

1. Clinic Appointment Booking System

Phase 1: Problem Understanding

The clinic needs a system to manage patient appointments efficiently.

- **Receptionist:** Books appointments for patients.
- **Doctor:** Views their own schedule of appointments.
- **Patient:** Receives reminders and confirmations about their appointments.

Goal: Reduce manual scheduling errors, prevent double bookings, and ensure smooth clinic operations.

Phase 2: Org Setup

Profiles:

- *Doctor:* Can view only their own appointments.
- *Receptionist:* Can create and update appointments, manage patients.
- *Patient:* (Optional) For future Experience Cloud access.

Role Hierarchy:

- Receptionist < Doctor < Clinic Admin (top-level access).

Phase 3: Data Modeling

- **Custom Object: Patient**
 - Fields: Name, Phone, Email, Notes.
- **Custom Object: Appointment**
 - Fields: Date, Time, Status (Booked / Completed / Cancelled), Reason.
 - Relationships:
 - Lookup to Patient.
 - Lookup to Doctor (User).

This ensures each Appointment links to exactly one Patient and one Doctor.

Phase 4: Automation (Admin)

- **Flow:**

Triggered when a new Appointment is created.

Sends **Email Confirmation** to the Patient with Date, Time, and Doctor details.

- **Validation Rule:** Prevents booking appointments in the past.

→ Error Message: *"Cannot book appointment in the past.."*

Phase 5: Apex (Developer)

- **Trigger on Appointment:**

Executes on *Before Insert* and *Before Update*.

Checks if another Appointment already exists with the same Doctor and same Date+Time.

If yes → throws error: *"This doctor already has an appointment at this time."*

Batch Apex: Sends next-day appointment reminders.

Apex Scheduler: Runs batch daily at 9 AM.

Phase 6: UI (Lightning)

- **Doctor Home Page:**

Lightning Component → *"My Appointments Today"*.

- **Clinic Management App:**

Tabs for **Patients & Appointments**.

Easy navigation for Receptionist and Admin.

Phase 7: Integration (Optional)

- **Twilio API (or WhatsApp Cloud API)** integration for SMS reminders.

- Patients receive SMS like:

“Reminder: Your appointment with Dr. Sharma is tomorrow at 10:30 AM.”

Phase 8: Data Management

- Import sample Patients (CSV file) via **Data Import Wizard**.
- Manually create Appointments for testing the workflow.
- This helps simulate a real clinic scenario.

Phase 9: Reports & Dashboards

- **Report: Appointments per Doctor**

Shows how many appointments each doctor has in a selected time frame.

- **Dashboard: Daily Appointment Summary**

Bar chart / pie chart summarizing today's appointments.

Helps Admin monitor workload and clinic performance.

Phase 10: Final Presentation

Demo Flow:

1. Receptionist books a new appointment.
2. Patient receives an email confirmation.
3. Doctor logs in → sees appointments on their dashboard.
4. If another appointment is booked at the same date/time for same doctor → Apex trigger prevents it.
5. Daily Dashboard shows all appointments summary.

Optional Add-on Demo: SMS reminder sent using Twilio.