



# Design & Development of Web Based Medical Application for Hospital Management

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## ABSTRACT

*A hospital is a healthcare institution that treats patients with experienced medical staff and state-of-the-art technology. The HMS executive's framework empowers the administrator to viably deal with an association, i.e. get ready patient arrangements, bills and clinical reports. The literature shows that the workflow in the hospital is done manually. It has been pointed out that manual work produces many errors. Although it was not centralized and not limited to one base. HMS attempt to cover the issues in HMS. A procedure for building up an electronic medical clinic the board framework is formed and is separated into four stages. Step 1: Analyze different existing HMS, Step 2: Design Web-Based HMS, Step 3: Develop Web-Based HMS, and Step 4: Deploy Web-Based HMS. The following modules in this system include doctors, patients, nurses, receptionists, laboratories and accountants. This article presents two phases, (analysis phase, design phase). During the investigation stage, basic writing is inspected and studied at the city emergency clinic. In the plan stage, plan the design of the venture. The framework comprises of two stages (examination stage, plan stage). It is intended to execute the accompanying stages (improvement stage, organization stage) in this framework in future. After compiling all the steps, then get the results. It is concluded that this project is to computerize a web-based (HMS) computer operating in a hospital. The main goal of our project is to reduce the amount of paper in the hospital to some extent. It aims to provide reliable automation of existing systems at low cost.*

Keywords—hospital; HMS; web based HMS; phases; modules

## 1. INTRODUCTION

An emergency clinic is a wellbeing organization that treats patients with experienced clinical staff and cutting edge innovation. The emergency clinic the board framework empowers the overseer to adequately deal with an association, i.e. plans arrangements, bills and clinical reports for the patient. As the wellbeing community is significant today. The wellbeing community expects to give the best clinical staff to the average person.

The work process at the emergency clinic was done physically. It has been brought up that manual work causes various blunders, which means recovering and refreshing information is perplexing, and keeping up records requires some serious energy. The presentation of online medical clinic the executive's framework has decreased the

outstanding burden in the medical clinic. Quiet subtleties and data are in the framework.

The framework can oversee persistent records, arrangement records, and lab report subtleties and encourage charging as a patient and permit the patient to keep up records as a past patient's solution. Coins Required. The new framework is intended for the specialist, the patient, the attendant who treats the patient, and the medical caretaker delegates the specialist for the patient, the bookkeeper can set up the bill for the patient.

Concluding the introduction, he reviewed the literature on the risk of temporary use of traditional HMS and loss of data in the event of natural disasters. The main purpose of this project is to benefit the patient and convert the manual system into a computerized system such as appointment, doctor description, lab report description, patient discharge,

nurse and receptionist can be assigned by the doctor. The doctor may include a prescription and allow the patient to view the patient's case history and diagnosis information. The PDF is listed on a document such as Excel, which contains patient information, patient lab reports, patient feedback, and patient billing details such as discharge bills. Our plan aims to reduce paperwork to some extent and reduce hospital costs and resources.

## 2. DESIGN ANALYSIS

This literature examines the lack of a traditional hospital management system to manage and manage hospitals efficiently and effectively. Some of the major difficulties identified by the literature are highlighted below:

- Retrieving / updating information is difficult and time consuming
- Risk of data damage in case of usual tragedies.
- Billing calculation and processing is drawn-out and time consuming.
- Flow of documentation from one section to another is time Killing.
- Hectic Paper Work is involved.

We have analyzed from the writing that the administration arrangement of the emergency clinic is being utilized everywhere on the nation where the clinical staff and laborers work in the clinic which gives the best clinical office [3].

In this manner, customary emergency clinic the executive's frameworks can't oversee records appropriately. The patient countenances extreme challenges as there are long lines of individuals hanging tight for an arrangement when the patient's number shows up when the specialist's available time are up. The reason for this venture is to encourage the patient and the patient doesn't need to hold up in long lines through this task. The time and resources of the patient and the doctor are saved. It also facilitates medical reports and facilitates doctors looking for patients, according to the department.

The Web Based the board framework computerizes and deals with crafted by clinics. It is a lot quicker and more effective than the conventional clinic framework [7]. The entire task is partitioned into various modules. The proposed framework not just takes out the weaknesses of the current framework yet in addition gives extra highlights, which will help in better administration and improvement of crafted by the clients. The specific objectives of the research are:

- To maintain the record of indoor and outdoor patients.

- To automate the records of employees working in the hospital, including their financial aspects.
- Automation of billing of patients.
- Management of Hospital Stock Inventory.

Touches the patient's record, in one way or another, practically everyone is involved in providing, receiving or compensating for health care services[5]. This wide range of applications and uses has resulted in efforts to collect, store and automate the data that creates this record. But despite more than 30 years of research and implementation by healthcare providers and millions of dollars into computer systems, patient records are still largely paper records.

The apparent decline in the spread of information management technologies in the healthcare sector has limited the resources available for effective decision making [2]. Activities across all parts of the healthcare spectrum seek to improve patient records, enhance information, and respond to the growing practical potential of patient record systems, given the importance of patient data. There are also recent technological advances that have reached the benefits of computer-based patient records [10].

The patient's clinical record is constantly broken. It tends to be depicted as social event clinical data about a patient. Preferably, this data is packaged with quiet distinguishing proof information in a similar organizer. A large portion of the data on record is out of date, futile, copy or hopeless and doesn't profit the patient during care.

Information proprietorship is additionally a restricted issue. Numerous clinics guarantee responsibility for records in their frameworks, while numerous patients contend that their clinical data is their own [9]. Therefore, there is a contrast between having a physical record and getting to (or duplicating) the information in intuit is commonly concurred that patients reserve the option to be educated regarding the overall substance of their clinical records and that guardians of patients ought to be permitted admittance to any data that is applicable to the patient's treatment.

Be connected He said the utilization of the Internet to move clinical data could give suppliers admittance to clinical data in a position of care, however it could abuse patients' security. Deterrents that have forestalled such implementation incorporate patient and supplier recognizable proof, security prerequisites, material issues, shape and language. A patient available through the World Wide Web, who is "routinely sheltered" and has an even clinical record, can be very easy to actualize and sufficiently handy to demonstrate gainful.

### 3. MATERIAL AND METHODS

Different devices and methods to aid the examination, plan, improvement and testing of programming, information flowcharts and point by point plan of information base plan. We divide our methodology in four phases shown in figure no: 1.

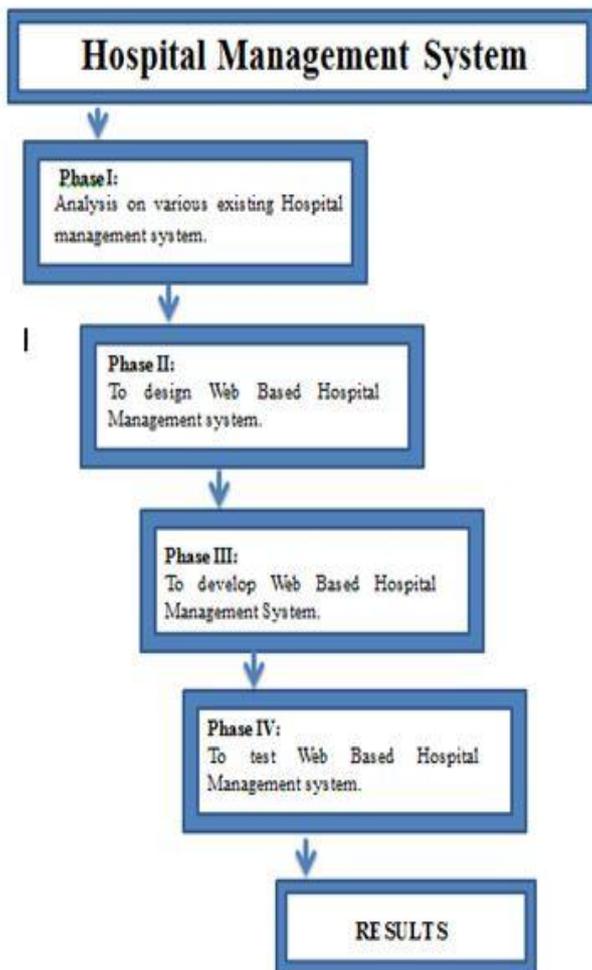


Figure No: 1 Research Phases

Phase I: We analyze the different existing management systems of the hospital, we review the literature reading this research paper and the hospital review what are the flaws in the current system, the use of the current system of manual transaction procedures. Which cannot maintain manual records for long periods of time. Records are hard to keep up. At that point presenting our task prerequisites, necessities accommodation is a depiction that clarifies the preparing condition, the necessary programming capacities, execution and treatment of exemptions. At that point we set the objectives of our arrangement, which is intended to dispense with all the imperfections in the current framework.

Phase II: At least one plans have been created, with which the consequence of the task can be extricated. Contingent upon the goals of the task, the design phase products may include flow charts, shown in figure No 2 and 3.

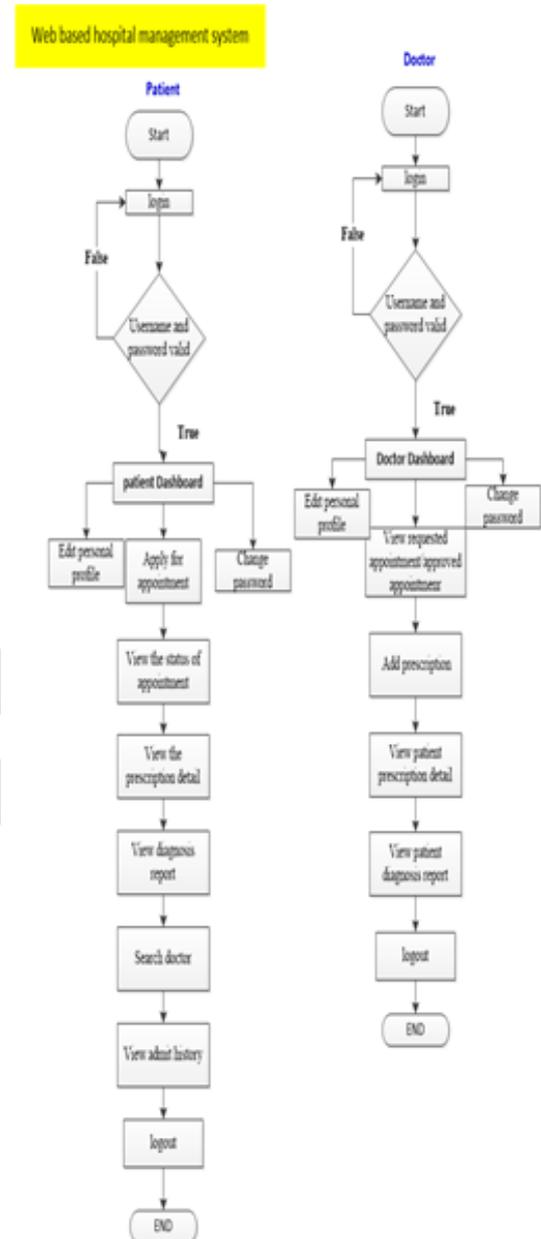


Figure No 2 Flow Chart 1

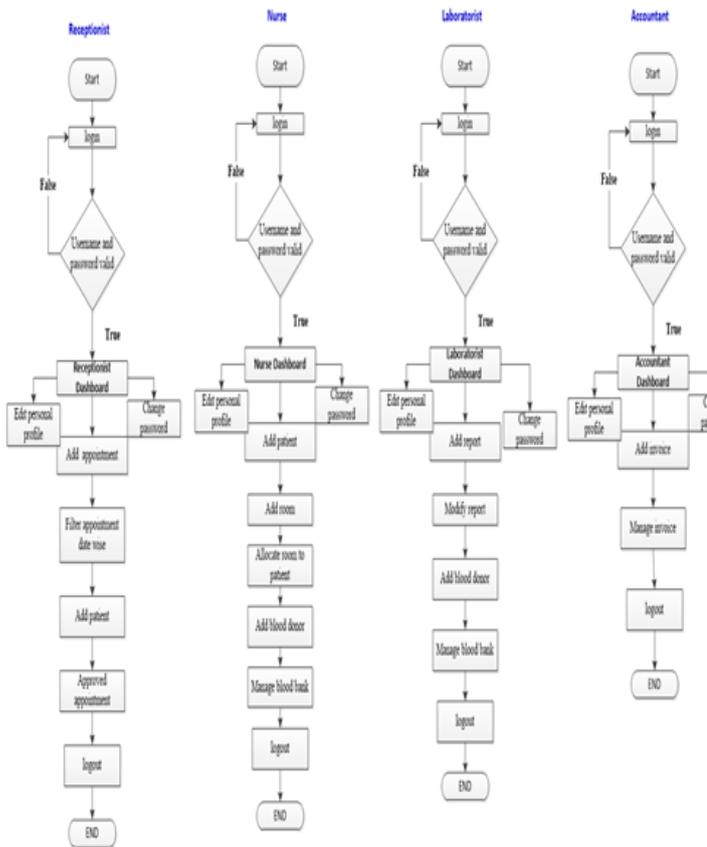


Figure No: 3 Flow Chart

Phase III: we use incremental model for software development.

Phase IV: This system will be tested against the requirements we have submitted in Phase 1.

- **Admin:** When Admin Login then Username and Password Confirmation, on the off chance that Password Verification, at that point it comes to Admin Dashboard, If Password Verification isn't then Admin Login or Admin Dash Can't get to board. The head is permitted to incorporate division, specialist, tolerant, nurture, secretary, research facility, and bookkeeper.

- **Patient:** Username and secret word check when patient is signed in, in the event that secret key is right, at that point this patient comes to dashboard, in the event that secret key isn't confirmed, at that point tolerant isn't signed in or admittance to understanding dashboard can do. The patient is likewise permitted to change the secret word and alter his profile. The patient can likewise apply for an arrangement, see arrangement status, see medicine subtleties, see symptomatic report, discover specialist, and see affirmation date.

- **Doctor:** At the point when the specialist is signed in then the username and secret key affirmation, if the secret phrase is checked, it goes to the specialist dashboard, on the off chance that the secret phrase isn't confirmed, at that point the specialist login or specialist run Cannot get to board. The specialist is permitted to change the secret word and alter his profile. The specialist is additionally permitted to support the arrangement application and solicitation the endorsement of the arrangement, to incorporate the remedy, to see the subtleties of the patient's solution, to see the patient's analysis report.

- **Receptionist:** At the point when the gathering login then username and secret word affirmation, in the event that the secret key is checked, at that point the gathering dashboard, on the off chance that the secret word isn't confirmed, at that point the secretary login or assistant dashboard Can't get to The assistant is permitted to change the secret key and alter his profile. The secretary is likewise permitted to incorporate the arrangement, channel arrangement date, tolerant consideration, and endorsed arrangement without the specialist.

- **Nurse:** At the point when the medical attendant is signed in, the username and secret word affirmation, on the off chance that the secret phrase is right, at that point it goes to the medical attendant dashboard, in the event that the secret key isn't confirmed, at that point the medical attendant can't login or get to the medical caretaker dashboard. Is. The attendant is permitted to change the secret phrase and alter her profile. The attendant is additionally permitted to incorporate the patient, include a room, assign a space to the patient, include a blood benefactor, and deal with a blood donation center.

- **Laboratory:** At the point when the research facilities are signed in then the username and secret word confirmation, on the off chance that the secret key is right, at that point it goes to the labs dashboard, in the event that the secret key isn't checked, at that point the labs can't sign in or the labs Can't get to dashboard. Research centers are permitted to change passwords and alter their profiles. Research centers are likewise permitted to include reports, alter reports, include blood givers, and oversee blood donation centers.

- **Accountant:** When the accountant is logged in then the username and password verification, if the password is verified, then it comes to the accountant dashboard, if the password is not verified, then the accountant login or accountant Can't access dashboard. Accountants are allowed

to change passwords and edit their profiles. The accountant is also allowed to add invoices, manage invoices.

#### 4. RESULTS:

Web-based HMS provides greater security and better performance than manual hospital management. Paperwork is greatly reduced. Many tasks, such as patient registration on the hospital registers, patient bill calculation, maintenance of employee records, etc., which used to be done only in the first hours, now have only a few button click jobs, which have to do with Form No. 4. And shown in Figure no 5.

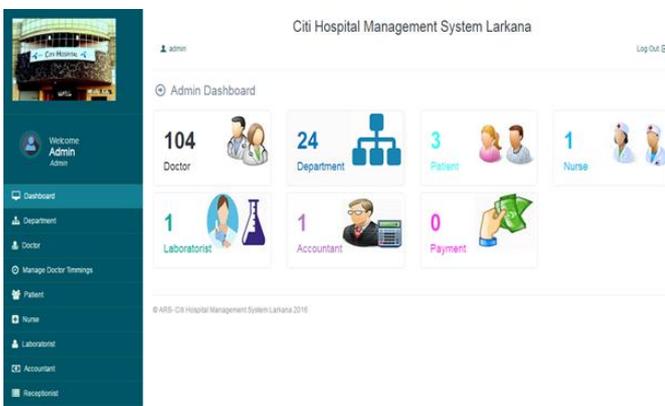


Figure No: 4 Dash Board



Figure No: 5 Log In

#### 5. CONCLUSION:

The exploration works an online clinic the executive's framework in a PC end clinic. The principle motivation behind this article is to profit the patient and convert the manual framework into a modernized framework, for example, understanding arrangement, persistent release, attendant and assistant can be appointed by the specialist.

The doctor may include a prescription and allow the patient to see the patient's case history and diagnostic information. The PDF is listed on a document such as Excel, which contains patient information such as the patient's lab report, the patient's feedback, and the patient's discharge bill.

This system provides facilities to patients, doctors, administrators, receptionists, nurses, accountants, laboratories. The main goal of our project is to reduce paperwork to some extent and reduce hospital costs and resources.

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