



Florida International University

Fall 2025 Senior Design Project

Schedulr

Students: Armand Robinson Jr, Van Duc Nguyen, Zachary Shepard, Piero Ramirez
Mentor: Masoud Sadjadi
Instructor/Faculty: Masoud Sadjadi, Florida International University

PROBLEM

Small businesses often rely on phone calls, notebooks, or simple calendars to schedule appointments. This causes:

- Double bookings
- Missed appointments
- Confusion between staff and customers
- Lost time and money

They need an easier, more reliable way to manage appointments.

CURRENT SYSTEM

Most businesses still schedule everything by hand or through basic tools. These systems:

- Can't check for time conflicts
- Don't send reminders
- Don't update automatically
- Make it hard for customers to book on their own

This leads to mistakes and frustrated customers.

REQUIREMENTS

- Functional Requirements**
- Customers can book, cancel, and reschedule appointments online
 - Manager dashboard to keep track of all appointments
 - Syncs appointments with Google
- Non-Functional Requirements**
- Reliable reminders
 - Secure login and protected data
 - Scales easily as the business grows

SYSTEM DESIGN

- Frontend (React + TypeScript):**
- User interface where customers book appointments and managers check their schedule.
- Backend (Firebase):**
- User login
 - Storing appointments
 - Cloud Functions to send reminders and prevent double bookings
- Google Calendar Integration:**
- Keeps business calendars updated in real time.
- AI Support (Gemini):**
- Helps predict busy times, recognize patterns, and improve reminders.

OBJECT DESIGN

- Main Features**
1. Customer Booking Page
Lets customers pick a service, choose a time, and book instantly.
 2. Scheduling Engine
Checks availability, double-bookings, and manages business hours.
 3. Reminder System (Cloud Functions)
Sends friendly email/text reminders automatically.
 4. Manager Dashboard
Gives managers a simple view of the daily schedule, customers, and history.

IMPLEMENTATION

- Built with React + TypeScript
- Firebase for login, database, and backend logic
- Google Calendar API for syncing appointments
- Gemini for smart suggestions and insights
- Deployed with Firebase Hosting

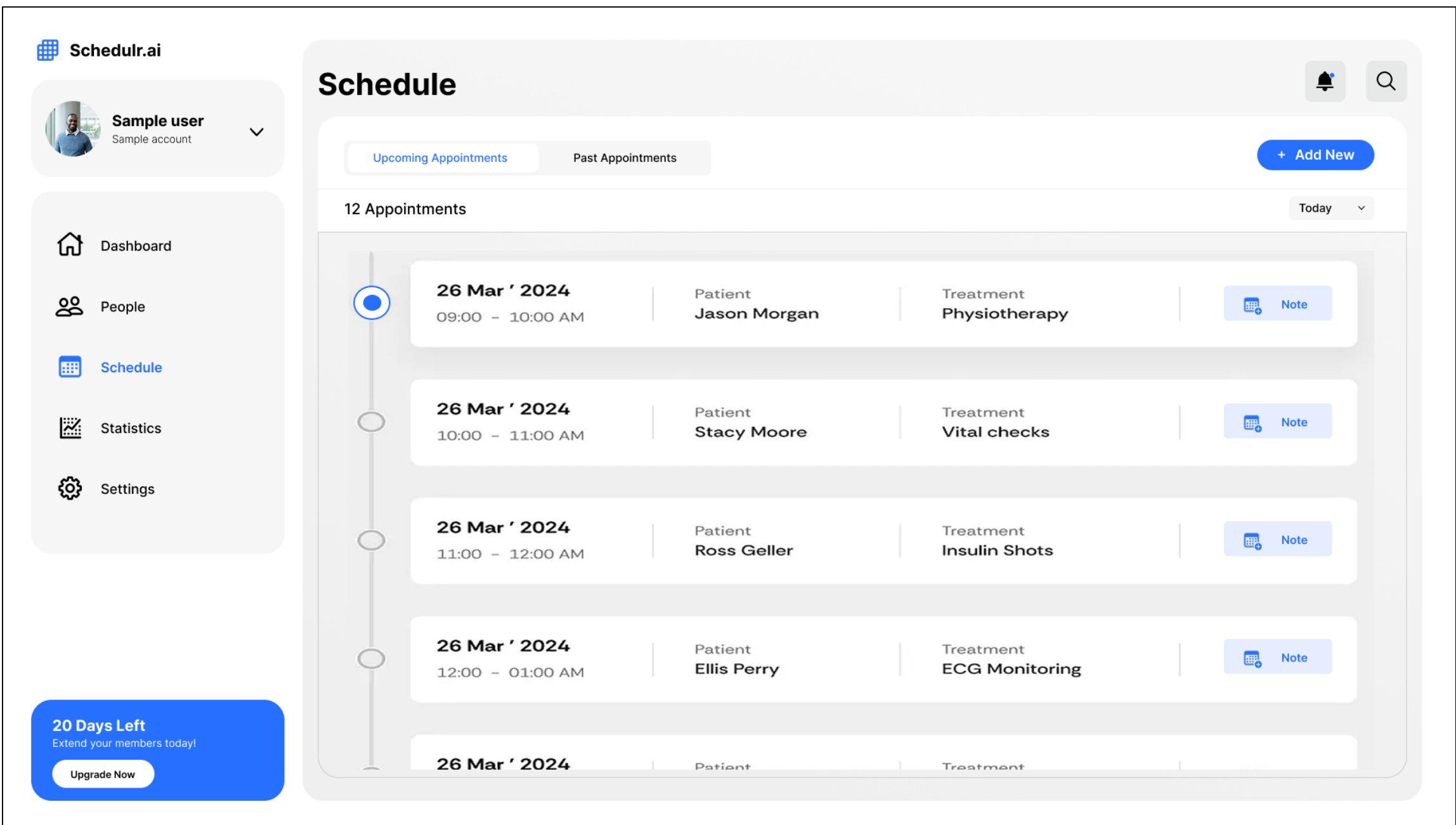
REFERENCES

- [Calendar Docs](#)
- [TypeScript Docs](#)
- [Firebase Docs](#)
- [Gemini API Docs](#)
- [React Docs](#)

VERIFICATION

- What We Tested**
- Booking, cancelling, and updating appointments
 - Two people trying to book the same time
 - Reminder emails and texts
 - Google Calendar sync
 - Dashboard features for managers
- User Testing**
- Users tested the dashboard
 - Users tested the booking flow
 - Feedback showed the app is simple and easy to use

SCREENSHOTS



SUMMARY

Schedulr is a simple, automated appointment-booking tool made for small businesses. Customers can book online without calling, and the system handles conflict, reminders, and calendar syncing automatically. With React, Firebase, and help from Google Calendar and Gemini, the system makes scheduling easier, faster, and more organized.

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