SMART HOSPITAL MANAGEMENT SYSTEM

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ABSTRACT

A Smart Hospital Management System offers a viable solution for managing patients in such scenarios. It relies on hardware components or does not provide a comprehensive end-to-end solution that covers the entire patient workflow. Introducing a Smart Hospital Management System that can It provides multiple interfaces for token generation and consumption on mobile devices integrated with hospital service counters and uses intelligent algorithms for token generation and allocation. This comprehensive solution enables streamlined queue management across multiple hospital areas of care using a single patient token, improving the patient experience and enabling hospital administrators to track key performance indicators. It also helps you track and optimize. We present the architecture and operational design of this system, how the system can be used in hospital to handle all the hospital operations significantly.

General Terms:

Dataset, Data Sorting Algorithms.

Keywords :

Smart hospital management, billing management, report management, laboratory management, OPD management

INTRODUCTION

A hospital management system offers the benefits of streamlined operations, enhanced management and control, superior patient care, tighter cost control, and increased profitability. Powerful, flexible and easy to use, HMS is designed to bring real benefits to hospitals. More importantly, it's backed by reliable and dependable support. The "Hospital Management System" project is based on database, objectoriented and network technologies. We use MY SQL software which is one of the best and easiest software to store information as there are many areas to store records in database. This project uses JAVA as the back-end software.

This is object-**oriented** programming and connected to MY SQL. The Hospital Management System is specifically designed to meet the specific needs of medium and large hospitals around the world. All necessary modules and functions have been developed specifically for your requirements. The entire application is web-based and built on a 3-tier architecture using the latest technology. A robust database for applications makes them easier to use and extensible. The package is highly customizable and can be modified according to your needs and requirements. Long-term research into hospital functions and their specific needs has resulted in excellent form, both technically and in terms of usability. It covers all the modules you need, including

patient registration**,** medication details, doctors**,** wards**,** administrators**,** stores**,** patient

appointments**,** bill payments**,** record changes and discharge details**.**

Related Work

Patients often have to queue at various hospital service areas, such as registration, labs, and bill payment counters. A Queue Management System (QMS) offers a viable solution for managing patients in such scenarios. or does not offer a comprehensive end-to-end solution that covers the entire patient workflow. Introduce queue management system.

1]. "Mobile Enhanced Smart Queue Management System" for Hospitals

The first component responsible for token generation for queues is via an Androidbased application running on the patient's mobile device or Android-enabled on the hospital premises. electronic kiosks can be installed. By supporting an intelligent token generation algorithm, the app enables multiple meter categories and servicebased token generation. The second component is the information display infrastructure. It basically consists of a set of services that are called through a socket-based infrastructure that can be rendered in her web pages in the browser running on your smart TV. These display units are Patient Information Displays maintained under 422 Authorized Licensed Use Limited to: University of Liverpool. Downloaded from IEEE Xplore on 5 Sep

2020 14:06:33 UTC. Restrictions apply. each service desks. The third component is a provided token consumption interface integrated with her HMIS module for the specific service where the QMS is configured and deployed. This paper describes a mobile-enhanced intelligent QMS that can be used for end-to-end patient management in hospitals. The developed system is generic for integration with operational HMIS and provides platform-independent interfaces on

mobile phones, desktops, and smart TVs for counter information display.

2]."Hospital Management System"

Login & Registration: First, you need to register your user type. After registering, you can log in to access all features of this website.

Profile Management: Profiles can be managed by editing. Feedback and Complaints: Allows you to submit feedback. You can file a complaint to improve our service. City Event Management: Find information about city events place. Managed by an In one administrator. Posted/deleted/modified by admin. Message Management: Users can communicate by sending messages on this website. Search Administration: Search for individuals as needed. Makes searching efficient and easy. Administration: Administrators can view details for all user types. Also, they will be able to tell them. The admin will verify the trainer before enabling login. Coach Management:

Coach manages details (address, teaching interests, phone number, online/offline classes). All trainers are verified after the certificate is verified by the portal administrator.

Methodology

There are various modules identified, a patient module , doctor module, staff module etc. The Patients module is used to book appointments, payments, view reports, and view medical and payment history. The patient module also contains the disease prediction section where the patient will be treated, and the doctor module contains the user interface (UI) for staff to access the database. In the Doctor module he has four types of users. They are administrators, physicians, laboratory staff, and pharmacy staff. They all have hierarchical access to the database. Administrators are responsible for adding users to the database and granting access as specified. Users with

doctor access can view patient details, administer medications, and review assigned tests. Lab employees are responsible for the payment area and reports. Pharmacy staff can add or remove drug details and ship drugs based on payment details.

Dashboard

Total Count OPD/IPD

This section includes the list of the doctors and their schedules. It also includes doctors' emergency numbers. The doctor can check his schedule and that of other doctors too.

Department List

In department you can add ANY number of departments present in your hospital for e.g., dental department, heart specialist, eye specialist and many more.

Diagnosis

We can add all type of diagnosis which are required for report. This diagnosis will come as you type the name.

Bed Manager for IPD

Using HMS one can quickly check the availability of rooms/beds so that the receptionist can adjust transfer of patients from one ward to another or allot the bed to the new patient.

Doctor List

It includes names and timings of the nurses and ward boys and Doctors on duty with their respective ward numbers.

GOB (General Order Book) D-GOB

Department wise entire data of patient is managed from the first investigation till the patient is discharged.

Pharma

The entire pharma or store is managed in the software like, what quantity of medicine is given, what is available or what tablets are there in store, how much is given etc.

Report

All the necessary reports for example, the below reports are managed in software.

- Department wise OPD/ IPD report.

- OPD Case Paper / IPD Case Paper.

- Date wise OPD/ IPD report.

- Gender wise OPD/ IPD report.

- Date wise Investigation Report.

- ANC Report.

- Month wise D-OPD/D-IPD report.

- Month wise D-Occupancy Report.

- Physiotherapy Report.

Billing

A separate automated section is meant for billing purposes. HMS helps to sum up all the expenses of a patient at one time and produce a complete bill at the end of the consultation or at discharge. This saves time and effort for each department as they need not produce separate.

SYSTEM REQUIREMENTS :

1. Software Requirements:

1. Operating system : Windows 10/11.

2.   IDE Tool : VS Code , IntelliJ IDEA ,etc.

3.   Coding Language : Java 8 , React.js

2. Hardware Requirements:
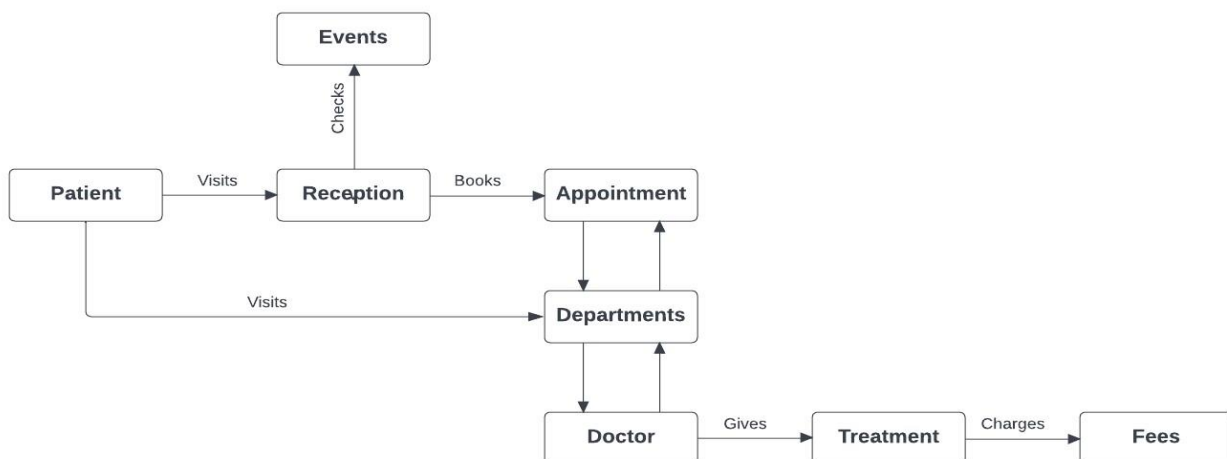
1. Processor : Intel i3 or higher 2.

RAM : min. 4 GB or higher.

3. Hard Disk Drive : 20 GB (free).

4. Peripheral Devices : Monitor, Mouse and Keyboard.

CONCLUSION

This hospital management system is very reliable and has been proven in many stages. All basic hospital necessities are in the hospital, fully managed, and can also store a large

Architecture of Smart Hospital Management System

amount of data.

There are many options for finding patient details, billing opti ons, creating test reports, and more. So, it's an important system even for   modern times.

This project has been a rewarding experience in many in the following areas:

a)   Gained insight into how hospitals work. This represents a typical real-world situation.

b)   I have a better understanding of the database design because ways. Work throughout the project has enlightened us   the database design must be followed closely to produce the final report.

c)   Planning a project and sticking to its schedule creates a strong sense of time management.

d)   Developed a sense of teamwork and greatly increased confidence in handling real projects.

e)   Initially had problems with validation, but after discussion, validation should be implemented

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