

Design Brief: Patient Data Management System

Objective

The goal is to develop a secure, user-friendly desktop application that replicates and enhances the current card-based system for managing patient data. The system will support detailed medical note entries, vaccination records, real-time syncing, robust data export features, and fine-grained user role permissions.

1. Form Structure

- **Field Names & Layout:** Must exactly replicate the physical patient card.
 - **Prefix + Name Field:**
 - Prefix (Mr., Mrs., etc.) is a dropdown.
 - Name and surname in a single text box with no label.
 - **Sex:** Dropdown selector.
 - **Date of Birth:** Calendar-style date picker.
 - **Notes Section:**
 - Every note must be tied to a calendar date selector.
 - Saved in a format like: 01/01/2025: This is a note.
 - Notes listed from most recent to oldest.
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2. Database Structure

- **Exact Match:** All field names must match the frontend labels.
 - **Unique Constraint:** Record No must be unique.
 - **Notes:** Stored per record with timestamped entries.
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3. Data Display & Editing

- **Table View on Load:**
 - Displays all patient records immediately.
 - Columns: Record No, Full Name, etc.
- **Detailed View (Temporary Window):**
 - Opens when a record is clicked.
 - Does not close the main window.
 - Clears temporary data on close to prevent leakage.

- Displays all patient data with editable fields, except:
 - Record No and Previous Notes (read-only).
 - **Add Note Inline:**
 - Allows adding a new note with date picker.
 - Displays in chronological order.
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4. Functionality Enhancements

Vaccination Records Section

Each patient can have multiple vaccine entries:

- **Fields:**
 - Patient Name (auto-filled)
 - Vaccine Name
 - Date (Calendar Picker)
 - Lot Number
 - Destination (Travel Location)
 - Passport Number
 - Additional Notes
 - **Behavior:**
 - Entries are linked to Record No.
 - Displayed in reverse chronological order.
 - Exportable with patient data.
 - Editable within the patient detail window.
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5. Export Functionality

- **Types:**
 - Full database export (PDF).
 - Individual patient export (PDF) named as: FirstName LastName - RecordNo.pdf.
 - **Export Button:**
 - Logically placed and visually clean.
 - Available on the patient view window.
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6. Update System

- **Update Prompt Button:**
 - Contacts a specified cloud service to download and install the latest version.
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7. User Roles & Permissions

- **Roles Defined:**
 - **Superuser:** Full permissions to view/edit/delete/export.
 - **Doctor:** View and add/edit patient data and notes.
 - **Receptionist:**
 - Can add new patients.
 - **Cannot** edit existing data **unless granted permission** by a superuser.
 - **Permission Enforcement:**
 - UI must restrict actions based on role.
 - Attempted unauthorized actions prompt a warning.
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8. Cloud Sync & Auto Backup System

- **Cloud Sync:**
 - Must support **OneDrive** and **Google Drive**.
 - Sync is triggered **immediately after data is added or edited**, ensuring real-time availability across devices.
 - Example use case: When reception adds a new patient, data is immediately available to the doctor before the patient enters.
 - **Auto Backups:**
 - The system must **continuously save drafts in the background**.
 - This ensures no data is lost even if the user forgets to click "Save".
 - Drafts are saved locally and marked until formally submitted or synced.
 - Crash recovery must restore the most recent draft upon app restart.
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9. Security Measures

- **Login Enforcement:**
 - Persistent login token required.
 - If token/user is null or empty, the app **must auto-quit**.

- **Database Access:**
 - Only the application may access the database folder (user-restricted file permissions).
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10. UI/UX & Styling

- **Patient Detail Window:**
 - Heading: Full Name + Record No.
 - Subheadings: Styled with bold, distinct fonts.
 - Structured like an admin form for logical data flow.
 - **Fonts/Styling:**
 - Use varied fonts and text sizes for hierarchy.
 - Maintain clean, intuitive visual flow.
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11. Future Considerations

- Hosting encrypted databases with optional local/cloud hybrid model.
 - Providing setup documentation for technical users wishing to configure their own database instances.
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DATABASE FIELDS:

Field Group	Field Name
Core Info	ID (<i>Auto-generated or hidden</i>)
	Full Name (<i>Name + Surname in one text box</i>)
	Prefix (<i>Dropdown: Mr, Mrs, Dr, etc.</i>) – stored separately but shown before Full Name
	Address
	Tel No (<i>Phone number – required, format validated</i>)
	Gender (<i>Dropdown: Male, Female, Other</i>)
	Date of Birth (<i>Date Picker control</i>)
Medical Info	Medical Aid
	Record No (<i>Must be unique – primary identifier</i>)
	Occupation
	Employer
	Allergies
	Special Features (<i>e.g., physical identifiers or chronic conditions</i>)
Clinical Notes	Notes (<i>Structured section with each entry showing date, main complaint, examination, results, treatment. Each new note has its own date.</i>)
Actions	View Patient (<i>Opens full editable detail view except Record No and previous notes</i>)
	Add Note (<i>Appends a new dated note section, newest first</i>)

Field Validations:

- All fields are required unless otherwise specified.
 - Phone number must match a valid South African format (or regex-based validator).
 - Record No is strictly unique.
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