# IMS PROJECT DOCUMENTATION

Batch: EB01

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## Hospital Management System

## Introduction

Hospitals bears the responsibility of the health and life of their patients and it is imperative for them to manage their hospital records and data with utmost efficiency. In order to give the patients the best possible treatment and to avoid misdiagnosis, it is essential for the hospitals to keep their records thorough accurate, updated. Well maintained records also results in fluent functioning of administration, non-essential and redundant data are removed regularly, key records are made accessible and can be found quickly, thus saving time and resources.

This also provides evidence of the hospital's accountability for its actions. Hospital Management System also addresses managing of clinical and non-clinical Hospital records. A comprehensive Hospital records system makes sure that the clinical and administrative information data are easily accessible on range of concerns such as equipment, patient records, buildings, rooms, doctors, nurses.

Records Management alludes to a process of managing the records in a medium neutral basis in line with approved strategies, plan, methods and schemes. Records management as a field lays down rules for creating, protecting, retrieving and disposition of records over time. Record keeping is an essential aspect of every company's smooth functioning. Records management cannot exist without records and neither the efficacy of record can be maintained without a good records management system. This management system also makes sure that records are conserved for evidential purposes, proper and methodical updating, controlling of modes accessibility by authorised workforce and pesonnel.

The devising of this Hospital management system/record management system involves intricate and comprehensive planning and execution. Each and every required piece of data is to be determined in order to make this management system more and more reliable. This records management system is of paramount importance, especially for hospitals in order ensure proper and smooth functioning of both-administrative and clinical related matters.

## Problem statement

There are thousands of hospitals all around the globe nursing and giving treatment to millions of patients, employing the doctors, nurses, and staffs. For such a huge organization like hospitals or sanatoriums where large number of people are supervised simultaneously, maintaining and managing database and track records become one of the utmost priorities as well as a challenge, parallelly. Maintaining the information of patients getting admitted or registering for appointments with the doctors, details about the doctors along with the staff members are some examples as described above. Some of the highlighted problems of a hospital without a proper management system has been described below.

- Inability to retrieve information instantaneously: Retrieving a particular data from large chunks of information can be a hectic task for any institution without a proper managing system especially when multiple data must be retrieved simultaneously. This can be finding out a patient's medical records or appointment details, etc.
- Inability to store large data instantaneously: Storing large datasets at the right place multiple people in short time also becomes a challenge.
- Difficulties in updating information: when there are so many records of multiple people, changes are bound to happen which becomes difficult to update on pen and paper.
- Correction of data: Manual correction of data and information in the absence of an automatic system can be time consuming and hectic work.
- Developing accurate reports: Accuracy of reports become difficult when information have to be assembled from multiple places.

# Objective

- Simple and effective utilization: Hospital management system should be simple and easy to use and operate for the users, not only helping them in managing databases easily, but also reducing the time required.
- Systematic and well-planned working: In the organizations like hospitals, the management will work more smoothly and systematically. The storage of data will be done not only with more efficiency but also with more security.
- Instant fetching of information: Extracting of information would be easier and faster with a systematic approach.
- Instant storage of information: Storing of information would become more simpler and time efficient when thousands of data to be stored within a short period.
- Accurate and reliable: the accuracy and reliability of information would be more than ever before, as there would be less human interference

and hence less errors. The functioning of the system would mostly be automatic, hence making it more reliable.

## Software Requirements

Our project is a Desktop Application , the software which will use to build are project are :-

1. For Backend and frontend - we are using JDK 1.8 as java is fast , reliable , easy to debug and secure . For developing our project in java we will be using Netbeans 8.0.2 IDE. For database connectivity and management we are using MYSQL server. for designing user interface and logo we will be using adobe photoshop.

2. Client end - The Hospital management software requirement for the operating system should be windows 8 or above. The computer should have JRE 1.8 (Java runtime environment )to run a JAVA application and MySql server for database connectivity.

Database
1. In the system database , the hospital management will be storing patient details such as name , age , gender , date of birth , contact no. , address. Our application will also allow hospital management to update patient information and to search patient information by their patient ID.

2. Our database will also have all the doctor information , nurse information , room information , Ward information . Our application allows users to update all the information in the database.

# Proposed Systems

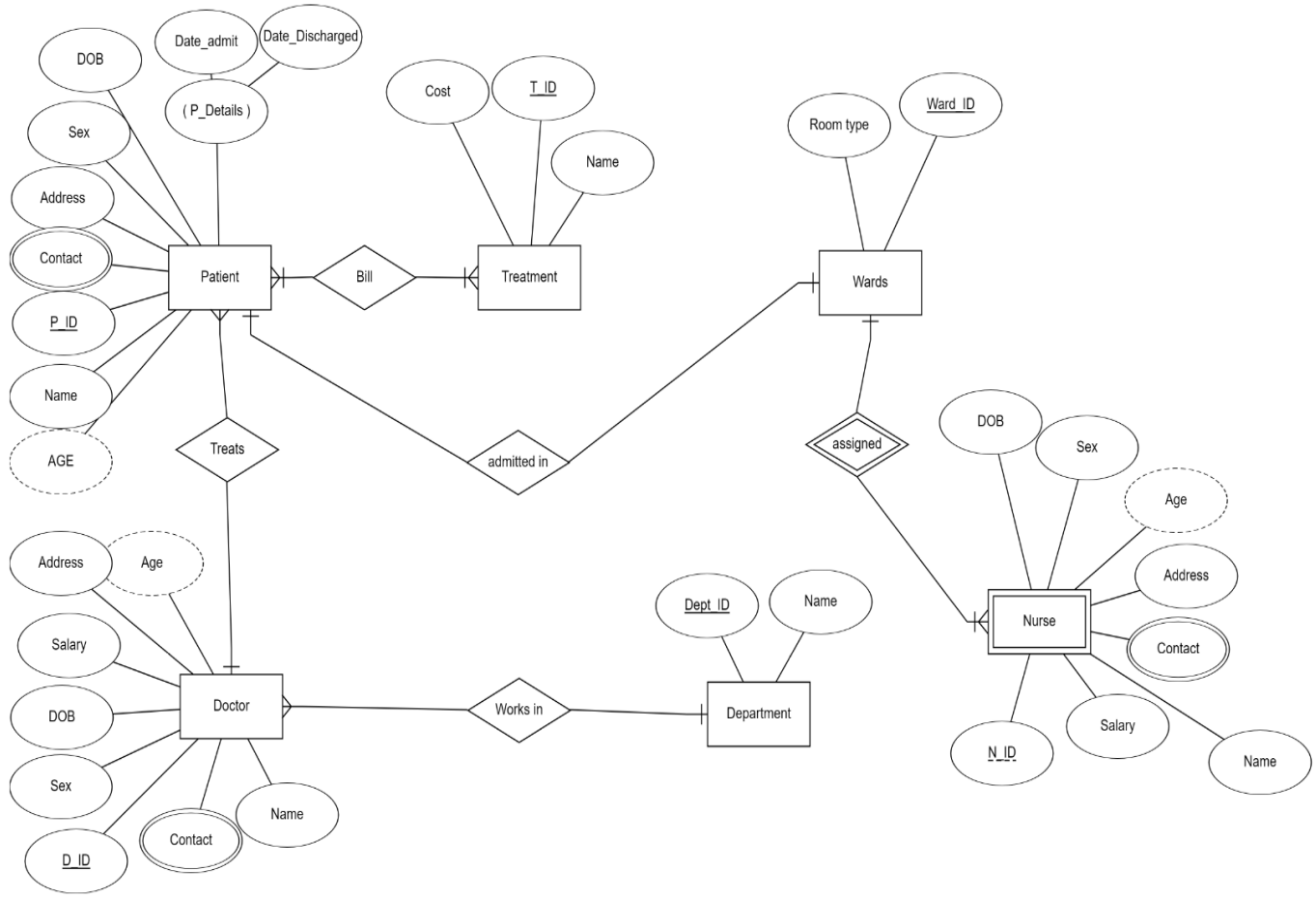
The Hospital Management System is a Software that can be used to streamline the functioning of the hospital . The Hospital management system can be used in any hospital and its use is to get information from the patient to avoid the confusion during treatment patient treatment and storing information in the database for future use. The Software will be used to allocate wards to patients in their respective department. According to the department ,the patients will be allocated to their respective doctors and respective nurses will be assigned to them .The software will help the doctors to keep track of their patients' health and moreover it will also help in the management of the resources of the hospital . The Nurses who are in direct contact with the patient , will use the software to keep track of all the patients in the department and will also track the medication of each patient. Our system is designed in such a way that anyone without any specific technical background can use it easily. Our Software provides a lot of features such as tracking of patient health , calculation of treatment cost , allocation of beds etc. Our system will be a centralised system so it will use a database like MSQL so creating a backup is necessary for any organisation that uses our software.

When a patient is admitted in the respective department , the software checks if the patient is already registered with the hospital or not. If the patient is not registered with the hospital , then the software assigns a unique patient id to the particular patient. The patient's information such as name , date of birth , gender , address , contact number and the department will be entered into the software. The system will assign patients to respective doctors and a room will be allocated to the patent. Our software will enable the management of the hospital to search for any patient in the hospital by their unique id and update and change their personal details. Our System also has a billing mechanism which creates bill based upon a patient's treatment . Our System also allocates nurses to the patients so that no patient remains unattended As our hospital cares for our patient's privacy , when the patient checks out a health report will be generated and the system will delete the patient id from the database.

The end goal of our software is to help the hospitals in managing the resources efficiently which in turn enables the hospital to provide better health care to

the patients. The Hospital Management system project is for automating the working in a hospital , which is much better than manual system. The automating system has speed up the process of working in the hospital. Our Software checks all the resources and requirements of the hospital and is able to provide and a easy solution and effective means of storing personal details related to the patients . Our software also provides automatic billing feature which is based on the patient's treatment . In the future , we can amplify the software by including more facilities like a pharmacy system , which stores data and enables functionality that organizes and maintains the medication.

## Entity Relationship Diagra




## Relational Model

```
CREATE TABLE Department
(
  Dept_ID INT NOT NULL,
  Name INT NOT NULL,
  PRIMARY KEY (Dept_ID)
);

CREATE TABLE Treatment
(
  T_ID INT NOT NULL,
  Name INT NOT NULL,
```

```
  Cost INT NOT NULL,
  PRIMARY KEY (T_ID)
);

CREATE TABLE Wards
(
  Ward_ID INT NOT NULL,
  Room_type INT NOT NULL,
  PRIMARY KEY (Ward_ID)
);

CREATE TABLE Nurse
(
  N_ID INT NOT NULL,
  Name INT NOT NULL,
  Address INT NOT NULL,
  DOB INT NOT NULL,
  Sex INT NOT NULL,
  Salary INT NOT NULL,
  Ward_ID INT NOT NULL,
  PRIMARY KEY (N_ID, Ward_ID),
  FOREIGN KEY (Ward_ID) REFERENCES Wards(Ward_ID)
);

CREATE TABLE Nurse_Contact
(
  Contact INT NOT NULL,
  N_ID INT NOT NULL,
  Ward_ID INT NOT NULL,
  PRIMARY KEY (Contact, N_ID, Ward_ID),
  FOREIGN KEY (N_ID, Ward_ID) REFERENCES Nurse(N_ID, Ward_ID)
);

CREATE TABLE Doctor
(
  Name INT NOT NULL,
  DOB INT NOT NULL,
  Address INT NOT NULL,
  Sex INT NOT NULL,
  D_ID INT NOT NULL,
  Salary INT NOT NULL,
  Dept_ID INT NOT NULL,
  PRIMARY KEY (D_ID),
  FOREIGN KEY (Dept_ID) REFERENCES Department(Dept_ID)
```

```
);

CREATE TABLE Doctor_Contact
(
  Contact INT NOT NULL,
  D_ID INT NOT NULL,
  PRIMARY KEY (Contact, D_ID),
  FOREIGN KEY (D_ID) REFERENCES Doctor(D_ID)
);

CREATE TABLE Patient
(
  Address INT NOT NULL,
  Sex INT NOT NULL,
  Date_admit INT NOT NULL,
  Date_Discharged INT NOT NULL,
  DOB INT NOT NULL,
  Name INT NOT NULL,
  P_ID INT NOT NULL,
  D_ID INT NOT NULL,
  Ward_ID INT NOT NULL,
  PRIMARY KEY (P_ID),
  FOREIGN KEY (D_ID) REFERENCES Doctor(D_ID),
  FOREIGN KEY (Ward_ID) REFERENCES Wards(Ward_ID)
);

CREATE TABLE Bill
(
  T_ID INT NOT NULL,
  P_ID INT NOT NULL,
  PRIMARY KEY (T_ID, P_ID),
  FOREIGN KEY (T_ID) REFERENCES Treatment(T_ID),
  FOREIGN KEY (P_ID) REFERENCES Patient(P_ID)
);

CREATE TABLE Patient_Contact
(
  Contact INT NOT NULL,
  P_ID INT NOT NULL,
  PRIMARY KEY (Contact, P_ID),
  FOREIGN KEY (P_ID) REFERENCES Patient(P_ID)
);
```