HOSPITAL WEBAPP WITH NLP INTEGRATION

Presented By J Joel Andrew

OVERVIEW

Project Overview: AI-driven platform for seamless patient appointment scheduling and healthcare optimization.

This AI-powered medical appointment platform offers patients an easy, user-friendly way to book appointments with healthcare providers. It intelligently manages doctor availability, optimizing schedules based on patient needs and real-time data. The system provides personalized recommendations, helping patients connect with the right specialists quickly. Automated reminders and notifications ensure better patient engagement and reduced no- shows. By streamlining the booking process, it enhances both patient convenience and hospital efficiency.

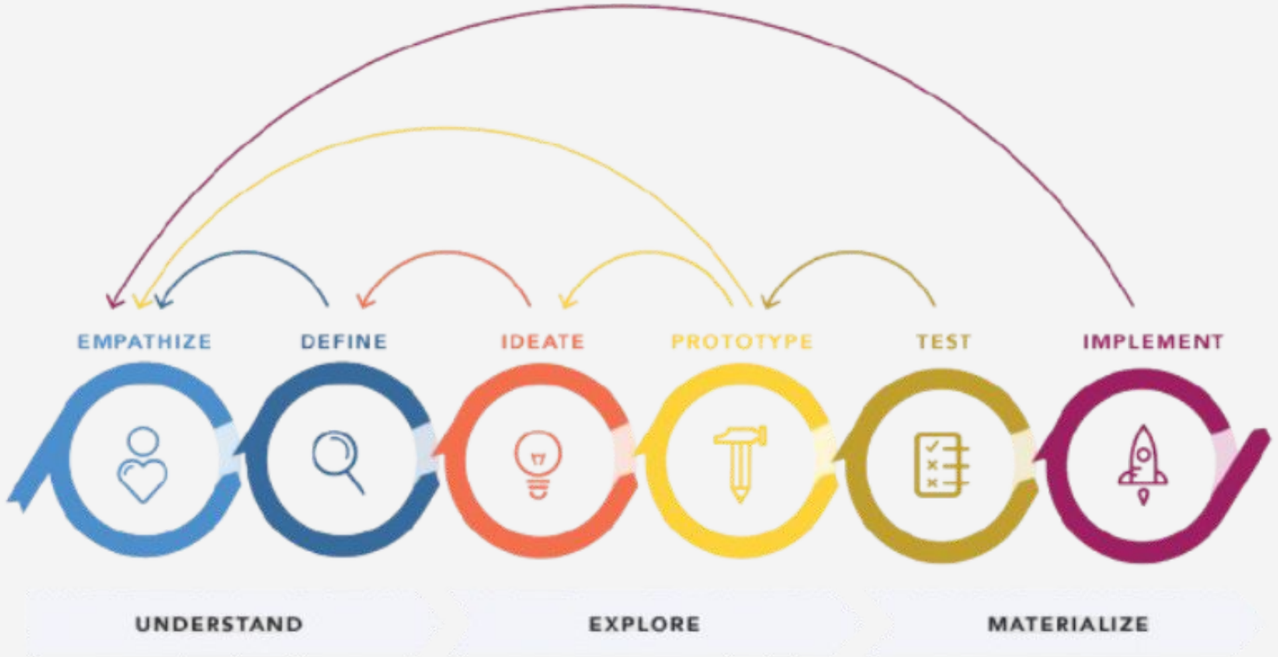
Problem Statement

Patients struggle with inefficient appointment scheduling and limited communication about their symptoms before visits, leading to unprepared doctors and longer consultation times. Hospitals also face difficulties in prioritizing appointments based on urgency, affecting overall care quality.

Goal

The platform uses NLP to let patients describe their symptoms during booking, extracting key details for doctors to prepare. It also analyzes symptom urgency, helping hospitals prioritize appointments, streamline scheduling, and improve patient-doctor communication.

DESIGN THINKING



Empathize:

- User Research: Conduct interviews and surveys with patients and healthcare providers to understand their pain points, preferences, and needs regarding appointment scheduling and management.
- Observation: Analyze how patients currently interact with existing medical booking systems to identify challenges such as long wait times, repetitive explanations, and difficulty accessing medical history.

DESIGN THINKING

Define:

- Problem Statement: Patients face challenges in efficiently booking appointments and communicating their health concerns, leading to longer consultation times and unprepared healthcare providers.
- User Persona: Develop user personas representing different types of patients (e.g., busy professionals, retirees) to guide design decisions and feature prioritization.

Ideate:

- Brainstorm Solutions: Generate ideas for features that address identified problems, such as:
    i. Symptom pre-submission through an AI-driven interface.
    ii. AI recommendations for appointment urgency based on symptoms.
    iii. A streamlined interface for accessing and managing medical history.
- Sketch Ideas: Create rough sketches or wireframes to visualize potential layouts and user interfaces.

Prototype:

- Low-Fidelity Prototype: Develop a low-fidelity prototype incorporating key features like appointment booking, symptom input, urgency assessment, and medical history management.
- Iterate: Gather feedback on the prototype from patients and healthcare providers, making iterative improvements based on their input.

DESIGN THINKING

Test:

- Usability Testing: Conduct usability tests with real users to observe how they interact with the prototype. Identify areas of confusion or frustration.
- Refine: Based on testing results, refine the design to enhance usability, ensuring a smooth user experience and effective communication between patients and healthcare providers.

MY ROLE

J. Joel Andrew
WebApp UI/UX Designer
Figma Prototyping
User Flow Diagram Competitive Analyst Presentation Specialist (Google Slides), Wireframe Sketch and Digital Wireframes

Therefore All-rounder

MY RESPONSIBILITIES

- Leading WebApp development and designing user flow diagrams.
- Creating Figma prototypes and designing the WebApp UI/UX.
- Ensuring accessibility and developing the app.
- Integrating API and back-end systems, managing app performance.
- Conducting competitive analysis, identifying unique app features, and tracking market trends.
- Designing and delivering project presentations, ensuring clear communication of app features and progress.
- Creating wireframes, refining designs for usability, and developing digital prototypes for testing.

PERSONA: PRIYA RAMESH

Age: 34
Occupation: HR Manager
Health Concerns: Chronic migraines, general wellness checkups
Tech Savviness: Intermediate
Location: Urban, Bangalore
Devices: Smartphone, Laptop

BIO

Priya is a busy professional who struggles to find time for her health amidst her work schedule. She regularly suffers from migraines and prefers consulting with the same neurologist.
Priya finds it hard to call clinics during work hours to book appointments, and would appreciate an easy way to schedule appointments and communicate her health concerns beforehand.

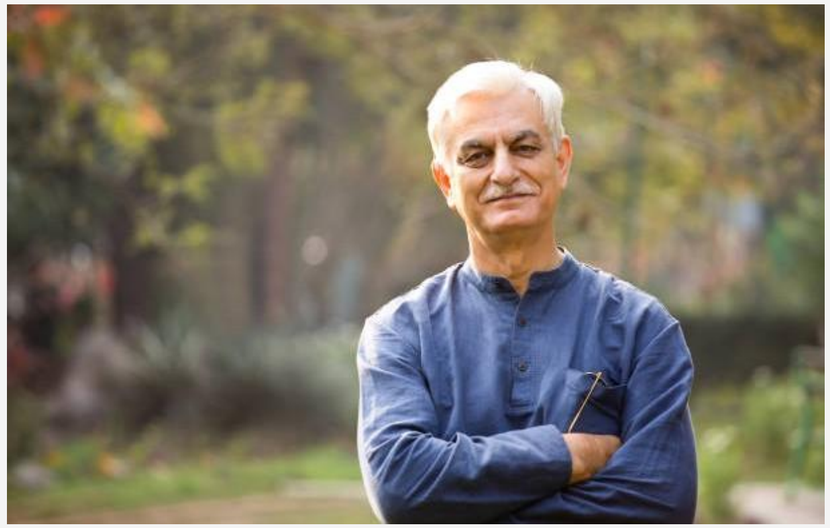
GOALS

- QUICK, HASSLE-FREE APPOINTMENT BOOKING WITH SYMPTOM PRE-SUBMISSION.
- AUTOMATED REMINDERS AND EASY SCHEDULING AROUND HER BUSY WORK LIFE.

FRUSTRATIONS

- REPETITIVE MEDICAL HISTORY EXPLANATIONS AT EACH VISIT. DIFFICULTY
- FINDING CONVENIENT APPOINTMENT SLOTS DURING WORK HOURS.

PERSONA: RAJESH KUMAR



Age: 58
Occupation: Retired Civil Engineer
Tech Savviness: Basic
Health Concerns: Diabetes, high blood pressure
Location: Semi-Urban, Hyderabad
Devices: Tablet

BIO

Rajesh is a retired civil engineer managing his diabetes and hypertension. He visits multiple specialists regularly for checkups and follows strict medication. Rajesh isn't very tech-savvy, so he relies on simple, intuitive interfaces when managing his appointments. He appreciates systems that don't require too much input and would benefit from AI- driven recommendations.

GOALS

- SIMPLE, USER-FRIENDLY SYSTEM FOR BOOKING MULTIPLE SPECIALIST APPOINTMENTS.
- PERSONALIZED FOLLOW-UP REMINDERS AND PRIORITY SCHEDULING FOR URGENT HEALTH ISSUES.

FRUSTRATIONS

- STRUGGLES WITH NAVIGATING COMPLEX APPS OR WEBSITES. MISSING
- FOLLOW-UP APPOINTMENTS DUE TO LACK OF TIMELY REMINDERS.

USER JOURNEY MAP

Persona - Rajesh Kumar (58, Retired Civil Engineer)
Goal - aims to easily manage and book his regular medical appointments.

The mapping of Rajesh Kumar's user journey highlighted the importance of a simple, intuitive interface and personalized reminders in managing his health needs, enabling him to efficiently coordinate appointments and maintain his well-being while fostering confidence in using technology.

Stage	Actions	Thoughts/Feelings	Touchpoints	Opportunities for Improvement
Sign-Up/Onboarding	• Registers account with assistance from family - Simple walkthrough	• "I'm not sure if I can do this alone, but it seems simple."	• Sign-up page, basic onboarding screens	• Simplify the onboarding process further, reducing unnecessary steps
Booking an Appointment	• Selects specialist - Chooses an available time slot	• "I hope I'm picking the right time for my health issues."	• Specialist selection, appointment scheduling interface	• Provide AI guidance to suggest the most appropriate specialist/time
Submitting Medical Info	• Uploads recent prescriptions or medical history - Describes symptoms	• "I want the doctor to see all my past records easily."	• Document upload page, symptom input form	• Simplify document uploads with guided prompts and autofill options

COMPETITIVE ANALYSIS

									First impressions	
	competitor type (direct/indirect)	Location	Product offering	Price (annually)	Website	Business size (small/medium/large)	Target audience	Unique value	Desktop website experience	App or mobile website experience
Zocdoc	Direct	North America	Patient appointment scheduling, doctor discovery, telehealth options	Free for patients, varies for providers	zocdoc.com	Medium	Patients, healthcare providers	Streamline scheduling of doctors	Clean interface with intuitive navigation	Easy-to-use mobile app
Practo	Direct	India	Doctor appointment booking, health records management, teleconsultation	Free for patients, premium features available	practo.com	Large	Patients, doctors, clinics	Comprehensive platform with health records	User-friendly layout	Responsive app that integrates health records
Healthgrades	Indirect	North America	Doctor reviews, appointment scheduling, health information	Free for patients, premium features available	healthgrades.com	Large	Patients seeking healthcare information	Extensive doctor database	Informative with a focus on healthcare	Functional mobile site for accessing doctor information easily

USER RESEARCH SUMMARY

We conducted interviews and surveys with patients and healthcare professionals to identify pain points in current medical appointment booking systems. Key findings revealed that patients often face challenges with long wait times, repetitive symptom explanations, and difficulty in finding available time slots. Healthcare providers expressed a need for better patient preparation before appointments, as well as improved scheduling efficiency. Users strongly desired a platform that allows symptom pre-submission, provides urgency-based appointment recommendations, and offers real-time updates. This feedback guided the development of our platform, integrating NLP for symptom analysis, AI-driven appointment prioritization, and seamless scheduling for both patients and doctors.

USER RESEARCH : PAIN POINTS

01

DIFFICULTY IN BOOKING APPOINTMENTS

Users face challenges with long wait times and the hassle of repeatedly explaining symptoms to healthcare providers, resulting in frustration and inefficiency.

02

FRAGMENTED INFORMATION

Many users find it difficult to access and manage their medical history and prescriptions across different healthcare providers, leading to confusion and delays in treatment.

03

LACK OF PERSONALIZED CARE

Patients often desire more personalized care and recommendations tailored to their specific health needs, which are currently lacking in traditional appointment booking systems.

GAIN POINTS

01

EFFICIENT APPOINTMENT BOOKING

Users can quickly and conveniently book appointments, reducing wait times and improving access to healthcare services.

02

STREAMLINED MEDICAL HISTORY MANAGEMENT

Our platform enables users to easily upload and access their medical history, prescriptions, and test results in one place, ensuring comprehensive and coordinated care.

03

PERSONALIZED HEALTHCARE EXPERIENCE

Patients benefit from personalized care recommendations and proactive health management based on their medical history and ongoing symptoms, enhancing treatment outcomes and satisfaction.

EMPATHY MAP

SAYS

- “I struggle to find time for appointments between work meetings”
- "I find it hard to remember all my appointments."

THINKS

- "I hope this platform can help me book appointments quickly."
- "I wish there was an easier way to manage multiple specialist visits."

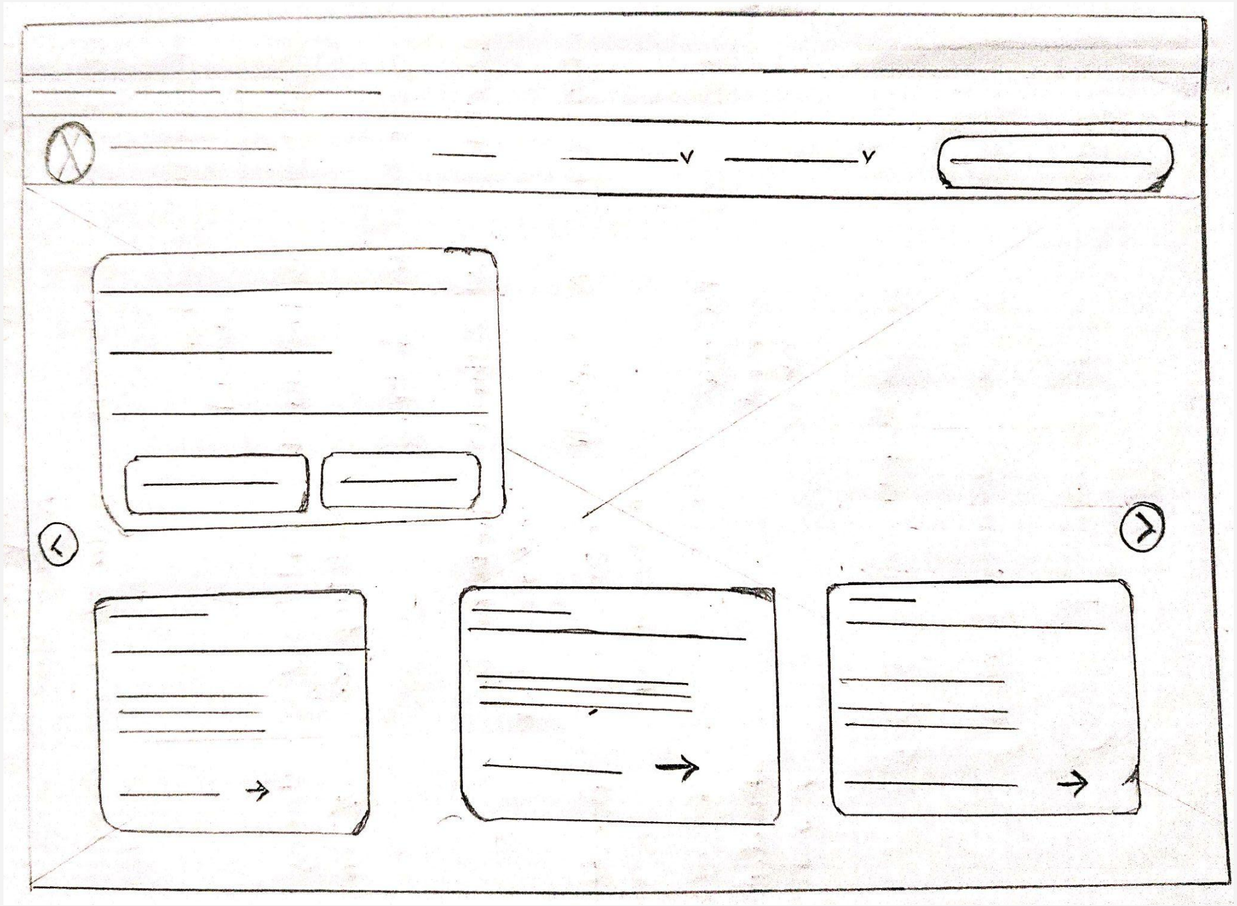
FEELS

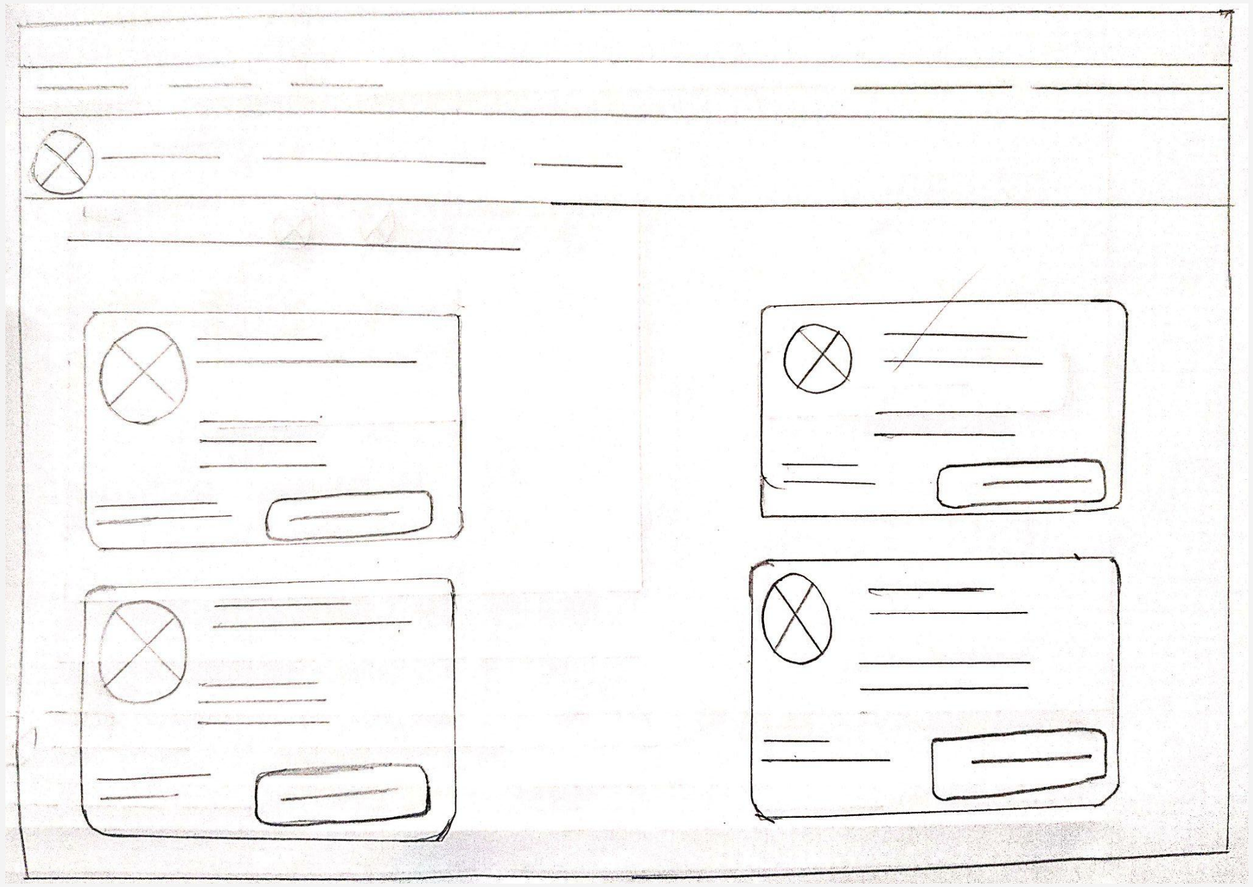
- Frustrated with long wait times and repetitive paperwork
- Overwhelmed by complex apps and technology.

DOES

- Calls clinics during lunch breaks to schedule appointments.
- Writes down appointments on a physical calendar.

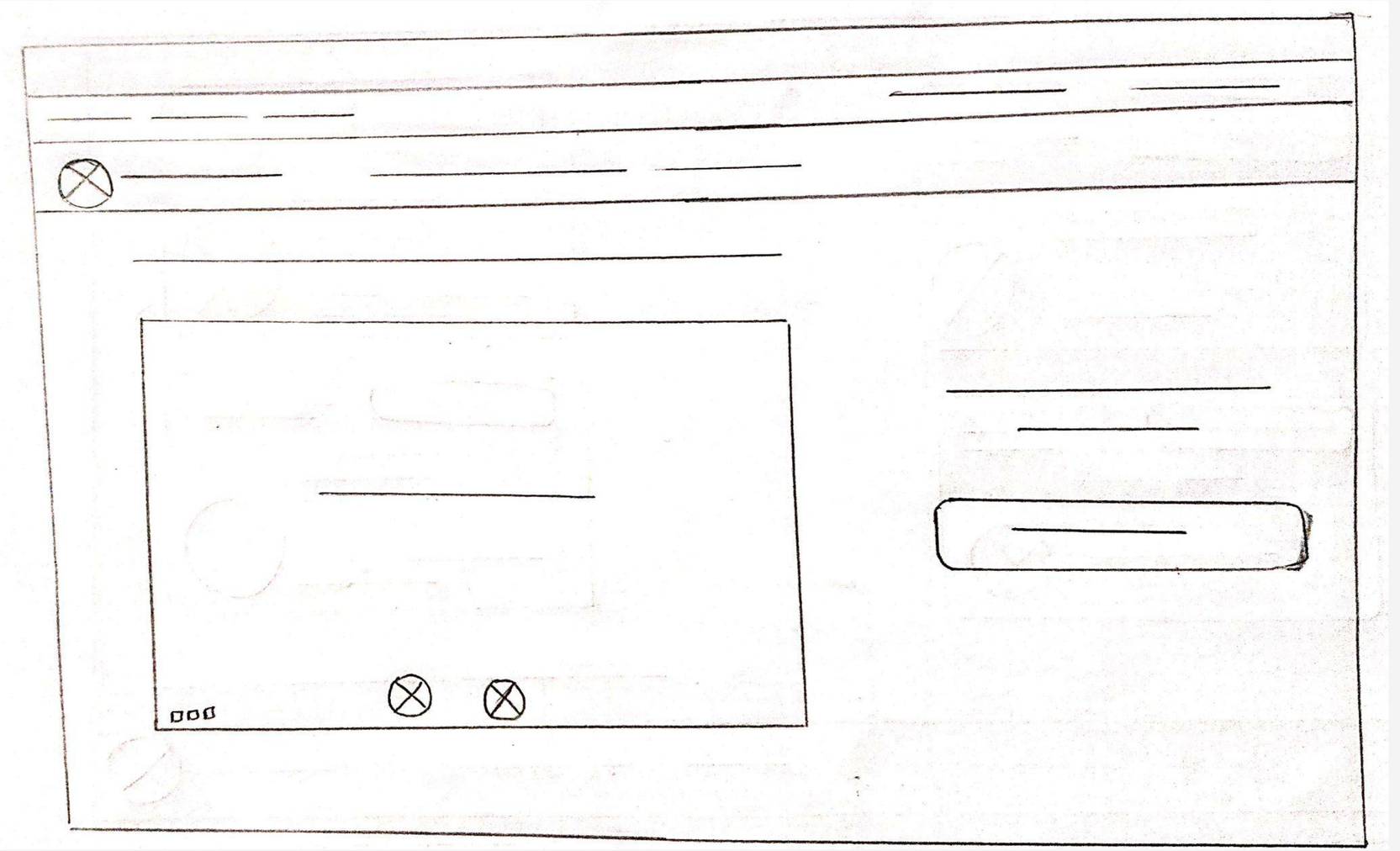
PAPER WIREFRAME





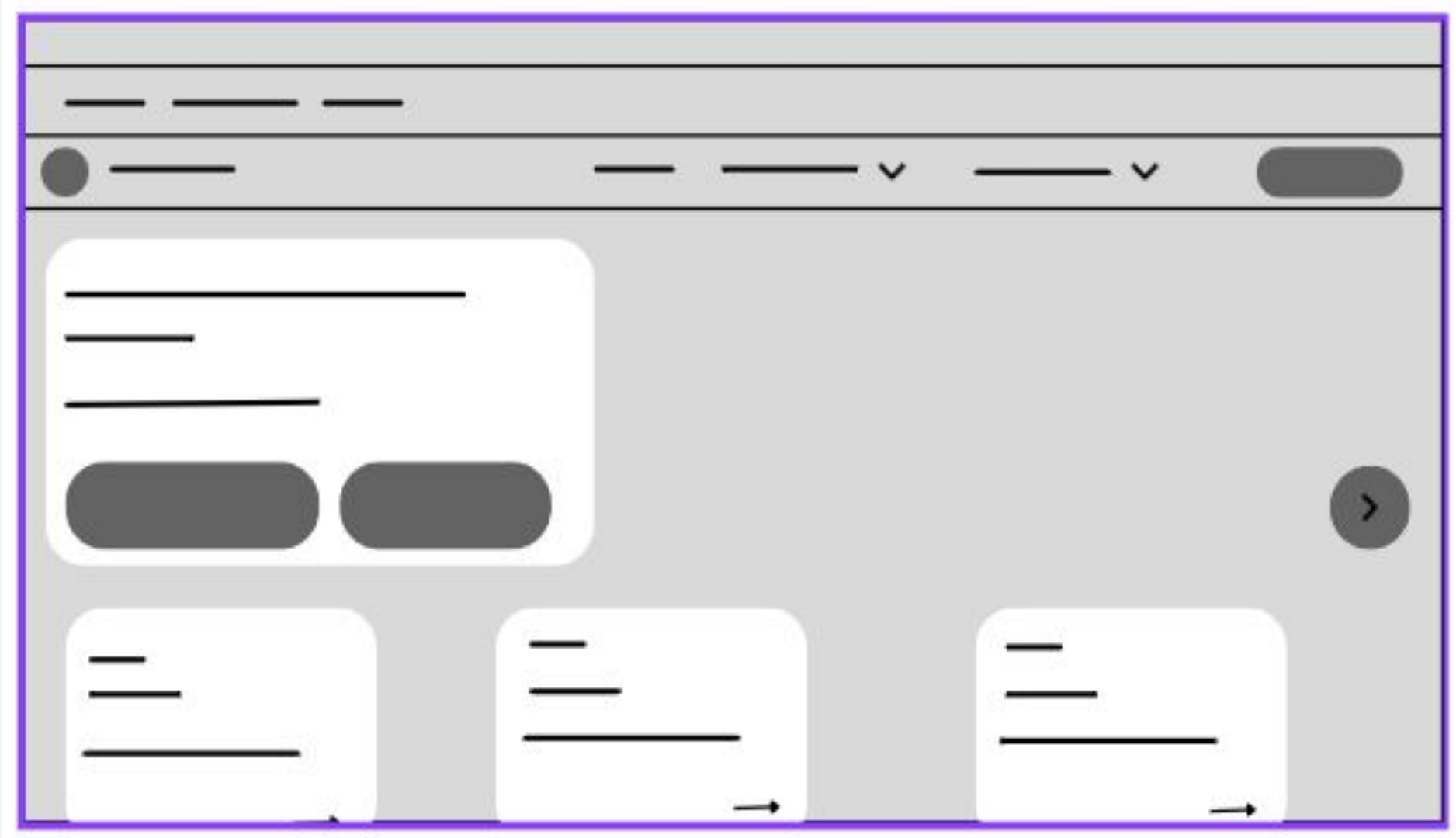
The main page for booking appointments offers a user-friendly interface that allows patients to easily schedule their visits. It seamlessly connects to a comprehensive list of doctors, highlighting their expertise and specialties, ensuring informed choices for optimal healthcare.

PAPER WIREFRAME



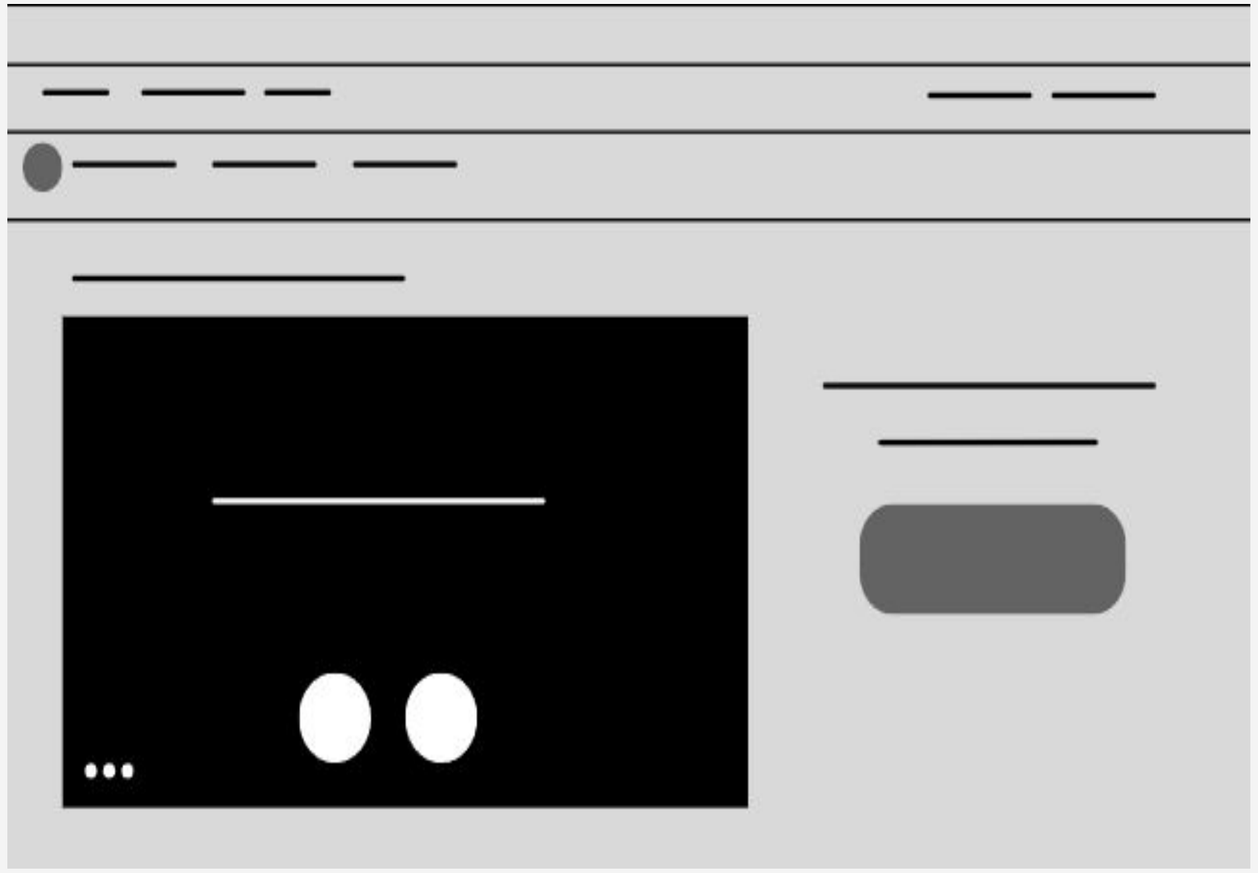
The video call feature of the web app facilitates seamless virtual consultations between patients and healthcare providers, allowing for real-time communication and enhanced patient engagement. This functionality ensures that patients receive immediate care and guidance, improving overall access to healthcare services.

DIGITAL WIREFRAME



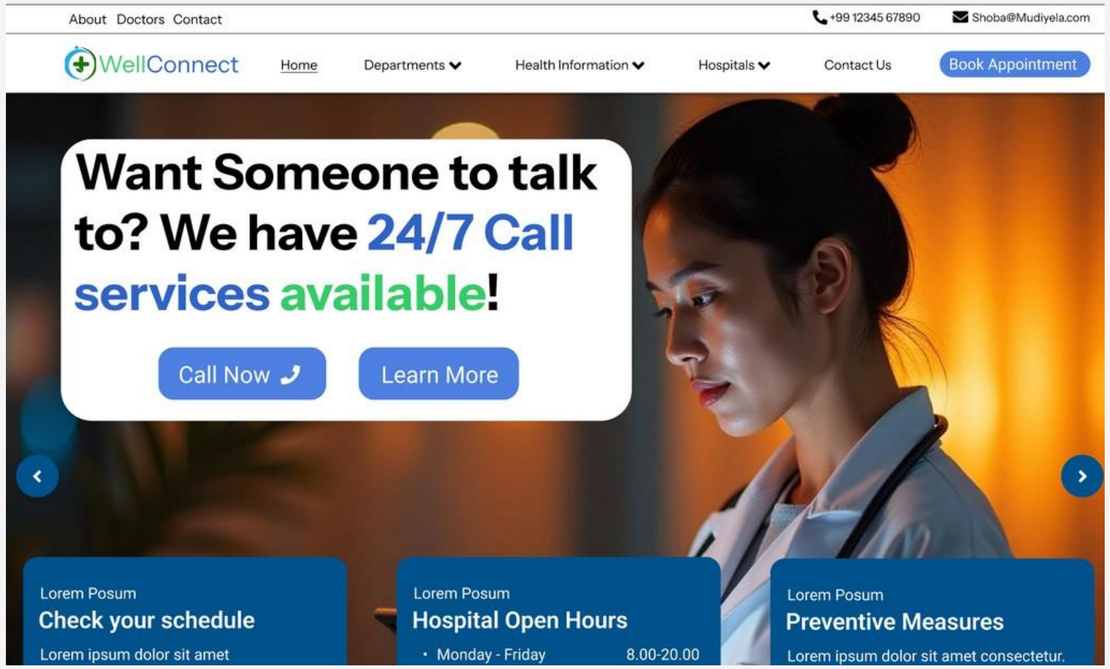
The digital wireframe of the main page for booking appointments illustrates a streamlined layout that prioritizes user experience. Key elements include clearly labeled sections for selecting healthcare providers, viewing available time slots, and accessing personalized recommendations, all designed to facilitate an efficient and intuitive appointment scheduling process.

DIGITAL WIREFRAME



The digital wireframe of the doctors' list displays a well-organized layout that enables patients to easily browse and select healthcare providers based on their specialties. Additionally, the video call section wireframe features a streamlined interface for initiating virtual consultations, ensuring efficient communication between patients and doctors.

MOCKUPS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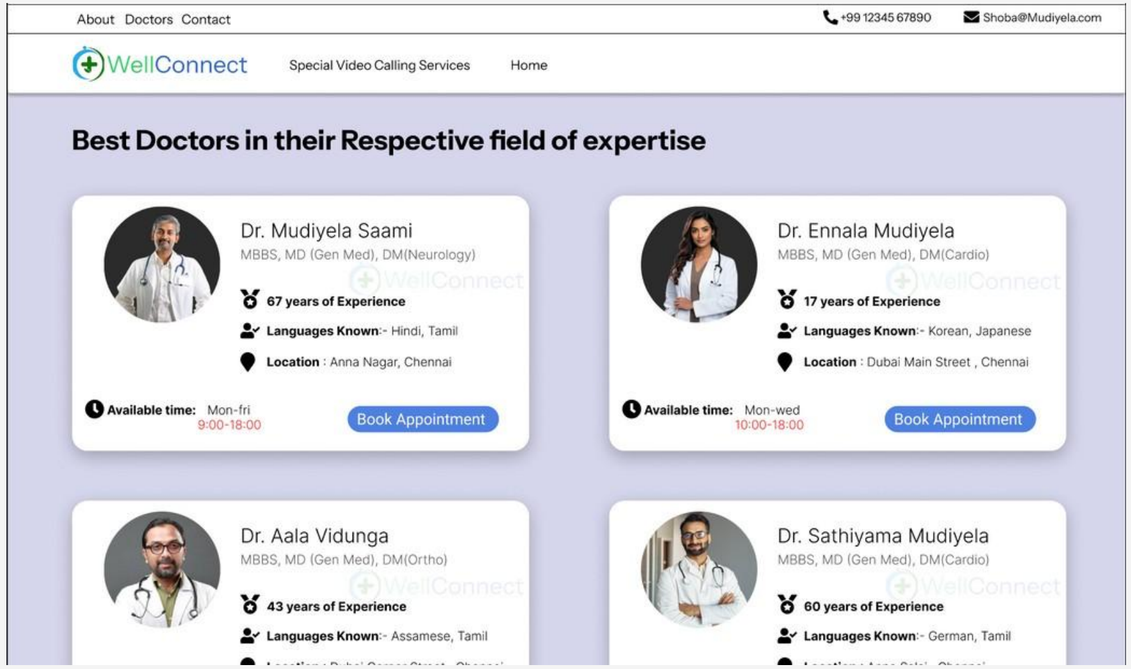
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67 years of Experience
Languages Known:- Hindi, Tamil
Location : Anna Nagar, Chennai
Available time: Mon-fri 9:00-18:00
Book Appointment
Dr. Ennala Mudiyela
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Book Appointment
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Dr. Sathiyama Mudiyela
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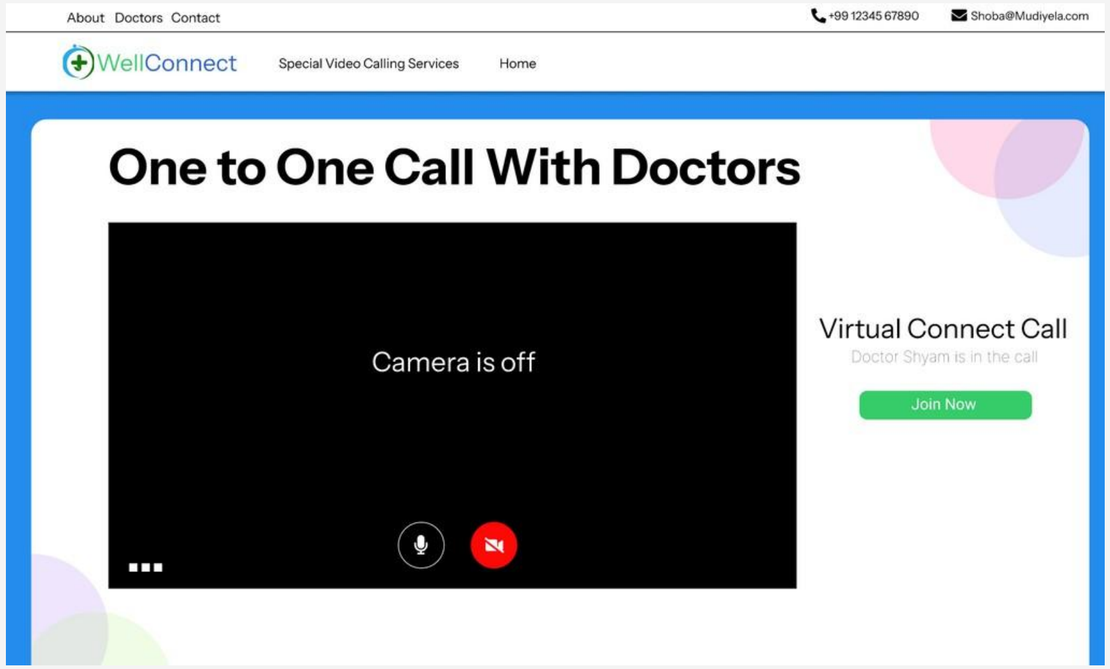
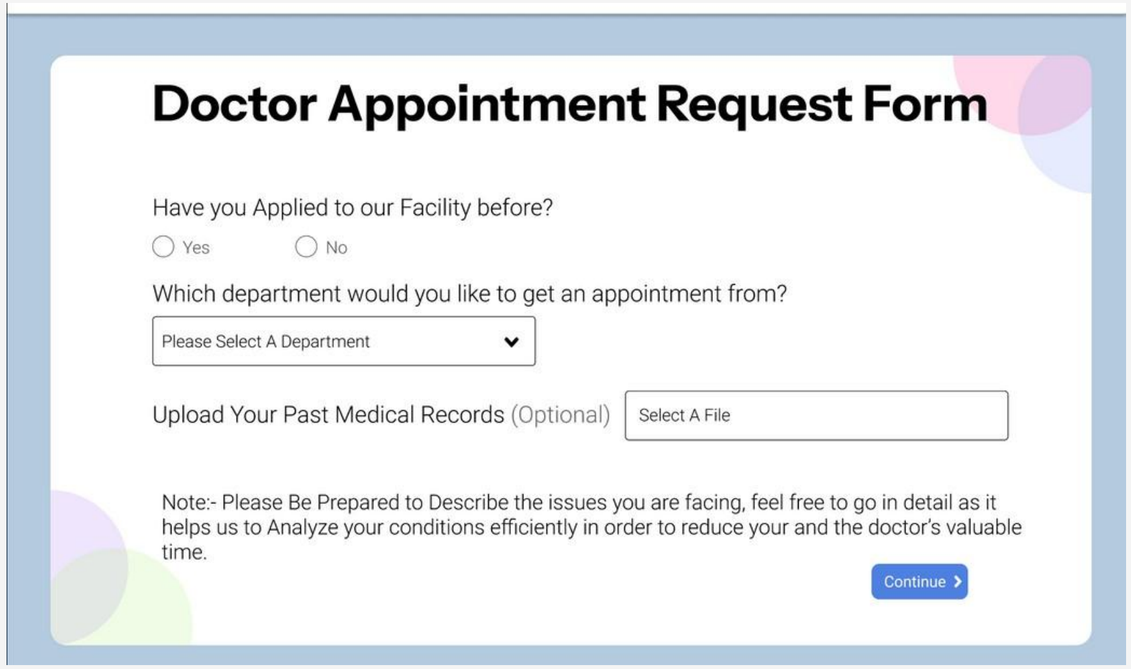
60 years of Experience
Languages Known:- German, Tamil

MOCKUPS





Figma Link : https://www.figma.com/design/ccbgMRjt1eSJ6wm6uset2r/Patient-Management-System?node-id=0-1&t=prhRQ9JyjrWv3Vxs-1

NEXT STEPS

Conduct User Testing: Organize user testing sessions with a diverse group of patients and healthcare providers to gather feedback on the app's usability, features, and overall experience. This will help identify areas for improvement and ensure the app effectively meets user needs.

Iterate on Features: Based on the feedback from user testing, refine and enhance existing features, such as the symptom pre-submission interface and AI-driven appointment prioritization. This iterative process will help create a more user-friendly and efficient experience for both patients and doctors.

Launch a Pilot Program: Consider launching a pilot program with selected healthcare providers to test the app in a real-world environment. Collect data on user interactions, appointment outcomes, and overall satisfaction to further refine the platform.

Gather Continuous Feedback: Implement mechanisms for ongoing user feedback post-launch, such as in-app surveys or feedback forms. This will help you stay attuned to user needs and continuously improve the platform.

TAKEWAYS

Positive User Reception: The majority of users found the platform intuitive, particularly appreciating features like symptom pre-submission and AI-driven appointment prioritization, which added value by streamlining the booking process.

Need for Clearer Guidance: Some users needed more guidance on how to use specific features, such as symptom submission and scheduling, indicating that clearer instructions or tooltips would enhance the overall experience.

Onboarding Experience: An improved onboarding process is essential to educate users about the app's features and help them make the most of the platform from the start.

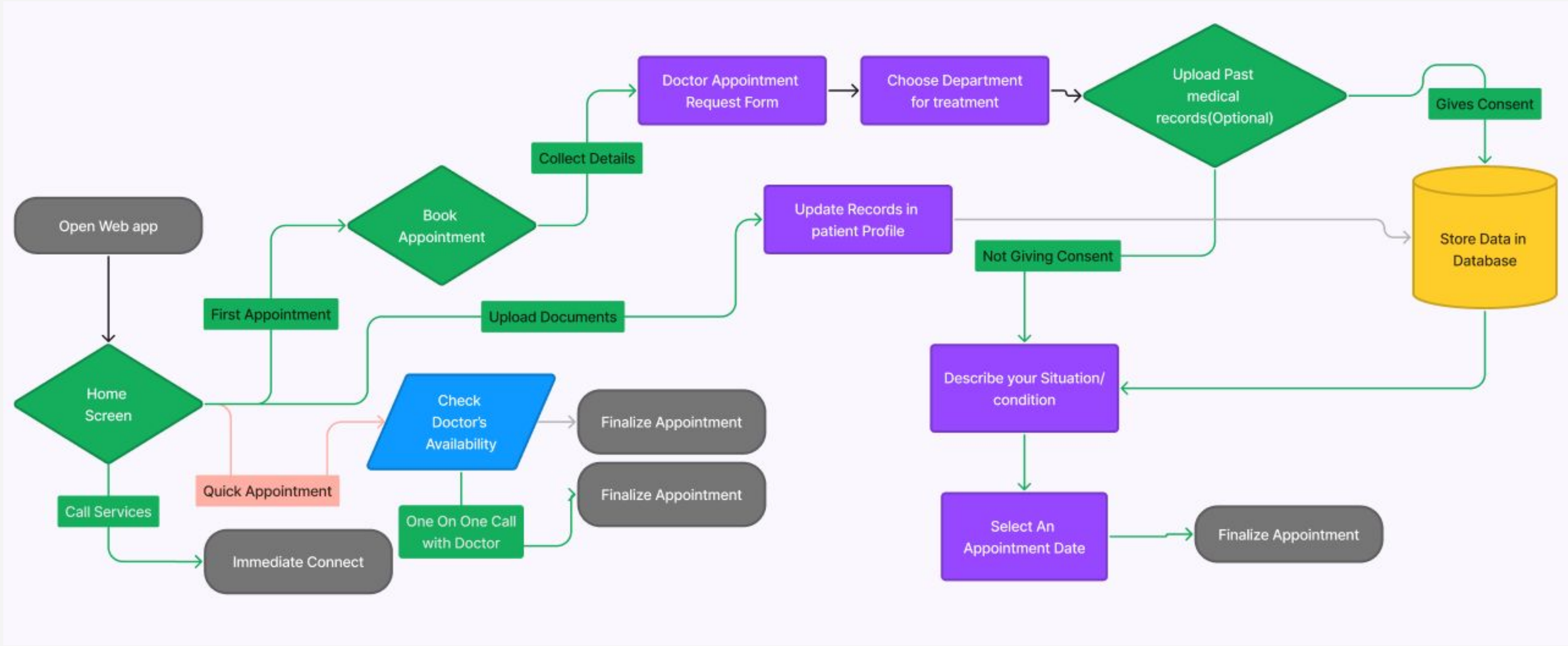
Efficiency Gains for Both Patients and Providers: The platform shows strong potential to save time for both patients and healthcare providers by streamlining the communication of symptoms and prioritizing appointments based on urgency, which could lead to faster and more personalized care.

USABILITY STUDY : FINDINGS

Symptom Pre-Submission:
Positive Feedback: Users appreciated the ability to submit symptoms before the appointment, stating it helped them feel more prepared and reduced consultation time.
Areas for Improvement: A few users suggested that providing examples of how to describe symptoms could enhance their experience and lead to more accurate submissions.

Medical History Management:
Positive Feedback: Users found it beneficial to upload and access their medical history and previous prescriptions in one place.
Areas for Improvement: Users expressed a desire for better organization and categorization of their uploaded documents to facilitate quick retrieval.

WorkFlow Diagram



THANK YOU!