

DATABASE MANAGEMENT SYSTEMS PROJECT

Hospital Management System

INTRODUCTION

Hospitals require effective software management systems to make sure they deliver high-quality healthcare services to patients in today's fast-paced, technologically advanced environment. The usage of web-based software programmes is essential for hospital administration because it promotes effective bookkeeping and facilitates seamless communication and collaboration between healthcare professionals, patients, hospital personnel, and other stakeholders. The functions of a web-based hospital management system should include patient registration, appointment, treatment, and test scheduling, patient admission and discharge, management of electronic medical records, display of patients' health records to the treating doctor(s), and storing general information about all the doctors, staff members, etc. To support the hospital's expansion, the software has to be scalable, secure, and user-friendly.

In general, a web-based hospital management system is an important tool that may aid hospitals in providing better medical treatment, increasing productivity, and improving patient outcomes. We have created a web-based software application for a hospital administration system as a result of this project. We made every attempt to include all necessary features and create a comprehensive, dynamic, and user-friendly application.

DATABASE SCHEMAS

a) User Schema:

```
CREATE TABLE User (
    userID INT NOT NULL,
    email VARCHAR(50) NOT NULL,
    role ENUM('Admin', 'DataEntry', 'FrontDesk', 'Doctor'),
    pass VARCHAR(50) NOT NULL,
    PRIMARY KEY (userID)
);
```

- All the four users have common user table which are distinguished by **role** attribute.
- Here **userID** attribute is the primary key. We can also make **email** as primary key but as we are storing json-web-token in the front-end storage so anyone can access it so we are storing only **userID** in json-web-token to prevent access of personal details of user.
- The Admin **role** represents a system/database administrator for the hospital. The Admin can register (add new entities) new (or delete existing) doctors, front-desk, and data-entry operators. This ensures that no doctor or front-desk/data entry operator can temper with details of other such entities.
- The Doctor **role** represents the doctors affiliated with the hospital. Additional Information of the doctor is stored in **Doctor Schema**.
- The Front Desk **role** represent the front-desk operator for the hospital. They are the first point of contact for patients and visitors at the hospital's reception/front desk. A front-desk operator is responsible for patient registration, scheduling patient appointment, handling patient's admission/discharge, and having access to information about all patients.
- The Data Entry **role** represents data entry operator who is in charge of updating the results of such tests, treatments and appointments when they are finished, and entering patients' medical records in accordance with specifications.

b) Doctor Schema:

```
CREATE TABLE Doctor(
    doctorID INT NOT NULL,
    Name VARCHAR(50) NOT NULL,
    Department VARCHAR(50) NOT NULL,
    Date_of_joining DateTime NOT NULL,
    Position VARCHAR(50) NOT NULL,
    Gender ENUM('Male', 'Female', 'Prefer Not To Say') NOT NULL,
    PRIMARY KEY (doctorID),
    FOREIGN KEY (doctorID) REFERENCES User(userID)
);
```

- Apart from User Information, Doctors have additional information like Name, Department, Position etc. This information are stored in Doctor Schema.
- Here **doctorID** attribute is the primary key. **doctorID** is also foreign key from **User Schema**.

c) Patient Schema:

```
CREATE TABLE Patient(
    patientID INT NOT NULL AUTO_INCREMENT,
    Name VARCHAR(50) NOT NULL,
    DOB DateTime NOT NULL,
    Gender ENUM('Male', 'Female', 'Prefer Not To Say') NOT NULL,
    Address VARCHAR(250) NOT NULL,
    Phone VARCHAR(10) NOT NULL,
    email VARCHAR(50) NOT NULL,
    Registration_Date DateTime NOT NULL,
    PRIMARY KEY (PatientID)
);
```

- The patient entity stands in for a person who is a hospital patient seeking care. The front desk staff member can help a patient arrange a doctor's visit, schedule tests and treatments, and have the data entry staff member update his medical records. A patient is not, however, a user of the

programme. It represents a passive entity for storing a patient's information.

- Here **patientID** attribute is the primary key which gets auto incremented.

d) Room Schema:

```
CREATE TABLE Room(
    roomNumber INT NOT NULL,
    roomType ENUM('General', 'Ventilator', 'ICU') NOT NULL,
    maxCapacity INT NOT NULL,
    currentOccupancy INT NOT NULL,
    PRIMARY KEY (roomNumber)
);
```

- The room entity represents a potential hospital room for an admitted patient, such as an ICU, general ward, ventilator ward, single rooms, etc.
- Each of these rooms has a distinct **roomNumber** (also the primary key).

e) Stay Schema:

```
CREATE TABLE Stay(
    stayID INT NOT NULL AUTO_INCREMENT,
    patientID INT NOT NULL,
    roomNumber INT NOT NULL,
    AdmitDate DateTIme NOT NULL,
    DischargeDate DateTIme,
    PRIMARY KEY (stayID),
    FOREIGN KEY (patientID) references Patient(patientID),
    FOREIGN KEY (roomNumber) references Room(roomNumber)
);
```

- The stay entity stores information about admit date and discharge date of the patient and in which room he/she was stayed.
- Each stay has a unique attribute **stayID** which is auto incremented and is the primary key. **patientID** is the foreign key reference to **patientID** of Patient Schema and **roomNumber** is a foreign key reference to **roomNumber** of Room Schema.

f) Appointment Schema:

```
CREATE TABLE Appointment(
    appointmentID INT NOT NULL AUTO_INCREMENT,
    patientID INT NOT NULL,
    doctorID INT NOT NULL,
    Date DateTime NOT NULL,
    priority INT NOT NULL,
    Reason VARCHAR(250) NOT NULL,
    Status ENUM('Pending', 'Completed', 'Cancelled') NOT NULL,
    PRIMARY KEY (appointmentID),
    FOREIGN KEY (patientID) REFERENCES Patient(patientID),
    FOREIGN KEY (doctorID) REFERENCES Doctor(doctorID)
);
```

- The appointment entity stands for a patient's scheduled appointment with a doctor. **patientID** and **doctorID** are used to identify the patient and doctor, respectively. The **Date** property keeps the appointment's date and time window (all appointment time slots are 15 mins).
- There are two different appointment scheduling options: regular and emergency. Any doctor will be assigned to a patient who requests an emergency appointment.
- The primary key is the **appointmentID**, while **patientID** is the foreign key reference to **patientID** of Patient Schema and **doctorID** is a foreign key reference to **doctorID** of Doctor Schema.

g) Treatment Schema:

```
CREATE TABLE Treatment(
    treatmentID INT NOT NULL AUTO_INCREMENT,
    patientID INT NOT NULL,
    doctorID INT NOT NULL,
    treatmentDate DateTime NOT NULL,
    treatmentStatus ENUM('Pending', 'Completed', 'On Going') NOT NULL,
    Description VARCHAR(250) NOT NULL,
    PRIMARY KEY (treatmentID),
    FOREIGN KEY (patientID) REFERENCES Patient(patientID),
    FOREIGN KEY (doctorID) REFERENCES Doctor(doctorID)
);
```

- The treatment entity stands for a patient's scheduled treatment with a doctor. **patientID** and **doctorID** are used to identify the patient and doctor, respectively. The **treatmentDate** property keeps the treatment's date and time window (all treatment time slots are 1 hour).
- The primary key is the **appointmentID**, while **patientID** is the foreign key reference to **patientID** of Patient Schema and **doctorID** is a foreign key reference to **doctorID** of Doctor Schema.

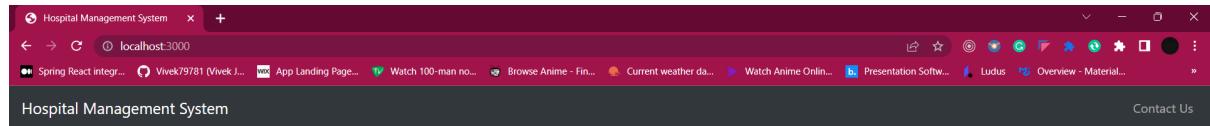
h) Test Schema:

```
CREATE TABLE Test(
    testID INT NOT NULL AUTO_INCREMENT,
    patientID INT NOT NULL,
    testCenter VARCHAR(50) NOT NULL,
    testName VARCHAR(50) NOT NULL,
    testDate DateTIme NOT NULL,
    testStatus ENUM('Pending', 'Completed', 'Cancelled') NOT NULL,
    testResult VARCHAR(250),
    PRIMARY KEY (testID),
    FOREIGN KEY (patientID) references Patient(patientID)
);
```

- The tests entity stands for a diagnostic test used in medicine (such as an RT-PCR test, blood test, etc.).
- Additional Attributes are **testCenter** which stores where patient is tested, **testName** which stores all the test name, **testStatus** which stores status of test result, **testResult** which stores result of test, **testDate** which stores date of result and **patientID** which refers which patient has taken the test.
- Its primary key is the **testID**, which is automatically increased while **patientID** is the foreign key reference to **patientID** of Patient Schema.

WEBPAGE USER INTERFACE:

HOME PAGE:



→ Login

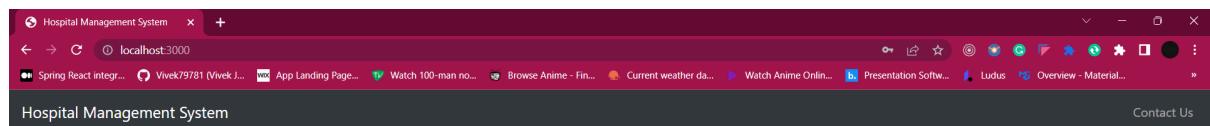
Email

Password

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LOGIN:

Case 1: Invalid Email Format:



→ Login

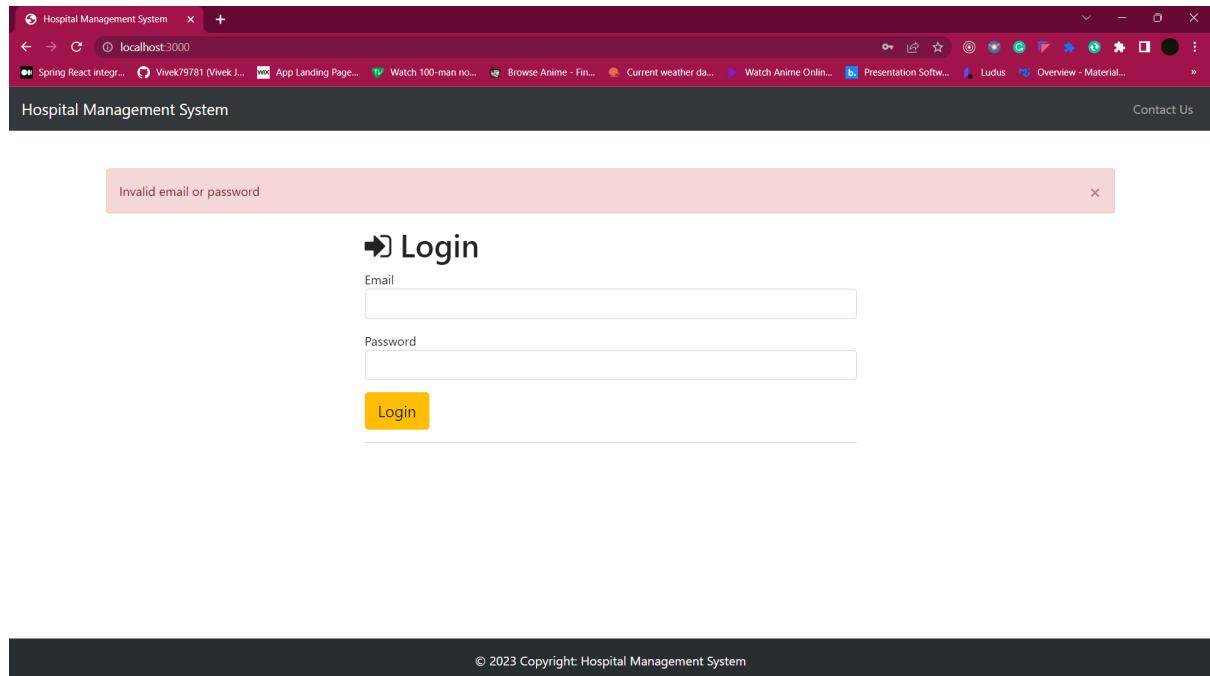
Email
 ⓘ

Password
 ✓

Looks good!

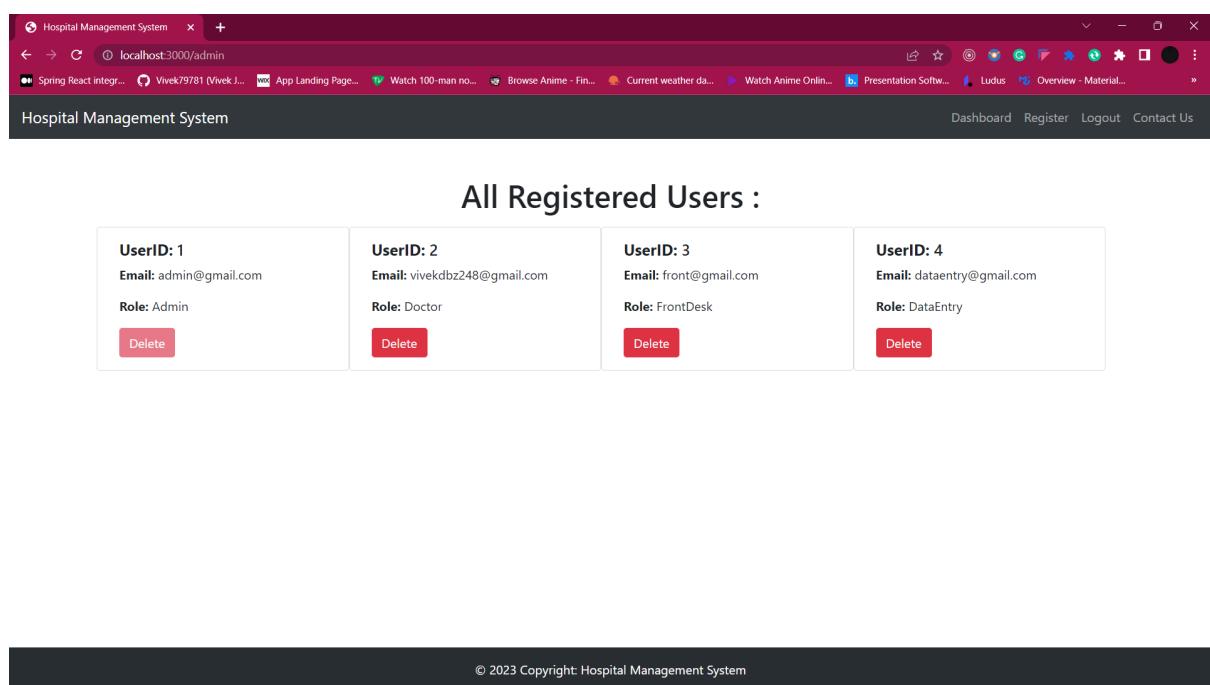
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CASE 2: Invalid Email or Password:



CASE 3: ADMIN LOGIN:

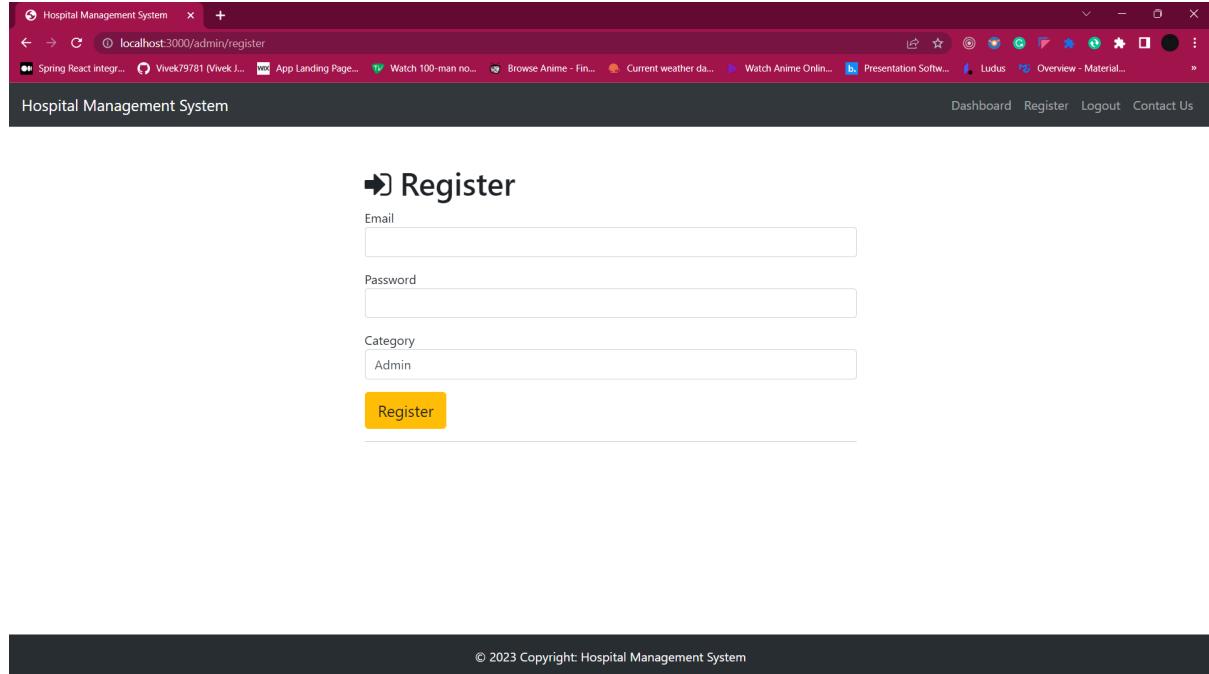
Redirected to '/admin' and showing admin dashboard.



ADMIN USER:

REGISTER AN USER:

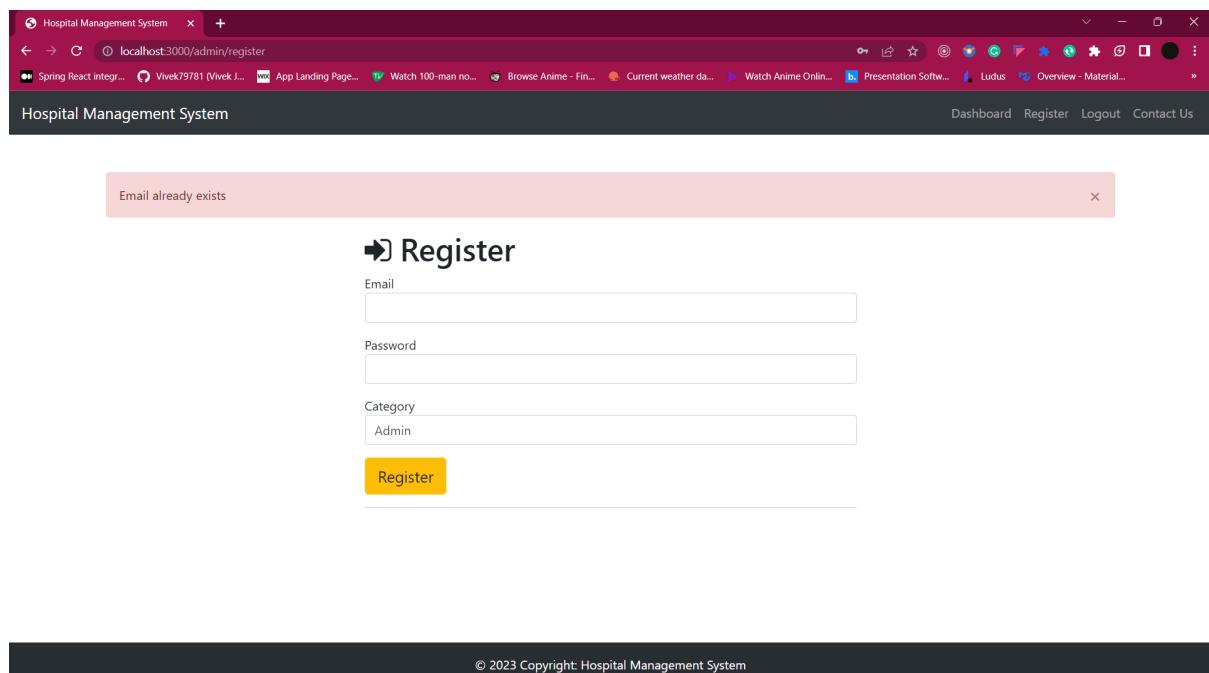
Click on the register button on navbar, it will redirect to '/admin/register':



The screenshot shows a web browser window with the title 'Hospital Management System'. The address bar displays 'localhost:3000/admin/register'. The main content area is titled 'Register' with a back arrow icon. It contains three input fields: 'Email' (empty), 'Password' (empty), and 'Category' (set to 'Admin'). Below the fields is a yellow 'Register' button. At the bottom of the page, there is a dark footer bar with the copyright notice '© 2023 Copyright: Hospital Management System'.

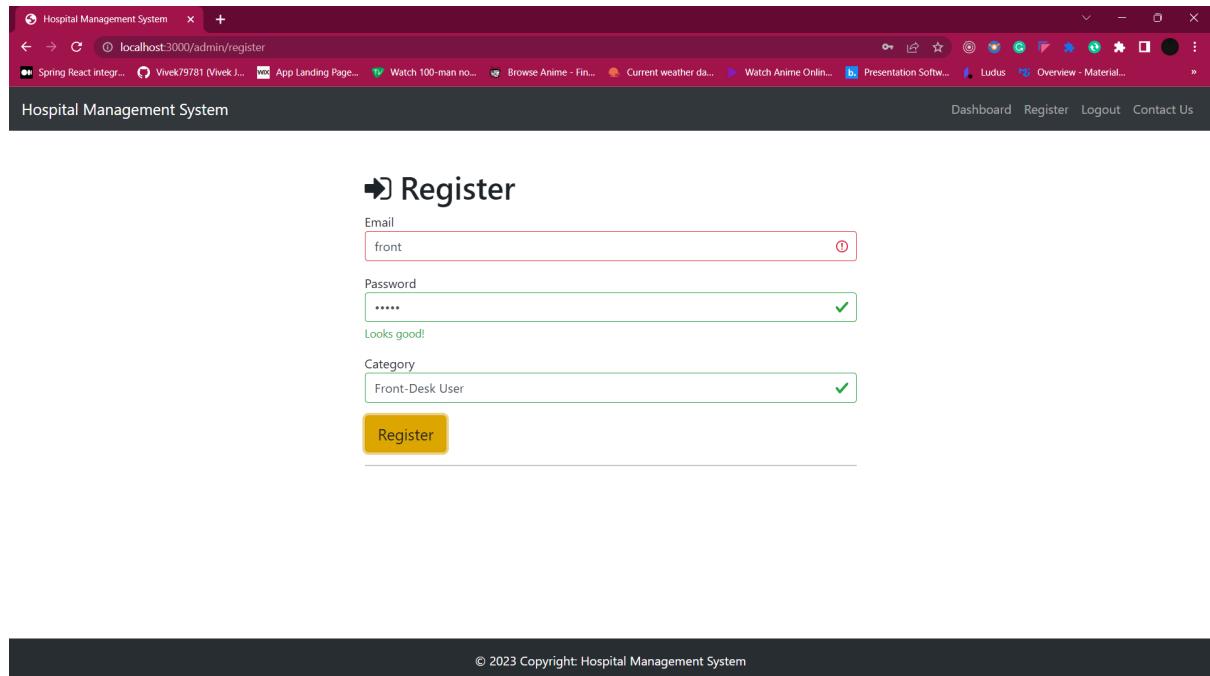
FILL UP CREDENTIALS:

CASE 1: Email Already Registered:



The screenshot shows a web browser window with the title 'Hospital Management System'. The address bar displays 'localhost:3000/admin/register'. The main content area is titled 'Register' with a back arrow icon. A red horizontal bar at the top contains the error message 'Email already exists'. Below the message is the registration form, which includes fields for 'Email' (empty), 'Password' (empty), and 'Category' (set to 'Admin'), and a yellow 'Register' button. At the bottom of the page, there is a dark footer bar with the copyright notice '© 2023 Copyright: Hospital Management System'.

CASE 2: Invalid Credentials Pattern:

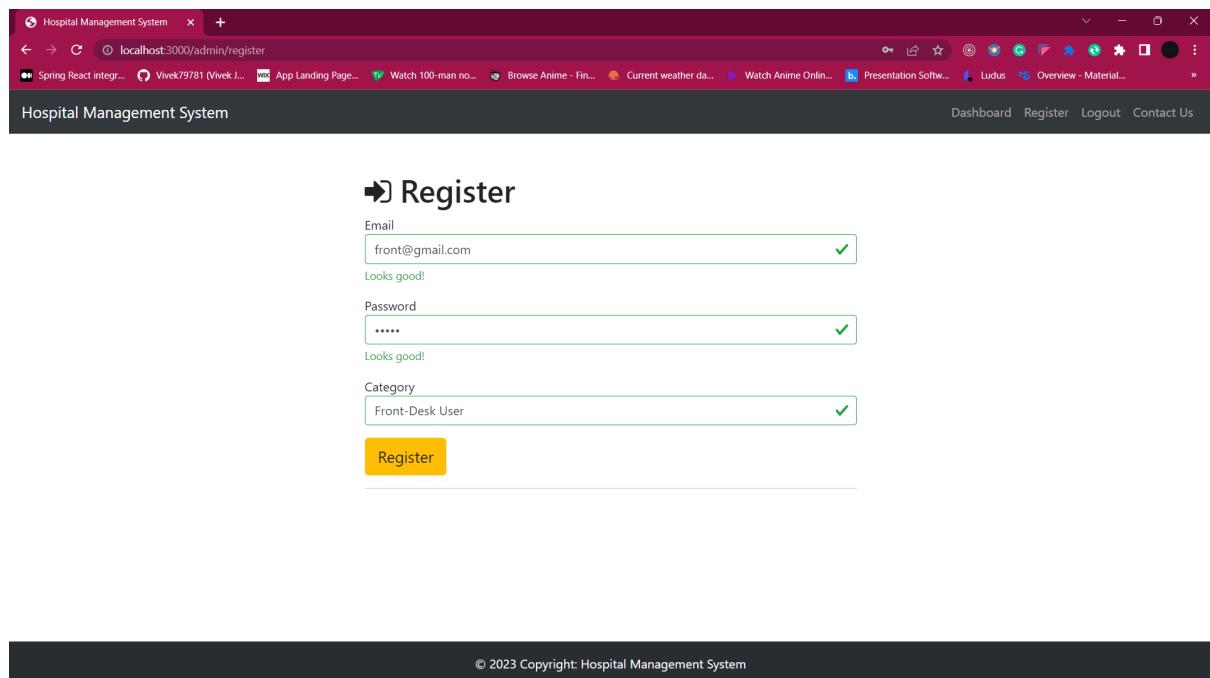


A screenshot of a web browser window titled "Hospital Management System". The address bar shows "localhost:3000/admin/register". The page content is a "Register" form. The "Email" field contains "front" and has a red border, indicating an error. The "Password" field contains "*****" and has a green border with a checkmark, indicating it is valid. Below the password field is the text "Looks good!". The "Category" field contains "Front-Desk User" and has a green border with a checkmark, indicating it is valid. At the bottom is a yellow "Register" button.

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CASE 3: Valid Credentials Pattern:

Redirected to 'admin/dashboard'



A screenshot of a web browser window titled "Hospital Management System". The address bar shows "localhost:3000/admin/register". The page content is a "Register" form. The "Email" field contains "front@gmail.com" and has a green border with a checkmark, indicating it is valid. Below the email field is the text "Looks good!". The "Password" field contains "*****" and has a green border with a checkmark, indicating it is valid. Below the password field is the text "Looks good!". The "Category" field contains "Front-Desk User" and has a green border with a checkmark, indicating it is valid. At the bottom is a yellow "Register" button.

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CASE 4: Doctor Form Expansion:

The screenshot shows a browser window titled "Hospital Management System" at the URL "localhost:3000/admin/register". The page has a header with "Dashboard", "Register", "Logout", and "Contact Us". Below the header is a form titled "Register" with the following fields:

- Email: hakaiisinvivek@gmail.com
- Password: (redacted)
- Category: Doctor
- Name: (redacted)
- Department: (redacted)
- Position: (redacted)
- Gender: Male

At the bottom of the form, there is a copyright notice: "© 2023 Copyright: Hospital Management System".

CASE 5: Valid Registration:

The screenshot shows a browser window titled "Hospital Management System" at the URL "localhost:3000/admin". The page has a header with "Dashboard", "Register", "Logout", and "Contact Us". Below the header is a section titled "All Registered Users :" displaying five user entries in a grid format:

UserID: 1 Email: admin@gmail.com Role: Admin Delete	UserID: 2 Email: vivekdbz248@gmail.com Role: Doctor Delete	UserID: 3 Email: front@gmail.com Role: FrontDesk Delete	UserID: 4 Email: dataentry@gmail.com Role: DataEntry Delete
UserID: 5 Email: hakaiisinvivek@gmail.com Role: Doctor Delete			

At the bottom of the page, there is a copyright notice: "© 2023 Copyright: Hospital Management System".

DELETE AN USER:

Click on the delete button of the user admin wants to delete.

Here we clicked on delete of userID: 4

The screenshot shows a web browser window titled "Hospital Management System" at the URL "localhost:3000/admin". The page displays a table with four columns, each representing a registered user. The columns are labeled "UserID: 1", "UserID: 2", "UserID: 3", and "UserID: 5". Each row contains the user's ID, email, role, and a red "Delete" button. The user with UserID 4 is missing from the list, indicating it has been deleted. The footer of the page includes the copyright notice "© 2023 Copyright: Hospital Management System".

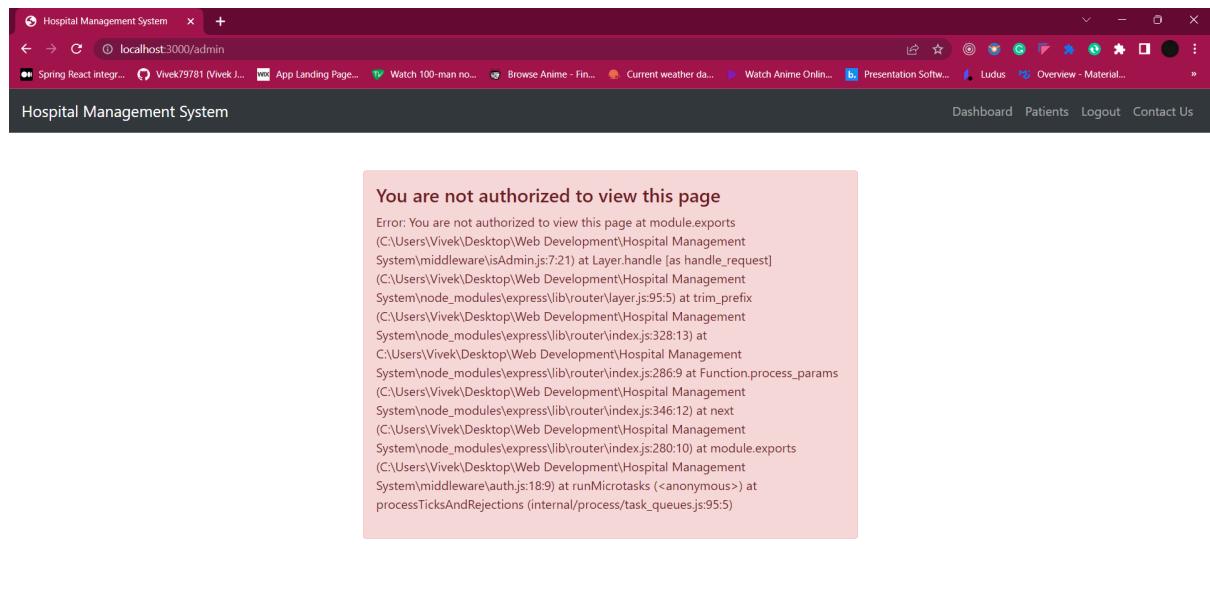
All Registered Users :			
UserID: 1 Email: admin@gmail.com Role: Admin Delete	UserID: 2 Email: vivekdbz248@gmail.com Role: Doctor Delete	UserID: 3 Email: front@gmail.com Role: FrontDesk Delete	UserID: 5 Email: hakaiisinvivek@gmail.com Role: Doctor Delete

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USER CAN'T ACCESS ANY UNAUTHORISED PAGE

Example, doctor cannot access any admin route or frontdesk route.

Below is the example of doctor tries to access admin route.



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FRONT DESK OPERATOR USER:

DASHBOARD:

The screenshot shows a web browser window titled "Hospital Management System" at "localhost:3000/frontdesk". The main content area is titled "All Registered Patients" and displays three patient records in a grid format:

PatientID: 1	PatientID: 2	PatientID: 3
Name: Patient Test 1	Name: Patient Test 2	Name: Patient Test 3
Address: Patient Test 1	Address: Patient Test Address 2	Address: Patient Test Address 3
Phone: 0000000000	Phone: 1111111111	Phone: 2222222222
Email: patienttest1@gmail.com	Email: patienttest2@gmail.com	Email: patienttest3@gmail.com
DOB: Mon Jan 01 2001	DOB: Tue Jan 02 2001	DOB: Wed Jan 03 2001
Registration date: Thu Mar 09 2023 6:07:11 am	Registration date: Thu Mar 09 2023 6:07:48 am	Registration date: Thu Mar 09 2023 6:08:17 am
Admission date: Thu Mar 09 2023 3:31:43 pm		Admission date: Thu Mar 09 2023 3:52:17 pm
Room number: 101		Room number: 101
Treatment date: Sun Mar 12 2023 11:00:00 am		
Treatment Description: Heart Problem		
Book Appointment	Book Appointment	Book Appointment
Discharge	Admit	Discharge
Schedule Test	Schedule Test	Schedule Test
Schedule Treatment	Schedule Treatment	Schedule Treatment

At the bottom of the page, a copyright notice reads "© 2023 Copyright: Hospital Management System".

ADMIT:

Admitting PatientID 2,

The screenshot shows a web browser window titled "Hospital Management System" at "localhost:3000/frontdesk". The main content area is titled "All Registered Patients" and displays three patient records in a grid format, identical to the dashboard:

PatientID: 1	PatientID: 2	PatientID: 3
Name: Patient Test 1	Name: Patient Test 2	Name: Patient Test 3
Address: Patient Test 1	Address: Patient Test Address 2	Address: Patient Test Address 3
Phone: 0000000000	Phone: 1111111111	Phone: 2222222222
Email: patienttest1@gmail.com	Email: patienttest2@gmail.com	Email: patienttest3@gmail.com
DOB: Mon Jan 01 2001	DOB: Tue Jan 02 2001	DOB: Wed Jan 03 2001
Registration date: Thu Mar 09 2023 6:07:11 am	Registration date: Thu Mar 09 2023 6:07:48 am	Registration date: Thu Mar 09 2023 6:08:17 am
Admission date: Thu Mar 09 2023 3:31:43 pm	Admission date: Thu Mar 09 2023 5:06:58 pm	Admission date: Thu Mar 09 2023 3:52:17 pm
Room number: 101	Room number: 101	Room number: 101
Treatment date: Sun Mar 12 2023 11:00:00 am		
Treatment Description: Heart Problem		
Book Appointment	Book Appointment	Book Appointment
Discharge	Discharge	Discharge
Schedule Test	Schedule Test	Schedule Test
Schedule Treatment	Schedule Treatment	Schedule Treatment

At the bottom of the page, a copyright notice reads "© 2023 Copyright: Hospital Management System".

DISCHARGE:

Discharging PatientID 2,

PatientID: 1

Name: Patient Test 1
Address: Patient Test 1
Phone: 0000000000
Email: patienttest1@gmail.com
DOB: Mon Jan 01 2001
Registration date: Thu Mar 09 2023 6:07:11 am
Treatment date: Sun Mar 12 2023 11:00:00 am
Treatment Description: Heart Problem

PatientID: 2

Name: Patient Test 2
Address: Patient Test Address 2
Phone: 1111111111
Email: patienttest2@gmail.com
DOB: Tue Jan 02 2001
Registration date: Thu Mar 09 2023 6:07:48 am
Admission date: Thu Mar 09 2023 5:06:58 pm
Room number: 101

PatientID: 3

Name: Patient Test 3
Address: Patient Test Address 3
Phone: 2222222222
Email: patienttest3@gmail.com
DOB: Wed Jan 03 2001
Registration date: Thu Mar 09 2023 6:08:17 am
Admission date: Thu Mar 09 2023 3:52:17 pm
Room number: 101

PatientID: 4

PatientID: 5

PatientID: 6

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SCHEDULE APPOINTMENT FORM:

Form Validation like above is applied here also.

Hospital Management System

Schedule Appointment

Doctor
Vivek Jaiswal - Cardiology

Date dd-mm-yyyy

Reason

Register Emergency

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CASE 1: Patient cannot have an appointment in past dates,

Hospital Management System

Schedule Appointment

Doctor
Vivek Jaiswal - Cardiology

Date dd-mm-yyyy

Reason

Register Emergency

localhost:3000 says
Please select a date in the future

OK

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User can only select time in the step of 15 minutes only as that will be time slot for appointment. If they choose time in between that then it will give valid time before that time slot.

CASE 2: Doctor is not available at that time:

The screenshot shows a browser window for the 'Hospital Management System' at localhost:3000/frontdesk/patient/2/bookappointment. A pink notification bar at the top says 'Doctor is not available at this time'. Below it is a form titled 'Schedule Appointment' with fields for 'Doctor' (Vivek Jaiswal - Cardiology), 'Date' (dd-mm-yyyy), and 'Reason'. At the bottom are two buttons: 'Register' (yellow) and 'Emergency' (red).

CASE 3: Valid Appointment:

Redirected to 'frontdesk/dashboard'

The screenshot shows a browser window for the 'Hospital Management System' at localhost:3000/frontdesk. A green notification bar at the top says 'Appointment has been scheduled'. Below it is a section titled 'All Registered Patients:' with three patient profiles. Each profile includes fields like Name, Address, Phone, Email, DOB, Registration date, Treatment date, and Treatment Description. Under each profile are 'Book Appointment' and 'Discharge' buttons. The footer copyright notice is '© 2023 Copyright: Hospital Management System'.

CASE 4: Emergency Appointment:

After Clicking Emergency Appointment from appointment form.

Redirected to 'frontdesk/dashboard'

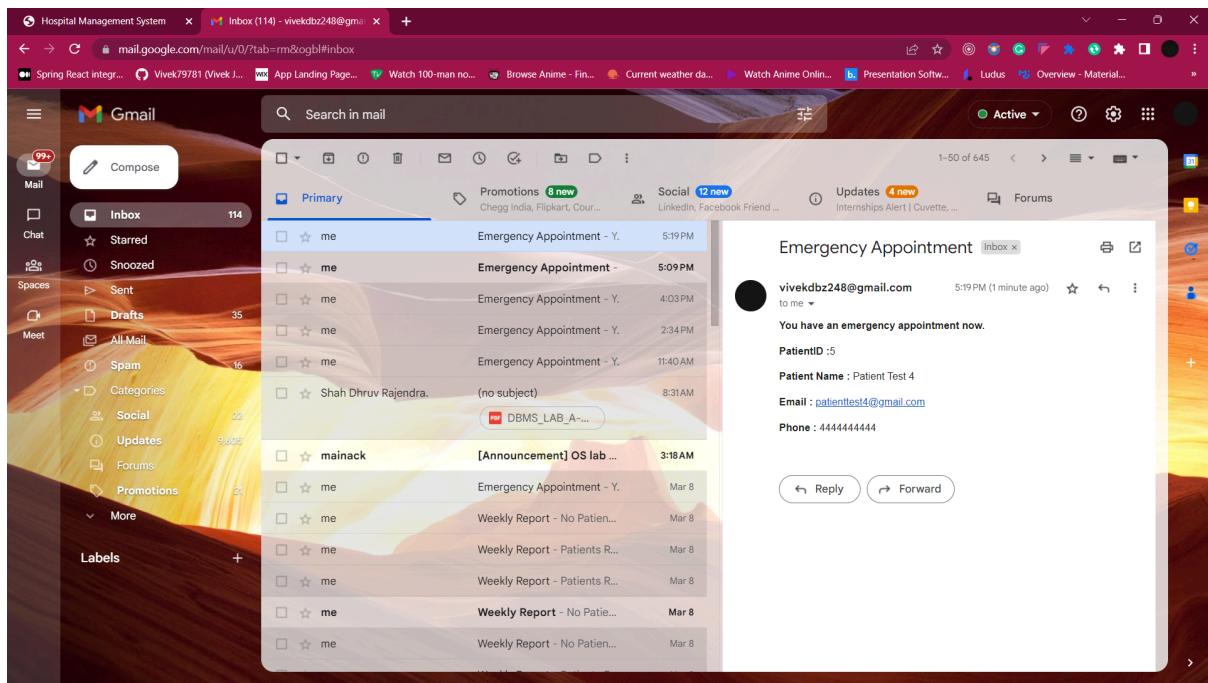
The screenshot shows a web browser window for the 'Hospital Management System' at localhost:3000/frontdesk. A green notification bar at the top states 'Emergency Appointment has been scheduled to Vivek Jaiswal'. Below it, the title 'All Registered Patients:' is centered. Three patient cards are displayed in a grid:

PatientID: 1	PatientID: 2	PatientID: 3
Name: Patient Test 1	Name: Patient Test 2	Name: Patient Test 3
Address: Patient Test 1	Address: Patient Test Address 2	Address: Patient Test Address 3
Phone: 0000000000	Phone: 1111111111	Phone: 2222222222
Email: patienttest1@gmail.com	Email: patienttest2@gmail.com	Email: patienttest3@gmail.com
DOB: Mon Jan 01 2001	DOB: Tue Jan 02 2001	DOB: Wed Jan 03 2001
Registration date: Thu Mar 09 2023 6:07:11 am	Registration date: Thu Mar 09 2023 6:07:48 am	Registration date: Thu Mar 09 2023 6:08:17 am
Treatment date: Sun Mar 12 2023 11:00:00 am	Admission date: Thu Mar 09 2023 5:06:58 pm	Admission date: Thu Mar 09 2023 3:52:17 pm
Treatment Description: Heart Problem	Room number: 101	Room number: 101

Each card has two blue buttons at the bottom: 'Book Appointment' and 'Discharge'.

At the bottom of the page, a dark footer bar contains the text '© 2023 Copyright: Hospital Management System'.

Email also has been send to the doctor email address:



SCHEDULE TEST FORM:

Form Validation like above is applied here also.

A screenshot of a 'Schedule Test' form on a web browser. The URL bar shows 'localhost:3000/frontdesk/patient/2/test'. The page title is 'Hospital Management System'. The main content area has a heading '➡ Schedule Test'. It contains two input fields: 'Test Center' and 'Test Name', both with placeholder text 'Enter Test Center' and 'Enter Test Name'. Below these is a yellow 'Register' button. At the bottom of the page is a dark footer bar with the text '© 2023 Copyright: Hospital Management System'.

CASE 1: Valid Test Inputs:

Redirected to 'frontdesk/dashboard'

The screenshot shows a browser window with the title 'Hospital Management System' at the top. Below the title, there is a green notification bar with the text 'Test has been scheduled'. The main content area is titled 'All Registered Patients:' and displays three patient records in a grid format. Each record includes a 'Book Appointment' and 'Discharge' button.

PatientID: 1	PatientID: 2	PatientID: 3
Name: Patient Test 1	Name: Patient Test 2	Name: Patient Test 3
Address: Patient Test 1	Address: Patient Test Address 2	Address: Patient Test Address 3
Phone: 0000000000	Phone: 1111111111	Phone: 2222222222
Email: patienttest1@gmail.com	Email: patienttest2@gmail.com	Email: patienttest3@gmail.com
DOB: Mon Jan 01 2001	DOB: Tue Jan 02 2001	DOB: Wed Jan 03 2001
Registration date: Thu Mar 09 2023 6:07:11 am	Registration date: Thu Mar 09 2023 6:07:48 am	Registration date: Thu Mar 09 2023 6:08:17 am
Treatment date: Sun Mar 12 2023 11:00:00 am	Admission date: Thu Mar 09 2023 5:06:58 pm	Admission date: Thu Mar 09 2023 3:52:17 pm
Treatment Description: Heart Problem	Room number: 101	Room number: 101

At the bottom of the page, there is a copyright notice: © 2023 Copyright: Hospital Management System.

TREATMENT SCHEDULE:

A patient can have only one treatment scheduled until and unless it is not pending it will not show schedule option. Below is the given example.

The screenshot shows a web browser window for the "Hospital Management System" at "localhost:3000/frontdesk". The page displays a grid of patient information and treatment options. The first row contains three columns for patients with IDs 1, 2, and 3. Each column includes a "Book Appointment" button, a "Discharge" button, a "Schedule Test" button, and a "Schedule Treatment" button. The second row contains three columns for patients with IDs 4, 5, and 6. Each column includes similar buttons. At the bottom of the page, there is a footer with the copyright notice "© 2023 Copyright: Hospital Management System".

PatientID: 1	PatientID: 2	PatientID: 3
Email: patienttest1@gmail.com DOB: Mon Jan 01 2001 Registration date: Thu Mar 09 2023 6:07:11 am Treatment date: Sun Mar 12 2023 11:00:00 am Treatment Description: Heart Problem	Email: patienttest2@gmail.com DOB: Tue Jan 02 2001 Registration date: Thu Mar 09 2023 6:07:48 am Admission date: Thu Mar 09 2023 5:06:58 pm Room number: 101	Email: patienttest3@gmail.com DOB: Wed Jan 03 2001 Registration date: Thu Mar 09 2023 6:08:17 am Admission date: Thu Mar 09 2023 3:52:17 pm Room number: 101
Book Appointment	Book Appointment	Book Appointment
Discharge	Discharge	Discharge
Schedule Test	Schedule Test	Schedule Test
Schedule Treatment	Schedule Treatment	Schedule Treatment
PatientID: 4 Name: Sahil Address: Rp hall Phone: 1234567890 Email: sahil@gmail.com DOB: Sat Mar 04 2023 Registration date: Thu Mar 09 2023 9:41:40 am	PatientID: 5 Name: Patient Test 4 Address: Patient Test Address 4 Phone: 4444444444 Email: patienttest4@gmail.com DOB: Thu Jan 04 2001 Registration date: Thu Mar 09 2023 3:26:50 pm	PatientID: 6 Name: Patient Test 5 Address: Patient Test Address 5 Phone: 5555555555 Email: patienttest5@gmail.com DOB: Fri Jan 05 2001 Registration date: Thu Mar 09 2023 3:53:01 pm

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Treatment Form:

Form Validation like above is applied here also.

The screenshot shows a web browser window for the "Hospital Management System" at "localhost:3000/frontdesk/patient/2/treatment". The page title is "Schedule Treatment". It features a "Doctor" input field containing "Vivek Jaiswal - Cardiology", a "Description" input field, a "Treatment Date" input field with a date picker, and a yellow "Register" button. At the bottom of the page, there is a footer with the copyright notice "© 2023 Copyright: Hospital Management System".

Hospital Management System

Dashboard Register Logout Contact Us

➡ Schedule Treatment

Doctor
Vivek Jaiswal - Cardiology

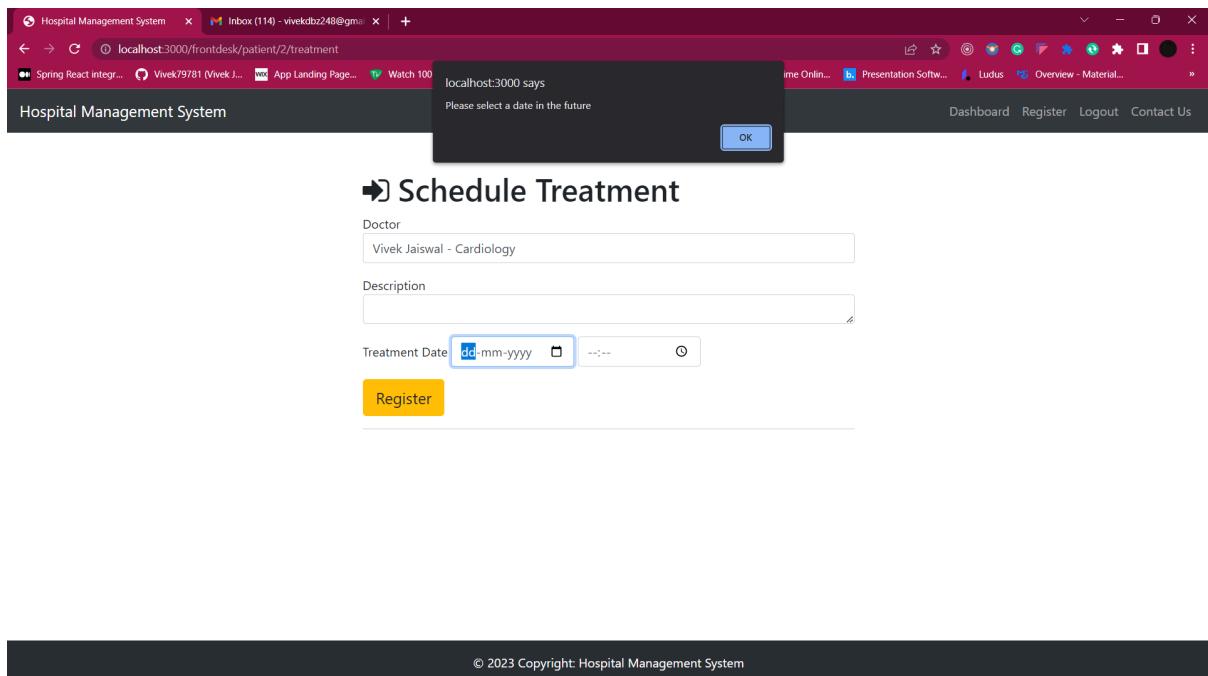
Description

Treatment Date dd-mm-yyyy

Register

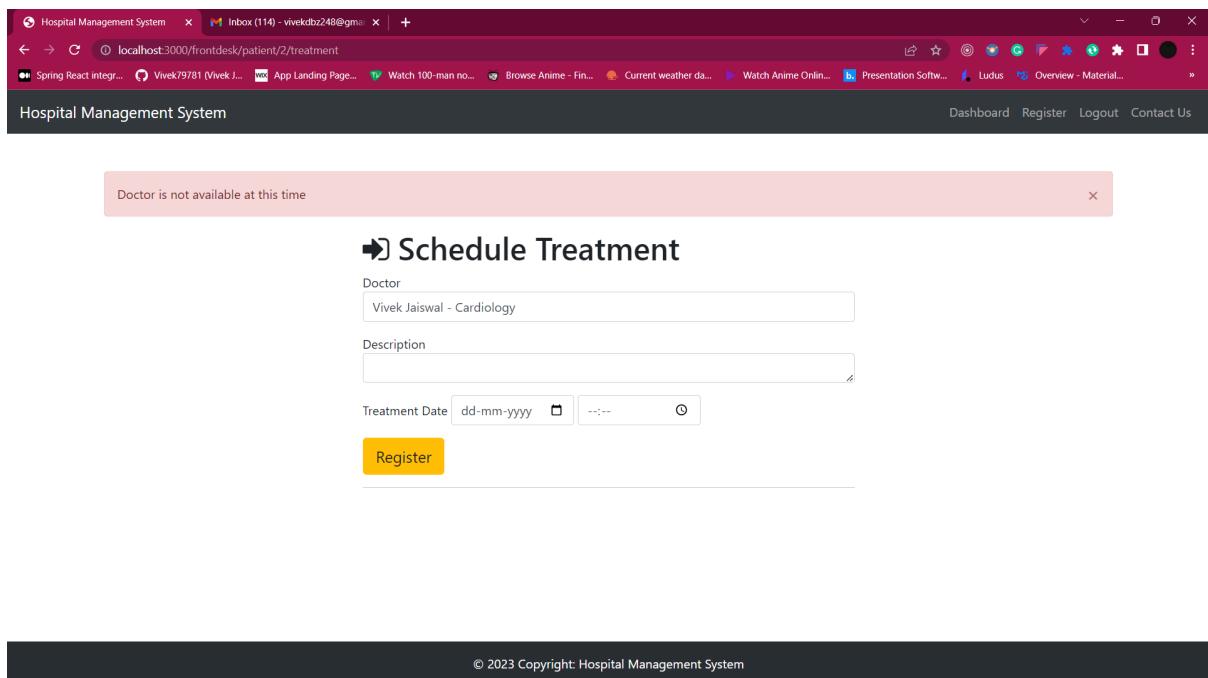
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CASE 1: Patient cannot have treatment in past dates,



User can only select time in the step of 1 hour only as that will be time slot for treatment. If they choose time in between that then it will give valid time before that time slot.

CASE 2: Doctor is not available at that time:



CASE 3: Valid Treatment:

Redirected to 'frontdesk/dashboard'

The screenshot shows a browser window for the 'Hospital Management System' at 'localhost:3000/frontdesk'. A green notification bar at the top says 'Treatment has been scheduled'. Below it, a section titled 'All Registered Patients:' displays three patient records in cards:

- PatientID: 1**
Name: Patient Test 1
Address: Patient Test 1
Phone: 0000000000
Email: patienttest1@gmail.com
DOB: Mon Jan 01 2001
Registration date: Thu Mar 09 2023 6:07:11 am
Treatment date: Sun Mar 12 2023 11:00:00 am
Treatment Description: Heart Problem
- PatientID: 2**
Name: Patient Test 2
Address: Patient Test Address 2
Phone: 1111111111
Email: patienttest2@gmail.com
DOB: Tue Jan 02 2001
Registration date: Thu Mar 09 2023 6:07:48 am
Admission date: Thu Mar 09 2023 5:06:58 pm
Room number: 101
Treatment date: Sun Mar 12 2023 5:00:00 pm
Treatment Description: TEST
- PatientID: 3**
Name: Patient Test 3
Address: Patient Test Address 3
Phone: 2222222222
Email: patienttest3@gmail.com
DOB: Wed Jan 03 2001
Registration date: Thu Mar 09 2023 6:08:17 am
Admission date: Thu Mar 09 2023 3:52:17 pm
Room number: 101

A blue 'Book Appointment' button is visible below the third patient's card. The footer contains the copyright notice '© 2023 Copyright: Hospital Management System'.

PATIENT REGISTRATION:

Form:

Form Validation like above is applied here also.

The screenshot shows a browser window for the 'Hospital Management System' at 'localhost:3000/frontdesk/register'. The page title is 'Patient Registration'. It features a form with the following fields:

- Name: An input field with a placeholder 'Name'.
- Address: An input field with a placeholder 'Address'.
- Phone: An input field with a placeholder 'Phone'.
- Email: An input field with a placeholder 'Email'.
- Date of birth: An input field with a placeholder 'dd-mm-yyyy' and a calendar icon.
- Gender: An input field with a placeholder 'Male'.

A yellow 'Register' button is located at the bottom of the form. The footer contains the copyright notice '© 2023 Copyright: Hospital Management System'.

It is also been validated that phone number should be exactly 10-digit

The screenshot shows a 'Patient Registration' form on a web browser. The fields and their current states are:

- Name: Patient Test 6 (green checkmark, validation message: Looks good!)
- Address: Patient Test Address 6 (green checkmark, validation message: Looks good!)
- Phone: 6666666666 (red border, validation message: Looks good!)
- Email: (empty, red border, validation message: Looks good!)
- Date of birth: dd-mm-yyyy (red border, validation message: Looks good!)
- Gender: Male (green checkmark, validation message: Looks good!)

A yellow 'Register' button is at the bottom. The footer says © 2023 Copyright: Hospital Management System.

Valid Patient Registration:

The screenshot shows a 'Patient Registration' form on a web browser. All fields are now valid, indicated by green checkmarks and validation messages:

- Name: Patient Test 6 (green checkmark, validation message: Looks good!)
- Address: Patient Test Address 6 (green checkmark, validation message: Looks good!)
- Phone: 6666666666 (green checkmark, validation message: Looks good!)
- Email: patienttest6@gmail.com (green checkmark, validation message: Looks good!)
- Date of birth: 06-01-2001 (green checkmark, validation message: Looks good!)
- Gender: Male (green checkmark, validation message: Looks good!)

A yellow 'Register' button is at the bottom. The footer says © 2023 Copyright: Hospital Management System.

On clicking register, it will redirect to '/frontdesk' page:

The screenshot shows a web browser window titled "Hospital Management System" at the URL "localhost:3000/frontdesk". A green notification bar at the top states "Patient has been registered". Below it, a section titled "All Registered Patients:" displays three patient records in a grid format:

PatientID: 1	PatientID: 2	PatientID: 3
Name: Patient Test 1	Name: Patient Test 2	Name: Patient Test 3
Address: Patient Test 1	Address: Patient Test Address 2	Address: Patient Test Address 3
Phone: 0000000000	Phone: 1111111111	Phone: 2222222222
Email: patienttest1@gmail.com	Email: patienttest2@gmail.com	Email: patienttest3@gmail.com
DOB: Mon Jan 01 2001	DOB: Tue Jan 02 2001	DOB: Wed Jan 03 2001
Registration date: Thu Mar 09 2023 6:07:11 am	Registration date: Thu Mar 09 2023 6:07:48 am	Registration date: Thu Mar 09 2023 6:08:17 am
Treatment date: Sun Mar 12 2023 11:00:00 am	Admission date: Thu Mar 09 2023 5:06:58 pm	Admission date: Thu Mar 09 2023 3:52:17 pm
Treatment Description: Heart Problem	Room number: 101	Room number: 101
	Treatment date: Sun Mar 12 2023 5:00:00 pm	
	Treatment Description: TEST	

A blue "Book Appointment" button is located at the bottom right of the patient grid. The footer of the page includes the copyright notice "© 2023 Copyright: Hospital Management System".

Showing Patient is registered:

The screenshot shows a web browser window titled "Hospital Management System" at the URL "localhost:3000/frontdesk". A green notification bar at the top is empty. Below it, a section displays a single patient record in a grid format:

PatientID: 7
Name: Patient Test 6
Address: Patient Test Address 6
Phone: 6666666666
Email: patienttest6@gmail.com
DOB: Sat Jan 06 2001
Registration date: Thu Mar 09 2023 6:36:23 pm

Below the patient details are four blue buttons: "Book Appointment", "Discharge", "Schedule Test", and "Schedule Treatment". The footer of the page includes the copyright notice "© 2023 Copyright: Hospital Management System".

DATA ENTRY OPERATOR USER:

DASHBOARD:

The screenshot shows a web browser window titled "Hospital Management System" at "localhost:3000/dataentry". The dashboard displays a grid of patient information cards. The first card (PatientID: 1) includes fields for Name, Address, Phone, Email, DOB, and Registration date, along with four blue action buttons: "Update Test", "Update Treatment", "Update Appointment", and "Show Images". The second card (PatientID: 2) and third card (PatientID: 3) follow a similar structure. Below the cards, there are three smaller boxes labeled "PatientID: 4", "PatientID: 5", and "PatientID: 6". At the bottom of the page is a dark footer bar with the copyright notice "© 2023 Copyright: Hospital Management System".

UPDATE TEST:

Form Validation like above is applied here also.

The screenshot shows a web browser window titled "Hospital Management System" at "localhost:3000/dataentry/patient/2/updateTest". The page has a title "Update Test". It contains a form with the following fields: "Test :Test Name Test 2 By Test Center Test 2", "Test Date: 2023-03-09 07:45:52", "Test Status: Pending", and "Test Result: [empty input field]". Below the form is a blue "UPDATE" button. At the bottom of the page is a dark footer bar with the copyright notice "© 2023 Copyright: Hospital Management System".

On updating the test result it will send to doctor and removed from the data entry side.

A screenshot of a web browser window titled "Hospital Management System". The URL in the address bar is "localhost:3000/dataEntry/patient/2/updateTest". The page content includes a green success message box at the top stating "Test result updated successfully". Below this, the title "Update Test" is centered. At the bottom right of the page, there is a copyright notice: "© 2023 Copyright: Hospital Management System".

UPDATE APPOINTMENT:

A screenshot of a web browser window titled "Hospital Management System". The URL in the address bar is "localhost:3000/dataEntry/patient/2/updateAppointment". The page content features four appointment cards arranged horizontally. Each card contains fields for "Appointment To", "Appointment Date", "Reason", "Priority", and "Appointment Status". The first card shows "Appointment To: Vivek Jaiswal", "Appointment Date: Fri Mar 10 2023 5:15:00 pm", "Reason: Test", "Priority: Severe", and "Appointment Status: Pending". The second card shows "Appointment To: Vivek Jaiswal", "Appointment Date: Thu Mar 09 2023 4:00:00 pm", "Reason: Emergency", "Priority: Highly Severe", and "Appointment Status: Cancelled". The third card shows "Appointment To: Vivek Jaiswal", "Appointment Date: Sun Mar 12 2023 1:30:00 pm", "Reason: Heart Problem", "Priority: Severe", and "Appointment Status: Completed". The fourth card shows "Appointment To: Vivek Jr", "Appointment Date: Thu Mar 09 2023 5:00:00 pm", "Reason: Emergency", "Priority: Highly Severe", and "Appointment Status: Pending". Each card has a blue "UPDATE" button at the bottom. At the bottom right of the page, there is a copyright notice: "© 2023 Copyright: Hospital Management System".

A Drop Down is given to update the form.

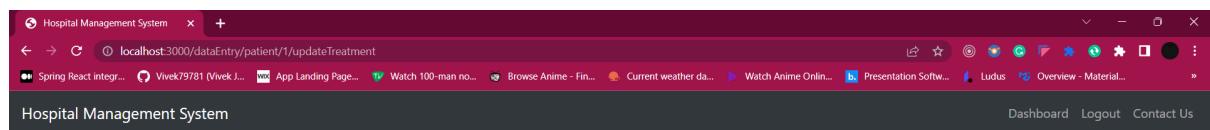
If Completed then drop down will not be appeared else it will be appeared.

On updating it will update the appointment status.

The screenshot shows a browser window for a "Hospital Management System" at the URL localhost:3000/dataEntry/patient/2/updateAppointment. The page title is "Update Appointment". There are four appointment slots, each with a "Status" dropdown menu. The first slot's dropdown is open, showing options like "Pending", "Completed", and "Cancelled". The other three slots show their respective statuses: "Completed", "Cancelled", and "Completed". The "Completed" and "Cancelled" slots have their dropdowns closed. A green success message at the top says "Appointment updated successfully". The bottom footer contains the copyright notice "© 2023 Copyright Hospital Management System".

Appointment To:	Vivek Jaiswal	Appointment To:	Vivek Jaiswal	Appointment To:	Vivek Jaiswal	Appointment To:	Vivek Jr
Appointment Date:	Fri Mar 10 2023 5:15:00 pm	Appointment Date:	Thu Mar 09 2023 4:00:00 pm	Appointment Date:	Sun Mar 12 2023 1:30:00 pm	Appointment Date:	Thu Mar 09 2023 5:00:00 pm
Reason:	Test	Reason:	Emergency	Reason:	Heart Problem	Reason:	Emergency
Priority:	Severe	Priority:	Highly Severe	Priority:	Severe	Priority:	Highly Severe
Appointment Status:	Pending	Appointment Status:	Cancelled	Appointment Status:	Completed	Appointment Status:	Completed
Appointment Status:	Pending	Appointment Status:	Pending	Appointment Status:		Appointment Status:	
	UPDATE	UPDATE					

UPDATE TREATMENT:



Update Treatment

Treatment Description:Heart Problem By Vivek Jaiswal - Cardiology

Treatment Date: Sun Mar 12 2023
11:00:00 am

Treatment Status: Pending

Treatment Status:

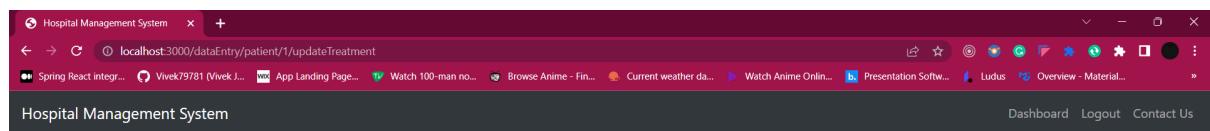
Pending

UPDATE

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A Drop Down is given to update the form.

On updating it will update the treatment status.



Update Treatment

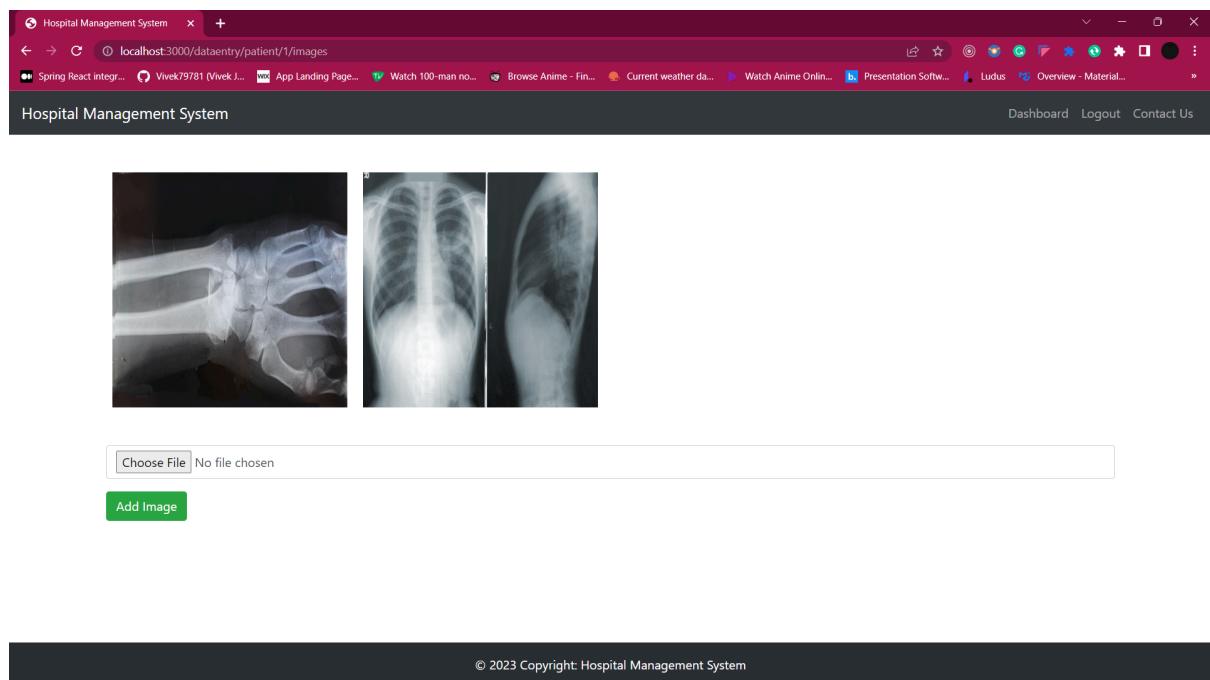
Treatment Description:Heart Problem By Vivek Jaiswal - Cardiology

Treatment Date: Sun Mar 12 2023
11:00:00 am

Treatment Status: Completed

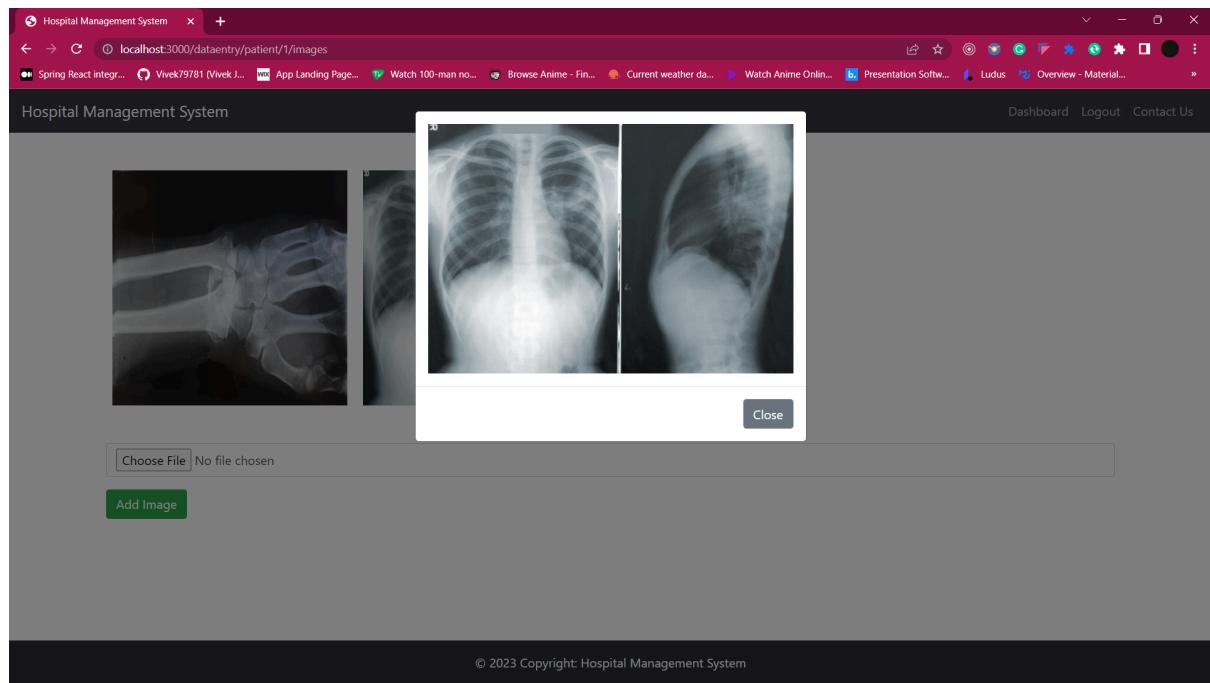
© 2023 Copyright: Hospital Management System

IMAGE SECTION:



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On Clicking Each Images, it will show a preview to the image:



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On Adding Image, it will be added here.

The screenshot shows a web browser window titled "Hospital Management System" at the URL "localhost:3000/dataEntry/patient/1/images". A green success message at the top left says "Images uploaded successfully". Below the message are three X-ray images: a hand X-ray on the left, a full chest X-ray in the center, and a shoulder X-ray on the right. Below the images is a file input field with the placeholder "Choose File No file chosen" and a green "Add Image" button. At the bottom of the page is a dark footer bar with the copyright notice "© 2023 Copyright: Hospital Management System".

DOCTOR USER

DASHBOARD:

List of all upcoming appointments are shown:

The screenshot shows a web browser window for the "Hospital Management System" at localhost:3000/doctor. The page title is "Hospital Management System". The main content area displays two sections: "Hello, Vivek Jaiswal Here is the list of all appointmnets" and "Here is the list of Patients".

Upcoming Appointments:

Appointment ID	Patient Name	Appointment Time	Priority	Reason
12	Patient Test 3	Thu Mar 09 2023 10:00:00 pm	Highly Severe	Emergency
10	Patient Test 2	Fri Mar 10 2023 5:15:00 pm	Severe	Test

Patients List:

PatientID: 1	PatientID: 2	PatientID: 5
Name: Patient Test 1 Address: Patient Test 1 Phone: 0000000000 Email: patienttest1@gmail.com DOB: Mon Jan 01 2001 Registration date: Thu Mar 09 2023 6:07:11 am	Name: Patient Test 2 Address: Patient Test Address 2 Phone: 1111111111 Email: patienttest2@gmail.com DOB: Tue Jan 02 2001 Registration date: Thu Mar 09 2023 6:07:48 am Admission date: Thu Mar 09 2023 5:06:58 pm	Name: Patient Test 4 Address: Patient Test Address 4 Phone: 4444444444 Email: patienttest4@gmail.com DOB: Thu Jan 04 2001 Registration date: Thu Mar 09 2023 3:26:50 pm Admission date: Thu Mar 09 2023 3:53:18 pm

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List of all patients treated by him are also shown here:

The screenshot shows a web browser window for the "Hospital Management System" at localhost:3000/doctor. The page title is "Hospital Management System". The main content area displays two sections: "Here is the list of Patients" and a grid of patient treatment history.

Patients List:

PatientID: 1	PatientID: 2	PatientID: 5
Name: Patient Test 1 Address: Patient Test 1 Phone: 0000000000 Email: patienttest1@gmail.com DOB: Mon Jan 01 2001 Registration date: Thu Mar 09 2023 6:07:11 am	Name: Patient Test 2 Address: Patient Test Address 2 Phone: 1111111111 Email: patienttest2@gmail.com DOB: Tue Jan 02 2001 Registration date: Thu Mar 09 2023 6:07:48 am Admission date: Thu Mar 09 2023 5:06:58 pm Room number: 101	Name: Patient Test 4 Address: Patient Test Address 4 Phone: 4444444444 Email: patienttest4@gmail.com DOB: Thu Jan 04 2001 Registration date: Thu Mar 09 2023 3:26:50 pm Admission date: Thu Mar 09 2023 3:53:18 pm Room number: 101

Treatment History:

PatientID: 4	PatientID: 2
Name: Sahil Address: Rp hall Phone: 1234567890	Name: Patient Test 2 Address: Patient Test Address 2 Phone: 1111111111

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TREATMENT HISTORY OF A PATIENT:

The screenshot shows a browser window for the 'Hospital Management System' at the URL 'localhost:3000/doctor/patient/4/treatment'. The title bar says 'Treatment History of Sahil'. The page contains a table with one row of data:

Treatment Date	Treatment Description	Status	Doctor
2023-03-10 14:30:00	TEST	Pending	Vivek Jaiswal

At the bottom of the page, there is a dark footer bar with the text '© 2023 Copyright: Hospital Management System'.

TEST HISTORY OF A PATIENT:

The screenshot shows a browser window for the 'Hospital Management System' at the URL 'localhost:3000/doctor/patient/1/test'. The title bar says 'Test History of Patient Test 1'. The page contains a table with one row of data:

Test ID	Test Center	Test Name	Test Date	Test Status	Test Result
1	Test Center Test 1	Test Name Test 1	2023-03-09 00:45:26	Completed	Negative

At the bottom of the page, there is a dark footer bar with the text '© 2023 Copyright: Hospital Management System'.

ALL PATIENT QUERY:

The screenshot shows a web browser window titled 'Hospital Management System' at the URL 'localhost:3000/doctor/patient'. The page displays three patient records under the heading 'All Registered Patients:'.

PatientID: 1	PatientID: 2	PatientID: 3
Name: Patient Test 1	Name: Patient Test 2	Name: Patient Test 3
Address: Patient Test 1	Address: Patient Test Address 2	Address: Patient Test Address 3
Phone: 000000000	Phone: 1111111111	Phone: 2222222222
Email: patienttest1@gmail.com	Email: patienttest2@gmail.com	Email: patienttest3@gmail.com
DOB: 2000-12-31 18:30:00	DOB: 2001-01-01 18:30:00	DOB: 2001-01-02 18:30:00
Registration date: 2023-03-09 00:37:11	Registration date: 2023-03-09 00:37:48	Registration date: 2023-03-09 00:38:17
Treatment date: 2023-03-12 11:30:00	Treatment Description: TEST	Admission date: 2023-03-09 11:36:58
Schedule Test	Schedule Test	Schedule Test
Schedule Treatment	Schedule Treatment	Schedule Treatment
Show Images	Show Images	Show Images

At the bottom of the page, there is a copyright notice: '© 2023 Copyright: Hospital Management System'.

Doctor can schedule treatment and test of the patient while prescribing about him/her.

SCHEDULE TEST BY DOCTOR:

It is same as front desk operator. Only difference is that after register the test timing, it will redirect to '/doctor/patient'

SCHEDULE TREATMENT BY DOCTOR:

Form is little bit different and it will redirect to '/doctor/patient'.

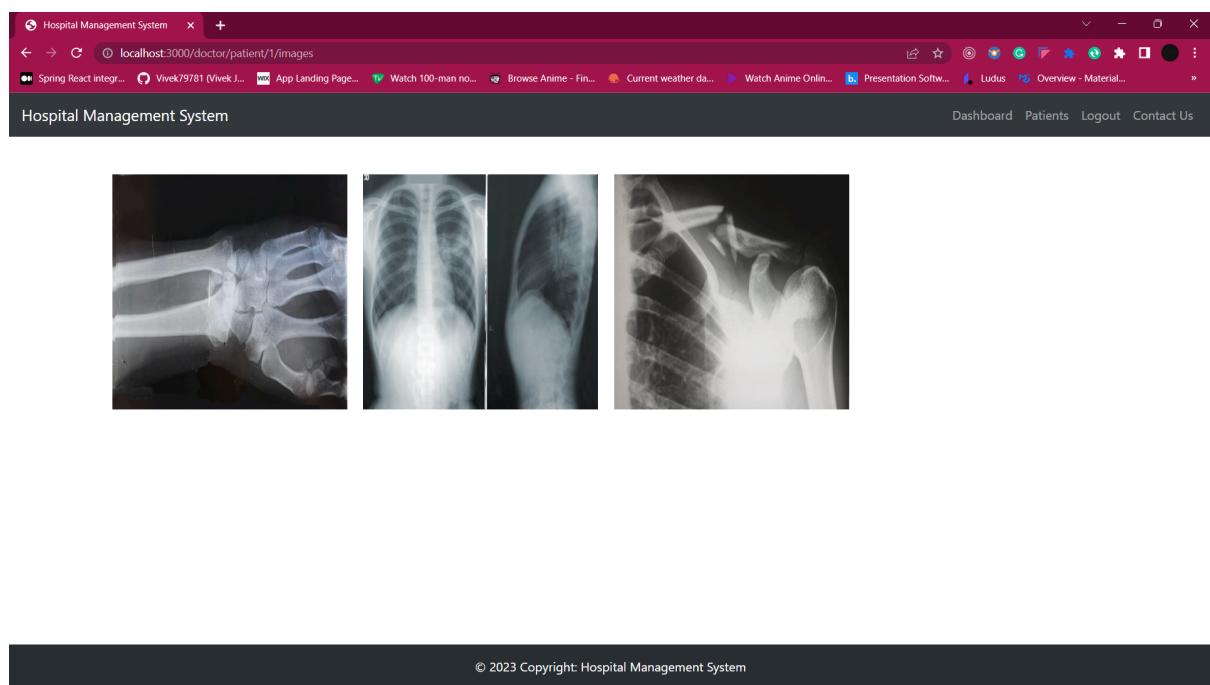
Screenshot of the Hospital Management System showing the "Schedule Treatment" page.

The page title is "Schedule Treatment". It features a "Description" input field, a date and time input field for "Treatment Date" (dd-mm-yyyy), and a yellow "Register" button.

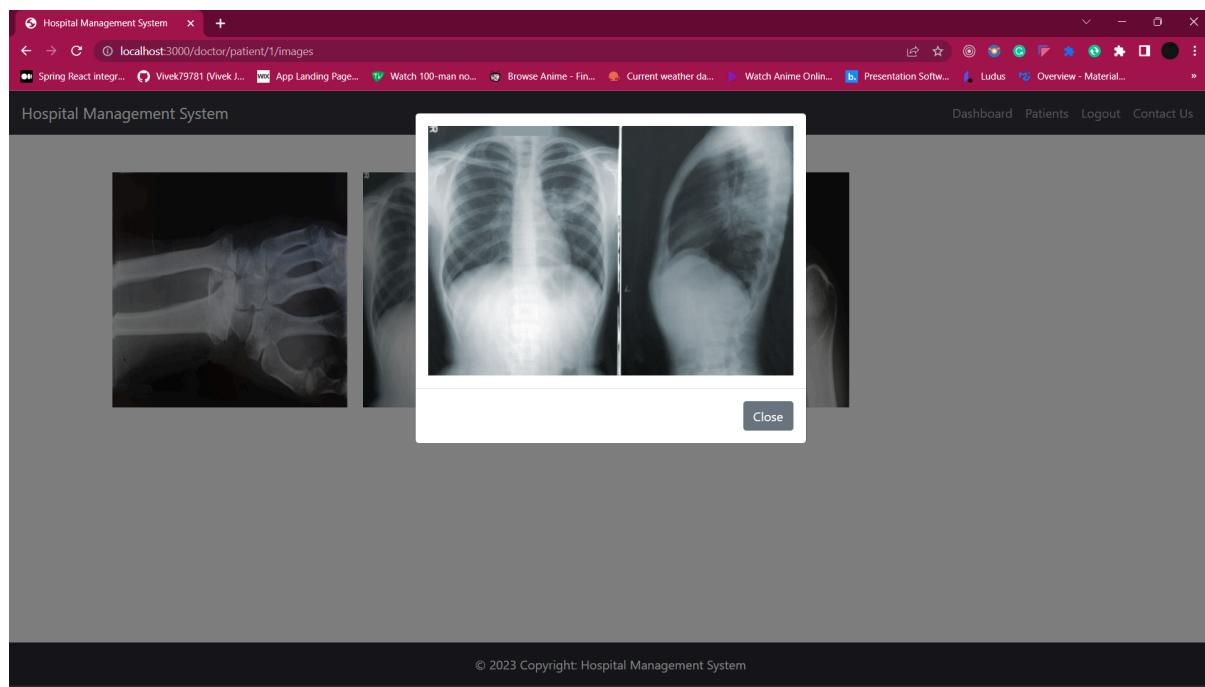
At the bottom right of the page, there is a footer bar with the text "© 2023 Copyright: Hospital Management System".

SHOW IMAGE:

Doctor can see images regarding each patient.



On Clicking Each Images, it will show a preview to the image:



EMAIL TO THE DOCTOR REGARDING DAILY APPOINTMENT:

The screenshot shows a Gmail inbox with 115 messages. An email from 'Patients List' is selected, titled 'Appointments'. The message body contains a table of daily appointments:

Appointment ID	Patient Name	Appointment Time	Priority	Reason
17	Dhruv	Wed Mar 08 2023 12:15:00 GMT+0530 (India Standard Time)	Highly Severe	Emergency
10	Rahul Sharma	Fri Mar 10 2023 10:15:00 GMT+0530 (India Standard Time)	Severe	Test
12	Amit Kumar	Thu Mar 09 2023 12:45:00 GMT+0530 (India Standard Time)	Severe	Test

EMAIL TO THE DOCTOR REGARDING WEEKLY REPORT OF PATIENTS:

The screenshot shows a Gmail inbox with 115 messages. An email from 'Patients Report' is selected, titled 'Patients Report'. The message body contains a table of weekly reports:

Test ID	Test Center	Test Name	Test Status	Test Result
4	Test	Doctor Test	Negative	

Treatments :

TreatmentID	Treatment Date	Description	Treatment Status
2	Sun Mar 05 2023 11:00:00 GMT+0530 (India Standard Time)	Stomach Pain	Completed
6	Tue Mar 07 2023 08:00:00 GMT+0530 (India Standard Time)	Dhruv ko kuch hua h	Completed