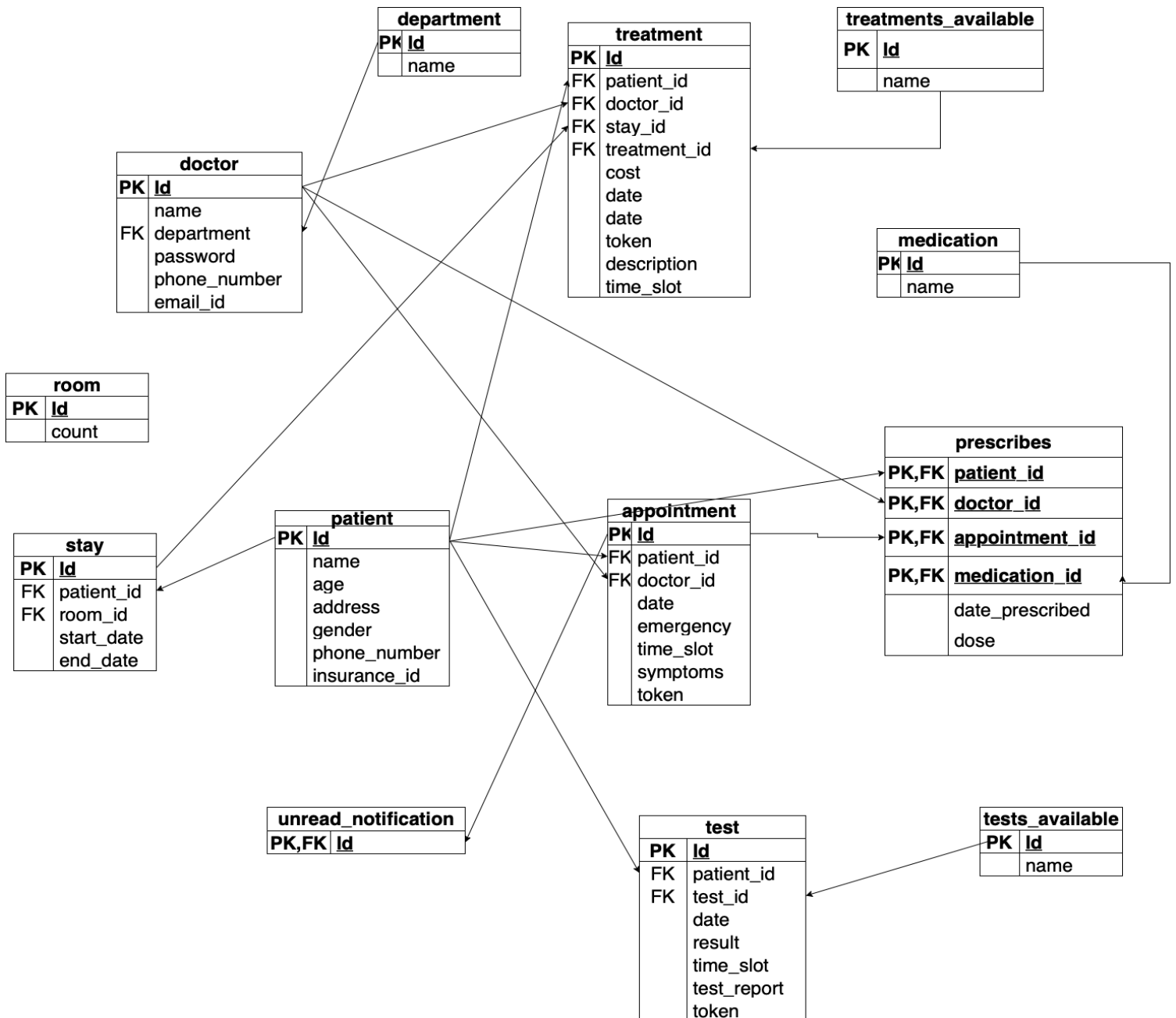


Hospital Management System

Languages and tools used: Python,HTML,CSS,flask framework

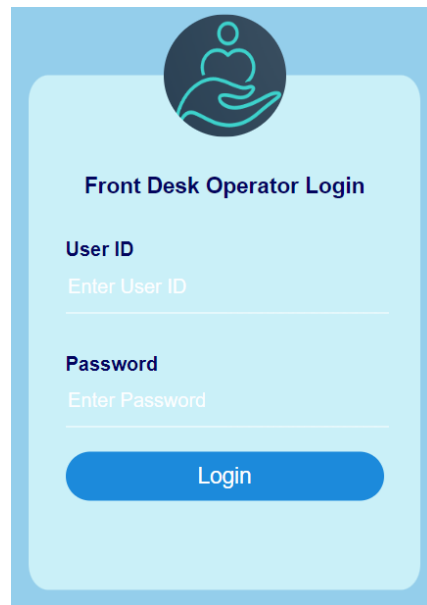
ER Diagram:



Front Desk Operator login page:

If the front desk operator enters an incorrect userid or password and clicks on login then it shows an error message that “you have entered an incorrect userid or password. Please try again!” and the front desk Operator stays on the same page.

"SELECT * FROM frontdeskop WHERE id = %s AND password = %s", (id, password)



The image shows a login form for a Front Desk Operator. It features a light blue background with a darker blue header and footer. At the top center is a circular icon containing a stylized figure of a person being held. Below the icon, the text "Front Desk Operator Login" is displayed in a bold, dark blue font. Underneath this, there are two input fields: "User ID" and "Password". Each field has a placeholder text "Enter User ID" and "Enter Password" respectively. Below the input fields is a blue button with the text "Login" in white.

Front Desk Operator page:

Side Nav

- Register a Patient
- Book an Appointment
- Schedule a Test
- Schedule Treatment
- Admit a patient
- Discharge a patient
- Edit patient details
- Logout

Register a Patient:

Phone Number : Accepts only if it has 10 characters and should lie in between 0 and 9. Gender Dropdown having options : F, M, others.

All the fields mentioned below are required. If the front desk operator clicks on the register, then Patient will be given an id and details will be added to the patient table, the message “successfully registered!” will be displayed and stay on the same page.

**“INSERT INTO patient(name,age,address,gender,phone_number,insurance_id)
VALUES(%s,%s,%s,%s,%s,%s)”, (name,age,address,gender,phone_number,insurance_id)**

Patient Registration

Patientname
Enter username

Address
Enter Address

PhoneNumber
Enter PhoneNumber

Insurance id
Enter Insurance id

Gender
Select

Age
Enter Age

Register

Book an appointment page:

Emergency Dropdown having options : 0 or 1

Specialization Drop down having specializations available in the hospital

Time Slot dropdown have 3 options namely “9-12”, “2-5”, “6-10”

Doctor drop down shows available doctors according to the chosen specialization ,chosen date, chosen timeslot.

If emergency is 0 then the front desk operator enters all the fields and books an appointment by adding fields to the appointment table. If emergency is 1 then the front desk operator takes only patient id and books an appointment by adding fields to the appointment table.

If emergency == 1:

```
“INSERT INTO appointment(patient_id,doctor_id,date,emergency)
VALUES(%s,%s,NOW(),%s,%s)”, (patient_id,doctor_id,emergency)
```

else:

```
“INSERT INTO appointment(patient_id,doctor_id,date,time_slot,emergency,token)
VALUES(%s,%s,%s,%s,%s,%s)”, (patient_id,doctor_id,date,time_slot,emergency,token)
```

Appointment Booking

Patientid
Enter Patientid

Emergency

Select Emergency Field

Choose the Specialisation

Select Specialisation

Choose Date of Appointment
dd-mm-yyyy

Choose TimeSlot

Select

Choose the Doctor

Select Doctor

Book

Test-Scheduling Page:

Time Slot dropdown have 3 options namely “9-12”, “2-5”, “6-10”. Adds the fields to the test table on clicking Schedule.

**“UPDATE test SET date = %s, time_slot = %s, token = %s WHERE id = %s”
,(Date,timeSlot,token,Test_id)**

Treatment-Scheduling Page:

Doctor drop down shows available doctors according to the chosen specialization ,chosen date, chosen timeslot. Adds the fields to the treatment table on clicking Schedule.

“UPDATE treatment SET doctor_id = %s, date = %s, time_slot = %s, token = %s WHERE id = %s”,(doctor_id,Date,timeSlot,token,Treatment_id)

Test-Scheduling

TestID
Enter Testid

Choose Date
dd-mm-yyyy

Choose TimeSlot
Select Time Slot

Schedule

Treatment-Scheduling

Treatmentid
Enter Treatmentid

Choose the Specialisation
Select Specialisation

Choose Date
dd-mm-yyyy

Choose TimeSlot
Select Time Slot

Choose the Doctor
Select Doctor

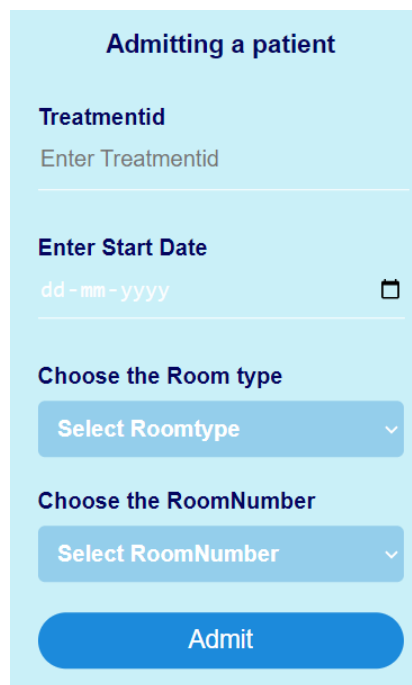
Schedule

Admitting a patient page:

If the front desk operator enters the correct Treatment id and clicks on the Admit then it shows a message that the patient got Admitted successfully, Decrease the count of vacancy in room number by 1 for the room number chosen, adds details to stay table, updates stay_id in treatment table and stay on the same page.

**“INSERT INTO stay(patient_id,room_id,start_date) VALUES(%s,%s,%s)”,
(patient_id,room_id,start_date)**

**“UPDATE treatment SET stay_id = (SELECT MAX(id) FROM stay) WHERE id=%s”,
(Treatment_id,)**

A light blue form titled "Admitting a patient" with a dark blue header. It contains four input sections: "Treatmentid" with a text input field labeled "Enter Treatmentid"; "Enter Start Date" with a date input field labeled "dd-mm-yyyy" and a calendar icon; "Choose the Room type" with a dropdown menu labeled "Select Roomtype"; and "Choose the RoomNumber" with a dropdown menu labeled "Select RoomNumber". At the bottom is a large blue "Admit" button.

Discharge Patient page:

Increases the count of vacancy by 1 for the room number chosen, updates end_date in the stay table and stays on the same page.

“UPDATE stay SET end_date=%s WHERE id=(SELECT stay_id FROM treatment WHERE id = %s)”, (end_date,Treatment_id)

“UPDATE room SET count=count+1 WHERE id = (SELECT stay.room_id FROM stay,treatment WHERE treatment.stay_id=stay.id AND treatment.id=%s)”,(Treatment_id,)

Discharge Patient

Treatmentid
Enter Treatmentid

Enter End Date
dd - mm - yyyy

Discharge

Edit-Patient details page: It has a table consisting of patient details and url edit beside every row in a table. If I click the url present in a row, then it goes to the edit page.

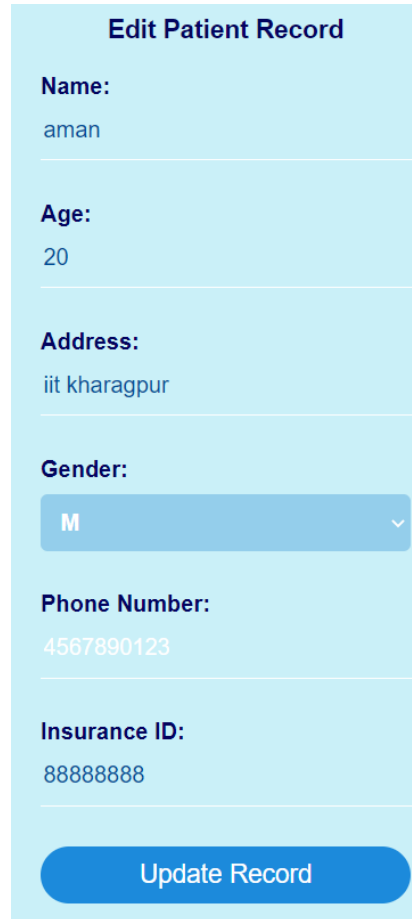
Patient Records

ID	Name	Age	Address	Gender	Phone Number	Insurance ID	Actions
1	aman	20	iit kharagpur	Male	4567890123	88888888	Edit
2	katherine	19	iit kharagpur	Female	4567890123	12345678	Edit
3	bhanu	20	iit bombay	Female	2345678901	76543218	Edit

Edit page: If the front desk operator clicks on the Update Record the data gets updated in the patient table and goes to the edit-patient details page.

"UPDATE patient SET name=%s, age=%s, address=%s, gender=%s, phone_number=%s, insurance_id=%s WHERE id=%s", (name, age, address, gender, phone_number, insurance_id, id)

If the Front Desk Operator clicks on the logout which is present in the side navigation bar then the Front Desk Operator goes to the Home page.



Edit Patient Record

Name:
aman

Age:
20

Address:
iit kharagpur

Gender:
M

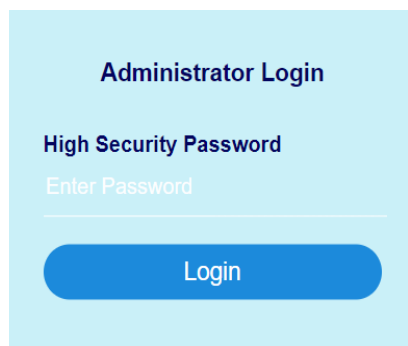
Phone Number:
4567890123

Insurance ID:
88888888

Update Record

If the user clicks on the Database administration it goes to the Database administration login page.

Database Administrator login page: It has a form containing a field High security password. If the Database Administrator enters the correct password(text) and clicks on login he goes to the Database Administrator page. If the Database Administrator enters an incorrect password and clicks on login then it shows an error message that “you have entered an incorrect password. Please try again!” and the Database Administrator stays on the same page.



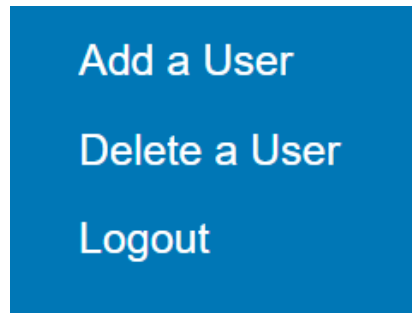
Administrator Login

High Security Password
Enter Password

Login

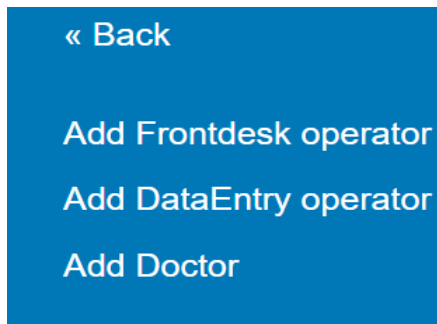
Database Administrator page:

Side Nav



Add a User:

Side Nav



Add a front desk operator page:

If the database administrator enters every field correctly and then clicks on the register then the front desk operator gets registered successfully, will be added to frontdeskop table and the same status message will be shown.

**“INSERT INTO frontdeskop(username,phone_number,password) VALUES(%s,%s,%s)”,
(name,phone_number,password)**

Register FrontDeskOperator

FrontDeskoperatorName
Enter Name

PhoneNumber
Enter PhoneNumber

Password
Enter Password

Re-enterPassword
Re-enter Password

Register

Add a data entry operator page:

If the database administrator enters every field correctly and then clicks on the register then the Data entry operator gets registered successfully, will be added to dataentryop table and the same status message will be shown.

**“INSERT INTO dataentryop(username,phone_number,password) VALUES(%s,%s,%s”),
(name,phone_number,password)**

Register DataEntryOperator

DataEntryoperatorName
Enter Name

PhoneNumber
Enter PhoneNumber

Password
Enter Password

Re-enterPassword
Re-enter Password

Register

Add a doctor page:

If the database administrator enters every field correctly and then clicks on the register then the Data entry operator gets registered successfully, will be updated in the doctor table and the same status message will be shown.

```
“INSERT INTO doctor(name,department,password,phone_number,email_id)  
VALUES(“%s,%s,%s,%s,%s”)”,(name,department_id,password,phone_number,email_id)
```

Register Doctor

DoctorName
Enter Name

PhoneNumber
Enter PhoneNumber

Department
Select Department

Email_id
Enter Email_id

Password
Enter Password

Re-enterPassword
Re-enter Password

Register

Delete a User:

« Back

Delete Frontdesk operator

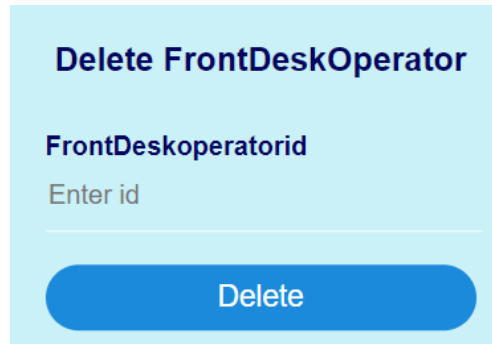
Delete DataEntry operator

Delete Doctor

Delete front desk operator page:

It removes the front desk operator with entered id from frontdeskop table

“DELETE FROM frontdeskop WHERE id = %s”,(id,)

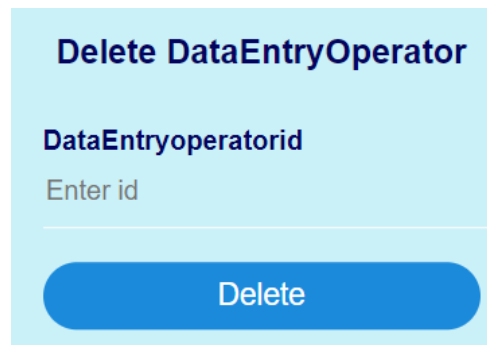


A light blue rectangular form with a dark blue title 'Delete FrontDeskOperator'. Below the title is a label 'FrontDeskoperatorid' in dark blue. Under the label is a text input field with the placeholder text 'Enter id'. At the bottom of the form is a blue rounded rectangular button with the text 'Delete' in white.

Delete Data entry operator page:

It removes the data entry operator with entered id from dataentryop table

“DELETE FROM dataentryop WHERE id = %s”,params = (id,)

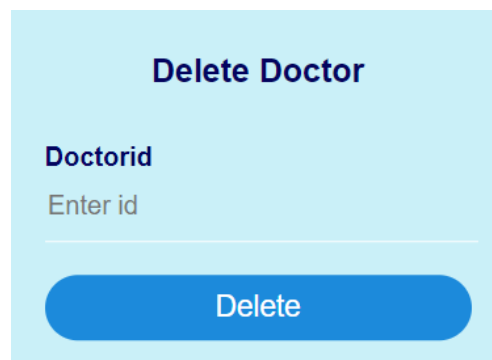


A light blue rectangular form with a dark blue title 'Delete DataEntryOperator'. Below the title is a label 'DataEntryoperatorid' in dark blue. Under the label is a text input field with the placeholder text 'Enter id'. At the bottom of the form is a blue rounded rectangular button with the text 'Delete' in white.

Delete Doctor operator page:

It sets password of doctor as NULL with entered id from doctor table (indicating no access to doctor)

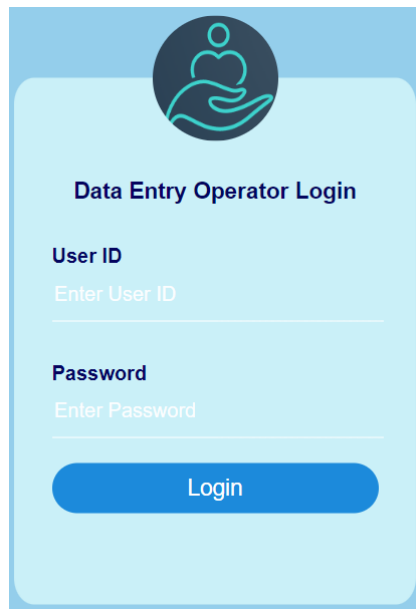
“UPDATE doctor SET password=NULL WHERE id = %s”, (id,)



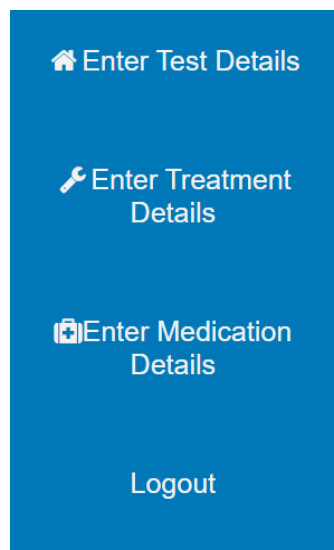
A light blue rectangular form with a dark blue title 'Delete Doctor'. Below the title is a label 'Doctorid' in dark blue. Under the label is a text input field with the placeholder text 'Enter id'. At the bottom of the form is a blue rounded rectangular button with the text 'Delete' in white.

Data Entry Operator login page:

If the data entry operator enters an incorrect username or password and clicks on login then it shows an error message that “you have entered an incorrect username or password. Please try again!” and the Data entry operator stays on the same page.

The image shows a login form for a Data Entry Operator. It has a light blue background with a darker blue header and footer. At the top, there is a circular icon containing a stylized figure of a person with arms raised. Below the icon, the text "Data Entry Operator Login" is displayed in a bold, dark blue font. Underneath, there are two input fields: "User ID" and "Password". Each field has a label in bold dark blue text and a placeholder text "Enter User ID" and "Enter Password" respectively. Below the input fields is a blue button with the text "Login" in white.

Data Entry Operator page:

The image shows a main menu for the Data Entry Operator. It is a vertical blue rectangle with four white icons and text labels. From top to bottom, the items are: a house icon followed by "Enter Test Details", a key icon followed by "Enter Treatment Details", a first aid kit icon followed by "Enter Medication Details", and the text "Logout" without an icon.

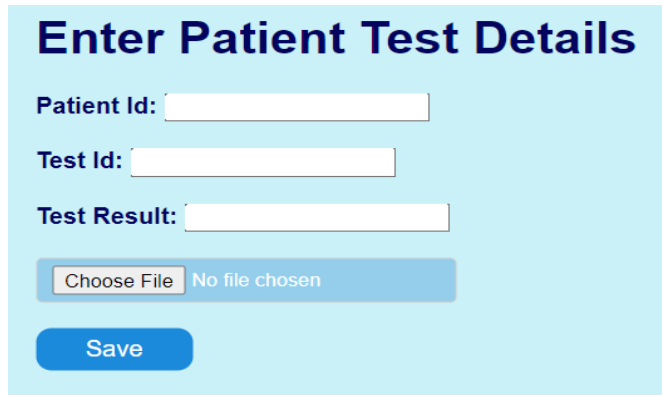
If the Data Entry Operator clicks on Enter Test Details, then the Data Entry Operator redirects to the Enter Test Details Page.

Enter Test Details:

Long BLOB data type is used for storing the images of type jpg,png in mysql database.All the fields mentioned are required. Entered details will be updated in the test table. Here, Test ID is taken as a field because the doctor already adds the test name into the table to which ID will be given.

"UPDATE test SET result=%s WHERE patient_id=%s AND id=%s",(test_result, patient_id, test_id)

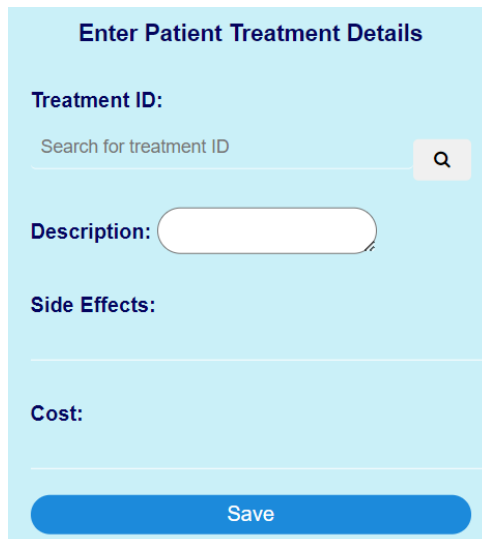
"UPDATE test SET test_report=%s WHERE patient_id=%s AND id=%s", (file_data, patient_id, test_id)



The screenshot shows a web form titled "Enter Patient Test Details" with a light blue background. It contains four input fields: "Patient Id:", "Test Id:", "Test Result:", and a file upload section with a "Choose File" button and "No file chosen" text. At the bottom is a blue "Save" button.

Enter Treatment Details: All the fields mentioned are required. Here first we enter the Treatment ID and on clicking the search button it displays the already existing description prescribed by doctor in Description field corresponding to the entered treatment id and we can edit the Description field and we also give entries for Side effects ,Cost and on clicking save button, the details get updated in treatment table if the id is valid.

"UPDATE treatment SET description=%s, side_effects=%s, cost=%s WHERE id=%s", (treatment_description, side_effects, cost, treatment_id)



The screenshot shows a web form titled "Enter Patient Treatment Details" with a light blue background. It contains four input fields: "Treatment ID:" with a search button, "Description:", "Side Effects:", and "Cost:". At the bottom is a blue "Save" button.

Enter Medication Details:

All the fields mentioned are required. Here first we enter Appointment ID and as Patient ID, Doctor ID are the foreign keys of prescribes table, we retrieve the patient ID, Doctor ID for a entered Appointment ID on running a query on appointment table, select Medication name from drop down menu consisting of the medication names prescribed by doctor, from this we run a query on medication table to get medication id and we enter medication description, medicine dose, symptoms and finally on clicking save button, the details get updated in prescribes table if the id is valid.

```
"INSERT INTO (patient_id,doctor_id,appointment_id,medication_id,date_prescribed,dose)
VALUES (%s,%s, %s,%s, NOW(),%s)"
,(patient_id,doctor_id,appointment_id,medication_id,medicine_dose)
```

```
"UPDATE appointment SET symptoms=%s WHERE patient_id=%s AND id=%s",
(symptoms, patient_id, appointment_id)
```

Enter Patient Medication Details

Appointment Id

Medication Name :

Search for a medication...

Select medication ▾

Medicine Dose

symptoms

Save

Doctor:

Functionalities accessible to a doctor are:

Prescribe a treatment to a patient :

Search for the patient using the patient id or the name of the patient

Prescribe the test: drop-down displays the treatments available in the hospital

SELECT id, name FROM treatments_available

INSERT INTO treatment (patient_id, doctor_id, treatment_id, description) VALUES (%s, %s, %s, %s);

Prescribe a treatment

Treatment Name:

Cardiac Surgery ▼

Treatment Description :

Submit

Prescribe medication to a patient :


Search for the patient using the patient id or the name of the patient

Prescribe the medicine and its dosage: drop-down displays the medications and enter the dosage manually

SELECT id , name FROM medication

INSERT INTO prescribes (patient_id, doctor_id, medication_id,date_prescribed, dose,appointment_id) VALUES (%s, %s, %s , NOW(), %s,%s);

Prescribe a medication



Appointment ID:

Medication Name :

lisinopril ▼

Dosage

Prescribe a test to a patient :


Search for the patient using the patient id or the name of the patient

Prescribe the test: drop-down displays the tests

SELECT id, name FROM tests_available

INSERT INTO test (patient_id, test_id) VALUES (%s, %s);

Prescribe a test



Test Name:

blood count ▼

Dashboard: contains a list of patients treated by that doctor and also a view button for each patient to view his information - information includes all the treatments undergone by that patient (to see the previous medical history of the patient) and medication prescribed to him/her by this doctor

Search patient by name, id, or gender



Dashboard : Upcoming Treatments

Patient ID	Name	Age	Gender	Treatment	Date
------------	------	-----	--------	-----------	------

Previous Treatments

Patient ID	Name	Age	Gender	Treatments	Date
1	aman	20	Male	2023-03-09 00:00:00	View
3	bhanu	20	Female	2023-03-09 00:00:00	View

Appointments: The doctor will be notified if a new appointment is made with him (count is displayed)
Contains the list of new appointment notifications and previous appointment notifications. Each notification includes the patient Id, name, age, gender

Search patient by name, id, or gender



New Appointments Notifications

Patient ID	Name	Age	Gender	Date
------------	------	-----	--------	------

Previous Appointments Notifications

Patient ID	Name	Age	Gender	Symptoms	Date
1	aman	20	Male	2023-03-24 00:00:00	View
2	katherine	19	Female	2023-03-17 00:00:00	View
3	bhanu	20	Female	2023-03-17 00:00:00	View

6. In addition to the above features, doctor can search for a patient using his/her name or patient id, and can see the patient's medical history which includes Medications prescribed to the patient by this doctor - medication name, dosage, date, symptoms related
Treatments undergone by the patient - information includes treatment name, description of the treatment, the date on which treatment was taken place
Tests taken by the patients - information includes test name, the result of the test, and the test report (eg-x rays in image formats, etc)

Search for the patient using the patient id or the name of the patient:

SELECT id FROM patient WHERE name LIKE %s OR age LIKE %s OR gender LIKE %s

7. Weekly health report of patients treated by him is emailed to him

Query to get patient information: **SELECT patient.id, patient.name, age, address, gender, patient.phone_number, description FROM (patient JOIN treatment ON treatment.patient_id = patient.id AND treatment.doctor_id=%s) JOIN doctor ON treatment.doctor_id = doctor.id AND doctor.email_id IS NOT NULL**

Thank you

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