



North South University

Project Report

CSE311

Project Name: DG Health Portal Management System of National Health

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DG Health Portal Management System Of National Health

1. Introduction

The **DG Health Portal Management System** is a robust, web-based application developed to centralize healthcare services at a national level. It simplifies patient appointments, resource management, and access to additional services like blood banks, ambulance coordination, and health tips. The project employs **XAMPP** for hosting on a local server and leverages **PHP**, **HTML**, **CSS**, and **SQL** for development.

2. Objectives

- Centralize healthcare service management.
- Streamline patient and hospital interactions.
- Maintain secure, efficient, and accurate data management.
- Enhance accessibility to additional health-related services.

3. Technologies Used

- **Back-end Development:** PHP
- **Front-end Development:** HTML, CSS, TAILWIND
- **Database:** MySQL (via XAMPP)
- **Server:** Apache (via XAMPP)
- **Development Environment:** Localhost

4. Features

1. **Appointment Scheduling:** Patients can book appointments based on department and doctor availability.
2. **Hospital Resource Management:** Tracks staff, departments, and facilities.
3. **Pharmacy Management:** Monitors medicine inventory and availability.
4. **Support Services:** Includes blood banks, ambulance services, and health tips.

5. Database Design

The project follows a relational database model with entities categorized into **strong**, **weak**, and **role entities**. Below is the detailed entity classification, attributes, and relationships.

Entities

1. Appointments

- **Entity Type:** Strong, Transactional
- **Description:** Represents patient bookings with doctors in specific hospitals and departments.
- **Attributes:**
 - `appointment_id` (Primary Key)
 - `patient_name`, `patient_age`, `patient_gender`, `patient_email`, `contact_number`
 - `hospital_id` (Foreign Key referencing Hospitals)
 - `dept_id` (Foreign Key referencing Departments)
 - `doctor_id` (Foreign Key referencing Doctors)
 - `appointment_date`, `patient_id` (Foreign Key referencing Patients)
- **Relationships:**
 - One-to-Many with Hospitals, Departments, and Doctors.
 - Many-to-Many with Patients.

2. Admin

- **Entity Type:** Strong, Master Data
- **Description:** Represents every management within hospitals.
- **Attributes:**
 - `id` (Primary Key), `name`, `username`, `password`, `email`, `contact_number`, `created_at`.
- **Relationships:**
 - Many-to-One with all.

3. Doctors

- **Entity Type:** Strong, Role
- **Description:** Represents doctors working in hospitals.

- **Attributes:**
 - `doctor_id` (Primary Key), `name`, `email`, `password`, `experience`, `department_id` (Foreign Key referencing Departments), `hospital_id` (Foreign Key referencing Hospitals)
- **Relationships:**
 - Many-to-One with Departments and Hospitals.
 - Linked with Appointments for consultations.

4. Medicine

- **Entity Type:** Weak, Inventory
- **Description:** Represents medicine stocks in hospital pharmacies.
- **Attributes:**
 - `medicine_id` (Primary Key), `pharmacy_id` (Foreign Key referencing Pharmacy), `name`, `type`, `manufacturer`, `expiry_date`, `quantity`
- **Relationships:**
 - Many-to-One with Pharmacy.

5. Hospital Staff

- **Entity Type:** Strong, Role
- **Description:** Represents administrative and support staff of hospitals.
- **Attributes:**
 - `staff_id` (Primary Key), `name`, `designation`, `contact_number`, `email`, `shift`, `hospital_id` (Foreign Key referencing Hospitals)
- **Relationships:**
 - Many-to-One with Hospitals.

6. Pharmacy

- **Entity Type:** Strong, Facility
- **Description:** Represents pharmacies linked to hospitals.
- **Attributes:**
 - `pharmacy_id` (Primary Key), `name`, `location`, `contact_number`, `email`, `hospital_id` (Foreign Key referencing Hospitals)
- **Relationships:**
 - One-to-One with Hospitals.
 - One-to-Many with Medicine.

7. Hospitals

- **Entity Type:** Strong, Core
- **Description:** Represents hospitals in the system.
- **Attributes:**
 - `hospital_id` (Primary Key), `name`, `location`, `contact`, `email`
- **Relationships:**
 - One-to-Many with `Departments`, `Doctors`, `Appointments`, `Pharmacy`, and `Hospital Staff`.

8. Patients

- **Entity Type:** Strong, User
- **Description:** Represents patients using the portal.
- **Attributes:**
 - `patient_id` (Primary Key), `name`, `email`, `password`, `gender`, `age`, `contact`
- **Relationships:**
 - Many-to-Many with `Appointments`.

9. Ambulance

- **Entity Type:** Weak, Service
- **Description:** Represents ambulance services provided by hospitals.
- **Attributes:**
 - `ambulance_id` (Primary Key), `vehicle_number`, `type`, `status`, `location`.

10. bookambulance

- **Entity Type:** Strong, Service
- **Description:** Represents ambulance booking services provided by hospitals.
- **Attributes:**
 - `booking_id` (Primary Key), `patient_name`, `contact_number`, `pickup_location`, `dropoff_location`, `booking_time`, `ambulance_id` (Foreign Key), `patient_id` (Foreign Key).
- **Relationships:**
 - Many-to-One with `Patient`.

11. Health Tips

- **Entity Type:** Informational Entity
- **Description:** Represents health-related guidance.
- **Attributes:**
 - `tip_id` (Primary Key), `title`, `description`, `created_at`

12. DEPARTMENTS

- **Entity Type:** Strong, Master Data
- **Description:** Represents departments within hospitals.
- **Attributes:**
 - `dept_id` (Primary Key), `name`, `hospital_id` (Foreign Key referencing Hospitals), `doctor_id` (Foreign Key referencing Doctors)

Relationships:

Many-to-One with Hospitals.

One-to-Many with Doctors.

6. Implementation Details

Backend (PHP & SQL)

- PHP scripts developed to handle CRUD operations for all entities.
- SQL used for efficient data retrieval and relationship integrity.

Frontend (HTML & CSS)

- HTML used for creating structure and forms for user interactions.
- CSS applied for styling and responsive design.

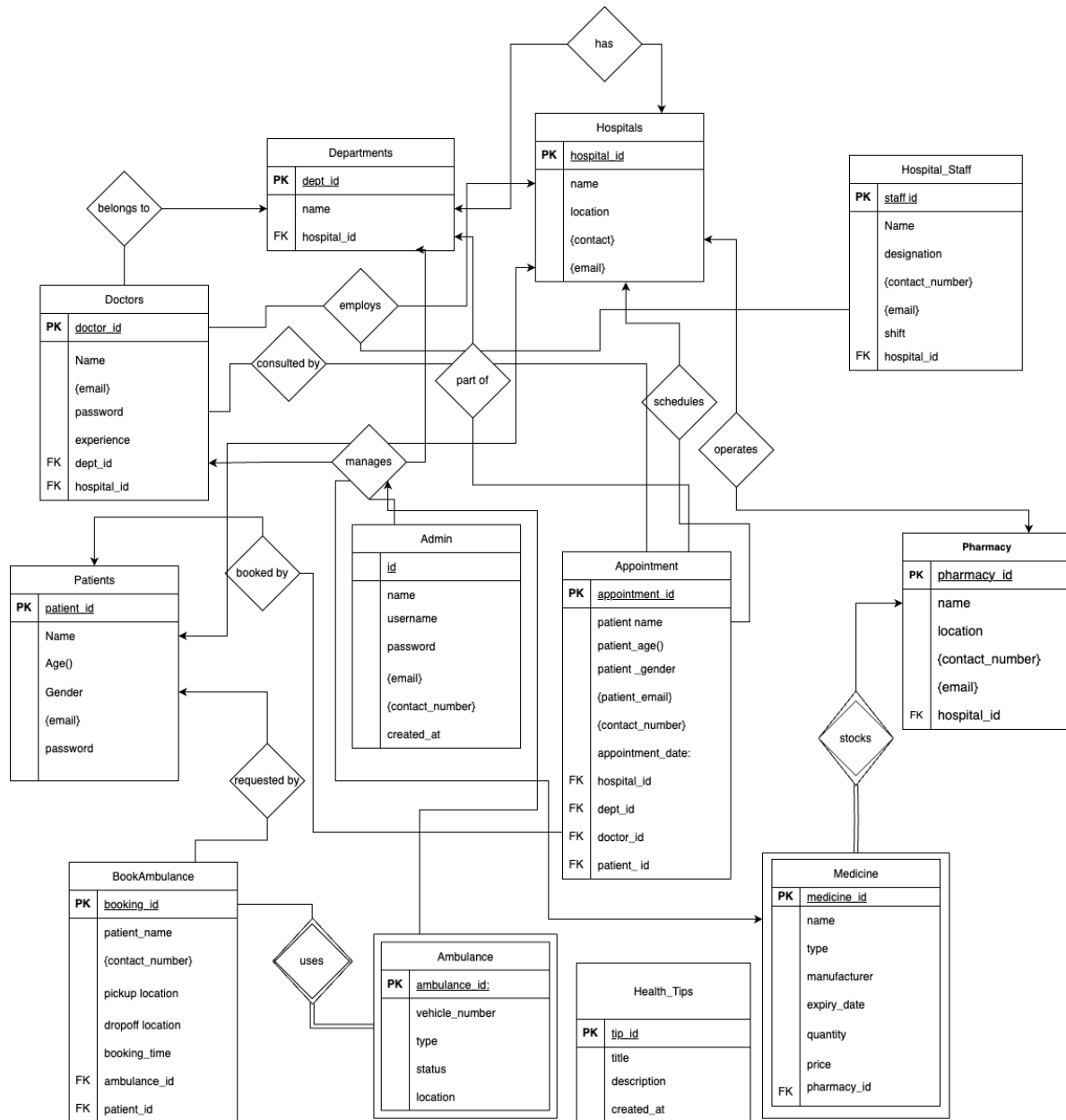
Hosting (XAMPP)

- Apache server hosts PHP scripts on a local environment.

7. Challenges and Solutions

- **Challenge:** Managing complex entity relationships.
Solution: Applied normalization to simplify database structure.
- **Challenge:** Designing user-friendly interfaces.
Solution: Conducted iterative testing for optimal UI/UX.

Entity-Relationship Diagram (ERD):



Relation Schema:

1. Hospitals(hospital_id, name, location)
2. Departments(dept_id, name, hospital_id)
3. Doctors(doctor_id, name, email, password, experience, dept_id, hospital_id)
4. Patients(patient_id, name, age, gender, password)
5. Appointments(appointment_id, patient_name, patient_gender, patient_email, appointment_date, hospital_id, dept_id, doctor_id, patient_id)
6. Hospital_Staff(staff_id, name, designation, shift, hospital_id)
7. Pharmacy(pharmacy_id, name, location, hospital_id)
8. Medicine(medicine_id, name, type, manufacturer, expiry_date, quantity, price, pharmacy_id)
9. Ambulance(ambulance_id, vehicle_number, type, status, location)
10. BookAmbulance(booking_id, patient_name, pickup_location, dropoff_location, booking_time, ambulance_id, patient_id)
11. **admin** (id, name, username, password, email, contact_number, created_at)
12. Health_Tips(tip_id, title, description, created_at)
13. **belongs_to** (dept_id, hospital_id)
14. **has** (dept_id, hospital_id)
15. **employs** (doctor_id, hospital_id,)
16. **consulted_by** (doctor_id, patient_id)
17. **booked_by** (patient_id, appointment_id)
18. **requested_by** (patient_id, appointment_id)
19. **scheduled_for** (hospital_id, appointment_id, staff_id)
20. **operates** (hospital_id, pharmacy_id)
21. **stocks** (pharmacy_id, medicine_id)
22. **uses** (patient_id, booking_id)
23. **booked_for** (ambulance_id, booking_id)

24.**created_for** (tip_id, hospital_id)
25.hospital_contact(hospital_id,contact)
26.hospital_email(hospital_id,email)
27.patient_email(patient_id,email)
28.appointment_contact(appointment_id,contact_number)
29.Hospital_Staff_contact(staff_id,contact_number)
30.Hospital_Staff_email(staff_id,email)
31.Pharmacy_contact(pharmacy_id,contact_number)
32.Pharmacy_email(pharmacy_id,email)
33.BookAmbulance_contact_number(ambulance_id,contact_number)
34.admin_email(id, email)
35.admin_contact_number(id,contact_number)

TENARY RELATIONSHIP:

scheduled_for (hospital_id, appointment_id,staff_id)

SQL DDL for the Relation Schema:

1. Appointments:

```
CREATE TABLE Appointments (  
    appointment_id INT PRIMARY KEY,  
    patient_name VARCHAR(100),  
    patient_age INT,  
    patient_gender VARCHAR(10),  
    patient_email VARCHAR(100),  
    contact_number VARCHAR(15),  
    hospital_id INT,  
    dept_id INT,  
    doctor_id INT,  
    appointment_date DATE,  
    patient_id INT,  
    FOREIGN KEY (hospital_id) REFERENCES Hospitals(hospital_id),  
    FOREIGN KEY (dept_id) REFERENCES Departments(dept_id),  
    FOREIGN KEY (doctor_id) REFERENCES Doctors(doctor_id),  
    FOREIGN KEY (patient_id) REFERENCES Patients(patient_id)  
);
```

2. Departments

```
CREATE TABLE Departments (  
    dept_id INT PRIMARY KEY,  
    name VARCHAR(100),  
    hospital_id INT,  
    FOREIGN KEY (hospital_id) REFERENCES Hospitals(hospital_id)  
    FOREIGN KEY (doctor_id) REFERENCES Doctors(doctor_id)  
);
```

3. Doctors

```
CREATE TABLE Doctors (  
    doctor_id INT PRIMARY KEY,  
    name VARCHAR(100),
```

```
email VARCHAR(100),
password VARCHAR(100),
experience INT,
department_id INT,
hospital_id INT,
FOREIGN KEY (department_id) REFERENCES Departments(dept_id),
FOREIGN KEY (hospital_id) REFERENCES Hospitals(hospital_id)
);
```

4. Medicine

```
CREATE TABLE Medicine (
  medicine_id INT PRIMARY KEY,
  pharmacy_id INT,
  name VARCHAR(100),
  type VARCHAR(50),
  manufacturer VARCHAR(100),
  purpose VARCHAR(100),
  expiry_date DATE,
  quantity INT,
  price INT,
  FOREIGN KEY (pharmacy_id) REFERENCES Pharmacy(pharmacy_id)
);
```

5. Hospital Staff

```
CREATE TABLE Hospital_Staff (
  staff_id INT PRIMARY KEY,
  name VARCHAR(100),
  designation VARCHAR(50),
  contact_number VARCHAR(15),
  email VARCHAR(100),
  hospital_id INT,
  Shift INT,
  FOREIGN KEY (hospital_id) REFERENCES Hospitals(hospital_id)
);
```

6. Pharmacy

```
CREATE TABLE Pharmacy (
  pharmacy_id INT PRIMARY KEY,
  name VARCHAR(100),
```

```
location VARCHAR(200),
contact_number VARCHAR(15),
email VARCHAR(100),
hospital_id INT UNIQUE,
FOREIGN KEY (hospital_id) REFERENCES Hospitals(hospital_id)
);
```

7. Hospitals

```
CREATE TABLE Hospitals (
  hospital_id INT PRIMARY KEY,
  name VARCHAR(100),
  location VARCHAR(200),
  contact VARCHAR(15),
  email VARCHAR(100)
);
```

8. Patients

```
CREATE TABLE Patients (
  patient_id INT PRIMARY KEY,
  name VARCHAR(100),
  email VARCHAR(100),
  password VARCHAR(100),
  gender VARCHAR(10),
  age INT,
  contact VARCHAR(15)
);
```

9. Ambulance

```
CREATE TABLE Ambulance (
  ambulance_id INT PRIMARY KEY,
  vehicle_number VARCHAR(20),
  type VARCHAR(50),
  status VARCHAR(20),
  location VARCHAR(200)
);
```

10. BookAmbulance

```
CREATE TABLE BookAmbulance (
  booking_id INT PRIMARY KEY,
  patient_name VARCHAR(100),
```

```
contact_number VARCHAR(15),
pickup_location VARCHAR(200),
dropoff_location VARCHAR(200),
booking_time TIMESTAMP,
ambulance_id INT,
patient_id INT,
FOREIGN KEY (ambulance_id) REFERENCES Ambulance(ambulance_id),
FOREIGN KEY (patient_id) REFERENCES Patients(patient_id)
);
```

11. Health Tips

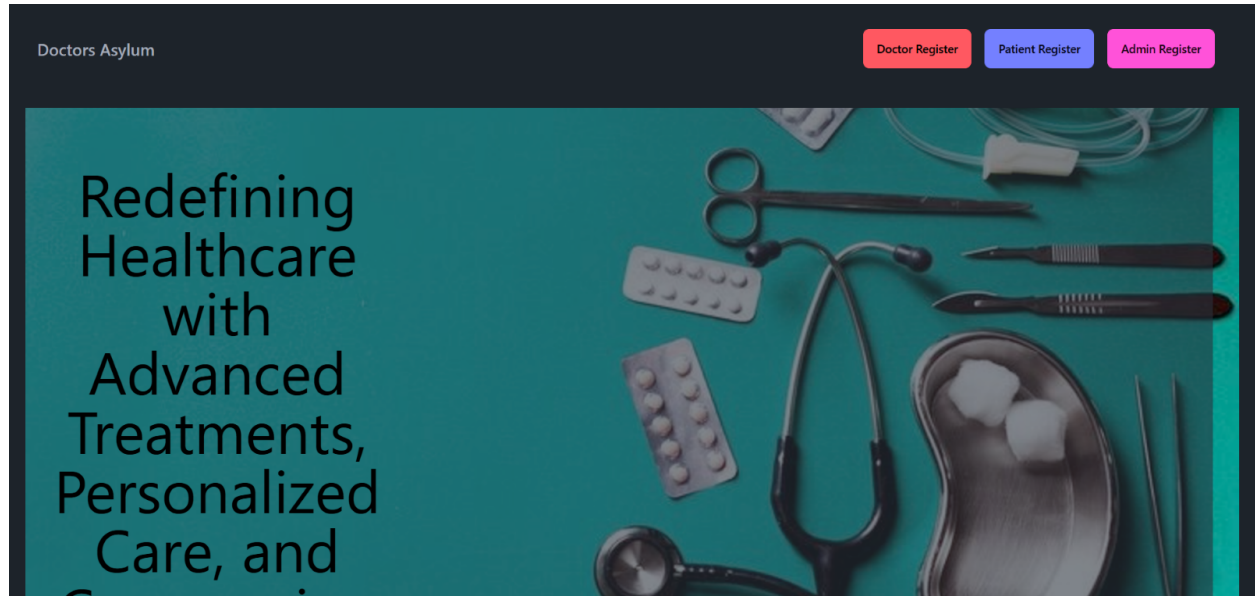
```
CREATE TABLE Health_Tips (
  tip_id INT PRIMARY KEY,
  title VARCHAR(200),
  description TEXT,
  created_at TIMESTAMP
);
```

12. Admin

```
CREATE TABLE Admin (
  id INT PRIMARY KEY AUTO_INCREMENT,
  name VARCHAR(255) NOT NULL,
  username VARCHAR(255) UNIQUE NOT NULL,
  password VARCHAR(255) NOT NULL,
  email VARCHAR(255) UNIQUE NOT NULL,
  contact_number VARCHAR(15),
  created_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
);
```

screenshots :

Front Page-



Patient Register Page-

Doctors Asylum

Register as Patient

Name:

muktadir1001

Email:

seller10001@gmail.com

Password:

....

Age:

69

Gender:

Male

Contact:

80800087

After filing up the patient register form the patient information will shown-

Doctors Asylum

LogoutBook AmbulanceBook Appointment

Patient Information

- Name: muktadir1001
- Email: seller10001@gmail.com
- Age: 69
- Gender: male
- Contact: 89890987

My Appointments

Appointments

Doctor Name	Hospital Name	Department	Appointment Date
muktadiir9999	LabAid	teeth	2024-12-01 23:59:06

From patient information page we can go to appointment page using book appointment button-

The screenshot shows a web application with a blue header bar labeled "Doctors Asylum". The main content area is light gray and contains a white card titled "Book Appointment". The card has several input fields with labels and values:

- Name: muktadir10001
- Age: 69
- Gender: Male (dropdown menu)
- Email: seller1001@gmail.com
- Contact: 909879
- Hospital: LabAid (dropdown menu)
- Department: (empty dropdown menu)

We can also go for ambulance booking-

The screenshot shows a web application with a blue header bar labeled "Doctors Asylum" and a green button labeled "Back to Patient Panel". The main content area is light gray and contains a white card titled "Book an Ambulance". The card has several input fields with labels and values:

- Patient Name: muktadir1001
- Contact Number: 7898
- Pickup Location: gulshan
- Drop-off Location: puran dhaka
- Select Ambulance: CD-5678 - Advanced Life Support (dropdown menu)
- Book Ambulance (green button)

We have doctor registration page -

Doctors Asylum

Doctor Registration

Name:

Email:

Password:

Hospital Name:

Department Name:

Experience:

Already Have an account ? [login](#)

We can see doctor panel with appointments-

DOCTORS ASYLUM

DOCTOR PANEL

Name: muktadir9999

Email: seller@gmail.com

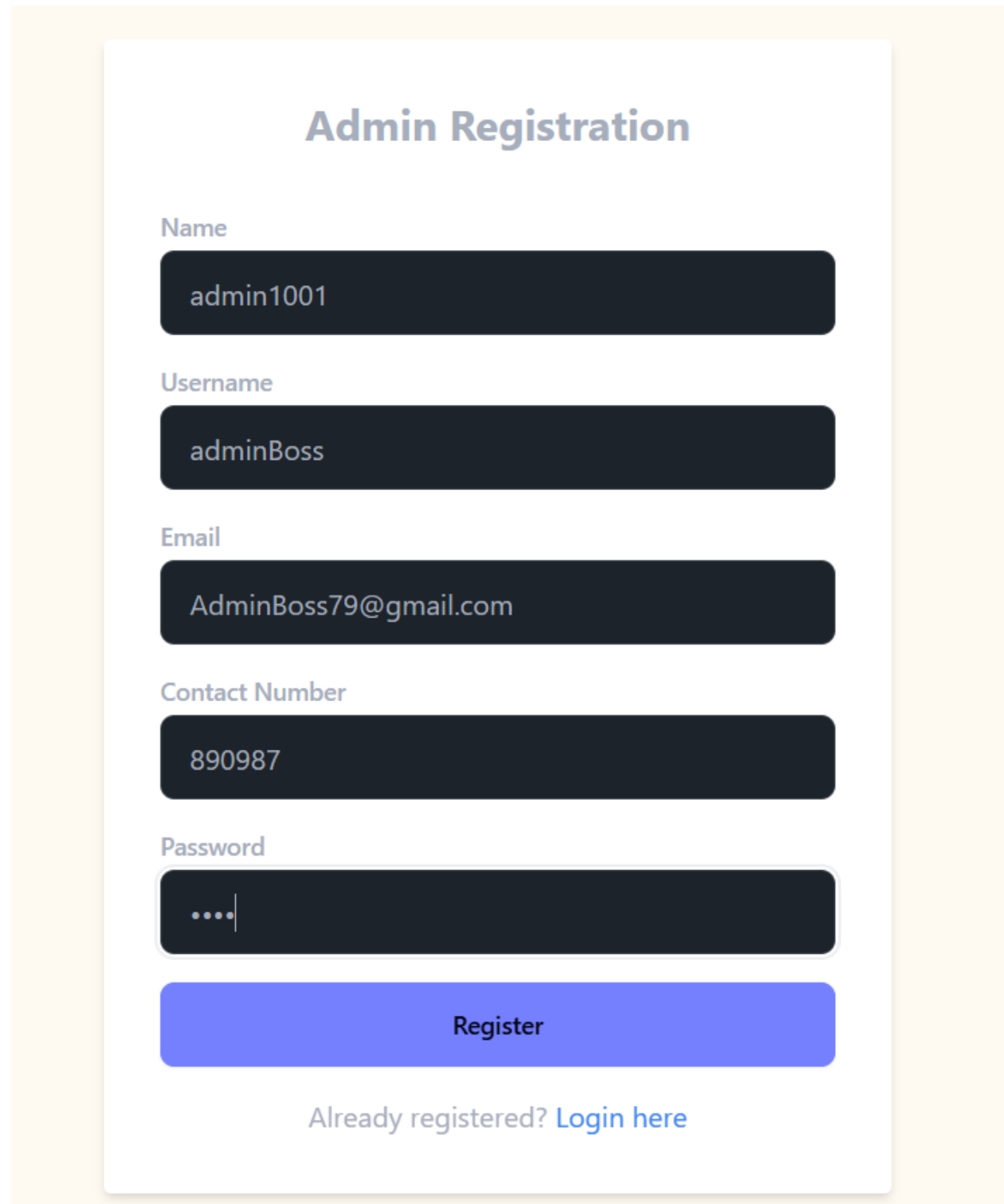
Hospital: LabAid

Department: teeth

YOUR APPOINTMENTS

APPOINTMENT ID	PATIENT NAME	AGE	GENDER	EMAIL	CONTACT	APPOINTMENT DATE
7	patient99	99	Female	patient99@gmail.com	8898	2024-12-01 14:46:23
8	hossain	77	Male	hossaain@gmail.com	987890	2024-12-01 15:16:49
9	muktadir10001	69	Male	seller1001@gmail.com	909879	2024-12-01 23:59:06

After that we can go to admin registration page-

A screenshot of an 'Admin Registration' form. The form is centered on a light yellow background. It has a white background with rounded corners. The title 'Admin Registration' is at the top in a bold, dark blue font. Below the title are five input fields, each with a label to its left: 'Name' (value: admin1001), 'Username' (value: adminBoss), 'Email' (value: AdminBoss79@gmail.com), 'Contact Number' (value: 890987), and 'Password' (value: masked with four dots). Below these fields is a blue 'Register' button. At the bottom, there is a link 'Already registered? Login here' in a smaller, blue font.

Admin Registration

Name

admin1001

Username

adminBoss

Email

AdminBoss79@gmail.com

Contact Number

890987

Password

....

Register

Already registered? [Login here](#)

Admin panel manage all of the management system-

Admin Panel							go back
Manage Patients Data							
Patient ID	Name	Email	Age	Gender	Contact	Actions	
2	tanvir90	fokir@gmail.com	26	Male	123462	Edit	Delete
4	ash	newPat33@gmail.com	44	male	76789676789	Edit	Delete
5	tanviryyy	tanviryy@gmail.com	6787678	male	09890987890	Edit	Delete
6	muktadir1001	seller10001@gmail.com	69	male	89890987	Edit	Delete

Doctors Asylum					Go Back
VIEW DOCTORS TABLE					
Doctor ID	Doctor Name	Hospital Name	Department Name	Actions	
9	muktadiir9999	LabAid	teeth	Update	Delete
10	tanvir	LabAid	mental health	Update	Delete
11	bekham	LabAid	urology	Update	Delete
12	scholes	alok	oncology	Update	Delete
13	kaka	alok	radiology	Update	Delete
14	tasin	alok	cardiology	Update	Delete
15	tanim	Dhaka Medical	surgeon	Update	Delete
18	newDoctor27	CMH	gynecology	Update	Delete
20	md tanvir	alok	oncology	Update	Delete

Manage Pharmacy List

Pharmacies List					
Pharmacy Name	Location	Contact Number	Email	Hospital Name	Actions
CityCare Pharmacy	Ground Floor	0123456789	citycare@hospital13.com	LabAid	View Medicines
HealthHub Pharmacy	Main Building	01122334455	healthhub@hospital14.com	alok	View Medicines
CureAll Pharmacy	West Wing	01777889900	cureall@hospital15.com	Dhaka Medical	View Medicines
Apex Pharmacy	East Tower	01666778899	apexpharma@hospital21.com	dhaka dental	View Medicines

Admin can also mange appointments-

Manage Appointments

Hospital: **Doctor:** **Patient ID:**

Patient Name	Doctor Name	Hospital Name	Department Name	Appointment Date	Actions
messi	tanim	Dhaka Medical	surgeon	2026-02-03 00:00:00	Update Delete
ahmed11	scholes	alok	oncology	2024-12-01 14:44:21	Update Delete
patient99	muktadiir9999	LabAid	teeth	2024-12-01 14:46:23	Update Delete
tanvir9999	muktadiir9999	LabAid	teeth	0005-05-05 00:00:00	Update Delete
muktadir10001	muktadiir9999	LabAid	teeth	2024-12-01 23:59:06	Update Delete

[GO Back](#)

They can mange ambulances-

Manage Ambulances

Vehicle Number

Ambulance Type

Status

Location

Add Ambulance

ID	Vehicle Number	Type	Status	Location	Actions
1	AB-1234	Basic Life Support	Available	Downtown Hospital	<div>EditDelete</div>
2	CD-5678	Advanced Life Support	Busy	City Clinic	<div>EditDelete</div>
4	GH-3456	Basic Life Support	Busy	Green Valley Health Center	<div>EditDelete</div>
5	IJ-7890	Neonatal Ambulance	Busy	Children's Hospital	<div>EditDelete</div>
6	KL-2345	Air Ambulance	Available	City Airport	<div>EditDelete</div>
7	MN-6789	Critical Care Unit	Busy	Heartland Specialty Hospital	<div>EditDelete</div>
8	OP-1122	Basic Life Support	Available	Suburban Community Hospital	<div>EditDelete</div>
9	QR-3344	Advanced Life Support	Under Maintenance	Regional Healthcare	<div>EditDelete</div>
10	ST-5566	Critical Care Unit	Busy	Downtown Emergency Services	<div>EditDelete</div>

Booking Ambulances

Booking ID	Patient Name	Contact Number	Pickup Location	Dropoff Location	Booking Time	Ambulance ID	Actions
1	tanvir101	1234000434343	mirpur	uttara	2024-12-01 00:58:05	5	<div>Delete</div>
2	tanvir101	1234000434343			2024-12-01 14:29:20	5	<div>Delete</div>
4	muktadir1001	7898			2024-12-02 00:01:21	2	<div>Delete</div>

They can mange health tips-

Manage Health Tips

Add New Health Tip

Health Tip Title

Health Tip Description

Add Health Tip

Existing Health Tips

Title	Description	Actions
Drink Plenty of Water	Staying hydrated is essential for maintaining energy levels and supporting overall health. Aim to drink at least 8 cups (2 liters) of water each day.	<div>EditDelete</div>
Eat a Balanced Diet	Incorporate a variety of fruits, vegetables, whole grains, and lean proteins into your diet to provide your body with the essential nutrients it needs to function at its best.	<div>EditDelete</div>
Exercise Regularly	Physical activity is crucial for cardiovascular health and weight management. Aim for at least 30 minutes of moderate exercise most days of the week.	<div>EditDelete</div>

They can add or remove staffs-

Select Hospital

Designation:

Shift:

Select Shift

Contact Number:

Email:

Add Staff

Name	Hospital	Designation	Shift	Contact	Email	Actions
Alice Smith	LabAid	Nurse	Day	1234567890	alice.smith@example.com	Delete
Bob Johnson	alok	Receptionist	Night	0987654321	bob.johnson@example.com	Delete
Charlie Brown	alok	Technician	Day	1122334455	charlie.brown@example.com	Delete

GO Back

www.messenger.com is sharing your screen. Stop sharing Hide

Conclusion:

The DG Health Portal Management System is a powerful tool for healthcare management, providing seamless coordination between patients, hospitals, and healthcare services. It ensures accurate and secure data management while maintaining scalability for future enhancements.

