Survey paper on hospital management system

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ABSTRACT

Hospital Management System provides the benefits of streamlined operations, enhanced system, control, patient care, cost control and improved profitability. HMS is easy to use and is designed and developed to deliver real conceivable benefits to hospitals. The project "Hospital Management System" uses JAVA as the front-end software which is an Object Oriented Programming and has connectivity with MySQL. All the required modules and features have been particularly built to just fit into the requirements. Entire architecture is Desktop based and built using the latest technologies. It covers all the required modules right from Patient Registration, Medical details, Doctor, Patient appointment, Bill, Record modification, etc. Human Body is a very complex and sophisticated structure and comprises of millions of functions. All these complicated functions have been understood by man himself, part-by-part their research and experiments. As science & technology progressed, medicines became an integral part of the research. Gradually, medical science became an entirely new branch of study & research. As of now, the Health Sector comprises of Medical institutions i.e. Hospitals, clinics, etc. Thus the Health sector aims at providing the best medical facilities to the common man.

Keywords: Object Oriented, Enhanced, Java, Mysql, Medical, Technology, Patients, Health Sector

1. INTRODUCTION

The purpose of the project entitled as "HOSPITAL MANAGEMENT SYSTEM" is to computerize the Front Office Management of Hospital to develop software which is user friendly, simple, fast and cost-effective. It deals with the collection of patient's information, diagnosis details, etc. Traditionally, it was done manually. The main aim of this project is to make Hospital management a paper-free work. The main function of the system is to register and store patient details and doctor details and retrieve these details as when required, and also to manipulate these details meaningfully system input contains patient details, diagnosis details; while system output is to get these details onto the screen.

It has receptionist module which takes responsibility to register patients with their details and take appointment from doctor and manage them respectively. Similarly, the Pharmacy module is able to login itself and view patient's prescription given by the doctor and provide them the required medicines accordingly.

Entire application is desktop based and will be built by using the latest technologies. This desktop application is more user friendly and expandable. The package is highly customizable and can be modified as per the needs and requirements of our client. Prolonged study of the functionalities of the hospital and its specific requirement has given it a wonderful shape in both technically and usability wise fashion.

Goals or Objectives:

- To computerize all details regarding patient details and hospital details.
- Scheduling the appointment of patient with doctors to make it convenient for both.
- The information of the patients should be kept up-to-date and their records should be kept in the system for historical purposes.

2. LITERATURE SURVEY

"International Journal of Healthcare Management (2021)" – The International Journal of Healthcare Management serves all those directly involved in, or concerned with, the organization, delivery, marketing and management of heath care services, at a strategic and operational level. It provides a peer-reviewed forum for the publication of briefings, discussion, applied research, case studies, expert comment and analysis on the key issues affecting the management and marketing of the sector. Healthcare providers exist in a turbulent political and social

environment with increasing demands being placed on them to pursue equality, quality, responsiveness, efficiency and affordability. Effective management and marketing of this sector is becoming an increasingly important area for the industry to address. As such, the Journal's scope addresses issues of concern to healthcare service providers- whether in the private, statutory or voluntary sectors – and seeks to cover the management and marketing of the full range of healthcare services. [1]

"Hospital management system using web technology (2020)" - This paper state that web-based technology offers many online services in almost every field. Every major industry is converting and establishing a digital front for all their major operations to get closer to the booming digital market. In today's world the information flow is very fast and redundant means won't add to the betterment of the individual or the organization that's using them. Online connectivity is now a must for all the well organized and well managed establishments. The paper describes an idea of such a web-based platform that eliminates the need of paper prescriptions in the Hospitals that proses E-Medical Management which will increase the efficiency of patient management, schedule management of the doctors and give universal access to the patient data anywhere in the hospital. [2]

"Hospital management and control system, Volume 7, 2020" – This paper informs the Network of Medical records has significant growth for rising patient demands, as well as providing medical professionals and personal with prompt quality & precision. Several indicators are essential for measuring efficiency of facilities like healthcare sector, and the effective application & usage of Patient management system is a key task. Patient information options were equipped upon industries associated with software & in most situations will have to be modified and in certain cases HIS needs to be created as specialized software dependent upon unique patient specifications. Research discusses evaluation & recognition of core E-HMS elements when their requirements & administration differ globally. The main success metrics of E-HMS / HIS are often approached through a bench-marking viewpoint. [3]

"HAMS: An Integrated Hospital Management System to Improve Information Exchange" - This paper describes that during ta situation of emergency, it is important for hospitals to be able to communicate with each other and with emergency care providers about their shortage or availability of resources in terms of bed and staff capacity. With this information, first responders are able to manage at their best the flow of patients and this improves the response time and the health services resilience during emergencies. As a consequence, effective management of emergencies and crisis depends on the knowledge of each healthcare facility of the status of its own resources and on timely information availability, reliability and intelligibility. [4]

"Hospital Management System, 2020"- This paper sort the details into the hospital management system. The software has the facility to give a search facility for every patients and the staff automatically. It includes the search facility to know the current status of each sector. It covers a wide range of hospital administration processes. Hospital Management System is a useful to improve the management of hospitals in the area of clinical process analysis and activity-based costing. It enables to develop organization and improve effectiveness and quality of work. [5]

"Review on Smart Hospital Management System technologies"- This paper explains about improving patient flow is a way to refine health services. In fact, an effective patient flow can improve the quality of services and the utilization of resources. A smart environment could facilitate the experience of individuals within a physical space, such as a hospital. Meanwhile, a smart healthcare environment could improve patient flow through an efficient scheduling policy and the utilization of healthcare resources by an optimized capacity plan. This paper can be loosely divided into four parts: First, we present a review on smart health systems in particular the infrastructure of the smart hospitals system. Then, we present the need for technology for smart hospital systems. In section three, we present some methods for analysis of smart hospital systems. Research Laboratory Smart Electricity & CT, SEICT, National Engineering School of Carthage, University of Carthage, Tunisia, Smart systems include functions of sensing, actuation, and control in order to represent and analyze a situation, and make decisions based on the accessible data in a predictive or adaptive manner, thus performing smart actions. In fact, a healthcare system is the organization of people, the health needs of target populations. [6]

"Hospital Management System (International Journal of Research in Engineering Application & Management)"- This paper is to computerize the Front Office Management of Hospital to develop software which is user friendly simple, fast, and cost-effective. It deals with the collection of patient's information, diagnosis details, etc. Traditionally, it was done manually. The main function of the system is register and store patient details and doctor details and retrieves these details as and when required, and also to manipulate theses details meaningfully. System input contains patient details, diagnosis details, while system output is to get these details on to the screen. The Hospital Management System can be entered using a username and password. It is accessible either by an administrator or receptionist. Only they can add data into the database. The data can be retrieved easily. The data are well protected for personal use and makes the data processing very fast. [7]

"Applications of Queuing Theory in Hospital Management System, Volume-9, 2020" – This paper contains the analysis of queuing system in hospital management is the mathematical approach to the analysis of waiting lines in any sitting where arrival. The goal of this paper explain the problem in their urgency of medical cases with respect to allocation problem of the patients and utilization the waiting lines. Assuming first service times first come first served queue discipline. [8]

"Cloud based Secure Multi Owner Hospital Management System, Volume-9, 2020"- Nowadays, in the Healthcare sector, digitalization is an essential part of the system. Technology has placed at the disposal of the healthcare community various potent tools to improve patient care. Since, e-Health Records are easily available to physicians, they can access complete medical histories of patients and make the well-considered medical decisions, Still, storing confidential health information to cloud servers is prone to revelation or stealing and necessitates the event of methodologies that ensure the privacy of PHRs. Existing hospital system does not contain multi-hospital appointment booking system. Proposed system overcomes certain drawbacks of existing system. The patients search nearest hospitals on the application and get number of nearest hospitals with their ratings reviews and waiting time. Patients send appointment requests to hospitals and get confirmation of the hospital through the message. Multiple doctors can share the same patients for treatment. [9]

3. PROPOSED WORK

A. *Flow of the System:*

Firstly, the Login system will be available for all three modules which are Doctor/Admin, Receptionist and Pharmacy. If the patient is new, the doctor will be able to enter medical record and if the patient is not new, then the doctor can see the medical history. After that, the doctor can add medical prescription according to the checkup performed. The role of receptionist is made available for patient's registration and then send patient to the doctor according to appointments taken. The pharmacy is available to check whether the medicines in the prescription are available or not. If yes, then provide medicines to patient and if not, then send medicine not available message. The message can be forwarder to doctor and doctor will have option to update the medicines in the prescription.
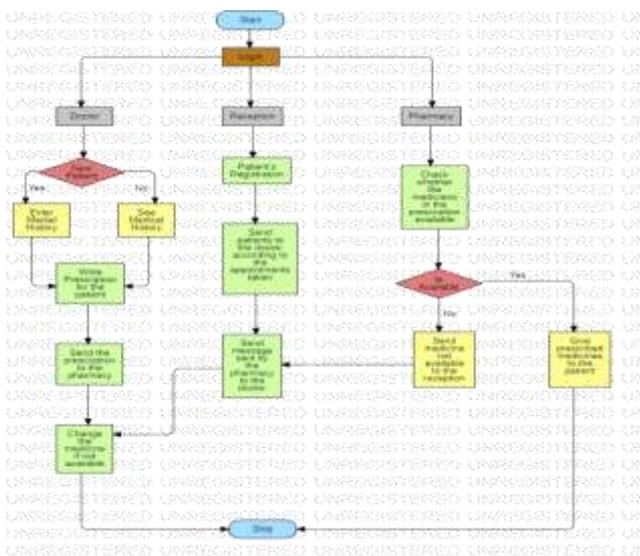

Fig. 3.1 Flowchart for Hospital Management System

B. *Functional Modules:*

The whole system is divided into three modules. They are Doctor/Admin, Receptionist and Pharmacy.

1) *Doctor /Admin:*

The doctor/admin module allows to manage receptionist, pharmacist. It will have all the authorities to login/register and check patient's reports and do necessary checkup followed with providing prescription.

2) *Receptionist:*

This module will be able to login itself and do registration of new patients and manage patients with approved appointments from the doctor.
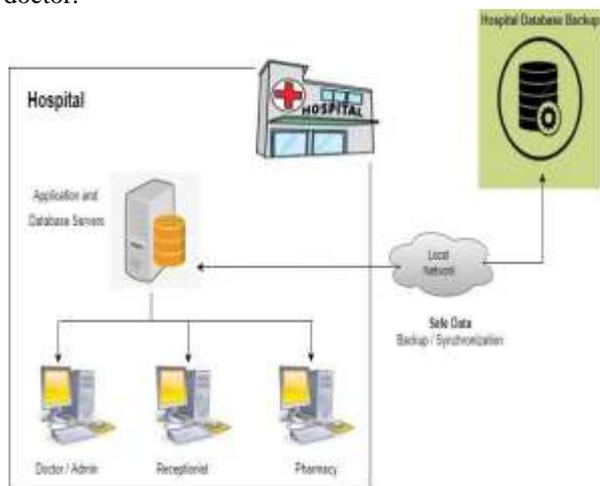

Fig.3.2 Architecture Diagram showing Modules Representation

3) *Pharmacy:*

This module mainly responsible for providing prescribed medicines and will be able to login itself to see patient's prescription and provide required medicines accordingly.

4. CONCLUSION

The project Hospital Management System (HMS) is for computerizing the working in a hospital. It is a great improvement over the manual system. The computerization of the system has speed up the process. In the current system, the front office managing is very slow and time consuming. The hospital management system was thoroughly checked and tested with dummy data and thus is found to be very reliable. The software takes care of all the requirements of an average hospital and is capable to provide easy and effective storage of information related to patients that come up to the hospital. This project achieves the main thing by allowing to give facilities like creating patient's profile, allowing appointments, etc. When a patient reaches medical, he/she gets his medicines without papered prescription since prescription is already stored in the database. Hence, patients need not to worry about carrying a prescription.

5. REFERENCES

[1] International Journal of Healthcare management, Volume 14, Issue 4 (2021). Research on health administration, healthcare system, e-Health, patient satisfaction, healthcare marketing, medical tourism, health policy and reform.

[2] Hospital management system using web technology ISSN 0193 4120, May 2020: Kotapati Saimanoj, Grandhi Poojitha, Khushbu Devendra Dixit, Laxmi Jayannavar

[3] Hospital Management and Control System ISSN 2515-8260, Volume 7, June 2020 (European Journal of Molecular & Clinical Medicine): Ashmita Gupta, Ashutosh Niranjan, School of Medical Sciences & Research, Uttar Pradedesh

[4] HAMS: An Integrated Hospital Management System to Improve Information Exchange, CISIS- June, 2020: Francesco Lubrano, Federico Stirano, Gluseppe Varavallo, Fabrizio Bertone, Olivier Terzo

[5] Hospital management System (International Research Journal of Engineering & Technology)- Volume: 07 Issue: 04 | April 2020: Pranjali Anpan, Roshni Udasi, Susneha Jagtap, Shon Thakre, Chalika Kamble

[6] Review on Smart Hospital Management System Technologies: RST Journal, Spring 2019: Najeh Lakhoua

[7] Hospital Management System – International Journal for Research in Engineering Application & Management: M. Sowmya, D. AnilChandraVarma, M. Sailaja, M. Venugopalarao, T. Prasanth

[8] Application of Queuing Theory in Hospital Management System (International Journal of Science & Research): Volume 9Issue 9 | September 2020: Balamurugan.S, Anitha.R

[9] Cloud based Secure Multi Owner Hospital Management System (International Journal of Engineering Research & Technology): Volume 9 Issue 1 | January 2020: Omkar Warghade, Archana Jadhav, Rupashree Padithurai, Swarali Joshi, Rutuja Patil