

Hospital Management System

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Abstract— HOSPITAL MANAGEMENT is an integrated Hospital Information System, which addresses all the major functional areas of modern multi-specialty hospitals. The HOSPITAL MANAGEMENT enables better patient care, patient safety, patient privileged, coherence, reduced costs and better management information system. It provides easy access to hypercritical information thus enabling the management to take better decisions on time.

This journal deals with processing of each and every department in the hospital. This journal sincerely aims to reduce the manual processing of each department.

The Scope of the journal takes care of the details of each and every department. These details gives the doctor, staffs, specialists and patient details together with their salary, attendance, doctor's selections and the billing system. The details of Doctor and staff help the hospital to preserve the record of every person. Their attendance details help them to know about their perceptive presence while salary is calculated.

Index Terms— HMS, Clinical Process Analysis

I. INTRODUCTION

The journal Hospital Management system encompasses enrollment of patients, storing their details into the system, and also computerized billing in the pharmacy, and labs. The software has the potential to give a distinctive id for every patient and stores the details of every patient and the staff instinctive. It encompasses a search facility to know the current status of each room. User can search obtainable of a doctor and the details of a patient using the id. The Hospital Management System can be invaded using a username and password. It is approachable either by an administrator or receptionist. Only they can add data into the database. The data can be retrieved easily. The interface is very user-friendly. The data are well protected for distinctive use and makes the data processing very fast. Hospital Management System is powerful, adaptable, and convenient and is assemble and developed to deliver real understandable satisfaction to hospitals. Hospital Management System is designed for multi speciality hospitals, to cover a wide diversity of hospital administration and management processes. It is an non-segregated termination Hospital Management System that impart related information across the hospital to support constructive decision making for patient care, hospital administration and critical financial accounting, in a absolute flow. Hospital Management System is an application software which is defined to progress the

quality and management of hospital management in the sector of clinical process exploration and pursuit establish costing. Hospital Management System enables you to develop your organization and enhance its effectiveness and quality of work. Managing the key processes efficiently is critical to the success of the hospital helps you organize your processes.

II. EXISTING METHODOLOGY

In existing work there are multiple log-in's ,which ever may be interrupted by any of the admins since there are having common admins.

There are security issues due the several admin's.

A. DISADVANTAGES OF EXISTING SYSTEM

A bit of miss-communication occurs due to common log-in.

→Miss matching of reports occurs at the time of delivery to patients.

→Wrong estimation of appointments to the patients.

III. PROPOSED SYSTEM

The proposed system is an approach to software development under which requirements and solutions evolve through the collabrative effort of self-organizing and cross –functional teams and their customers or end users.

A. ADVANTAGES OF PROPOSED SYSTEM

These services are to be provided in an efficient, cost effective manner, with the goal of reducing the time and resources currently required for such tasks.

B. BLOCK DIAGRAM



Fig.1. Block Diagram

C. METHODOLOGY

This HMS is based on the database, object-oriented programming language and networking techniques. My SQL (Structure Query Language) is used in areas where keeping the records in the database is necessary, this system uses ANGULAR JS as the front-end software which is an

object-oriented programming technique and has connectivity with My SQL, the back-end software.

D. Angular Js

Angular Js is a Javascript open source front-end framework that is mainly used to develop single page web applications(SPAs).It is a continuously growing and expanding framework which provides better ways for developing web applications. It changes the static HTML to dynamic HTML. It's features like dynamic binding and dependency injection eliminates the need of code that we have to write otherwise. Angular Js is rapidly growing and because of this reason we have different versions of Angular Js with the latest stable being 1.7.7 . It is also important to note that Angular is different from Angular Js. It is an open source journal which can be freely used and changed by anyone. It extends HTML attributes with Directives, and data is binded with HTML.

E. Usage

Easy to work with: All you need to know to work with Angular Js is basics of HTML,CSS and JavaScript, not necessary to be an expert in these technologies.

Time saving: Angular Js allows us to work with components and hence we can use them again which saves time and unnecessary code.

Ready to use template: Angular Js is mainly plain HTML, and it mainly makes use of the plain HTML template and passes it to the DOM and then the Angular JS compiler. It traverses the templates and then they are ready to use.

F. Key Features

1) Model View Controller (MVC):

An architecture that is basically a software pattern used to develop an application. It consists of three components in general, they are:

Model: used to manage the application data.

View: responsible for displaying the application data.

Controller: main job is to connect the model and the view component.

Normally when we talk about MVC architecture, we have to split our applications into these three components and then write the code to connect them. However, in Angular Js all we have to do is split the application into MVC and it does the rest by itself. It saves a lot of time and allows to finish the job with less code.

2) Data Model Binding:

Data Binding in Angular JS is a two-way process, i.e the view layer of the MVC architecture is an exact copy of the model layer. You don't need to write special code to bind data to the HTML controls. Normally in other MVC architectures, we have to continuously update the view layer and the model layer to remain in sync with one another. In Angular Js it can be said that the model layer and the view layer remain synchronized with each other. Like when the data in the model changes, then the view layer reflects the change and vice versa. It happens immediately and automatically which helps in making sure that the model and the view is updated all times.

3) Templates:

On the main advantage of using Angular JS is how it

makes use of the templates. Normally what happens is that the templates are passed by the browser into DOM, then DOM becomes the input of the Angular JS compiler and then Angular JS traverses the DOM template for rendering instructions which are called directives. The other siblings of Angular JS work differently as they make use of the HTML String whereas Angular Js does not manipulate the template strings. Using the DOM is what gives us the privilege to extend the directive vocabulary or even abstract them into reusable components.

Unit Testing ready:- The concern of Google's designer was not only developed Angular but also developed a testing framework called "Karma" which helps in designing unit tests for Angular JS applications.

4) Mysql

MySQL is a fast, easy to use relational database. It is currently the most popular open-source database. It is very commonly used in conjunction with PHP scripts to create powerful and dynamic server-side applications.

MySQL is used for many small and big businesses. It is developed, marketed and supported by MySQL AB, a Swedish company. It is written in C and C++.

a) Features

MySQL is an open-source database so you don't have to pay a single penny to use it.

MySQL is a very powerful program so it can handle a large set of functionality of the most expensive and powerful database packages.

MySQL is customizable because it is an open source database and the open-source GPL license facilitates programmers to modify the SQL software according to their own specific environment.

MySQL is quicker than other databases so it can work well even with the large data set.

IV. EXPERIMENTAL EVALUATION

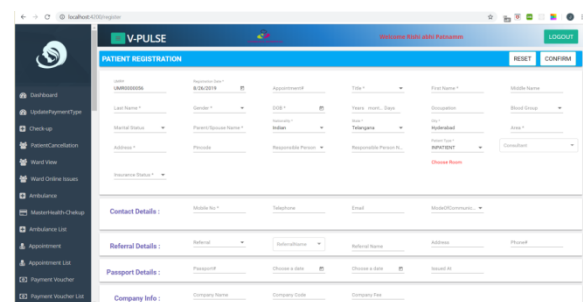


Fig.2. Patient Registration

This Patient Registration module registers patient details based on general and demographic information. Patients are allocated a Unique Health Identification Number (UHID) and discount cards at the time of registration.

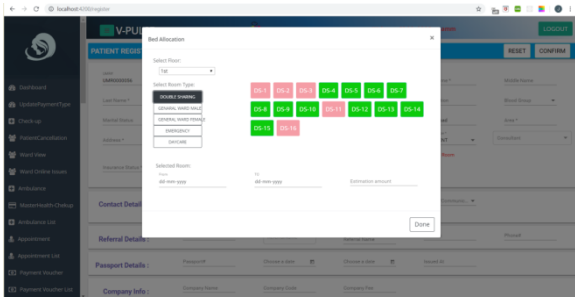


Fig.3. Bed Allocation

The bed management module maintains the record of bed occupancy status at all times. It facilitates the estimation of appropriate waiting time for patients and helps in reducing the bed turnover time which is very essential for optimization of revenues. It also provides statistical information regarding the occupancy status of a bed over a period of time.



Fig.4. Existing Patients

Consulting Appointment Management Patients reach hospitals either through direct walk in or through a reference from referral hospitals. Using this module, appointments can be issued in advance for new patients as well as for follow-up patients.



Fig.5. Inpatient List

This inpatient module commences when the patient is being registered and allotted a bed in the ward. It deals with the complete treatment and services provided to the patient during his/her stay in the hospital.

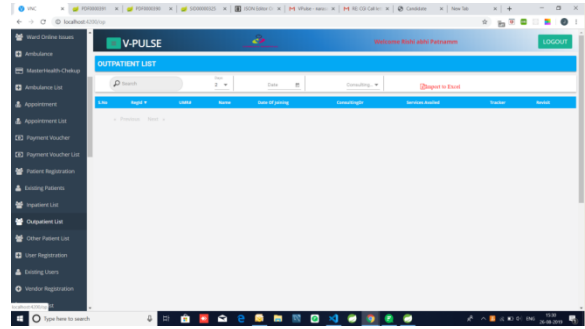


Fig.6. Outpatient List

This outpatient module deals with recording the patients' basic medical treatment details and depends on other modules for acquiring their registration details, booking appointments for consultation, test appointments, report viewing etc.

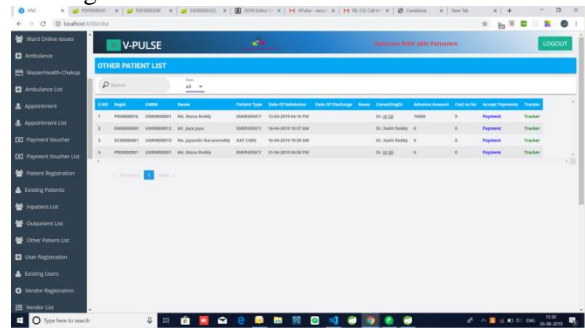


Fig.7. Other Patient List

V. CONCLUSION

Hospital management software is software meant to computerize the day to day average small hospital management activities and capable of providing easy and very effective storage information including patient registration, patient medical records, doctors and nurses information. Test reports, medication prescription details which include diet advice can also be performed by the system. The billing facility of either inpatient or outpatient is also an attribute of this software and most importantly, a backup facility is included in the software in case of unexpected crash. Understanding the complexity of software development process and life circle was quite challenging and demanding, therefore a lot of man power, coding and research were done for this journal to be completed. The main scope of this journal is to develop complete package Hospital management software for Rainbow Specialist Medical Center, which was one of the reason development and de-signed took so long but what is shown in this thesis is limited to few modules because it is contract between me and the company. At the beginning of this journal, everything look really simple and easy but as time went by, it was realized that there is more to the development of the software especially the coding part, though at the end of it all it was worth it because the result is satisfying because the main objective was realized There are still limitations to the

development of this software because at the moment, the software is stand alone and cannot communicate with other another computer from another branch of the hospital. Improvement is still needed to further enhance it so that in future it can communicate with other computers which have same software installed on them. Furthermore, at the moment the response of the software is delayed due to some technicalities that cannot be resolved at the moment due to time constrain of this the thesis. It must be stated at this point that the journal is still on-going and many bugs are being fixed as testing goes on.

REFERENCES

- [1] Elmarsi and Navathe, Fundamentals of Database System (Third Edition), Addison Wesley.
- [2] Ian Somerville, Software Engineering, Third Edition, Pearson Education.
- [3] Ali Bahrami, Object-Oriented System Development, Third Edition, Tata McGraw Hill Edition.
- [4] AngularJS Essentials, Rodrigo Branas.
- [5] AngularJS Web Development cookbook, Matt Frisbie.
- [6] MEAN Web Development, Amos Q.Haviv