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E-Hospital Management and Intelligent Health Disease Prediction System (IHDPS) Using Data Mining Techniques

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Abstract: *Human Body is a very complex and sophisticated structure and comprises of millions of functions. All these complicated functions have been understood by him, part-by-part their research and experiments. This paper E-Hospital Management System includes registration of patients, storing their details into the system. Our software has the facility to give a unique id for every patient and stores the details of every patient and the staff automatically. User can search availability of a doctor and the details of a patient using the id. The Hospital Management System has entered using a username and password. It is accessible by either an administrator or receptionist. Only they can add data into the database. The data has retrieved easily. The interface is very user-friendly. The Intelligent Health Disease Prediction System (IHDPS) is an end user support and online consultation paper. This system allows users to get instant guidance on their health issues through an intelligent health care system online. The system contains data of various symptoms and the disease/illness associated with those symptoms. It also has an option for users of sharing their symptoms and issues. The system processes those symptoms to check for various illnesses that can be associated with it. The system is designing to use intelligent data mining techniques to guess the most accurate illness based on patient's symptoms. If users' symptoms do not exactly match any disease in the database, then it is showing the diseases user could probably have based on his/her symptoms. It also consists of doctor address, contacts along with Feedback and administrator dashboard for system operations.*

Keywords: IHDPS, Data Mining, Hospital Management, Disease Prediction**.**

I. Introduction

E-Hospital Management System will be an integrated, modular client server-based system working around a common database. The solution has developed across Hospital Management System using the computing technologies including Intelligent Health Disease prediction system (IHDPS) and data mining techniques. The system shall be user friendly. E-Hospital Management System and (IHDPS) is a web-based hospital management software. Provided password facility for different user to ensure high level of security. Has inbuilt database back up facility for safety and reliability. It is an Intelligent Health Care Resource Program by using database management system. It is completely user-friendly hospital management software. It automates the patient billing process completely. Change is always different for any human being. This paper has aimed to automate the hospital management system and predicting health diseases. This paper hasdeveloped mainly to administrate doctor's appointment with the patients. Data mining is the process of discovering patterns in large data sets involving methods at the intersection of machine learning, statistics, and database systems. Data mining is an interdisciplinary subfield of computer science with an overall goal to extract information (with intelligent method) from a data set and transform the information into a comprehensible structure for further use. Data mining is the analysis step of the"Knowledge Discovery in Databases" process or KDD. Aside from the raw analysis step, it also involves database and data management aspects, data preprocessing, interestingness metrics, complexity considerations, post- processing of discovered structures visualization, and online updating. The term "Data mining" is in fact a misnomer, because the goal is the extraction of patterns and knowledge from large amounts of data, not the extraction of patterns and knowledge from large amounts of data, not the extraction of data itself. It also

is a buzzword and frequently applied to any form of large-sale data or information processing as well as any application of computer decision support system include artificial intelligence.

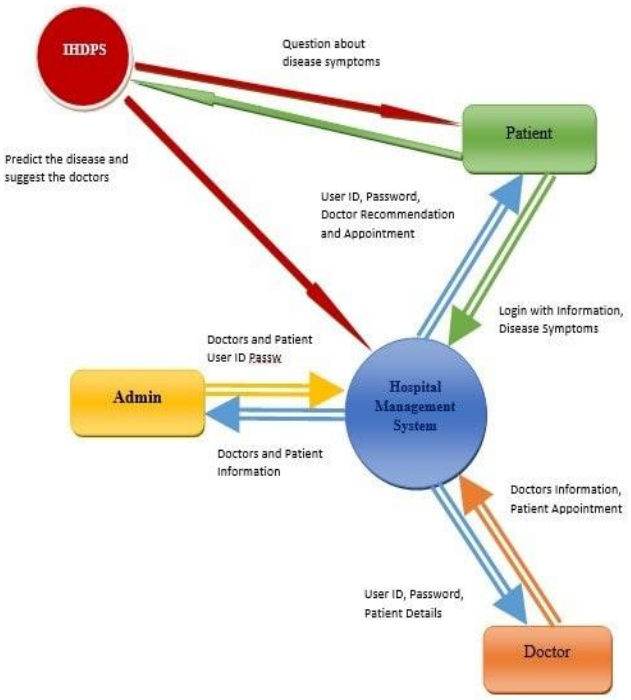

Figure 1: Proposed Diagram of HMS and IHDPS

II. Floor plan and Material

This paper Hospital Management system includes registration of patients, storing their details into the system. The software has the facility to give a unique id for every patient and stores the clinical details of every patient automatically. It includes a search facility to know the status of each patient. User can search details of a patient using the id. The Hospital Management System has entered using a username and password. It is accessible by either an administrator or receptionist. Only they can add data into the database. The interface is very user-friendly. The data well protected for personal use and makes the data processing very fast.

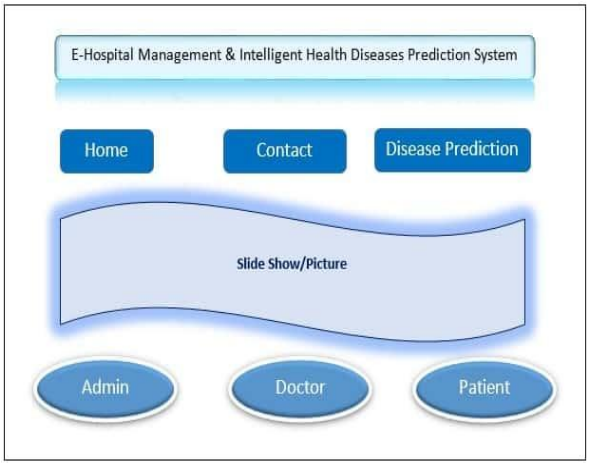

Figure 2: Home Page Design (block diagram)

Data mining technique has used in our Intelligent Health Disease Prediction System (IHDPS). Data mining is the process of discovering patterns in large data sets involving methods at the intersection of machine learning, statistics, and database system. The practice of examining large pre-existing databases in order to generate new information. It is the process of sorting through large data sets to identify patterns and establish relationships to solve problems through data analysis. Data mining tools allow enterprises to predict future trends.

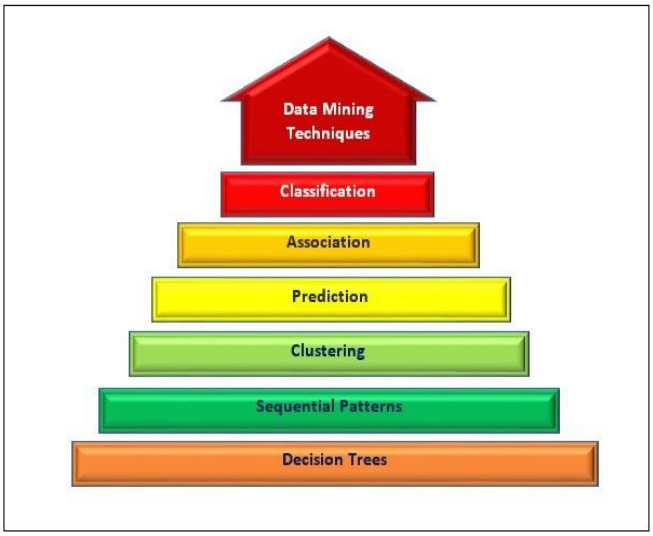

Figure 3: Data Mining Techniques in IHDPS

III. Implementation

3.1 Home Page Design

Our home page has designed by using HTML, CSS, JavaScript, jQuery and bootstrap. This paper is mainly a web application. Here html has used for basic design and CSS for adding style on the site. JavaScript is as scripting language and jQuery is using as JavaScript'slibrary function. At last, bootstrap has used for making the site responsive for all kinds of devices.

Figure 4: Home Page Design

3.2 Patient Login

Patient login form HTML and CSS has been used for designing and styling in the frontend. For backend, designing PHP has used and MySQL has used for the database designing. After login, the patient will get the dashboard in which there will be three sections. The first section called My Profile, second one called My Appointments and the last one is Book My appointment. The first section is for checking and updating the patient profile, second, one is for checking or viewing the appointments and last one is for booking the appointment.

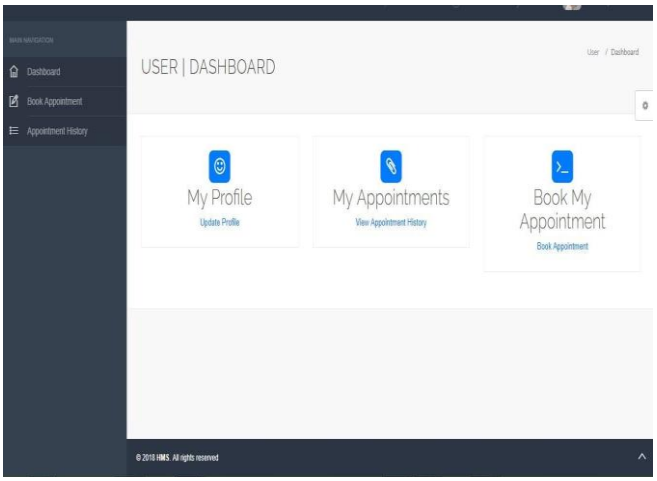

Figure 5: Patient User Dashboard

3.3 Doctor Login

After login, the doctor will get the doctor dashboard. There will be two sections in the dashboard. The first one called my profile for updating the doctor's profile and the second one called my appointments for checking how many appointments the doctor got and he or she can manage the appointments.

3.4 Admin Login

After login the Admin will get the Dashboard in which there will be three sections. 1st one called, Manage Patient from this section the admin will be able to see the total number of patients who are using this system. The second one is Manage Doctors from this section the admin can control the doctor's database and their activity. The third one called Appointments from a section the admin will check the appointments and manage those appointments.

IV. Intelligent Health Disease Prediction System (IHDPS)

4.1 Home Page

This is the main section for the health prediction and finding approximate disease and getting specialist suggestion and getting appointment. In this section, the patient will get the login form. Who are already registered can login here and new users will get a registration form for creating user ID and Password. HTML, CSS, PHP and JavaScript has usedfor designing.

4.2 Check Your Symptom

This is the second step of our prediction system. In this section, the patient will get some questions about the symptoms of diseases. For designing this section HTML, CSS, PHP and JavaScript has used. This is the main database for the Intelligent Health Prediction System (IHDPS). The entire information and data are stored here and all the data havetransferred to the management system. This database has used for storing and identifying the diseases.

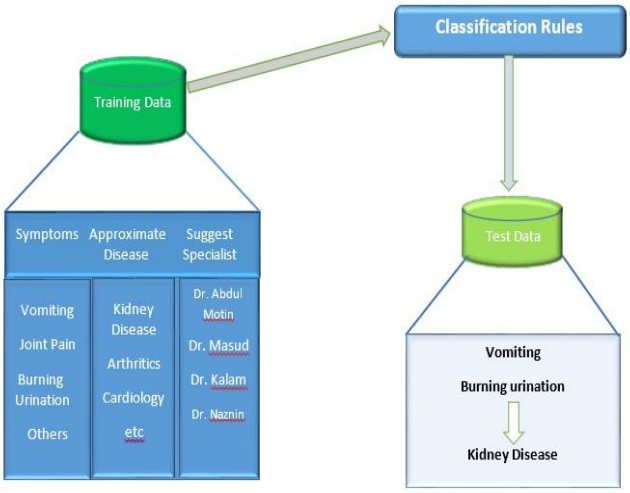

Figure 6: The Working procedure of SQL database using data mining technique

V. Testing Result

Our system IHDPS shows the approximate disease name and that disease related specialist's list. Those disease are not the exact disease of that patient, it is an approximate disease, which haspredicted by the software by using the answers of the questions related to their disease symptoms, which has given by the patients first level headings. After getting the specialist's list, the patient will get option for Appointment and the contact details of the doctor and the patient will be able to check his or her appointment histories.

Figure 7: Prediction System Result

VI. Conclusion

Since the Hospital Management System is essential for maintaining detail about the Doctor, Patient, Hospital staff etc. However, the Intelligent Health Prediction System (IHDPS) by using Data Mining Technique is the new concept in hospital management system. We understand that by using Hospital Management System paper, the work became very easy and we save lot of time. Hospital administrators would be able to significantly improvement the system. This would enable to improve the response time to the demands of patient care. This system helps the patient to find their approximate diseases at a very short time and show the results of specialists related to the patient's disease, which is very helpful for the wellbeing of our society. This system will bring a revolutionary change in the online Hospital Management System. This technique will bring changes in the concept of giving and taking appointments. Online access to the software allows the doctors to view reports and visit details of patients even by sitting at home. It will be also helpful for those who does not want to spend much time on the purpose of treatment. They can find out their problems from anywhere and anytime.

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