

PROJECT ABSTRACT

Telemedicine Appointment Booking Platform

A web platform for discovering verified doctors, booking video consultations with real-time slot management, and handling digital prescriptions. Delivered built-to-order with the full web application, database schema, report, PPT and viva kit.

01. Title

Telemedicine Appointment Booking Platform.

02. Introduction / Background

Access to specialist doctors remains uneven: patients in smaller towns travel hours for a 15-minute consultation, while clinics lose time to phone-based scheduling, no-shows and paper records. Telemedicine — clinical consultation over video, audio or chat — addresses the distance problem, but only when the booking layer is trustworthy: verified doctor profiles, genuine slot availability, reminders, and a proper prescription trail. This project builds that booking layer as a complete web application, covering doctor discovery, appointment scheduling with conflict-free slots, patient records, and post-consultation prescriptions.

03. Problem Statement

Existing appointment workflows — phone calls, WhatsApp messages, walk-ins — create double bookings, long queues and no verifiable record of the consultation. Generic booking plugins lack medical specifics: specialty-wise search, consultation-type handling (video/audio/chat), doctor-side schedule control, and prescription generation. This project delivers a purpose-built telemedicine booking platform where patients find the right specialist, book a confirmed slot, join a secure video session, and receive a signed digital prescription — with doctors managing their own availability.

04. Objectives

- Implement doctor discovery with specialty filters, ratings, fees and real availability.
- Build conflict-free slot management: date-wise calendars, per-doctor schedules, and booking locks.
- Support video, audio and chat consultation types with pre-call reminders via SMS/email.
- Generate signed digital prescriptions (PDF) after completed consultations.
- Provide patient history and doctor-side dashboards for schedule and earnings overview.

05. Proposed Methodology

The system is built as a three-tier web application. (1) Data layer: relational schema for doctors, specialties, schedules, slots, appointments, patients and prescriptions, with constraints that prevent double booking at the database level. (2) Application layer: REST endpoints for search, slot generation, booking, cancellation with policy rules, and prescription creation. (3) Presentation layer: a responsive frontend with the patient booking flow (search → date → slot → details → confirm) and doctor/admin dashboards. Video sessions integrate a standard WebRTC provider link issued per appointment.

06. System Architecture / Working

A patient searches doctors by specialty and sees only genuinely available doctors with live slot data. Selecting a doctor renders a date strip derived from the doctor's weekly schedule template minus already-booked slots; picking a slot creates a provisional hold that is confirmed on detail submission, eliminating race-condition double bookings. Fifteen minutes before the session, both parties receive the secure video link. After the call, the doctor issues a prescription from a template (medicines, dosage, advice), which is stored as a signed PDF in the patient's history. Cancellations follow a configurable policy (e.g. free until 4 hours before).

07. Software Requirements

- Backend: Python (Django/Flask) or Node.js (Express) with a REST API
- Database: PostgreSQL or MySQL with transactional booking constraints
- Frontend: HTML5, CSS3, JavaScript (responsive; works on mobile browsers)
- Video: WebRTC provider integration (e.g. Daily, Twilio Video) for session links
- Notifications: SMS/email gateway for reminders and video-link delivery
- PDF generation library for prescriptions; any modern browser for use

08. Expected Outcomes

A working multi-role web application (patient, doctor, admin) with searchable doctor listings, a tested booking flow that cannot double-book, reminder notifications, and PDF prescription generation. The student can demonstrate the full journey live — from search to a booked appointment — and explain the concurrency handling in the viva.

09. Applications

- Clinic and hospital OPD appointment management
- Independent practitioners offering paid video consultations
- Corporate wellness programs and campus health centers

10. Future Scope

- E-pharmacy integration for one-click medicine ordering from the prescription
- AI symptom checker for pre-consultation triage
- Health-record locker with lab-report uploads and trend charts