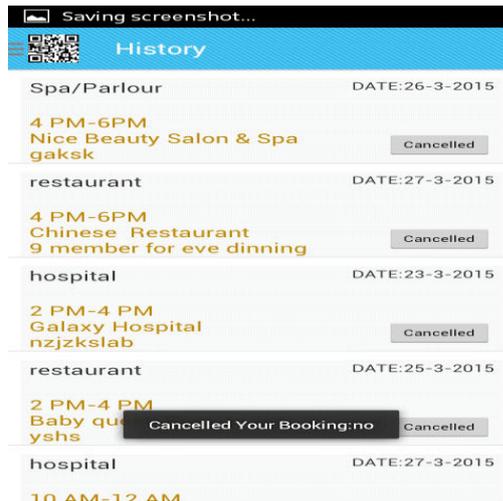


Fig.11: Cancellation.

VII. Conclusion

The recent advancements in mobile communication have led to the development of more applications which have made the life of people day to day works easier. With mobile devices playing a vital role in every day's life it is essential to make applications user friendly.

In order to satisfy the above facts, developed an android application user friendly and responsive. The application makes instant appointments for user with various services Location Based appointments and appointment notification are other enhancements which will help the users greatly.

Future Enhancement

The future work for this application would make it more adaptable and more responsive. For any application to survive in the market, it need to be updated regularly or enhancements must be made. The enhancement for our application would be as follow

- Voice input can be given instead of entering the text input.
- Internet connections can be enhanced.
- This application can be developed on different platforms.

References

1. Nitish Soman, Ulhas Shelke, Shahanawaj Patel, "Automated Examination Using QR Code", International Journal of Engineering and Advanced Technology (IJEAT) , ISSN: 2249 – 8958, Volume-2, Issue-3, February 2013

2. Tasos Alexandridis, pailos charonyktakis, antonis mkrogiannakis, Artemis Papakanstantinou, and maria Papadopoulo, "Forthroid on Android: A QR-code based, Information Access System for Smart Phones" , 2012
3. Shanta Sondur, "QR-Decoder and Mobile Payment System for FeaturePhones", VESIT , International Technological Conference, 2014
4. www.ieeeexplorer.org
5. www.isorgen.org
6. play.google.com
7. <http://www.slideshare.net>
8. <http://programnerguru.com>
9. <http://developer.android.com>
10. <http://www.bookmyshow.com>
11. <https://itunes.apple.com/us/app/qrappoint>
12. <http://app-qr.com>

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