

WECARE - A SUPPORT SYSTEM TOWARDS IMPROVEMENT OF HEALTHCARE FACILITIES

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Abstract—

Nowadays most medical organizations provide more reliable facilities regarding medicines, oxygen and other requirements in these organizations. Our System is going to make these facilities providing procedures more easy and effortless. The system will contain admin and user side views, the admin can manage all users like update information, delete, and add users. The user represents a Doctor and Patient. This system will enable us to manage and record the activities like patient details, doctor details. The system generates a number of reports. Prepare reports of patients seen by the doctors as well as upcoming visits to a doctor. The objective of this system is to register and store patient, doctor details and to also fetch these details when required, and the function is to also operate these information meaningfully. The System takes input as patient details, diagnosis details and the output of these details can be seen on the screen as and when required..

Keywords—Appointments, Prescriptions, User-Friendly, Interface

I. INTRODUCTION

The physical handling or non-automatic handling of the records is very much time consuming and requires a high level of accuracy as a result it is highly prone to error. One of the objectives of this system is to automate or make online the process of day-to-day activities like Admission of New Patients, Discharging of Patients, Assigning a Doctor, and finally computing the bills etc.

It has three levels:

ADMIN: Managing Patients, managing doctors, and managing appointments.

DOCTOR: View patients' appointments, give prescriptions, view patients' medical history.

PATIENT: Can easily find doctors, applied for appointments, view appointments, view prescriptions and view bill details.

The system performs each Hospital's activity in a computerized way rather than manually also providing a paperless hospital facility up to 90%. The website has the feature to provide a unique id to every patient and store the details of each and every patient and the hospital staff automatically. The WeCare System can be entered using a username and password and can be accessed by an admin as only they can manipulate secured data in the database. These

data can be retrieved easily by the patients and doctors efficiently.

The data are also well secured for personal use and the data manipulating features of the website are also very fast.

II. RELATED WORK

In Paper [1] K. Saimanoj et al. defined the facility to store the patient's record including disease history and reports in an easy manner which can be very useful to eliminate the manual handling of papers. This paper also informed about accurate graphical user interface. The journal shows management of different details of doctors, patients, staff, medicine, etc. in a good manner. Different features can be acquired such as patient registration, report sharing, sharing prescriptions, etc. which are not present in the proposed system depicted through this paper. We came to know about division of modules through this paper where patient and the doctor modules have been created in the system proposed.

In Paper [2] Kumaran S. et al. have described how to implement search availability of a doctor and the details of a patient using his or her unique ID through their paper [2]. The interface that is presented in this system is user friendly and easy to use for normal users. This paper also gives us the idea

of securing the data and processing the data in a very fast way so that time constraints can be reduced in a great way. This journal gives us some information about the difficulties faced in the Hospital Management System for its implementation in an organization. The paper proposed to us different management features of a hospital which guided us the way to give different functionalities in our system in a proper and efficient way.

Ilo S.F et al. [3] provides an efficient web design for betterment of medical research and analysis. Relational Database Management System(RDBMS) is used to design databases organizing large amounts of data and defining the relationship between the datasets in a consistent and understandable way. This system also allows the admin to make changes in the database which makes it user friendly. This system also generates test reports, provides prescription details including various tests and medicines prescribed to patients by doctors. It also provides medical details and billing facilities on the basis of a patient's status. The software takes care of all the requirements of a normal hospital and is capable of providing an easy and effective storage of information related to patients that come up to the hospital.

In Paper [4] solved the problems associated with the existing manual system. In this proposed system, security is also enhanced since access to the system requires authentication. It developed an online automated system that is used to manage patient information and its administration. It uses various tools to implement the system: Hypertext Markup Language (HTML), Cascading Style Sheets (CSS), Hypertext Preprocessor (PHP), and My Structured Query Language(MySQL). This system was tested using the information collected from a real hospital in Nigeria which makes it a real-time system. The proposed system is divided into three modules into Receptionist's module, Doctor's module and Pharmacist's module. All the user input is verified and validated by the system and if any error is detected then it will be notified to the user.

In paper [5] it is introduced to secure records of a patient's medical history and also search for nearest blood banks and hospitals. It provides doctors a list according to their specialization domain. By using a location track it will correctly find the nearest hospital, Medical and blood bank. There is an option for sign up by giving the correct user id and password. User data is fetched by server side then it stores all information at SQL database system. Database management is done at the back end.

In Paper [6] This intelligent hospital information management project was developed to help the patient and to assist him or her. Thus the patient is able to connect with the best doctors he/she wants. The patient can also look upon appointment times, relevant medical tests and medicine about his/her medical situation. The prototype also provides software assistance to the doctors which consequently help them to diagnose the disease faster and easily by using the program's algorithm and mechanism.

Nidhi Kushwaha, et al. [7] proposed how to retrieve information like to find a particular patient's appointment, prescriptions, doctor details and invoice details. This paper also showed the idea of selection of doctors based on a patient's disease symptoms. And further collects these requirements and gives suitable medication and treatments to the respective patient. The journal also gives some more descriptions about how the system involves reasonable cost, reduces manual effort as well as time of its user. The paper also discussed covering a wide range of hospital management processes.

In paper [8] Harpreet Kaur et al. depicted some ideas about computerizing the records of all doctors working in the organization as well as their respective salaries. The system designed has proper authorization and security of data collected in the database. The paper features eradication of redundant data in the database. The database collected in the system design is kept on a central server, which collects the data in a relational model and each and every information is stored at its right place. The paper also shows features of the system like ease in the handling of processes like accounts management, invoice management etc.

In this paper [9] the system has large computerized databases which are intended primarily for communication and storing health and different administrative information. The proposed system also provides a diagnostic support system and intervention for patient care activities. The project also provides the stats about the number of in-patients in the hospital at that particular time and what they are being treated for. The paper gives us an idea of past medical records of different patients such as diagnosis reports, drug prescriptions and usage in a very efficient way.

The proposed system in paper [10] aims to fully automate the operational things carried out in a hospital and also to maintain the managerial system in the hospital. The system expects to achieve good computing skills for the staff and management of the respective hospital. The system has been designed from observations and many case studies and thus providing a good cost effectiveness. The project aims at accurate information on management issues. The idea of dividing the project into different modules has also been implemented.

Paper [11] motive is to do paperless work in hospitals. Design and implementation of an online advanced hospital management system using modern technology is Eco-friendly in use. The proposed system gives fast response to search engines with high security and privacy. This paper has four modules which are Administrator Module, Reception Module, Treatment Module and Laboratory Module. This system also reduces the time taken for communication and transmission as all the information saved in a database so all the staff members of the hospital share the same database, so there is no need to pass the information to each other and all the staff members inside the hospital could get up to date information from the sharing database. The paper also shows how easily doctors can fetch the past records of the patient and give advice or give proper treatment on the basis of past records.

In Paper [12] The System proposed is the system of Healthcare Information (HIS) which is a computer based software developed to retrieve managerial information and which Healthcare professionals can carry out efficiently and effectively. The website is designed to retrieve all information which is stored in digital form and to locate the nearest hospital for the patients in emergency which will ultimately make the arrival very faster and thus will provide results perfectly. The main aim of this system was to gather the data in an effective manner and to design it keeping medical emergencies in mind.

III. Methodology

Although many works have already been done in this field, we have tried to simplify all those works keeping in mind the customer view and tried to give a high percentage control of the system to the customers. And for doing this and providing a user friendly interface to the doctors as well as customers we have used the basic concepts of HTML, CSS, PHP and MySql.

So, to design an efficient interacting webpage we have used HTML and CSS and for the backend purpose and database management we have used PHP and MySql. The target of this system has always been managing the workload of a hospital fraternity and making it scalable in use in recent future. Keeping everything simple using this system we are stepping ahead to make the Interface and functionality more interactive and flexible.

The most important step before beginning to work on a project is to plan out everything in detail. And for this Use Case Diagrams and Data Flow Diagrams are the simple and logical way to showcase and make a blueprint of the system.

The use case diagram depicts all the interaction going on the system overall when a patient or a doctor or an admin uses the system.

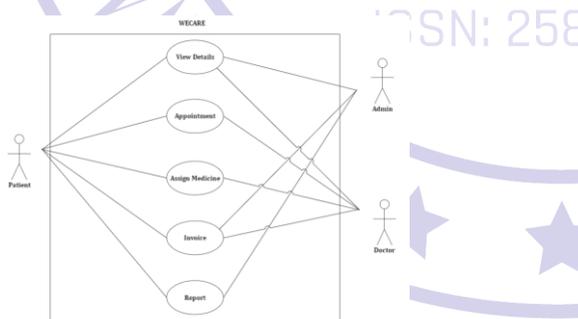


Figure 1: User Case Diagram of WeCare

Data Flow Diagrams are showing all the processes, functions and features implemented in this system.

The Level 0 Data Flow diagram shows the external behavior or the characteristics of the system.

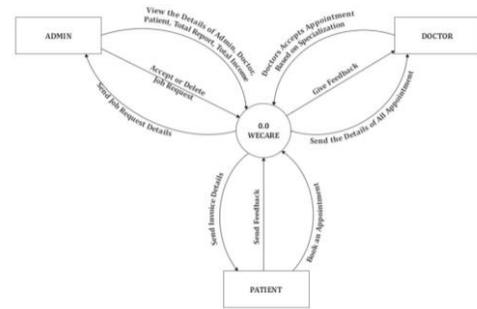


Figure 2: Data Flow Diagram of WeCare (Level 0)

The Level 1 Data Flow diagram summarizes the database management as well as the functionality of the design when a patient and a doctor uses it.

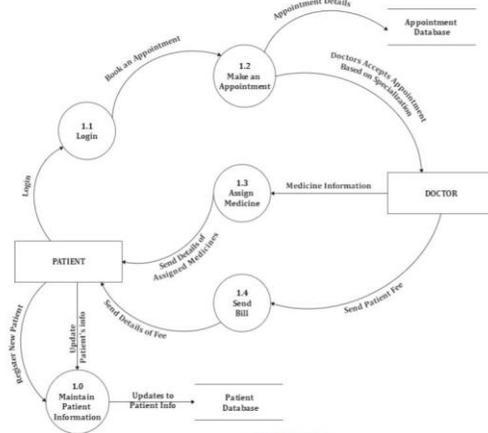


Figure 3: Data Flow Diagram of WeCare (Level 1)

The Level 2 Data Flow diagram represents all the interactions between all three entities of this system and also features how the system stores the data required in the database.

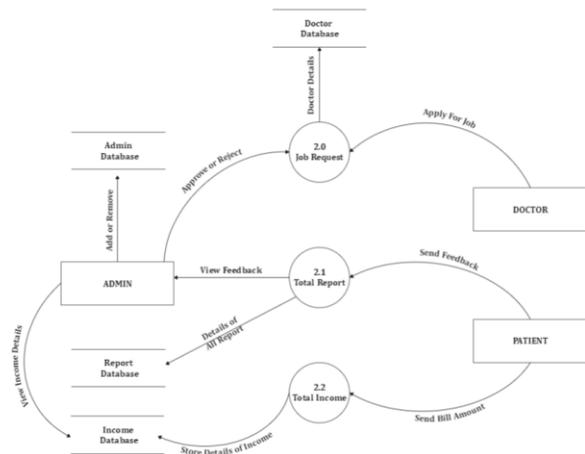


Figure 4: Data Flow Diagram of WeCare (Level 2)

III. RESULTS AND DISCUSSION

Thus we have developed a fully functional website which is very user friendly and is able to maintain the records and

retrieve them very efficiently. We have tried to use all the learnings in the best possible way and also implemented it on this system.

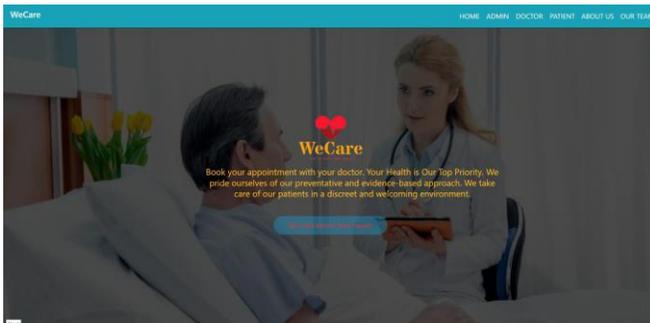


Figure 5: WeCare Homepage



Figure 6: Admin Dashboard



Figure 7: Doctor Dashboard



Figure 8: Patient Dashboard

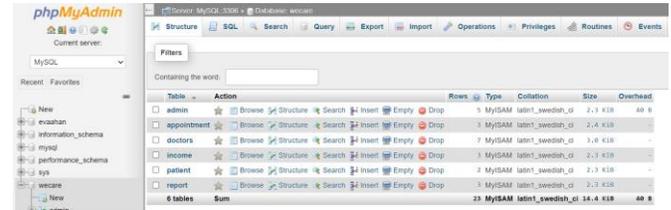


Figure 9: WeCare Database

IV. CONCLUSION AND FUTURE SCOPE

There is always a need for a system that will perform online searching of doctors and apply for appointments. This system will minimize the manual operations required for maintaining all the records. And It produces the various reports for the purpose of analyzing these reports. Basically, this project has a wide scope, as it is not intended for a particular organization. This project is going to develop a whole website, which can be used by any medical organization as well as the general public. Also this system is going to provide a huge amount of summary data.

Since one of the limitations of this system is that, it does not have an online payment gateway, so we will be adding this feature in future.

Also a proper billing system will be added in a later version of the system.

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