FINAL REPORT

Date	12 April 2025
Team Id	SWTID1743517106
Project Name	MEDICARE: Book a Doctor

1. INTRODUCTION

1.1 Project Overview

MEDICARE is a web-based platform that simplifies the process of booking medical appointments online. Users can search for doctors based on their specialties, choose convenient time slots, and make payments either online or via cash. Doctors can manage their profiles, view patient history and appointments, and track daily earnings. The admin panel provides comprehensive control to manage doctors, appointments, and monitor key statistics.

1.2 Purpose

The purpose of this project is to digitize the appointment booking process for healthcare services, ensuring convenience, transparency, and efficiency for patients, doctors, and the administration.

2. IDEATION PHASE

2.1 Problem Statement

Patients often face challenges in booking appointments due to long queues, lack of availability information, and communication delays. There's a need for a platform that connects patients and doctors seamlessly.

2.2 Brainstorming

- Appointment booking system
- Doctor search by specialization
- Online & offline payment options
- Admin dashboard for control
- Doctor earnings & history tracking
- Patient history & profile updates

2.3 Empathy Map Canvas

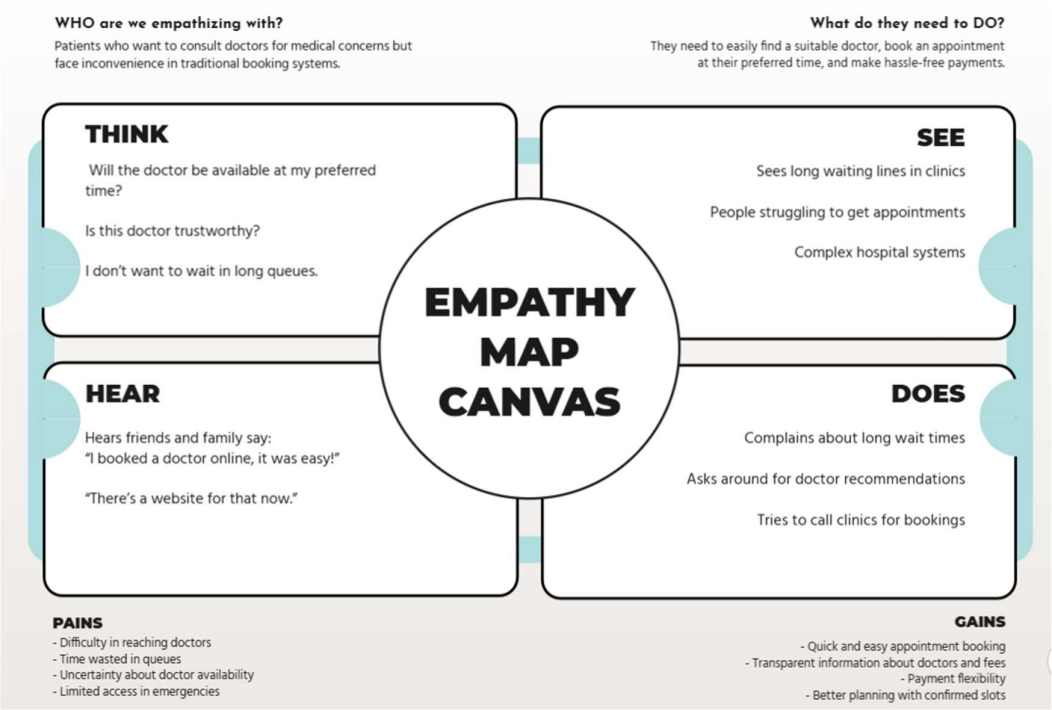

Fig. 2.1 Empathy Map Canvas

3. REQUIREMENT ANALYSIS

3.1 Customer Journey Map

Stage	Actions	Thoughts	Emotions	Opportunities
1. Awareness	Sees ad/post/social media about MEDICARE	"This might help me book a doctor without hassle."	Curious, Hopeful	Online promotion, influencer reviews, easy onboarding
2. Consideration	Visits website, explores features, checks doctors and specialties	"Is this trustworthy? Are the doctors real?"	Cautious, Evaluating	Clear info, verified doctor tags, testimonials
3. Registration	Signs up and logs in	"That was quick and easy."	Satisfied, Confident	Minimal steps to register, optional social login
4. Booking	Searches doctors, filters by availability/specialty, books slot	"Hope I chose the right doctor and time."	Anxious but Hopeful	Intuitive UI, smart suggestions, instant confirmations
5. Payment	Pays via Razorpay or opts for cash	"Is this payment secure?"	A bit Worried, then Relieved	Multiple payment options, visible Razorpay trust badge
6. Appointment Day	Gets reminder via email/SMS, visits doctor	"Let's hope the visit goes smoothly."	Calm, Ready	Timely reminders, directions to clinic, option for reschedule

Stage	Actions	Thoughts	Emotions	Opportunities
7. Post-visit	Views doctor feedback, prescription (future scope), maybe leaves review	"This was useful. I'd use it again."	Grateful, Empowered	Feedback system, prescription upload, loyalty program
8. Follow-up	Gets follow-up reminders or books next visit easily	"Oh yeah, I needed to book again."	Trusting, Engaged	Smart scheduling, automatic follow-up recommendations

3.2 Solution Requirement

- User module for searching and booking doctors
- Doctor module for profile, appointments, earnings
- Admin module for full control
- Authentication system
- Payment integration (cash & online)

3.2.1 Functional Requirements

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Form Registration through Gmail Registration through LinkedIn
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-3	Doctor Module	Doctor Login Profile Management Appointment Management View Earnings View Patient History
FR-4	Patient Module	Search Doctor by Specialization View Appointment Cancel/Reschedule Appointment
FR-5	Payment System	Online Payment via Razorpay Cash Payment Option View Invoice
FR-6	Admin Panel	Manage Doctors Manage Appointments Monitor System Stats View Earnings Reports
FR-7	Authentication	Secure Login/Logout JWT-based Session Management Password Reset
FR-8	Notifications	Appointment Reminders via Email/SMS Payment Confirmations Doctor Schedule Updates

3.2.2 Non-functional Requirements

NFR No.	Non-Functional Requirement	Description
NFR-1	Usability	Interface must be simple, intuitive, and accessible on all modern browsers.
NFR-2	Security	Secure login using JWT; data encryption during transactions; secure payment API.
NFR-3	Reliability	System should function without crashes; data must not be lost during use.
NFR-4	Performance	Fast search and booking (<2s); optimized queries; responsive under load.
NFR-5	Availability	System should be available 99.9% of the time; use of uptime monitoring tools.
NFR-6	Scalability	System should handle increase in users, doctors, and appointments seamlessly.

3.3 Technology Stack

- **Frontend:** React.js
- **Backend:** Node.js, Express.js
- **Database:** MongoDB
- **Authentication:** JWTS
- **Styling:** Tailwind
- **Payment Integration:** Razorpay

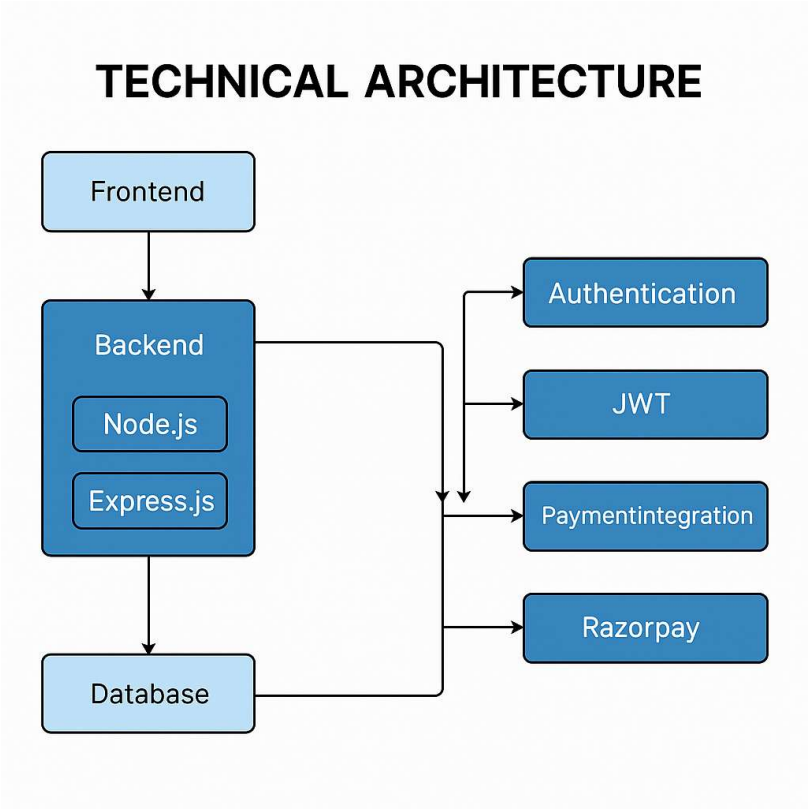

Fig. 3.1 Technical Architecture

3.4 Data Flow Diagram:

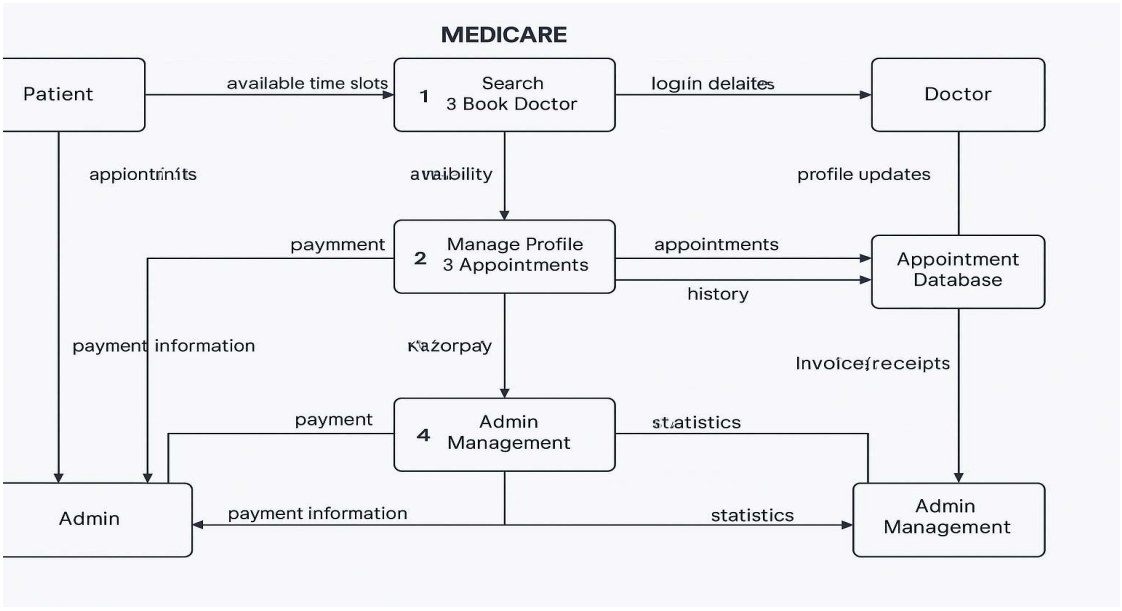

Fig. 3.2 Data Flow Diagram

4. PROJECT DESIGN

4.1 Problem-Solution Fit

The solution addresses the inefficiencies of traditional doctor appointments by digitizing scheduling and tracking processes.

4.2 Proposed Solution

A responsive web app with distinct portals for patients, doctors, and admin with secure login, appointment scheduling, real-time updates, and payments.

4.3 Solution Architecture

S. No.	Parameter	Description
1.	Problem Statement	Patients face difficulties in booking medical appointments due to long queues, lack of doctor availability visibility, and poor communication between parties.
2.	Idea / Solution Description	MEDICARE is a web-based platform that enables users to book appointments online, search doctors by specialization, and make payments online or offline. Doctors can manage their schedules, view patient history, and track their earnings, while the admin oversees the entire system.
3.	Novelty / Uniqueness	Unlike basic booking systems, MEDICARE provides real-time doctor availability, multi-role dashboards (user, doctor, admin), payment integration, and future add-ons like video consultation and e-prescriptions.
4.	Social Impact / Customer Satisfaction	MEDICARE bridges the accessibility gap in healthcare by simplifying the appointment process, reducing

S. No.	Parameter	Description
		waiting time, and improving healthcare access, especially in urban and semi-urban regions.
5.	Business Model (Revenue Model)	MEDICARE can generate revenue via subscription plans for doctors, small commissions per appointment booked, priority listing for practitioners, and ad space for health-related brands.
6.	Scalability of the Solution	The solution is designed using modern tech (React, Node, MongoDB) and is cloud-deployable, making it easily scalable across regions, with future versions for mobile apps and integration with hospitals/clinics.

5. PROJECT PLANNING & SCHEDULING

5.1 Project Planning

5.1.1 Product Backlog & Sprint Schedule

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	2	High	A, B
Sprint-1	Registration	USN-2	As a user, I will receive confirmation email once I	1	High	A

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
			have registered for the application			
Sprint-2	Registration	USN-3	As a user, I can register for the application through Facebook	2	Low	C
Sprint-1	Registration	USN-4	As a user, I can register for the application through Gmail	2	Medium	B
Sprint-1	Login	USN-5	As a user, I can log into the application by entering email & password	1	High	A, D

5.1.2 Project Tracker, Velocity & Burndown Chart

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	10	6 Days	17 Mar 2025	22 Mar 2025	10	22 Mar 2025
Sprint-2	10	6 Days	24 Mar 2025	29 Mar 2025	9	29 Mar 2025

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-3	10	6 Days	31 Mar 2025	05 Apr 2025	8	02 Apr 2025
Sprint-4	10	6 Days	07 Apr 2025	12 Apr 2025	10	06 Apr 2025
Sprint-5	10	6 Days	14 Apr 2025	19 Apr 2025	9	09 Apr 2025

6. FUNCTIONAL AND PERFORMANCE TESTING

6.1 Performance Testing

- Load testing for appointment flow
- Stress testing under multiple user logins
- Speed testing for search & booking operations
- Data integrity during updates

7. RESULTS

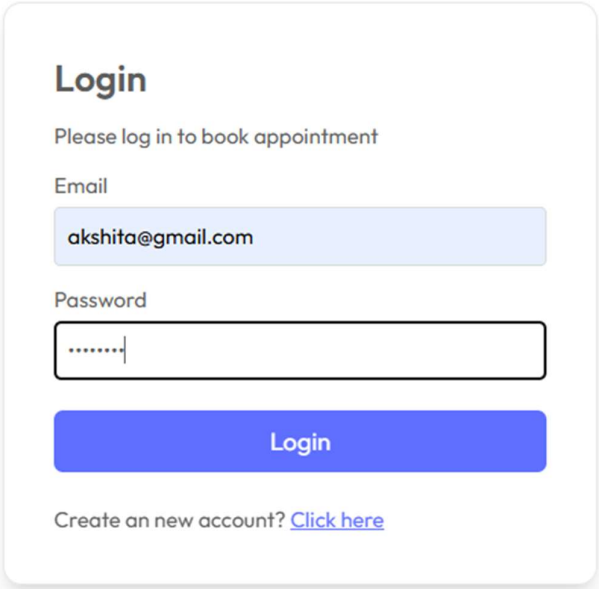

Fig. 7.1 User Login Page

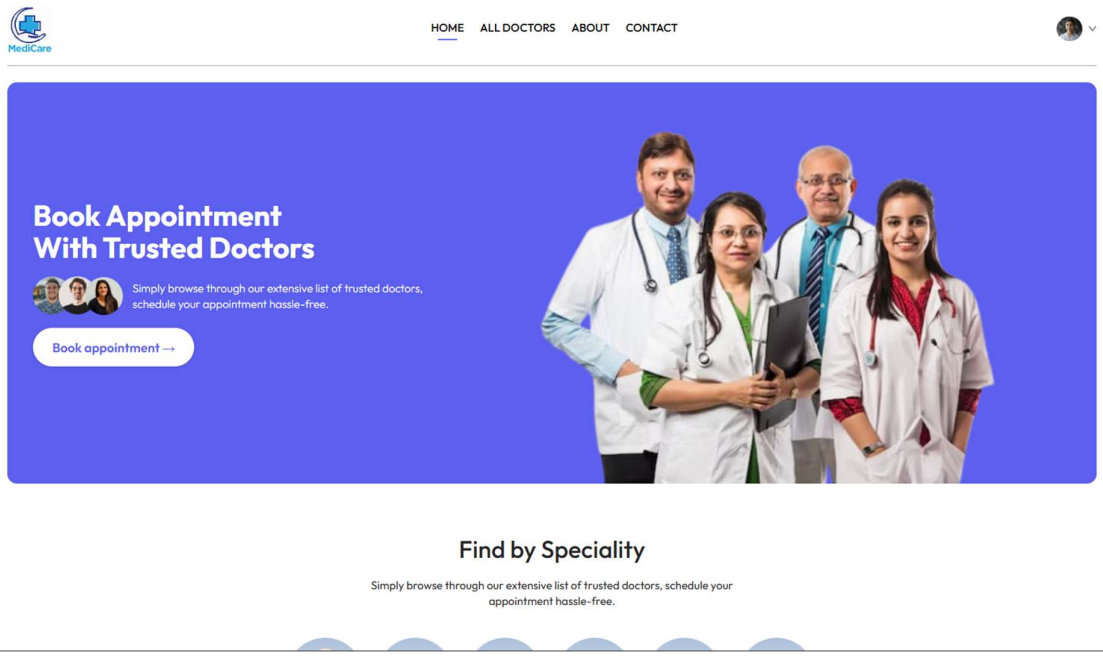

Fig. 7.2 User Dashboard

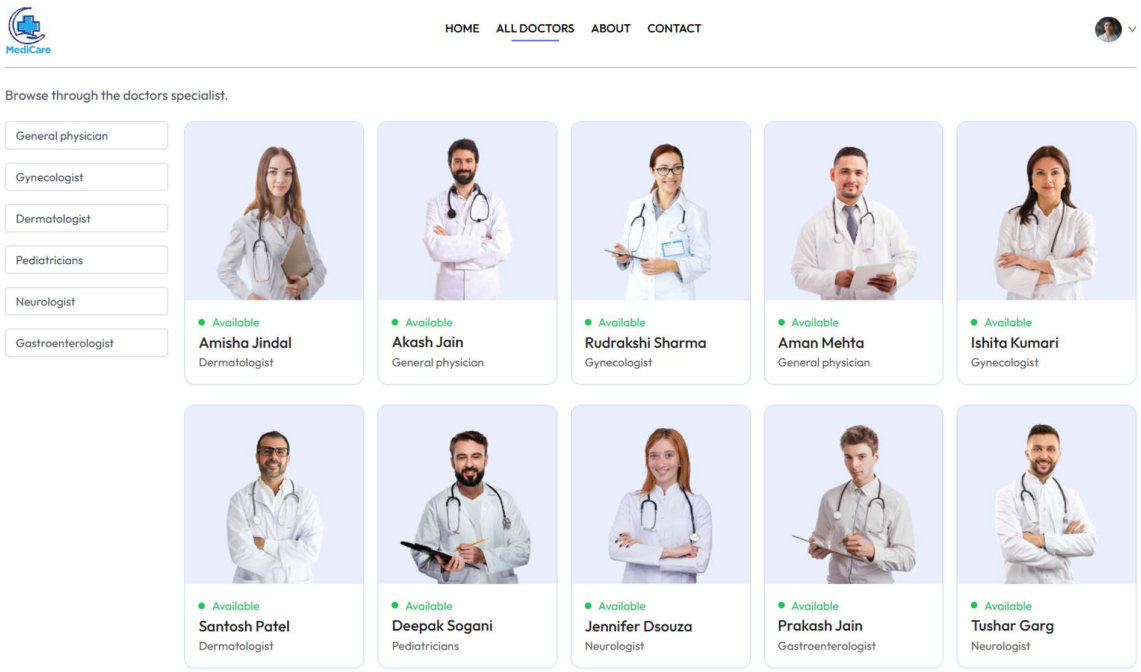

Fig. 7.3 Doctors' List

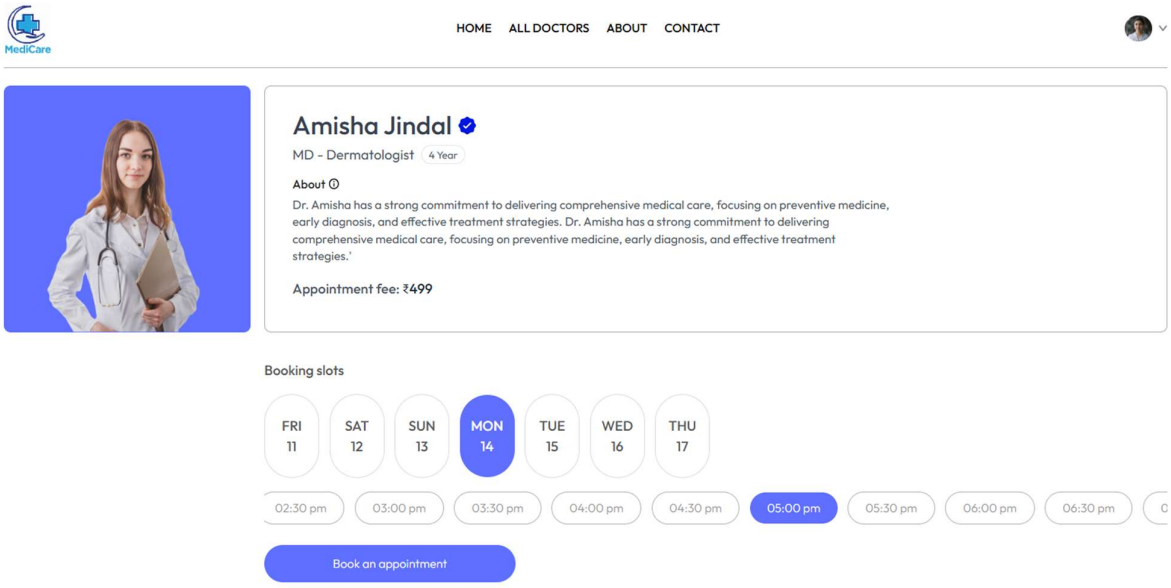

Fig. 7.4 Booking Page

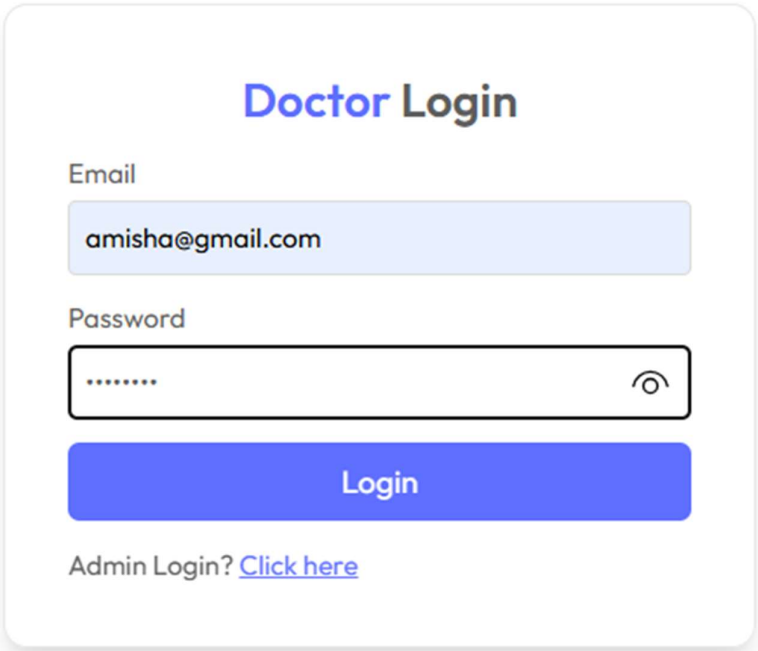

Fig. 7.5 Doctor Login

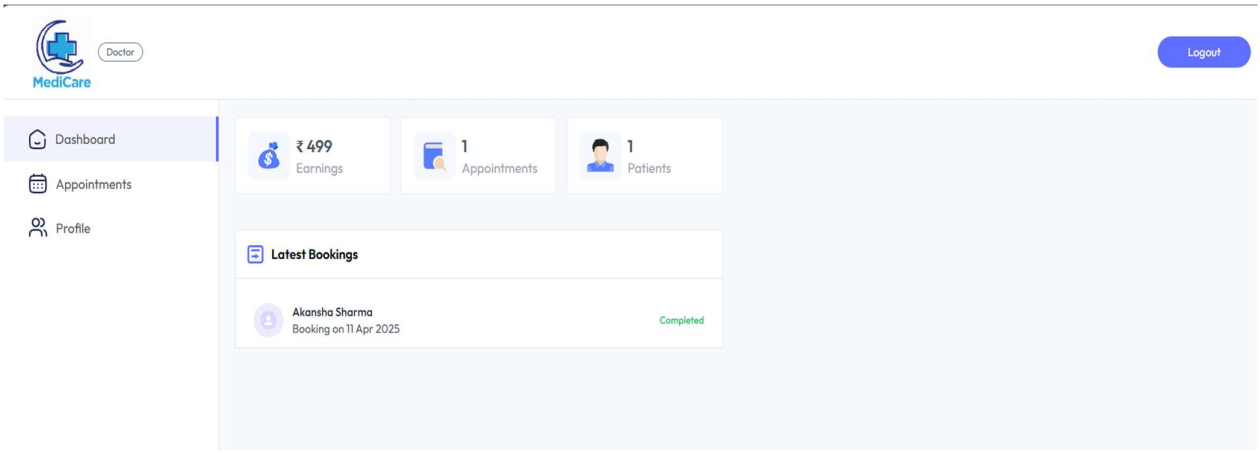

Fig. 7.6 Doctor Dashboard

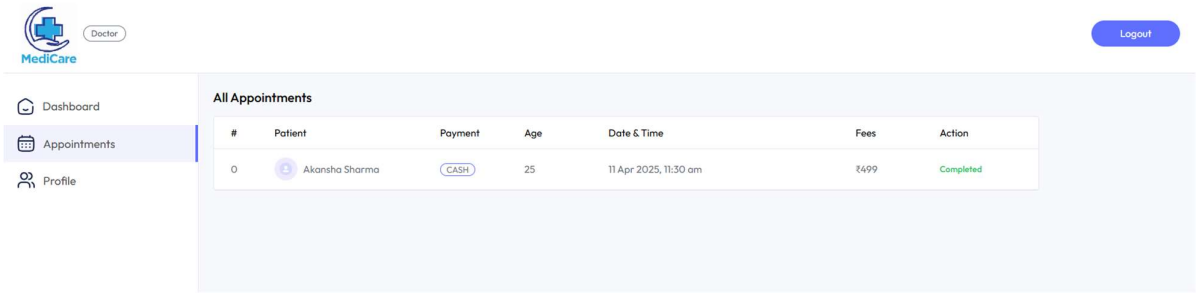

Fig. 7.7 All Appointment List

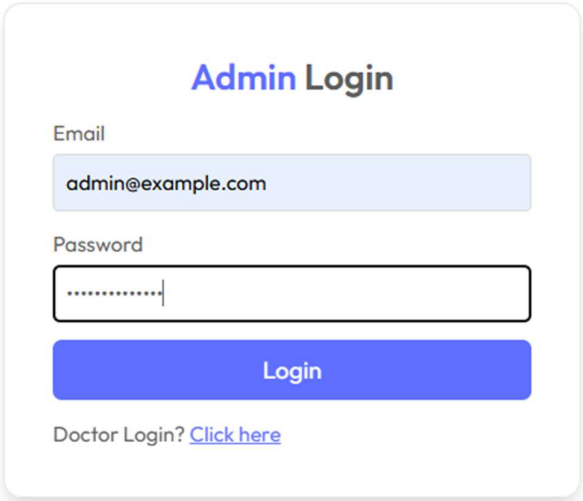

Fig. 7.8 Admin Login

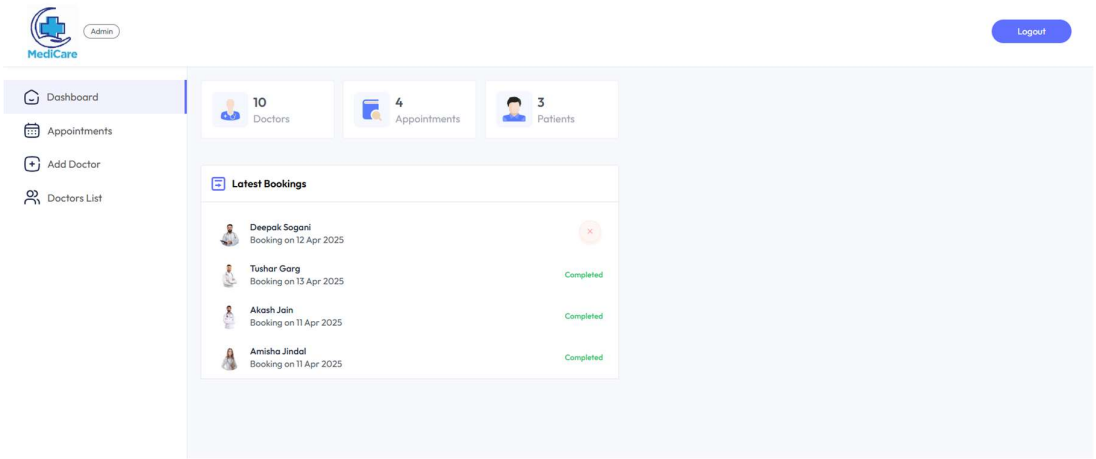

Fig. 7.9 Admin Dashboard

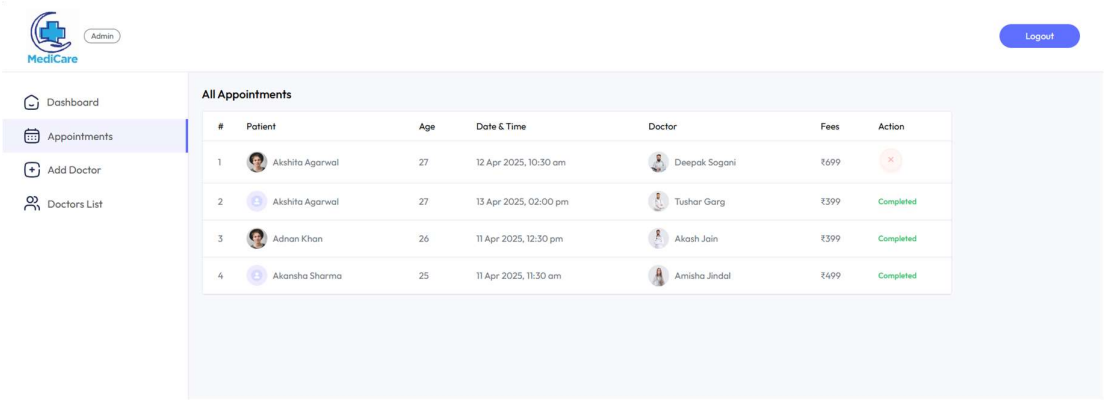

Fig. 7.10 All Appointment List (of All Doctors)

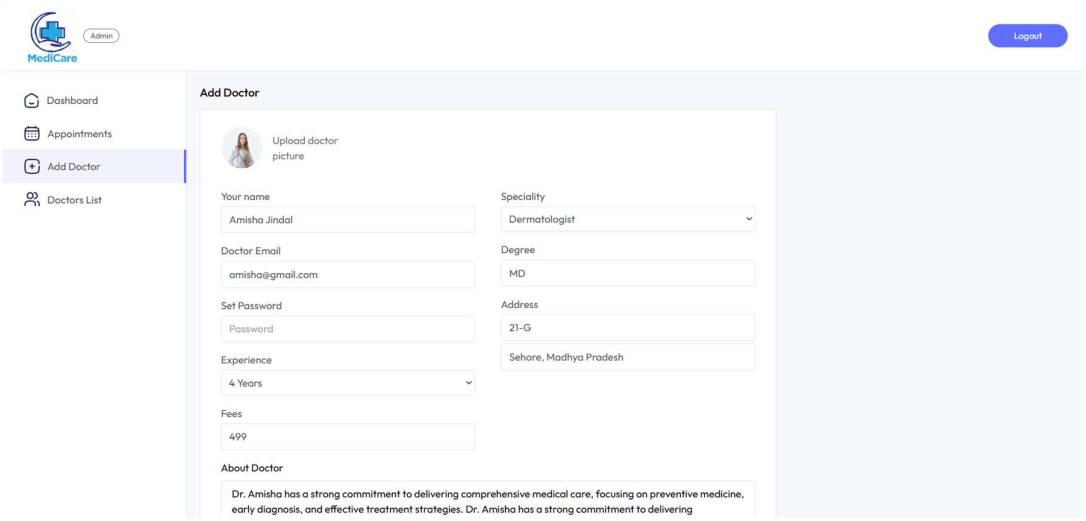

Fig. 7.11 Add a Doctor

8. ADVANTAGES & DISADVANTAGES

Advantages

- Saves time and effort
- Easy accessibility
- Real-time updates
- User-friendly interface
- Detailed doctor insights

Disadvantages

- Requires internet access
- Limited to online users
- Dependent on accurate doctor availability data

9. CONCLUSION

The MEDICARE platform stands as a modern, digital healthcare solution that effectively bridges the gap between patients, doctors, and administrative systems. By streamlining the traditionally cumbersome process of booking medical appointments, it enhances both efficiency and accessibility in healthcare services. Through features such as doctor specialization search, real-time appointment scheduling, secure user authentication, and integrated payment options, the platform offers a user-centric experience that is simple, fast, and reliable.

From a doctor's perspective, the ability to manage appointments, view patient history, and track earnings within a unified dashboard ensures smooth operational flow and informed clinical decisions. Administrators benefit from full control over platform operations, doctor registrations, and statistical monitoring, improving governance and service delivery.

In addition to its functional strengths, MEDICARE promotes transparency, reduces waiting time, and minimizes human errors often found in manual systems. The responsive design ensures usability across devices, empowering patients to book or manage their medical needs from anywhere.

Ultimately, the platform provides a solid foundation for the future of digital healthcare services. Its modular architecture and scalable technology stack mean that advanced features like video consultations, prescription management, and hospital integrations can be added without disrupting existing services.

In conclusion, MEDICARE is more than just a booking system — it is a leap toward an intelligent, inclusive, and tech-driven healthcare ecosystem that aligns with the growing demand for digital transformation in the medical sector.

10. FUTURE SCOPE

- Add video consultations
- Patient prescription management
- Mobile app version
- Automated reminders via SMS/Email
- Ratings and reviews for doctors
- Integration with hospitals and clinics

11. APPENDIX

Github Link (for the Project, Documentations and Demo Video Link) :

https://github.com/Anshika-Garg123/Medicare