



A REVIEW: ANALYSIS OF HEALTHCARE RECORDS USING KDD IN DATA MINING

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Abstract: With the advent of the era of big data in the world and the commercial value of new technology, the prospect for Analysis of Healthcare Records System is to provide efficient management services in hospital. The previous hospital system was full of drawbacks like writing patients' information on books so sometimes they can loss the important information. This project is fully automated and any user who doesn't know about computer can operate it easily. This AHR consist patients' disease information, patient's personal information, doctor's details, doctor's availability. It consists information about various objectives of Healthcare Records. The scope of this project and current use of this project in hospital management. This makes managing easier than earlier. An analytical approach that is regarding the uniqueness of medical data in healthcare is presented here. The advance concept of database includes the database of hospital and patient's medical record. This concept avoids the process of manipulation with record and to avoid the tampering of patient's information.

Keywords – AHR, automated, medical data, patient's disease information.

I. INTRODUCTION

Health Record Analysis is a project that aims to develop a computerized system for storing all information about hospital subjects. It has an administrator login facility through which the administrator can monitor the entire system. Admin modules manage patients, manage doctors and manage appointments. The patient modules are find a doctor and request an appointment, view an appointment and view a prescription. The medical modules are to view our appointments, write prescriptions and view patient details. Overall, this project of ours is developed to help the hospital management to maintain patient healthcare records in the best possible way and also to reduce human effort. Health insurers are able to identify cases of fraud and abuse, health administrators are able to make better decisions, especially when managing their customers, and health professionals are able to provide better services and treatments. The vast amount of data generated by healthcare transactions is too complex and voluminous to process and analyze using traditional methods. Data mining can improve decision making by discovering patterns and trends in large amounts of complex data. Such analysis has become increasingly important as financial pressures have increased the need for healthcare organizations to make decisions based on the analysis of clinical and financial data. Insights gained from data mining can impact costs, revenue and operational efficiency while maintaining a high level of care. Healthcare organizations that do data mining are better positioned to meet their long-term needs. In recent years, computers and their peripherals have become cheaper and more accessible, and in line with the development of information technology, various kinds of advanced data mining techniques have entered the market. These new age data mining techniques include both traditional and newer sophisticated classification algorithms. Both classification techniques are designed to work with complex datasets such as multidimensionality, user inference and prior knowledge, web data, spurious data points that cause model overfitting, human enhancement, noisy dataset cleaning, multimedia dataset mining, and incremental datasets. Cross-disciplinary data mining techniques and approaches can be used for all of the above 2 databases to predict the impact and discover meaningful relationships in the data to extract useful

information for knowledge generation. Data mining is the exploration of large data sets to extract hidden and previously unknown patterns, relationships, and knowledge that are difficult to uncover with traditional statistics. Thus, it obtains useful knowledge from huge data sets and presents it in a human-understandable form. Data-mining divides its task into two parts Predictive and Descriptive tasks. Predictive tasks predict the value of specific attributes, and descriptive tasks drive patterns that summarize the relationship between data. Classification, regression, and variance deduction fall under Predictive tasks. Descriptive tasks derive a pattern that summarizes the relationship between data. Data mining expertise provides consumer access to new and unknown patterns in data.

II. LITERATURE SURVEY

A. *Advanced Hospital Management System (AHMS)*

This research paper **Advanced Hospital Management system** ("Rohit Gopal Misal" 2022) states that it is a user-friendly system build for the convenience of patients, doctors and for management of hospitals in effective way. It includes registration, storing details of patients and also includes computerized billing of medicines and laboratory tests. The software works on the latest technology. The data is stored automatically and can be stored for years for future needs. The patient gets his/her unique id for various purposes like with the help of that id patient can check availability of doctor and book the slot. The data in this system can be added and retrieved by administrator (admin) or receptionist. System is powerful, flexible, easy to use and fast processing and it is end-to-end integrated. This system supports decision making for patients care. AHMS is a software product suite designed to improve quality and management of hospital.

Design: Database design, E-R Diagram, Database schema, Data flow Diagram.

Tools and techniques:

- i) Software: Php my admin, Xampp, Windows 7+
- ii) Hardware: Processor 64 GB, RAM 4GB, Hard Disk 80 B
- iii) Programming Languages: PHP, HTML, CSS, Java Script, MySQL

Planning of this project:

Initiation: 31 days

Planning: 28 days

Execution: 29 days

Closure: 7 days

This project has been a rewarding experience in more than one way. The entire project work has enlightened us in the following areas. 1) We have gained an insight into the working of the HOSPITAL. This represents a typical real-world situation. 2) Our understanding of database design has been strengthened this is because in order to generate the final reports of database designing has to be properly followed. 3) Scheduling a project and adhering to that schedule creates a strong sense of time management. 4) Sense of teamwork has developed and confidence of handling real life project has increased to a great extent. 5) Initially, there were problem with the validation but with discussions, we were to implement validations. A. Limitations of the System 1) Online payment is not available at this version. 2) Data delete & edit system is not available for all section. 3) Loss of data due to mismanagement. B. Future Plan 1) Diagnostics billing system.

B. *Future Perception In Public Healthcare using Data Mining*

This research Paper **Future Perception In Public Healthcare using Data Mining** ("IJERT 1 January 2014") states that the managing Patients, manage doctors and manage appointment. In recent year, a medical department has been frustrated by the problem of overloading long processing time, delay patient treatment and high cost. The Problem have been caused from several internal and external factors, including patients characteristics, staffing pattern of medical department access to health care providers, patients arrival time, management practices and testing treatment strategies selected by medical department.

Techniques: Data Mining

Programming languages: HTML, CSS, JavaScript, MYSQL

Advantages:

- Easy Access to Patient Data
- Improved Patient care
- Improved Efficiency

Disadvantages:

- lack of information about the Patients
- Increased cost of the Treatment for the Patient

Since, we are entering detail of the patients' electronically in the "Future Perception in Public Healthcare using Data Mining" data will be secured. Thus, processing information will be Faster. It guarantees accurate maintenance of patient details. Future Perception in Public Healthcare using Data Mining for maintaining detail about Doctor, Patient, and Hospital staff etc. They would unable to improve the response time to the demand of patient care because it automates the process of collecting, collating and retrieving patient information.

C. Hospital Management System

The previous manual System has a lot of paper work. With the increase in database, it will become a massive task to maintain. The retrieval of records of previously registered patients will be a tedious task. Lack of security for the records, anyone disarrange the records of your system.

To overcome such problems, "Hospital Management System" Comes into the picture.

Hospital Management System is a computerized System used in office for management of hospital. The main function of the System is to register and store Patient details and doctors details.

System input contains patient details, diagnosis details, while system output is to get these details on to the screen.

The system automates the day-to-day activities like room activities, admission and discharge of patients, assign a doctor, etc....

Tools and techniques:

- Programming Languages: HTML, CSS, JavaScript, MySQL
- Software: Windows 7+
- Hardware: processor 64 GB, RAM 4 GB, Hard Disk 80 B

Advantages:

1. In this hospital management system project, the work became very easy and we save lot of time.
2. It automates the process of collecting, collating and retrieving patient information.
3. Hospital administrators would be able to improve the operational control and streamline operations.
4. This application will help user to access and view all his reports from anywhere online.

Disadvantages:

1. Lack of employment . The chances of employment usually become less with the automation of the system. Also, the gradual need for manual data drafting becomes an irrelevant aspect.

D. Advanced Hospital Database Management System (AHMS)

Advanced database concept that includes both hospital and patient database. This is a type of database that involves keeping patient records. This concept avoids the process of manipulating the record. There is a chance of losing important data but we can back up all data with this concept. The data is also secured in every way. The data will be distributed and made available to everyone.

Tools and techniques:

- i) Software: Windows 7+
- ii) Hardware: Processor 64 GB, RAM 4GB, Hard Disk 80 B
- iii) Programming Languages: HTML, CSS, Java Script, My SQL

Data is protected by electronically entering patient data into medical record review. With this project, you can get a patient's medical history with just one click. This increases the speed of information processing. This ensures that patient data is stored accurately. Reduces human effort and improves accuracy speed by easily reducing paperwork and bookkeeping.

Analyzing medical record systems is necessary to maintain detailed information about doctors, patients, hospital staff, and more. We know that using a medical records system analysis project will make your work very easy and save you a lot of time. Hospital administrators can streamline operations by significantly improving operational control. This can improve response times to patient care needs by automating the process of collecting, matching, and retrieval of patient information. Accounting sometimes gets terribly disastrous and complicated.

This product removes that complexity.

III. RESEARCH METHODOLOGY

They used various concepts of mining for managing the unsatisfactory services in healthcare department. Firstly, they understood the medical data from various sources like Operation theatre, blood bank, drug store, etc and then implemented it for public healthcare using data mining. To extract the useful data from the raw data knowledge discovery in databases is used. In the medical data processing, they followed a healthcare business cycle using various techniques for like modeling, evaluation, deployment. Evenly they used some common data mining algorithm like Decision Tree, Convolutional Neural Network, Nearest Neighbour method, Generic algorithm in healthcare domain.

IV. ANALYSIS OF SYSTEM

Architecture of AHR

A series of components of the system illustrated in the architecture of Analysis of Healthcare Records Using KDD in Data Mining:

- The components of Analysis of Healthcare Record.
- The database uses star schema of Analysis of Healthcare Record.
- The executable of an application of Analysis of Healthcare Record.

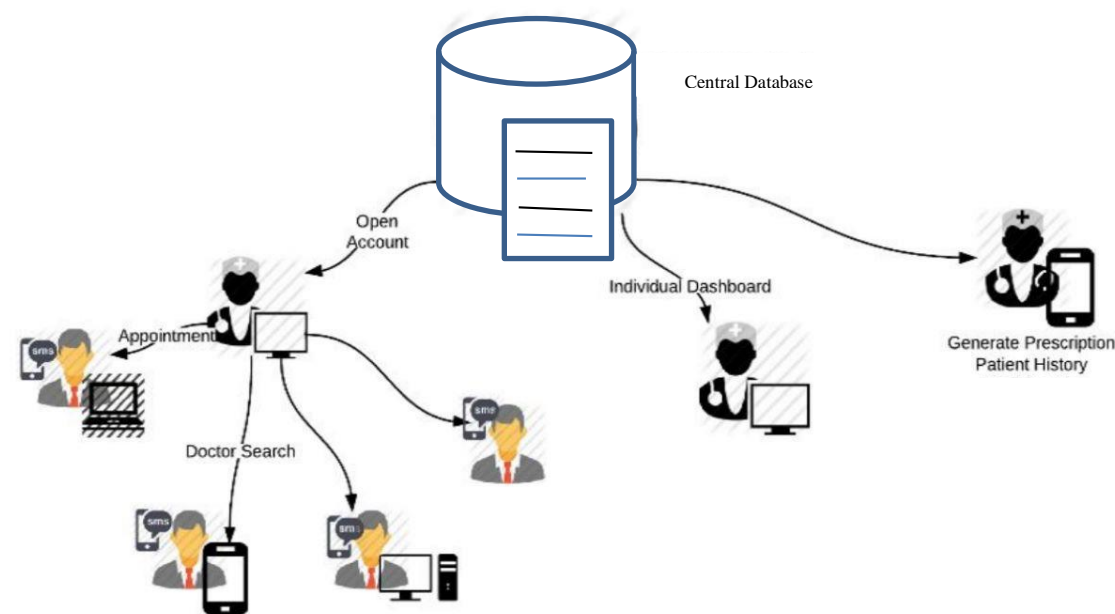


fig (a): system architecture

Use case diagram

A general use case diagram for a system is *a graphical depiction of a user's possible interactions with a system*.

- User will be able to search and generate the report of Doctor, Patient and Guest.
- All object such as (Patient, Doctor, Guest) are interlinked.
- It shows the full description and flow of Admin, Doctor, Patient and Guest.

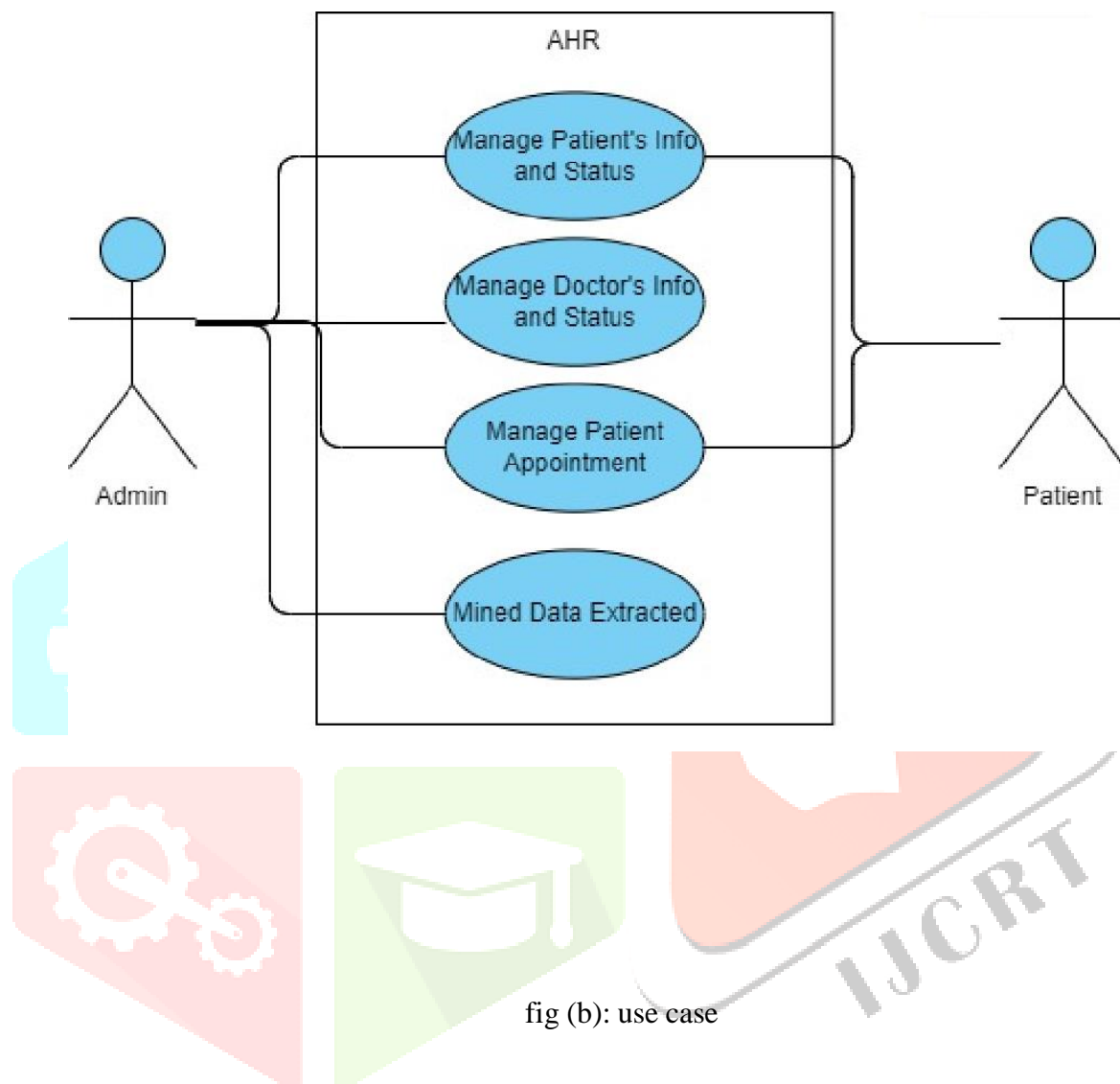


fig (b): use case

V. CONCLUSION

Since we are entering details of the patient's electronically in the "Analysis of Healthcare Records", data will be secured. Using this project, we can retrieve patient's history with a single click. Thus, processing information will be faster. It guarantees accurate maintenance of patient details. It easily reduces the paper work and accounts keeping and thus reduces the human effort and increases accuracy speed.

Analysis of Healthcare Records System is essential for maintaining detail about the Doctor, Patient, and Hospital Staff etc. We understand that by using of Analysis of Healthcare Records System project the work become very easy and we save lot of time. Hospital administrators would be able to significantly improve the operational control and thus streamline operations. This would able to improve the response time to the demands of patient care because it automates the process of collecting, collating and retrieving patient information. Accounting sometimes becomes awful pathetic and complex. This product will eliminate any such complexity.

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