

# Database Management Systems Lab

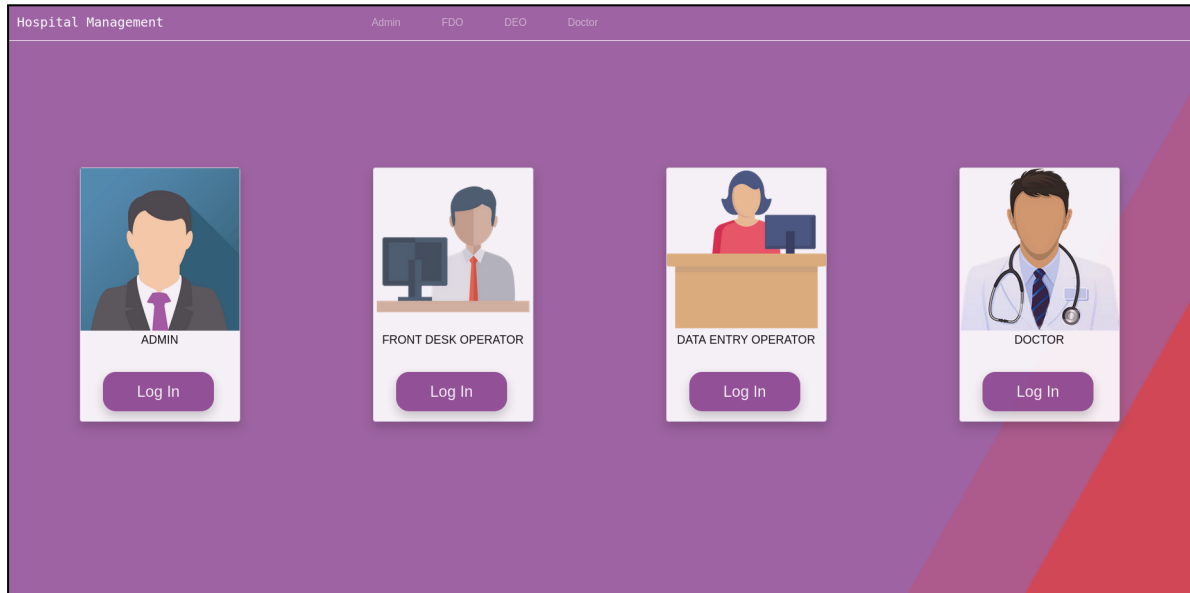
## Assignment 4 (Web Application Development)

### Members

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## Introduction :

This report illustrates the functionalities implemented by our web app implementing a Hospital Management System. We provide an overview of the features present in the web app and how it caters to the needs specified by the assignment.



The main page

## Users :

There are 4 different types of users, and correspondingly 4 user interfaces :

- ADMIN
- FRONT DESK OPERATOR
- DATA ENTRY OPERATOR
- DOCTOR

## 1. ADMIN :

The admin is the system administrator of the web-app with access to most of the key functionalities of other types of users. It also has the power to add and delete other user profiles, and update their details.

The admin dashboard page shows cards with details of the statistics of different user profiles, as well as tabs on the left, showing menus to manage different user profiles.



The admin dashboard

The form titled 'Add New Patient To Hospital' contains the following fields: Name (filled with 'Ruby'), Mobile (filled with 'Shelby'), Symptoms (filled with 'Fever'), Email (filled with 'ruby@gmail.com'), and a file upload field (filled with 'Screensho...2-00.png'). A dropdown menu for 'Name and Department' is also present. A red 'Admit' button is at the bottom.

Adding new users

Patient							
Name	Profile Picture	Symptoms	Mobile	Address	Status	Update	Delete
Linda Shelby		Cough	9873458763	linda	Admitted		
Arthur Shelby		Cough	9873458763	.	Discharged		

Deleting new users

## 2. FRONT DESK OPERATOR :

The front desk operator can :







- Register new patients
- View patient records, update details
- Admit patients
- Discharge patients

### Register Patient To Hospital



Screensho...0-36.png

Satya (Cardiologist)


Patient Registration Form

Patient							
Name	Profile Picture	Symptoms	Mobile	Address	Status	Update	Delete
Linda Shelby		Cough	9873458763	linda	Visiting		
Arthur Shelby		Cough	9873458763	.	Visiting		

Patient Details

Your Total Patient List					
Name	Profile Picture	Symptoms	Mobile	Address	Admit
Shashwat Naidu		cold	7568267480	.	<input checked="" type="checkbox"/>
Atulya Sharma		fever	7568267480	.	<input checked="" type="checkbox"/>

Admitting Patients

Your Total Patient List					
Name	Profile Picture	Symptoms	Mobile	Address	Discharge
Arthur Shelby		Cough	9873458763	.	<input checked="" type="checkbox"/>

Discharging Patients

# Hospital Management

Admit Date: March 12, 2023  
 Release Date: March 12, 2023  
 Days Spent: 0

Patient Name : Arthur Shelby  
 Patient Mobile : 9873458763  
 Patient Address : .

Doctor Name : Satya

Disease and Symptoms  
 Cough

Item	Price
Room Charge (Per Day)	2000
Doctor Fee	500
Medicine Cost	3000
Other Charge	200

Generate Bill

Generating the bill on discharging patient

### Book Test/Treatment Details

Satya (Cardiologist)

Grace (Cough)

MRI

03 / 20 / 2023 , 12 : 00 PM

03 / 21 / 2023 , 12 : 00 PM

Check

Book

Scheduling tests/treatments

## Appointments :

Book Appointment Details

Severe cough

Emergency

03 / 17 / 2023, 12:30 PM

Satya (Cardiologist)

Linda (Cough)

Check

Book

Book Test/Treatment Details

Satya (cardiologist)

Linda (Cough)

Bypass Surgery

03 / 19 / 2023, --:-- --

03 / 21 / 2023, --:-- --

Check

Book

### Book Appointments and Tests/Treatments

Appointments						
Doctor Name	Patient Name	Description	Priority	Time	Update	Delete
Satya	Linda	Severe cough	Emergency	March 17, 2023, 12:30 p.m.		

### View Appointment Details

Satya- Doctor

Dashboard

Patient

Appointments

Logout

1  
Appointments For You

1  
Patient Under You


1  
Your Patient Discharged

Recent Appointments For You

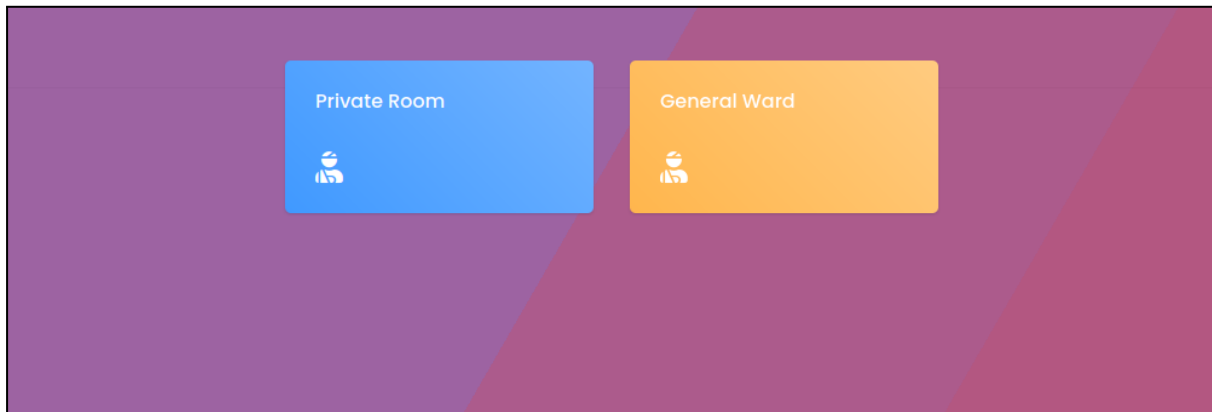
Patient Name	Picture	Description	Mobile	Address	Date
Linda		Severe cough	9873458763	linda	

### New Appointment displayed in Doctor dashboard

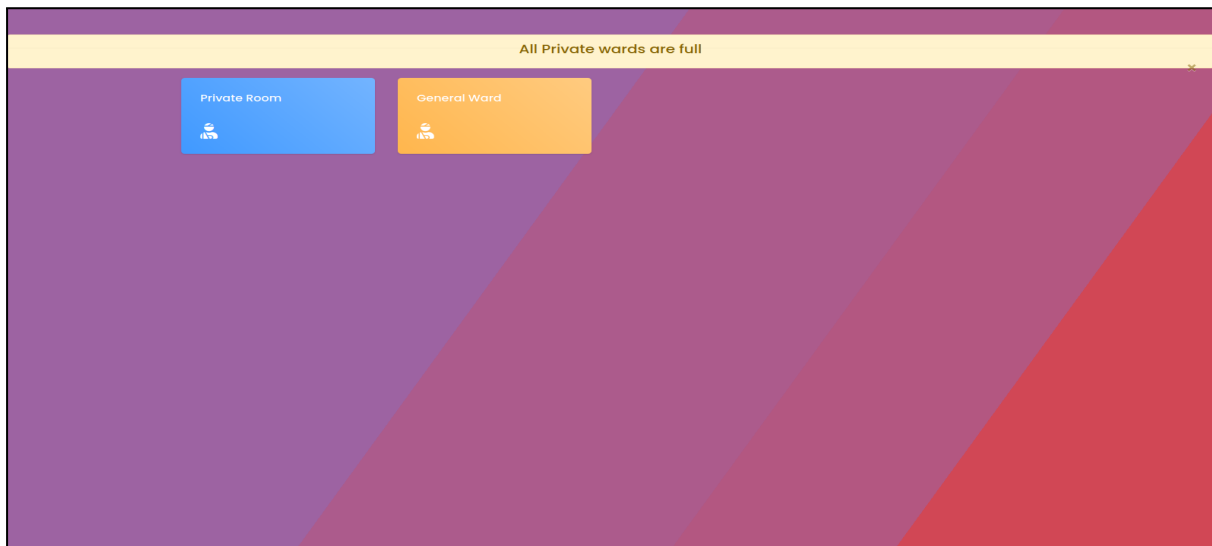
## Admitting Patients :

Your Total Patient List					
Name	Profile Picture	Symptoms	Mobile	Address	Admit
John Shelby		Cough	9873458763	.	<input checked="" type="checkbox"/>

### Admitting Patients



Allot room based on available room capacity out of the two room types



Error message displayed if capacity is full



### 3. DATA ENTRY OPERATOR :

The data entry operator enters data about patient tests and treatments.

Add Treatment/Test Report for Patient

Linda (Cough) ▾



Tuberculosis Test

Browse...

Screensho...0-42.png




Add

Adding Test/Treatment Reports

Tests/Treatments				
Name	Patient name	Doctor's name	Update	Delete
Bypass Surgery	Linda Shelby	Satya (Cardiologist)		


Viewing Test/Treatment Reports

#### 4. DOCTOR :

Your Total Patient List					
Name	Profile Picture	Symptoms	Mobile	Address	Medical History
Linda Shelby		Cough	9873458763	linda	<a href="#">view</a>
Grace Shelby		Cough	9873458763	.	<a href="#">view</a>
John Shelby		Cough	9873458763	.	<a href="#">view</a>

Linda Shelby's Medical History		
Procedure Name	Doctor Name	Details
Bypass Surgery	Satya (Cardiologist)	<a href="#">view</a>

Doctor querying patient medical history

Your Appointments						
Patient Name	Picture	Description	Mobile	Address	Appointment Date	Prescribe
Linda		Severe cough	9873458763	linda	March 17, 2023, 12:30 p.m.	<input checked="" type="checkbox"/>

Doctor can prescribe treatments

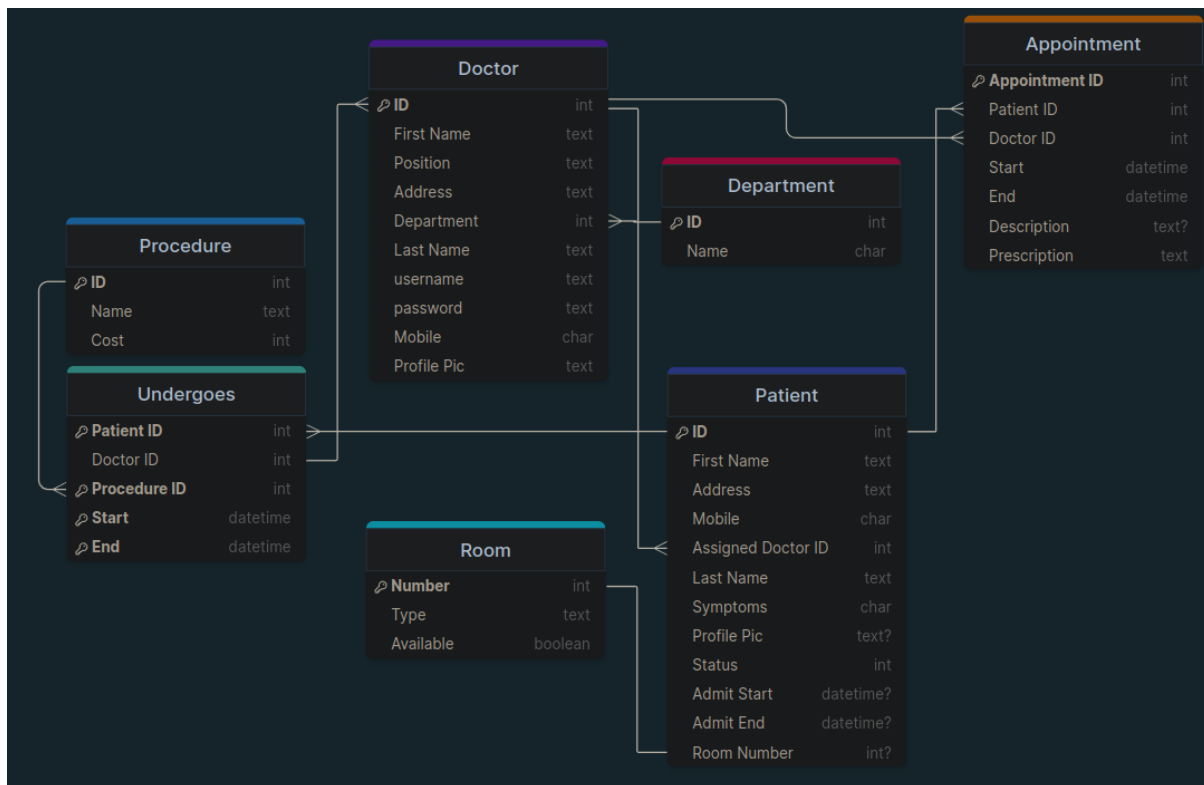
### Prescription

Two drops of Belladona 200

Update

Doctor prescribing treatments

## Database Schema :



Database Schema

The database schema used for the web-app is as shown above, it has the following key features and functionalities :

- The schema for **Procedure** and **Undergoes** is similar to the one used for Assignment 2.
- The doctor schema is mostly similar as well, with a few other app-specific attributes like username, password and profile picture.
- **Room** has two types - PRIVATE ROOM or GENERAL WARD, and a boolean variable “available” signifying its availability. PRIVATE ROOMS are set to be fewer in number with single capacity only, to simulate real-life applications and demonstrate the test case of “**insufficient rooms available**”, while GENERAL WARDS have higher capacity.
- **Patient** has some features, like :
  - “Symptoms”, a text variable added by Front Desk Operator (FDO) to describe symptoms;
  - “Assigned Doctor ID” is set by the FDO during patient registration to assign the patient to a doctor;
  - “Status” can have three values - VISITING, ADMITTED or DISCHARGED. When a patient is registered in the hospital, the default

status is assumed VISITING. This can be changed by the FDO to ADMITTED when she admits the patients. Similarly, an ADMITTED patient can be DISCHARGED by her as seen fit.

- When a patient undergoes a Test/Treatment, the patient and doctor's IDs are added to the "Undergoes" object along with the procedure ID (done by the Data Entry Operator (DEO)). These tests/treatments can be referred to in the future to get an idea of the patient's medical history.
- When an Appointment is booked for a patient-doctor match by the FDO, the priority can be set to "**Regular**" or "**Emergency**" by the FDO as deemed fit. **A Regular appointment with a doctor at a particular time interval can be replaced by an Emergency appointment, due to higher priority.** The same won't happen for the Emergency appointment though.
- Appointments for a particular time interval are scheduled based on **First Come First Serve**, with the function of replacing Regular appointments with Emergency appointments added to showcase priority handling.
- Doctor has an interface to look for a patient's medical history, and based on the need, prescribe treatments to her.
- Finally, the Database Administrator (**Admin**) has the power of adding and deleting new user profiles. App testing is usually done from the admin's point of view, who can view and update any user profile, as and when needed.