

A Study of Advanced Hospital Management System

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Abstract: Health care in India as in many other countries is confronted with growing demand for medical treatment and services. The medical records must appropriately have all of the patients' medical history. Physicians must maintain flawless records, because this document serves a number of purposes. This study on hospital management system is design to transform the manual way of searching, sorting, keeping and accessing hospital information (files) into electronic medical record in order to solve the problem associate with manual method. The existing system has been studied and hence computer based software was provided to replace this manual method. These computer based systems generate the patient report as the patient register in and out of the hospital. It also generate the information regarding the doctor, nurse allot to the patient. This paper generally looks for a more accurate, reliable and efficient method of computer to facilitate hospital record's keeping in General Hospitals to ensure efficient outcome that will lessen time consuming. The study proposed that the design of hospital management record will be a solution to the problem being experienced by the current manual method of keeping patient medical record.

Registration of patients, storing their details into the system and also computerized billing in the pharmacy, and labs. Our software has the facility to give a unique id for every patient and stores the details of every patient and the staff automatically. It includes a search facility to know the current Status of each room. User can search availability of a doctor and the details of a patient using the id. The interface is very user-friendly. The data are well protected for personal use and makes the data processing very fast.

Keywords: Advanced software in hospitals, managing data, administration, user friendly.

I. Introduction

Before computerized Hospital Management System came into practice, it was difficult to keep proper records of the daily activities of hospitals, patient information, maintenance schedule of equipments in the hospital, and how funds are being allocated and used. This resulted in waste of money, time and manpower. Hospital Management System is an information management system designed to help manage the various aspects of a hospital (administrative, clinical and financial). It helps in monitoring and controlling the hospital's daily transactions, as well as the hospital's performance. It also helps to address the critical requirements of the hospital. Hospital Management System enables access to the right information and automation of complex task, thereby allowing staff to spend more time caring for patients. Hospital Management System is custom built to meet the specific requirements of the medium and large size hospitals across the globe¹.

Current Management System

Most hospitals face several challenges with Hospital Management System because some of them are still using manual processes, while the ones that use the computerized method are also faced with the challenge of adjusting to it.

Such problems include:

- High cost of software development, deployment and improvement.
- Difficulty in migrating from manual processes, because both staff and patients are used to the manual processes and so are unable to speedily cope with the new system.
- Lack of IT friendly medical personnel is also presenting several challenges.
- Huge influx of patients visiting government hospitals makes the process of migrating to automated processes highly difficult. They do not have the patience to wait for registration and data entry and often fail to understand the functioning of automated processes².

Considering the above, there is need for the improvement of computerized hospital management system to such hospitals as it would help provide and customize clinical data, enable faster diagnosis with readymade templates, allow doctors to follow advanced medical prescription patterns, and so on.

Hospital Management System

Management has been defined as the process, comprised of social and technical functions and activities, occurring within organizations for the purpose of accomplishing predetermined objectives through humans and other resources (Longest, Rakich & Darr, 2000). Healthcare quality and patient safety are the common mantra of all primary and secondary health care providers. In hospitals, over the years, a variety of models and schemes for hospital interventions and development have been deployed (Friesner, 2009). Hospital Management System provides the benefits of streamlined operations, enhanced administration & control, superior patient care, strict cost control and improved profitability.

There are different modules in the process of Hospital Management System.

These include:

- Patient management,
- Services management,
- Appointment scheduling,
- Store management,
- Pharmacy management³,

Hospital Information systems are in high demand to handle increasing population needs and also aids the practicing doctors and hospital service and support staff with timely service and precision. There are varied metrics available to assess the performance of services like hospital industry, and the successful implementation and usage of Hospital information system forms a crucial role. Hospital information systems are available in the soft ware market which in most cases needs to be customized and in some cases HIS needs to be developed as a customized software based on specific hospital requirements (user requirements). The paper looks at assessing and identifying the key components⁴.

“Advanced Hospital Management System” includes Registration of patients, storing their details into the system and also computerized billing in the pharmacy, and labs. Our software has the facility to give a unique id for every patient and stores the details of every patient and the staff automatically. It includes a search facility to know the current Status of each room. User can search availability of a doctor and the details of a patient using the id⁵.

The Advanced 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 interface is very user-friendly. The data are well protected for personal use and makes the data processing very fast⁶.

Existing system refers to the system that is being followed till now. Presently all the hospital functionalities are done manually. That is if a Patient want to consult a doctor he can visit their till his chance called. This is make the person very difficult. Outpatients and Inpatient tickets are Distributed directly. The main disadvantage is time consuming⁷.

Limitations of existing system:

Lack of security of data.

Time consuming.

Consumes large volume of paper work.

Manual work.

No direct role for the higher officials.

To avoid all these limitations and make the system working more accurately it needs to be computerized⁸.

Objectives of proposed system:

The Hospital management system software is user-friendly software. The main objectives of the system is which shows and helps you to collect most of the information about Hospitality and Medical Services the system is very simple in design and to implement⁹.

II. Materials And Methods

(1) Softwarerequirement specifications Software specifications

1. Operating System : Windows 2000/XP

2. Font end : Visual Basic 6.0

- 3. Back end : MS Access
- 4. Design Tool : Data Flow Diagram¹⁰

(2) Hardware Specifications

- Processor : X86 Compatible processor with 1.7 GHz Clock speed
- RAM : 512 MB or more
- Hard disk : 20 GB or more
- Monitor : VGA/SVGA
- Keyboard : 104 Keys
- Mouse : 2 buttons/ 3 buttons¹¹

Data flow diagram:

One of the most widely used system analysis process models is the data flow diagram. A Data Flow Diagram (DFD) is a tool that illustrates the data flow through a system and the work and processing performed by that system. It is used to help understand the existing system and to represent the required system. The diagrams represent the external bodies sending and receiving Information¹².

Context Diagram

The context diagram data flowchart diagram is known as the fundamentation system model. The diagram is the starting point of the software application design. The data flowchart diagram depicts the global picture of the system as modeled as the process of outer entity-system interaction. The context diagram for the healthcare management information system¹³.

Figure no1: Hospital management system



Figure no2 LEVEL 1 DFD ADMINISTRATOR:



Figure no3 Level 1 DFD User:

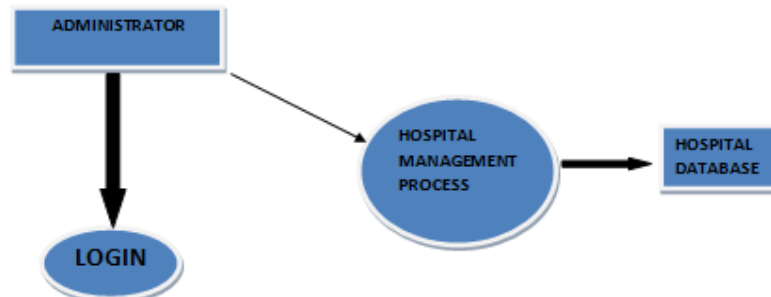
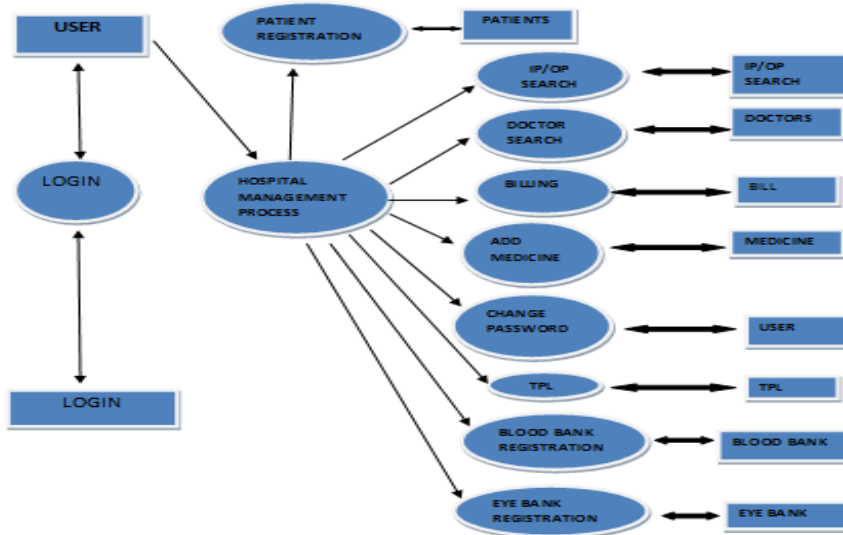


Figure no 4: Level 2 DFD User



The system requires very low system resources and the system will work in almost all configurations. The main objectives of the proposed system can be enumerated as follows:

- Patients are easily allocated to the doctors.
- Doctors Search is possible.
- today's patient list help doctors to search their patients

III. Results

SCREEN LAYOUT
Figure no 5: LOGIN



Figure no 6: admin registration:

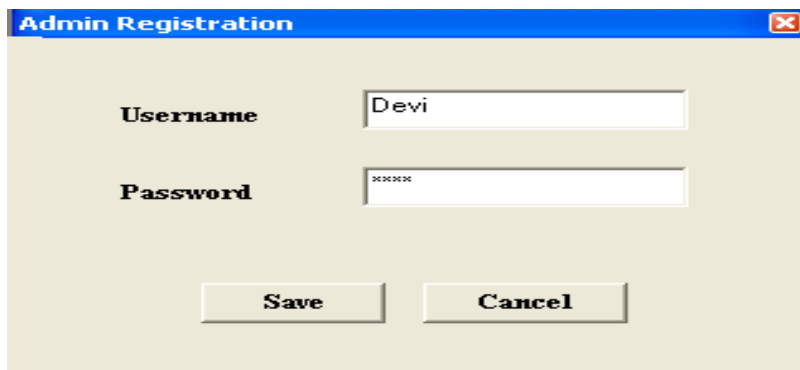


Figure no 7: user registration:

REGISTRATION-FORM

REGISTRATION

Name: Vinu

Age: 35

Sex: Male Female

Address: Vinu Nilayam
Kozhancheri

PhoneNumber: 0473896952

UserName: Vinu

Password: *****

ConfirmPassword: *****

Save Cancel

Figure no 8: Doctor Registration:

DOCTOR'S REGISTRATION

Dr.Name: Chandrasekar

Sex: Male Female

Department: general medicine

Consultation day: Wednesday

ConsultationTime: From 9 To 12
Example(10:30 am) Example(1:30 pm)

Address: Vishal bhavan
Trivandrum

ContactNumbe: 9995666999

EmergencyNumber: 425686

Consultation fee: 500

Total Patients: 25

Date: 9 /17/2008

Save Cancel

Figure no 9: edit doctor:

EDIT DOCTOR FORM

EDIT DOCTOR

Doctor name: R. Saith Kumar

Time: 9:30 am to 1:30 pm

Address: kamalanivas manzil kumarapuram p.o tvpm

Contact no: 25795621

Emergency no: 25485627

Update Cancel

Figure no 10: doctor search:

DOCTOR'S SEARCH

DOCTOR SEARCH

Doctor name: Kumar

Department: Paed

ConsultationTim: 10 am to 1 pm

Address: Kottayam

ContactNumber: 5656565

EmergencyNumber: 6666

Close

Figure no 11: inpatient billing :

IP BILL

IP BILL

BillNo: 31

PatientID: [dropdown]

Name: Vinod

Doctor: Arun

Reg Date: 12/08

Room: 40

Amount: 1500

Total: 3000

Save Close Discharge

Figure no 12: OP BILLING:



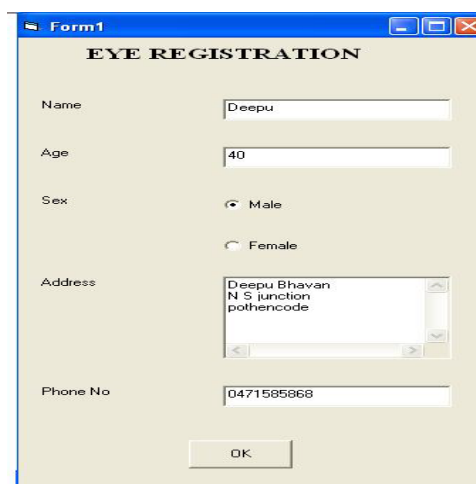
The screenshot shows a window titled "OPbill" with a title bar containing standard Windows window controls. The main content area is titled "OP BILL" and contains several input fields and buttons. The fields are: "BillNumber" with the value "7", "PatientID" (empty), "Name" with the value "Rakesh", "Doctor" with the value "Arun", "Date" with the value "9 /19/2008", "Amount" with the value "600", "Pharmacy" with the value "200", "Lab test" with the value "800", and "Total" with the value "1600". At the bottom, there are two buttons: "Save \$ Print" and "Close".

figure no 13: change password:



The screenshot shows a window titled "TPL" with a title bar containing standard Windows window controls. The main content area is titled "TODAYS PATIENT LIST". It features a "Doctor's Name:" label followed by a dropdown menu showing "Kumar". To the right of the dropdown is a large, empty rectangular area, likely intended for a list of patients. At the bottom left, there is an "OK" button.

figure no 14: today's patient list:



The screenshot shows a window titled "Form1" with a title bar containing standard Windows window controls. The main content area is titled "EYE REGISTRATION". It contains several input fields and a radio button group. The fields are: "Name" with the value "Deepu", "Age" with the value "40", "Address" with the value "Deepu Bhavan N S junction pothencode", and "Phone No" with the value "0471585868". The "Sex" field has two radio buttons: "Male" (selected) and "Female". At the bottom, there is an "OK" button.

figure no 15: Eye Registration:

IV. Discussion

The system is very simple in design and to implement. The system requires Very low system resources and the system will work in almost all Configurations.

Security of data.

Ensure data accuracy's.

Administrator controls the entire system.

Reduce the damages of the machines.

Minimize manual data entry.

Greater efficiency.

User friendly and interactive.

Minimum time required¹⁴.

V. Conclusion

This study embarked on the hospital management system which substitutes the current method of sorting, handling, searching, and keeping of hospital records. This concludes the importance and indispensable nature of the computer and its application in the hospital. The database aimed at reducing paper work in the reception area to reduce the time wasted by patients in the course of waiting for their files to be retrieved. This also reduced the spaced occupied by the files and provide adequate security for patient s medical record. Based on the finding of this study, the design of hospital patient database record will be a solution to the problem being experienced by the current manual method of keeping patient medical records. The study has critically indentified the importance associate with using electronic in keeping hospital record to eliminate missing files and enhance speedy retrieval of patient's record. The management of General Hospital North Bank has agreed that the manual method of keeping patient records should be change to computerized hospital records which will help them to eliminate inefficiency associated with the manual method. Through the exhausted study and analysis made in this research, it was recommend that General hospital and other medical centre that had been providing health care service should have an automated system for effective operations¹⁵.

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