System Development Plan: Patient & Nurse Management System

Project Goal: To create a simple, user-friendly web application to streamline appointment booking for nurses and centralize patient history and information.

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1. Core Technology Stack

- **Front-end:** React
- **Back-end & Database:** Supabase (PostgreSQL)

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2. Database Schema

The core of the system is built on four key tables.

`patients` table

- `id` (UUID, Primary Key)
- `first_name` (Text)
- `last_name` (Text)
- `date_of_birth` (Date)
- `address` (Text)
- `phone_number` (Text)
- `assigned_caretaker_id` (UUID, Nullable, Foreign Key)

`nurses` table

- `id` (UUID, Primary Key, linked to Supabase Auth)
- `first_name` (Text)
- `last_name` (Text)
- `email` (Text, Unique)

`appointments` table

- `id` (UUID, Primary Key)
- `patient_id` (UUID, Foreign Key to `patients`)
- `nurse_id` (UUID, Foreign Key to `nurses`)
- `appointment_date` (Date)
- `appointment_time` (Time)
- `status` (Enum: `Scheduled`, `Completed`, `Cancelled`)

`patient_records` table

- `id` (UUID, Primary Key)

- **appointment_id** (UUID, Foreign Key to `appointments`)
- **notes** (Text)
- **vitals** (JSONB)
- **recorded_at** (Timestamp)

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3. Key User Flows (Nurse)

Flow 1: Authentication & Dashboard View

1. **Access:** Nurse navigates to the application URL.
2. **Login:** Enters email and password on the login screen. Supabase Auth handles the process.
3. **Dashboard:** On successful login, the nurse is directed to a personalized dashboard.
   - **Upcoming Appointments List:** Displays a chronological list of their scheduled visits for the day and week.
   - **Action Buttons:** Prominent buttons for "Book New Appointment" and "Search Patients."

Flow 2: Booking a New Appointment

1. **Initiate:** The nurse clicks "Book New Appointment" from the dashboard.
2. **Patient Selection:**
   - **Existing Patient:** Nurse searches for a patient by name or ID using a type-ahead search bar.
   - **New Patient:** Nurse clicks "Add New Patient" and fills out a form.
3. **Schedule:** Nurse selects a date from a calendar interface and a time from a list of available slots.
4. **Confirm:** A summary screen shows the patient's name, date, and time. The nurse confirms to create the appointment.

Flow 3: Viewing & Managing Patient Information

1. **Search:** Nurse uses the "Search Patients" function on the dashboard.
2. **Select:** Nurse clicks on a patient's name to view their detailed profile.
3. **Patient Profile View:**
   - **Personal Information:** Displays the patient's core details (name, DOB, address, etc.).
   - **Visit History:** Shows a chronological list of all past appointments. Each entry provides a summary and can be expanded to view full notes and vitals from the `patient_records` table.

Flow 4: Recording Patient Data (Post-Appointment)

1. **Complete Appointment:** After a visit, the nurse can mark an appointment as "Completed."
2. **Data Capture:** A form appears, linked to that specific appointment.

3. **Enter Information:** The nurse inputs the visit `notes` and `vitals` (e.g., blood pressure, temperature, etc.) into the form.
4. **Save:** The data is submitted and stored in the `patient_records` table, automatically linked to the completed appointment.