

AmazeCare (Hospital Management System)



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PROBLEM STATEMENT

- Traditional systems involve long wait times and manual booking, causing delays in patient care.
- Patient records are often scattered or paper-based, making it difficult for doctors to access complete medical history.
- There is no dedicated platform for real-time and secure communication between patients and healthcare providers.
- Managing appointments, doctor schedules, and patient data manually is time-consuming and error-prone.
- Existing solutions lack integration, modern UI, and secure authentication mechanisms like JWT, compromising both usability and data safety.



OBJECTIVE

- To provide an intuitive interface for patients to book, view, and manage doctor appointments online.
- To Maintain centralized, accessible, and secure electronic medical records for efficient diagnosis and treatment.
- To Implement JWT-based authentication and authorization to ensure data privacy and user-specific access (Admin, Doctor, Patient).
- To allow administrators to manage doctors, patients, and appointments efficiently through a dedicated dashboard.
- To facilitate seamless communication and consultation tracking with prescription generation and test recommendations.

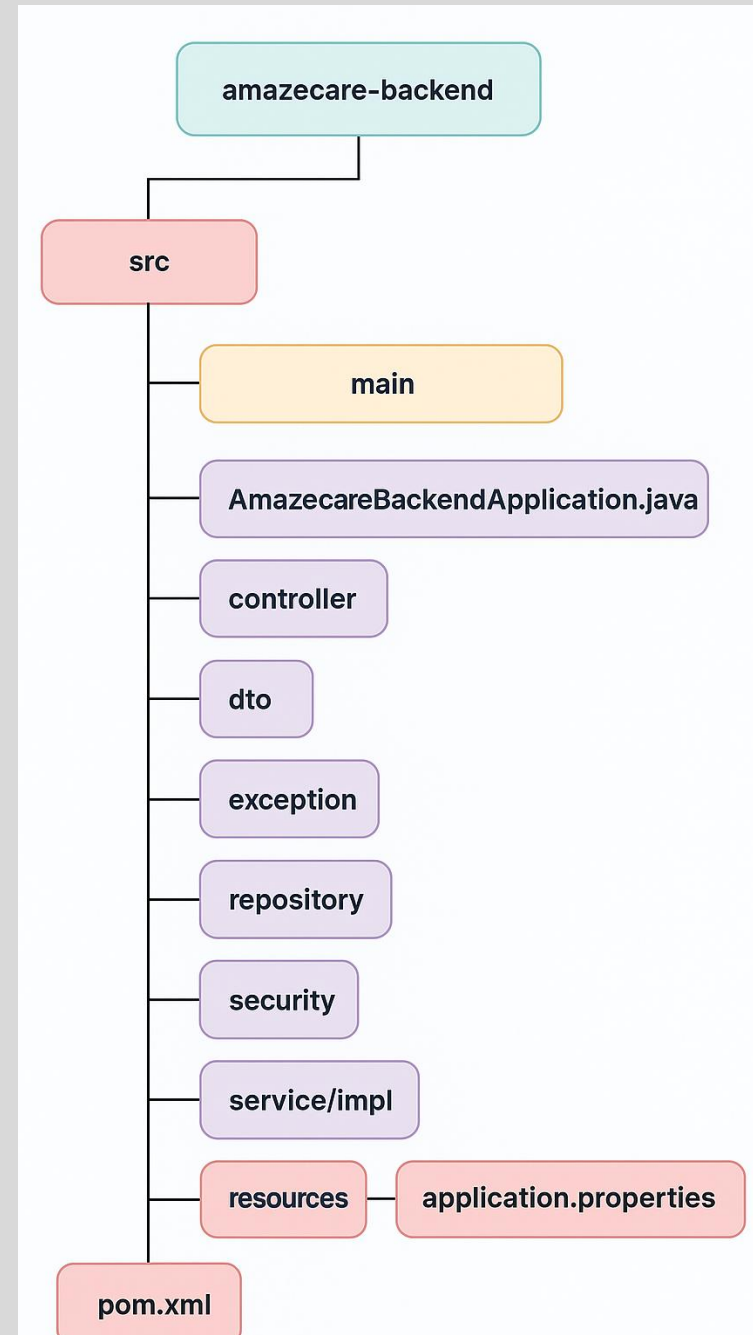
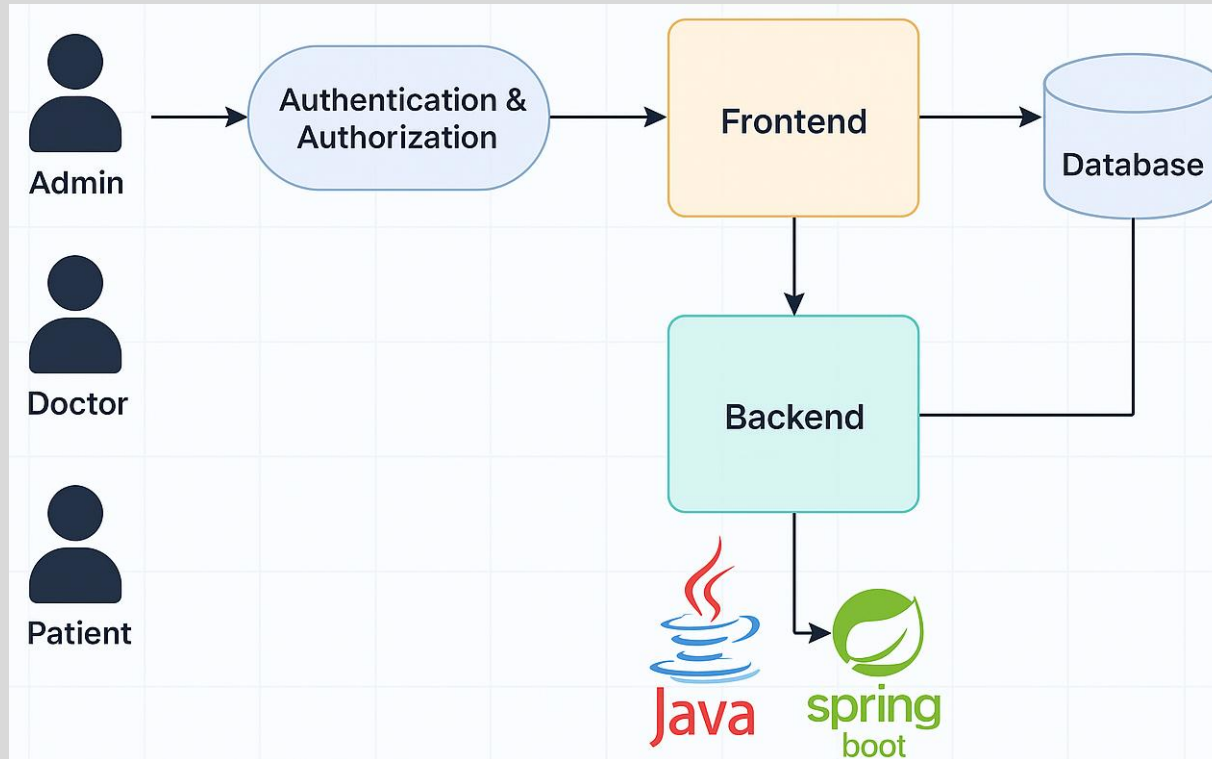


TECHNOLOGY STACK

Category	Technology Used
Language	Java 17
Framework	Spring Boot 3.2.5
Security	Spring Security + JWT
ORM	Spring Data JPA
Database	MySQL
Docs / Testing	Swagger (OpenAPI), Mockito



SYSTEM ARCHITECTURE



ENDPOINTS

Role	HTTP Method	Endpoint	Description
Public	POST	/api/auth/register	Register a new user (Admin, Doctor, or Patient)
Public	POST	/api/auth/login	Authenticate user and return JWT
Public	POST	/api/auth/forget-password	Request password reset (Forgot Password)
Admin	POST	/api/admin/add-doctor	Add a new doctor
Admin	POST	/api/admin/add-patient	Add a new patient
Admin	GET	/api/admin/patients/id-name	Get list of patient IDs and names
Admin	DELETE	/api/admin/delete-doctor/{id}	Delete doctor by ID
Admin	DELETE	/api/admin/delete-patient/{id}	Delete patient by ID
Doctor	GET	/api/doctor/appointments/{doctorId}	View all appointments for the doctor
Doctor	GET	/api/doctor/completed-consultations/{doctorId}	View all completed consultations for the doctor
Doctor	GET	/api/doctor/specialties	View list of available specialties

Doctor	GET	/api/doctor/id-name	Get list of doctor IDs and names
Doctor	GET	/api/doctor/all	Get all doctor details
Doctor	POST	/api/doctor/prescribe	Add prescription and mark appointment as completed
Doctor	PUT	/api/doctor/cancel/{appointmentId}	Cancel an appointment (Doctor side)
Patient	POST	/api/patient/book	Book a new appointment
Patient	GET	/api/patient/appointments/{patientId}	View upcoming appointments
Patient	GET	/api/patient/medical-history/{patientId}	View past medical consultation history (completed visits)
Patient	GET	/api/patient/doctors	Get list of all doctors (for patients to view)
Patient	DELETE	/api/patient/cancel/{appointmentId}	Cancel an appointment (Patient side)

FLOW OF JWT AUTHENTICATION

- ❖ User Login:
User sends their username and password to `/api/auth/login`.
- ❖ Authentication:
Backend verifies credentials using Spring Security and loads user details from the database.
- ❖ Token Generation:
Valid, a JWT token is generated with the user's username, role, and expiry.
- ❖ Token Response:
The JWT is sent back to the client (Angular), which stores it (e.g., in localStorage).
- ❖ Protected Request:
For every secure API request, the client includes the token in the `Authorization` header.
- ❖ Token Validation:
`JwtRequestFilter` intercepts the request, validates the token, and sets the user context.
- ❖ Access Control:
Spring Security allows or denies access based on the user's role defined in the token.

ERROR HANDLING

Centralized Global Exception Handling:

- Has `@RestControllerAdvice` class (`GlobalExceptionHandler.java`) to handle all exceptions in one place, improving code maintainability.

Custom Exceptions:

Exception Class	Description
BadRequestException	Thrown when invalid input is provided (e.g., missing required fields).
ResourceNotFoundException	Thrown when requested resource is not found (e.g., doctor/patient ID not found).
UnauthorizedException	Thrown when access is denied (e.g., invalid login or access to a restricted route).

Validation Error Handling:

- If a request body fails validation (e.g., missing required fields or wrong formats), `MethodArgumentNotValidException` is triggered.

SWAGGER INTEGRATION

- Swagger (now OpenAPI) is a tool for documenting and testing REST APIs.
- It provides an interactive UI to:
- View all available endpoints
- Test APIs with sample inputs and JWT tokens
- Automatically generate OpenAPI JSON docs

```
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  <groupId>org.springdoc</groupId>  
  <artifactId>springdoc-openapi-starter-webmvc-ui</artifactId>  
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```

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  <artitactId>springdoc-openapi-starter-webmvc-ui<\artitactId>  
  <gironbId>org.springdoc<\gironbId>  
<qebenuqencl>
```

DATABASE DESIGN

Table	Primary Key	Related Entities
users	id	doctor, patient (via one-to-one)
doctors	id	user (one-to-one), appointment (many)
patients	id	user (one-to-one), appointment (many)
appointments	id	doctor (many-to-one), patient (many-to-one)
prescriptions	id	appointment (one-to-one)
medical_records	id	appointment (one-to-one)
test_recommendations	id	appointment (one-to-one)

FUTURE ENHANCEMENT

- SMS Notifications:
Notify patients about appointment confirmations, cancellations, and reminders.
- Online Video Consultation:
Integrate secure video calling for remote doctor-patient consultations.
- Payment Gateway Integration:
Enable patients to pay consultation or booking fees online using UPI, cards, etc.
- Lab Report Upload & Viewing:
Allow patients and doctors to upload and access diagnostic reports.
- Admin Analytics Dashboard:
Visualize system usage, appointment trends, and doctor workloads through charts.



CONCLUSION

- AmazeCare digitalizes healthcare operations by streamlining appointments, medical records, and consultations.
- It ensures secure and role-based access using JWT authentication for Admin, Doctor, and Patient roles.
- The system offers a clean API structure with integrated Swagger documentation for easy testing and development.
- Doctor–patient interactions are made efficient with features like prescription management and appointment history.
- The architecture is scalable and ready for enhancements like video consultations, billing integration, and analytics.



SWAGGER (OUTPUT)

doctor-controller

PUT	/api/doctor/cancel/{appointmentId}	✓	🔒
POST	/api/doctor/prescribe	✓	🔒
GET	/api/doctor/specialties	✓	🔒
GET	/api/doctor/id-name	✓	🔒
GET	/api/doctor/completed-consultations/{doctorId}	✓	🔒
GET	/api/doctor/appointments/{doctorId}	✓	🔒
GET	/api/doctor/all	✓	🔒

patient-controller

POST	/api/patient/book	✓	🔒
GET	/api/patient/medical-history/{patientId}	✓	🔒
GET	/api/patient/doctors	✓	🔒
GET	/api/patient/appointments/{patientId}	✓	🔒
DELETE	/api/patient/cancel/{appointmentId}	✓	🔒

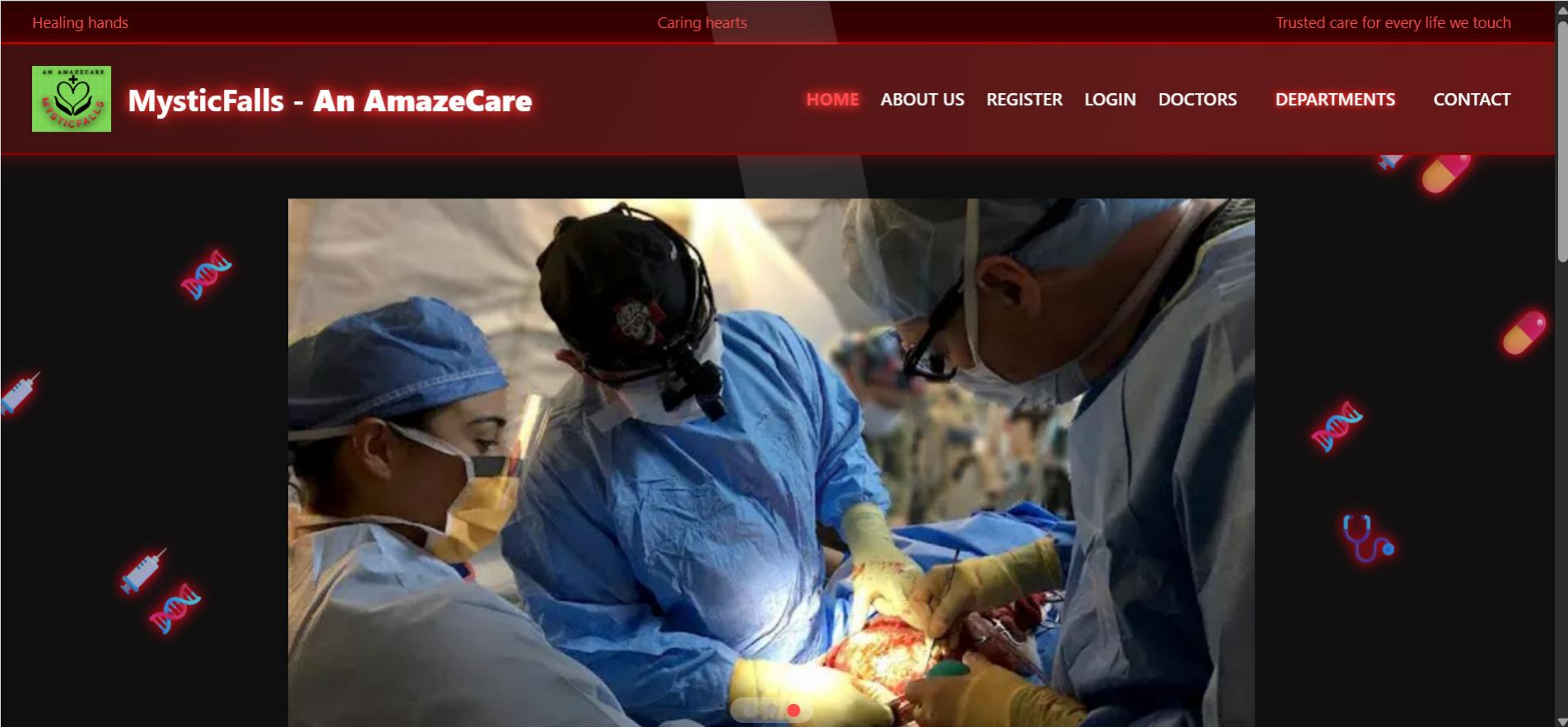
auth-controller

POST	/api/auth/register	✓	🔒
POST	/api/auth/login	✓	🔒
POST	/api/auth/forget-password	✓	🔒


admin-controller

POST	/api/admin/add-patient	✓	🔒
POST	/api/admin/add-doctor	✓	🔒
GET	/api/admin/patients/id-name	✓	🔒
DELETE	/api/admin/delete-patient/{id}	✓	🔒
DELETE	/api/admin/delete-doctor/{id}	✓	🔒

HOME PAGE



HOME PAGE



Compassion in Action

At the heart of healing lies compassion — the invisible force guiding every touch and treatment. Our team believes that empathy is as vital as expertise. We listen, we understand, and we care beyond prescriptions. Each patient is treated with dignity, not just diagnosis. From comforting a child to standing with families, our mission is to offer a hand that heals and a heart that understands. Because true care means never letting you feel alone. At every stage, your wellness is our shared journey.

Your Health, Our Mission

We don't just offer healthcare — we champion it. Every doctor, nurse, and staff member is driven by one goal: your wellbeing. With cutting-edge technology and personalized care, we aim to make every visit efficient, respectful, and reassuring. Our facilities are built for healing, and our people for hope. Your health journey becomes our personal responsibility. We stand by you in sickness, recovery, and strength. Because when you're healthy, our mission is complete.

Care That Never Sleeps

Around the clock, our care continues without pause. Whether it's midnight emergencies or early morning checkups, our commitment remains unwavering. Trained professionals are always on alert for your needs. Critical care, maternity, emergency, and more — all active 24/7. We combine vigilance with warmth in every shift. In your moments of urgency, we are already there. Health never waits — and neither do we.

Trusted Hands, Modern Healing

Our blend of tradition and technology creates extraordinary care. We trust experience and embrace innovation in every treatment. Doctors use AI-assisted diagnostics, but never forget the human touch. Each procedure is guided by safety, science, and sensitivity. From surgeries to scans, accuracy is paramount. Patients find confidence in our expertise and humility. We're not just skilled — we're trusted. Your health is safe in hands that blend wisdom with progress.

Excellence in Every Pulse

Quality care is not a slogan — it's our daily standard. From first appointment to final follow-up, we ensure each step is smooth, secure, and superior. No test is too routine, no detail too small. Our protocols are sharp, our audits thorough. Even the environment is built to soothe and heal. You'll feel it in our tone, our timing, our teamwork. Because excellence isn't occasional — it's every heartbeat.

Where Science Meets Soul

We believe healing is both an art and a science. State-of-the-art tools assist our hands, but compassion guides our hearts. We treat symptoms with skill and people with sensitivity. From the lab to the ward, empathy flows beside knowledge. You'll see it in our eyes and feel it in our care. A balanced blend of medical expertise and soulful service. Because healing should comfort the soul, not just the body.

Empowering Every Patient

You're not just a patient — you're a partner in healing. We empower you with clear answers, real choices, and constant respect. Our approach is collaborative, transparent, and informed. We encourage questions, offer clarity, and build trust. From treatment plans to recovery paths, you're involved. We're here to

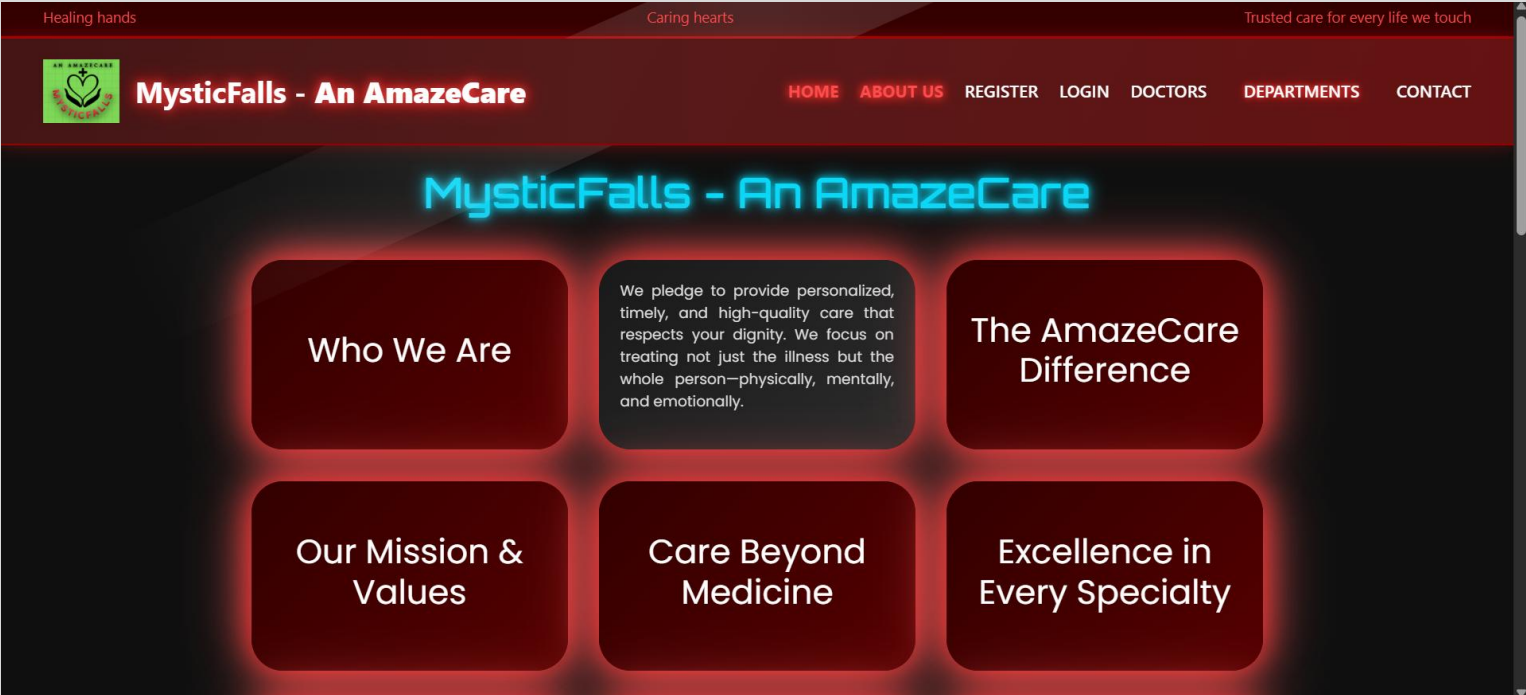
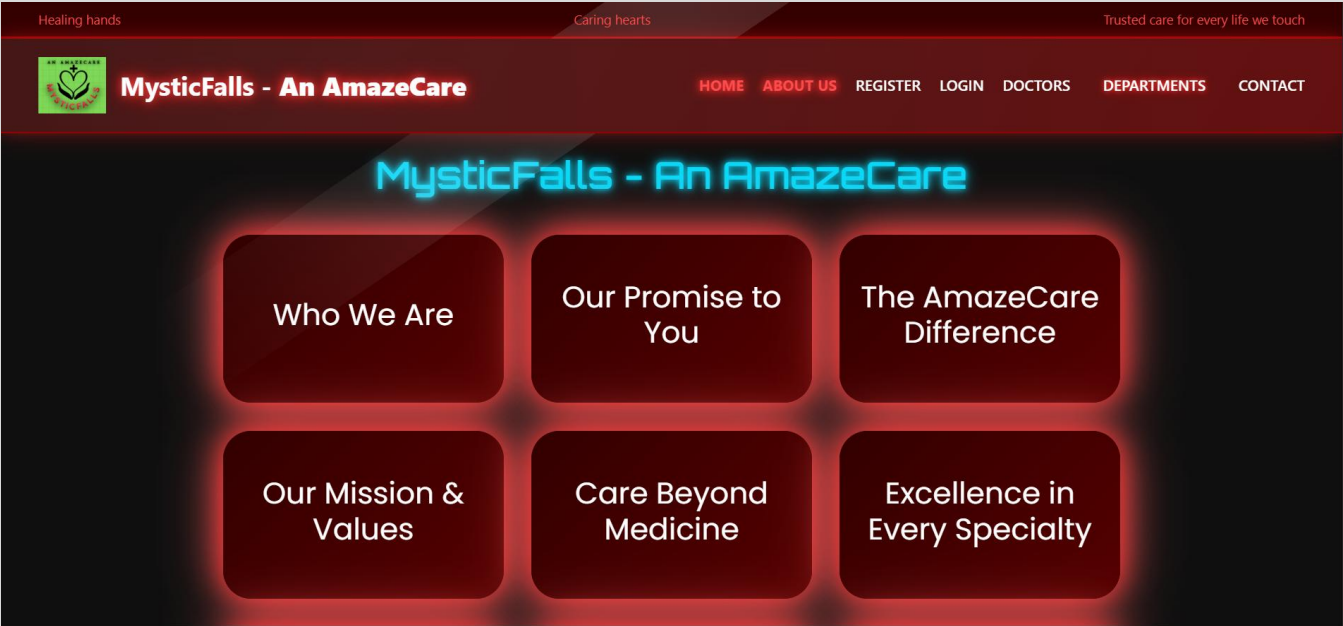
Healing Beyond Walls

Care doesn't end at the hospital gate. We bring healing to homes, offices, and remote corners. Virtual consultations make expert help accessible anytime. Outreach camps serve those who cannot reach us. Chronic care, follow-ups, or minor concerns — all managed remotely. Your time, comfort, and convenience

Hope Begins Here

Every visit to our hospital is the start of something new. A broken spirit finds restoration, and fear turns into strength. We treat not just the illness, but the uncertainty within. Hope is infused into every consultation, test, and touch. With compassionate faces and reassuring voices, we light a path toward

ABOUT US PAGE




REGISTRATION PAGE

Healing hands

Caring hearts

Trusted care for every life we touch



MysticFalls - An AmazeCare

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Registration

Username:

Email:

Password:

Role:

Select Role 


Register

LOGIN PAGE

Healing hands

Caring hearts

Trusted care for every life we touch

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Password:

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FORGOT PASSWORD PAGE

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Forgot Password ??

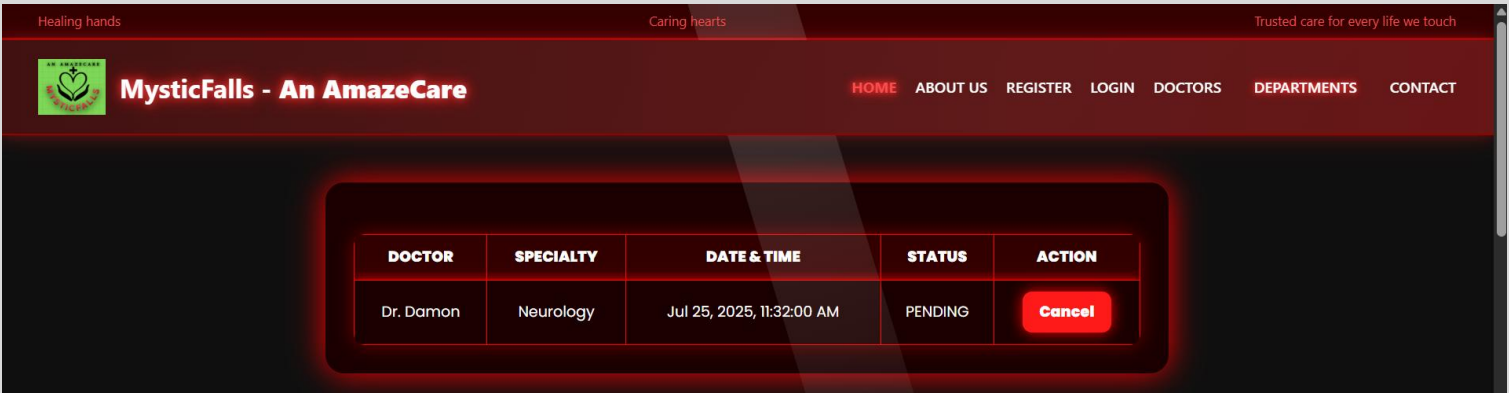
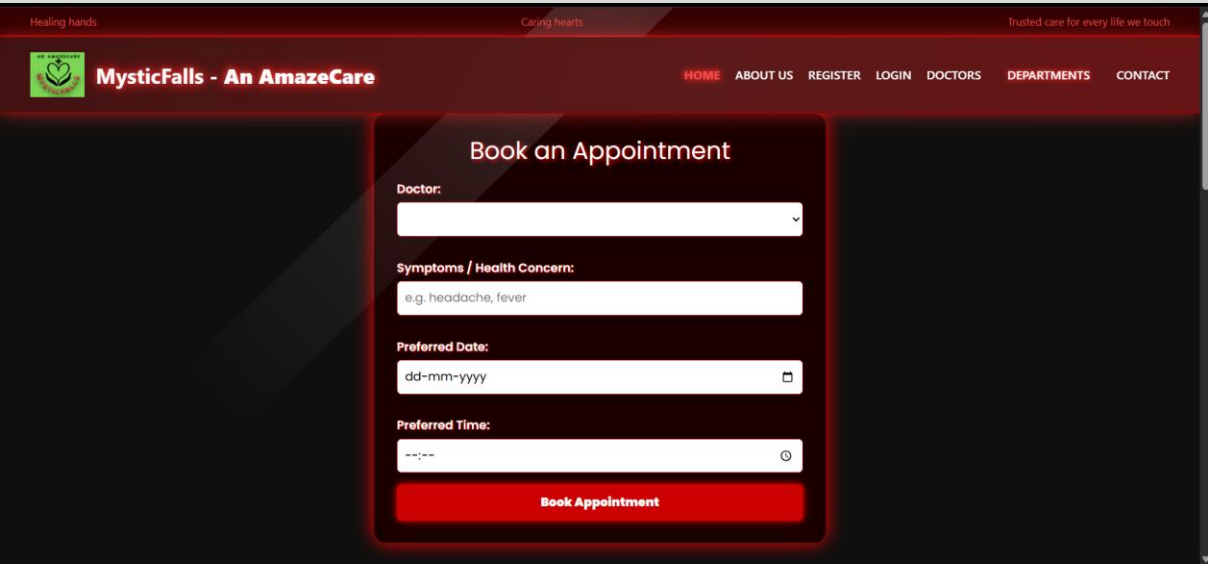
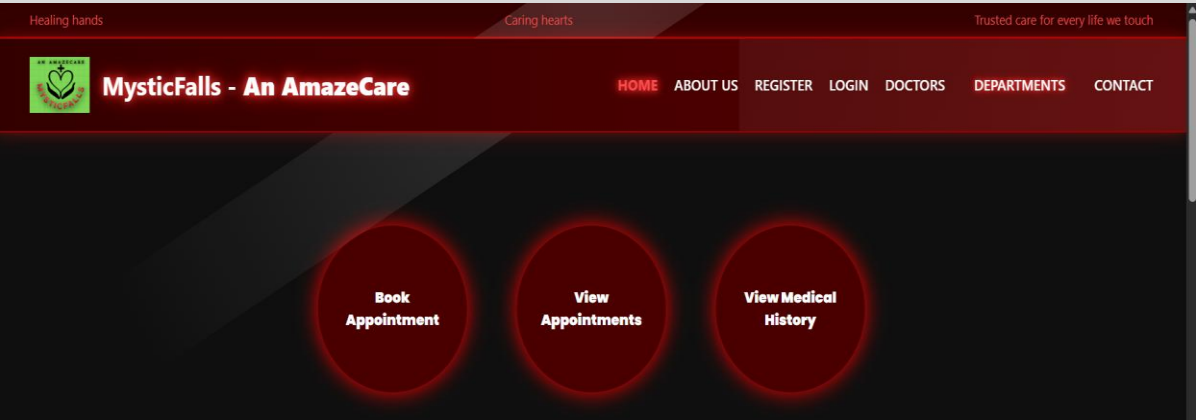
Username:

New Password:

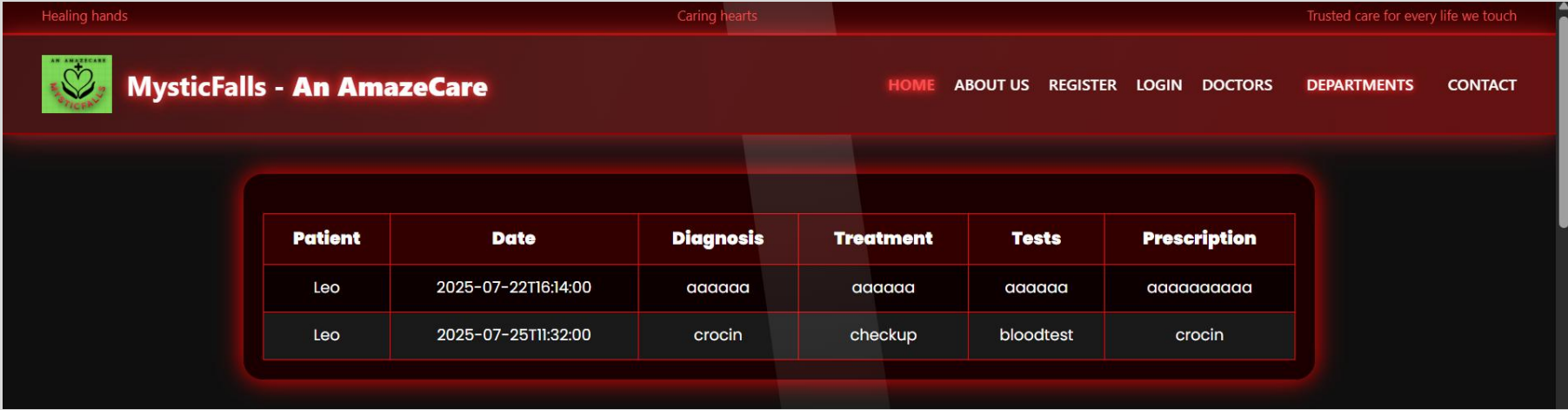
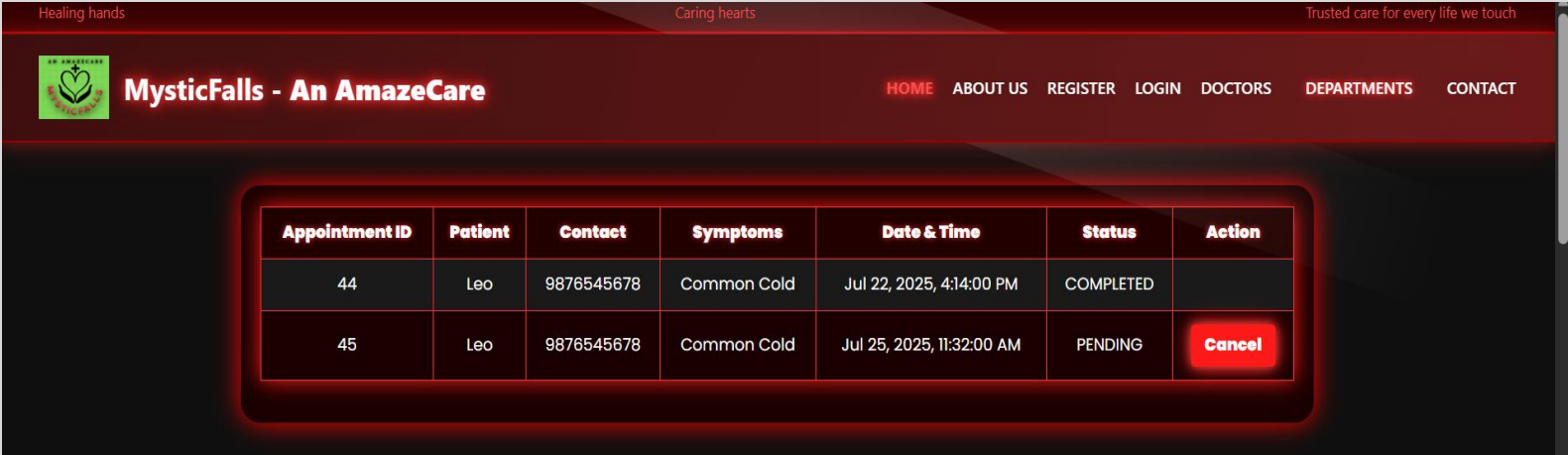
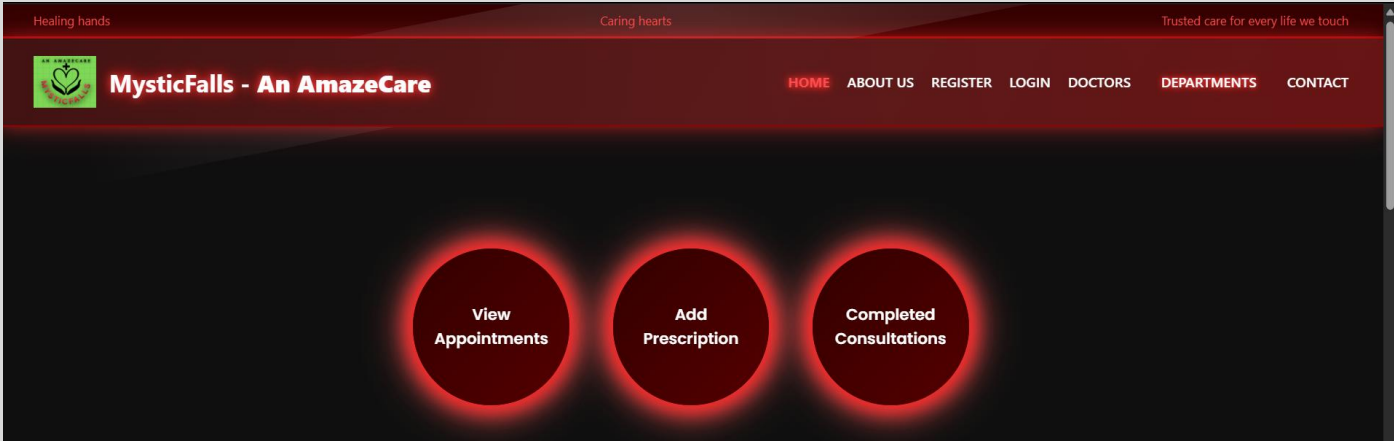
Reset Password

[Back to Login](#)

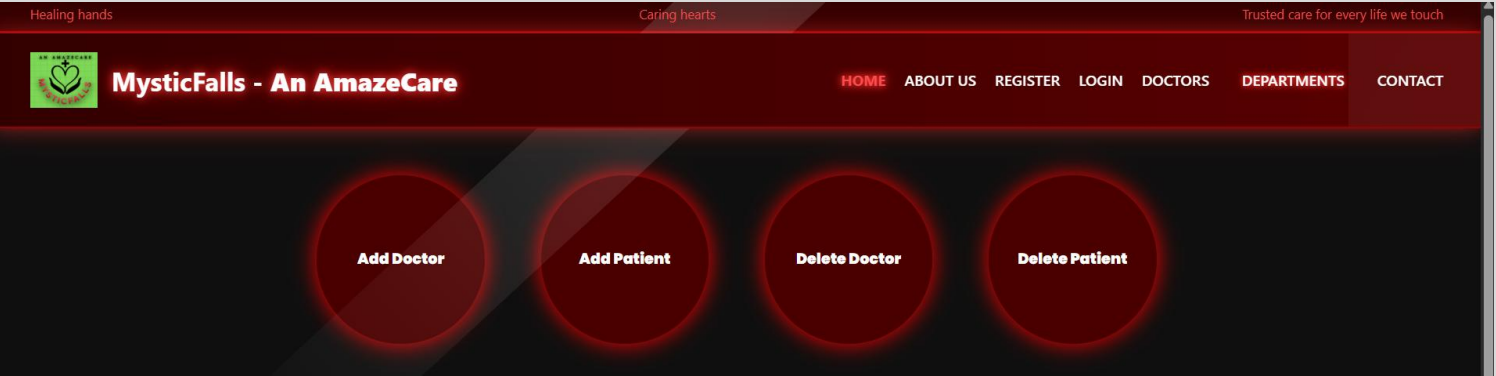
PATIENT APIs



DOCTOR APIs



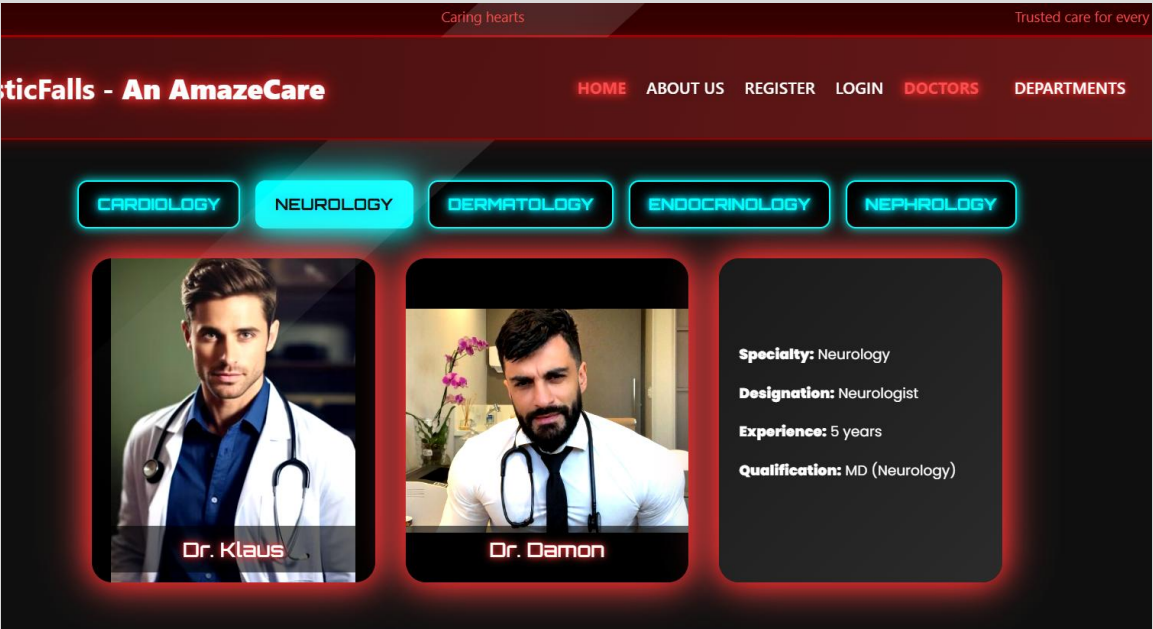
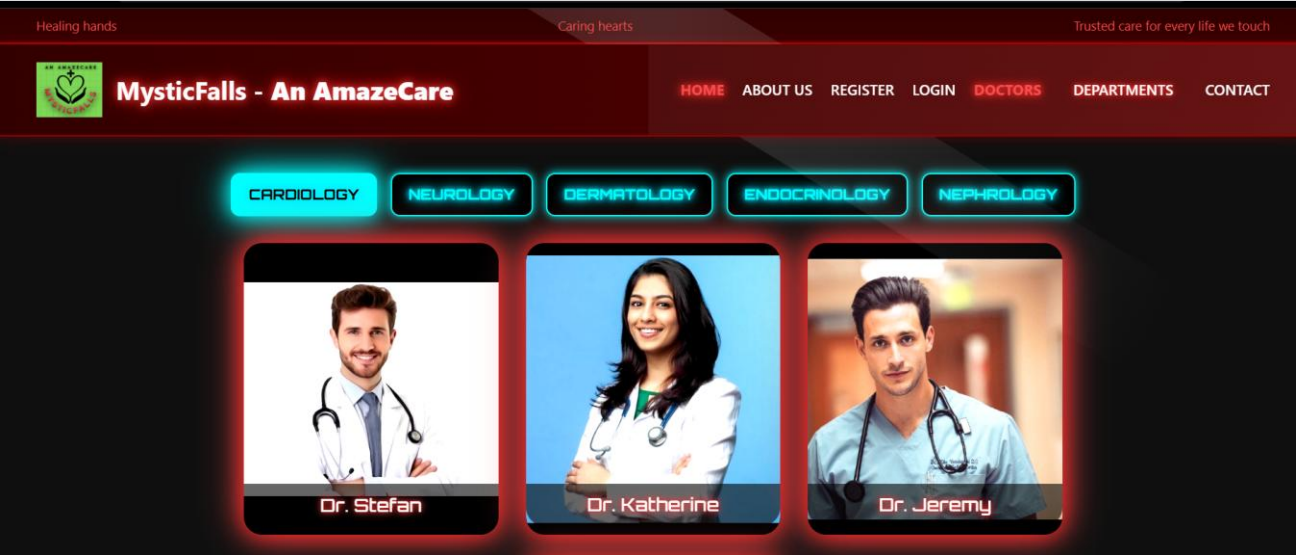
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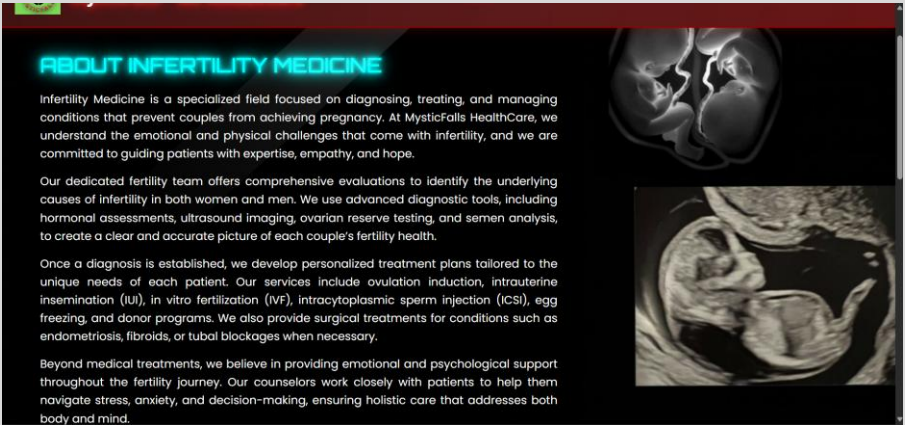
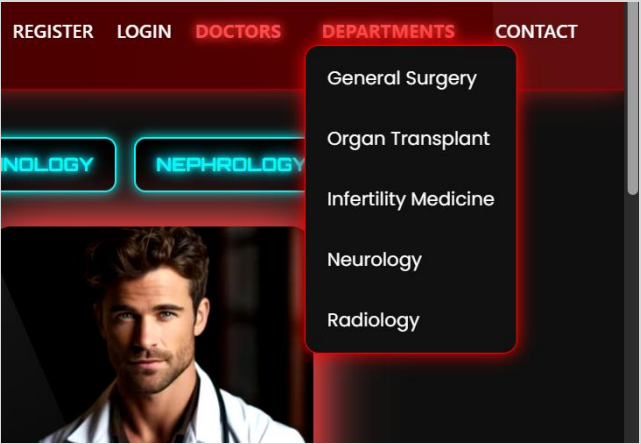
This screenshot displays the 'Add New Doctor' form. The form is titled 'Add New Doctor' and contains the following fields: Name, Specialty, Experience (in years), Qualification, Designation, Email, Username (for login), and Password (for login). Each field is represented by a white input box. At the bottom of the form is a red button labeled 'Add Doctor'.

This screenshot shows the 'Delete Doctor' form. It features a title 'Delete Doctor' and a label 'Doctor:' followed by a dropdown menu with the text 'Select doctor'. Below the dropdown is a red button labeled 'Delete'.

DOCTORS TAB



DEPARTMENTS TAB



CONTACT TAB

