

Advanced Hospital Database Management System

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Abstract: An advance concept of database that includes the database of hospital as well as patient. It is a kind of database that includes the maintenance of patient's record. This concept avoids the process of manipulation with record. There are chances that the important data can be lost but by using this concept we can keep a backup of each and every data. Also the data are secured in each and every manner. Data will be in distributed manner thus making it available for everyone. Each and every patient will be having its own individual ID and PASSWORD. Patient's registration form is also maintained which will include his/her name, address, contact number, DOB. The distributed data will be transferred from hospital to hospital and every patient will have the access to its own personal data.

Keywords: Easy access to data, reduced paper work, past medical record.

I. INTRODUCTION

Hospital management is related to integrated hospital information system, which addresses all the functional areas of multi-speciality hospitals. The hospital management includes better patient care, patient safety, patient confidentiality, efficiency and better management information system. The problem statement includes reducing paper work as well as saving lot of time. It also involves easy access to critical data thus enabling the management to take better decisions on time. Loss of data can also be recovered and even backup of data can be done. Hospitals should computerize all details including patient details & hospital details which should be able to handle the test reports of patients conducted in the pathology lab of the hospital. The information of the patients should be kept up-to-date and the record should be kept in the system for future use. Every type of information would be available whenever the user requires. It aims at standardizing the data, consolidating the data ensuring the data integrity and reducing inconsistency. Also the system is error free thus making it more useful

II. RELATED WORK

In [3] According to Gustavo H. M. B. Motta and Sergio S. Furuie the design and implementation of proper models for authorization and access control for the electronic patient record (EPR) are essential to a wide scale use of the EPR in large health organizations. However, specifying the access conditions and privileges for an EPR user is still a difficult task, since an access control solution must keep the confidentiality of EPR data, without hindering patient care by denying legitimate access to clinical data and services requested by medical staff. For instance, it is not appropriate to impose a restricted control that prevents a physician, in an emergency room, to access crucial EPR information about a patient in a critical condition. The urgency condition should be regarded as an exception, overriding the access control restrictions

already established. The problem is to devise authorization and access control models capable of supporting exceptional cases, taking into account contextual or conditional information. We propose in this paper a contextual role-based access control (RBAC) authorization model for the EPR that extends the proposed National Institute of Standards and Technology (NIST) RBAC reference model.

In[5] keeping track of all the activities and their records on paper is very cumbersome and error prone. It is also very inefficient and a time-consuming process. Observing the continuous increase in population and number of people visiting the hospital, recording and maintaining all these records is highly unreliable, inefficient and error-prone. It is also not economically & technically feasible to maintain these records on paper. The main aim of our project is to provide a paper-less hospital. It also aims at providing low-cost reliable automation of the existing systems.

Information systems in electronic healthcare have the potential to support a variety of medical stakeholders in performing their regular daily working activities. Still with the growing amount of electronically available health-related data on patients, aspects of data privacy have to be considered, e.g., by improving the transparency of healthcare processes or by offering methods to allow patients to self-determine controls for their data. In[4] the work we present the results of a study we conducted in Austria about the general desire of patients to self-control access to their health records as well as to elicit typical factors for access control they personally consider as important. The results we present in this work are intended to support the requirements analysis and development of patient-centric healthcare management applications.

Healthcare management is a growing profession with increasing opportunities in direct and non- direct care settings. As defined by Buchbinder and Thompson (2010),

direct care settings are those organizations that provide care directly to a patient, resident or client who seeks services from the organization. Non-direct care settings are not directly involved in providing care to persons needing health services, but rather support the care of individuals through products and services made available to direct care settings. The construction of medical information is important to improve the hospital medical care capability, the management decision-making level of health and the hospital operational efficiency. Nowadays, comprehensive hospital information services and management platform have been established, centering on electronic medical records and clinical pathway. The establishment and use of these information systems played an important role in improving the degree of patient satisfaction, enhancing hospital efficiency and healthcare quality, protecting the safety of healthcare, and reducing healthcare costs

III. PROPOSED SYSTEM

The proposed software system is the Advanced Database Hospital Management System. The system will be used in any Hospital, Clinic, Dispensary or Pathology labs in any Hospital, Clinic, Dispensary or Pathology labs to get the information from the patients and then storing that data for future usage. Information about Patients is done by just writing the Patients name, age and gender. Whenever the Patient comes up, his information is stored freshly. Bills are generated by recording price for each facility provided to Patient on a separate sheet and at last they all are summed up. Diagnosis information to patients is generally recorded on the document, which contains Patient information. It is destroyed after some time period to decrease the paper load in the office. Immunization records of children are maintained in pre-formatted sheets, which are kept in a file. Information about various diseases is not kept as in any documented forms. Doctors themselves do this job by remembering various medicines. All this work is done manually by the receptionist and other operational staff and lot of papers are needed to be handled and taken care of. Doctors have to remember various medicines available for diagnosis and sometimes miss better alternatives as they can't remember them at that time.

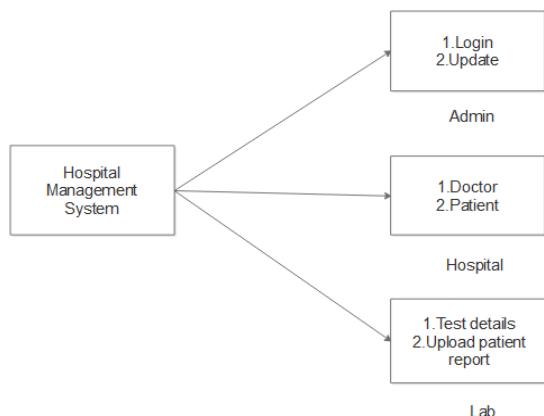


Fig3.1 Component diagram

IV. IMPLEMENTATION

4.1 ADMIN PANEL

Admin panel basically includes a login page which appears when an admin opens his system. This login page will ask the admin to enter valid username and password. If in case he/she enters invalid username or password a small message will pop up saying “invalid username/password”. After successful login, admin will get further access. After successful login admin will go to the home page of hospital management system. This home page includes patient details which are controlled by the admin itself. Admin is the one who takes decision whether to update patient status or not. Patient status is updated by clicking ON/OFF button and then by clicking on update button. If the status is ON the patient will be able to access his/her data. If the status is OFF then patient will not be given further access. If patient is done with his/her treatment then the status will be OFF hence not giving any further access. After finishing his work admin can successfully logout and all changes are saved.

4.2 HOSPITAL PANEL

Hospital panel includes the most important part of hospital management system that is regarding doctor details and patient details. Doctor details include his/her name, address and the very important thing that is his/her specialty. This ensures that for each and every patient there will be a doctor for the treatment. Also the details include his/her email id and contact number. The next important thing is patient details which includes his/her name, dob, contact address and phone number. The most important thing which is included in this system is patient's past medical history. This will be very helpful for the patient as well as doctor. Often the past records are lost or forgotten. But by keeping it online, the data will be secured and also accessible. Room allotted and bed allotment details are also maintained. There are two different rooms for the patient one is general and second is air conditioned.

4.3 LAB PANEL

Lab panel includes various test details that are conducted and their respective reports. Test details includes patient name, test conducted and update as well as delete option & test results. Update option includes whether the reports are pending, in-process or completed. Also the patient can upload his/her report in pdf format.

4.4 ANDRIOD APP PANEL

Hospital app is made for the benefit of patient. If a patient visits a hospital for the first time he has to fill the form, wait in line and wait for their turn to come. By using this app, patient will get their individual id and password for further access. After filling form and the entire required details patient will get their ID and Password. Admin will add the patient details in his system. App has proved to be very time saving and has reduced the paper work completely. Now patient will not have to wait in line and fill form, they can do that sitting at home by just simply downloading hospital app.



Fig 4.1 Admin Panel

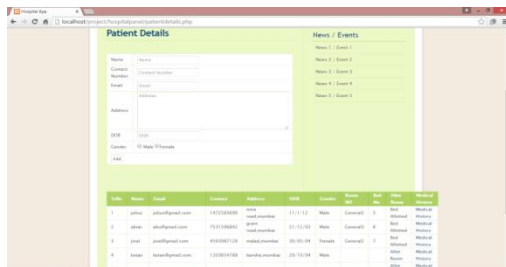


Fig 4.2 Hospital Panel(patient)

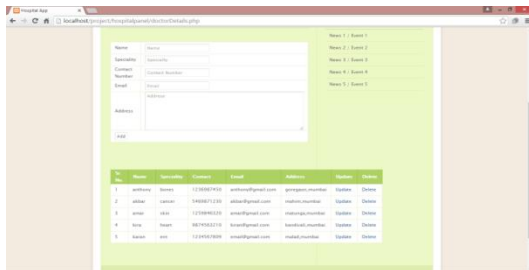


Fig4.2 Hospital Panel(Doctor)

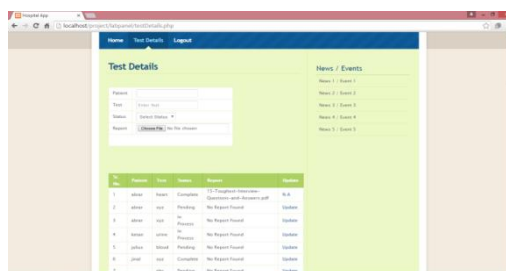


Fig4.3 Lab Panel

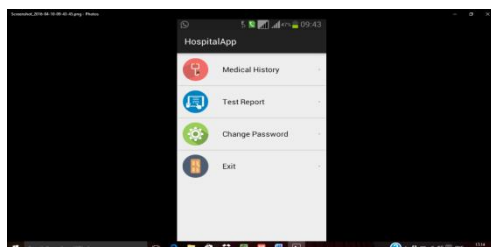


Fig4.4 Andriod App Panel

VI. FUTURE SCOPE

At present, this proposed system i.e. Advanced hospital management system is only dealing with database of hospital and patient. It has also included lab as well as test details. This system can be improved by adding pharmacist as well. Keeping a track of total medicine sold and bought is also important. Also a record should be

maintained about the total count of medicines. Also the entire working staff can be included in this system along with doctor and admin. Appointment of new staff like ward boys, nurses can also be included. Also the working hours of doctor, nurses, ward boy, watchmen should be included in the system. All these kinds of records will be very helpful for future use. This system can include many aspects, like providing health tips, dietary advice etc. This will be proved helpful in controlling of various diseases that is caused due to unhealthy diet. Effectiveness of the system can further be improved if trained on larger database.

V. CONCLUSION

This project Advanced Hospital Management System is for computerizing the working in a hospital. The system takes care of all the requirements of an average hospital and is capable to provide easy and effective storage of information related to patients that come up to the hospital. The system is also distributed thus making it available for every individual. There is no chance of loss of data since we have backup of each and every data. This proposed system has completely reduced the paper work thus reducing the work load of working staff. The system is not complex in nature and therefore can be handled very well. Patient’s report can be shared online thus saving a lot of time and effort. Also the system is error free and it avoids manipulation with the record. In order to access lab panel, hospital panel and admin panel every individual requires an unique ID and Password. First panel is admin panel which can be accessed only by the admin wherein the admin can update(ON or OFF) the status of the patient

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