

Dermatology Management System

A full-featured clinical and dermatology management system designed to digitize and streamline clinic operations, including patient management, appointments, diagnosis, inventory, billing, and reporting.

Overview

This project provides a complete solution for managing a dermatology clinic with clear role separation between Doctors and Receptionists.

It follows real clinic workflows where receptionists handle bookings and payments, while doctors handle diagnosis and treatment.

Technology Stack

- Backend: Django + Django REST Framework
 - Frontend: React Native (Expo)
 - Database: SQLite
-

System Architecture

The system follows a client–server architecture:

- **Backend (Django):**
 - Business logic and data validation
 - Authentication and authorization
 - Database management
 - Reporting and analytics
 - REST API endpoints
- **Frontend (React Native):**
 - Doctor and Receptionist dashboards
 - Patient and appointment management
 - Inventory and billing UI
 - Data visualization and reports

All communication is done using JSON over HTTP via APIs.

Project Structure

Backend

```
backend-1/
├── clinic/
│   ├── models.py
│   ├── serializers.py
│   ├── views.py
│   ├── urls.py
│   └── migrations/
├── clinical_backend/
├── db.sqlite3
├── requirements.txt
└── seed_data.py
```

Frontend

```
DermaSkincareApp/
├── app/
├── components/
├── context/
├── doctor/
├── receptionist/
├── assets/
├── hooks/
├── src/api/
└── types/
```

Backend Features (Django)

Authentication

- Login for doctors and receptionists
- Role-based access control

Patient Management

- Add, edit, and view patients
- Store personal and medical information
- Track allergies, conditions, and surgeries

Appointment Management

- Book appointments
- Status tracking: booked, checked-in
- Link appointments to doctors and services

Service Management

- Laser and diagnosis services
- Price, duration, and category support

Medical Records & Diagnosis

- Store diagnosis notes per visit
- Link records to appointments
- Maintain full patient history

Medication & Prescriptions

- Medication management
- Prescriptions linked to medical records
- Track dosage and duration

Treatment Plans & Sessions

- Create treatment plans
- Track individual treatment sessions
- Suitable for laser and beauty services

Inventory Management

- Inventory items with expiry dates and minimum stock
- Stock transactions: add, use, expired
- Low stock and expiring item alerts

Billing & Invoices

- Generate invoices per appointment
- Track total amount, discounts, and payment method
- Store payment status

Patient Files

- Upload and store documents, photos, and lab results

Reports & Analytics

- Appointments statistics
 - Inventory usage
 - Revenue and patient analytics
-

Backend Models

Patient
Doctor
Receptionist
Service
Appointment
AppointmentService
Invoice
InvoiceItem
MedicalRecord
Medication
Prescription
PrescriptionMedication
TreatmentPlan
TreatmentSession
Allergy
PatientAllergy
MedicalCondition
PatientMedicalCondition
SurgeryType
PatientSurgery
InventoryItem
StockTransaction
PatientFile
LaserSession

See backend-1/clinic/models.py for full field definitions.

API Endpoints

Core

/login/
/patients/
/doctors/
/receptionists/
/services/
/appointments/

Medical & Treatment

- /medical-records/
- /medications/
- /prescriptions/
- /treatment-plans/
- /treatment-sessions/

Medical History

- /allergies/
- /patient-allergies/
- /medical-conditions/
- /patient-medical-conditions/
- /surgery-types/
- /patient-surgeries/

Inventory & Billing

- /inventory/
- /stock-transactions/
- /invoices/

Reports

- /reports/analytics/
- /reports/appointments/
- /reports/inventory/
- /reports/patients/

Backend Setup

```
cd backend-1
pip install -r requirements.txt
python manage.py migrate
python manage.py runserver
```

Optional demo data:

```
python seed_data.py
```

Backend runs at:

```
http://localhost:8000/
```

Frontend Features (React Native / Expo)

Authentication

- Login screen
- Context-based authentication state

Receptionist Screens

- Dashboard with appointment statistics and calendar
- Add, edit, and manage patients
- Book and manage appointments
- Invoice creation and payment tracking
- Inventory management with alerts

Doctor Screens

- Dashboard with today's sessions
- Patient history and visit tracking
- Diagnosis and prescription management
- Inventory usage
- Reports and analytics

Shared Screens

- Home tab navigation
- Role-based layouts
- Patient quick view modal

Key Components

- DiagnosisTemplatePills
 - PatientInfoBar
 - PrescriptionTable
 - ReusablePhotoUploader
 - ServiceTabs
 - InventoryTable
 - InventoryCharts
 - Sidebar and DoctorSidebar
-

Backend–Frontend Integration

- API communication
- JSON data exchange
- Frontend performs all operations through backend endpoints
- Backend must be running before using the frontend

Frontend Setup

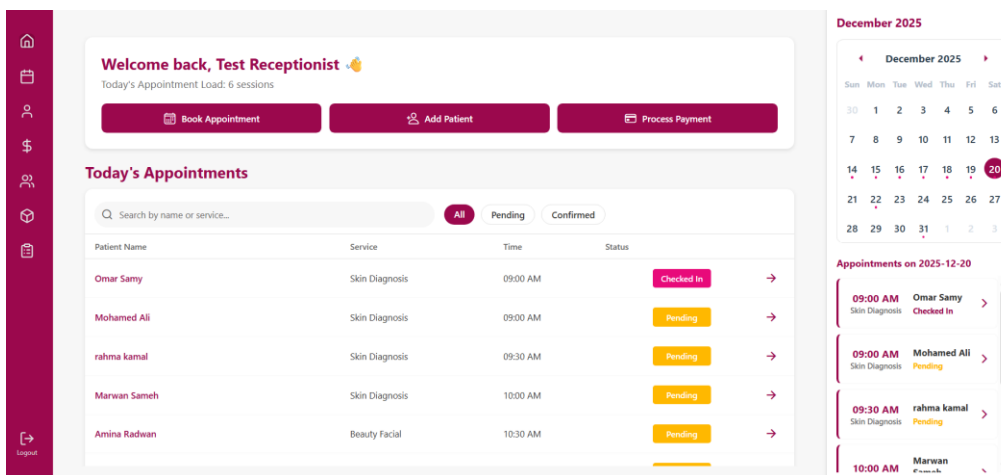
```
cd DermaSkincareApp
```

```
npm install
```

```
npx expo start
```

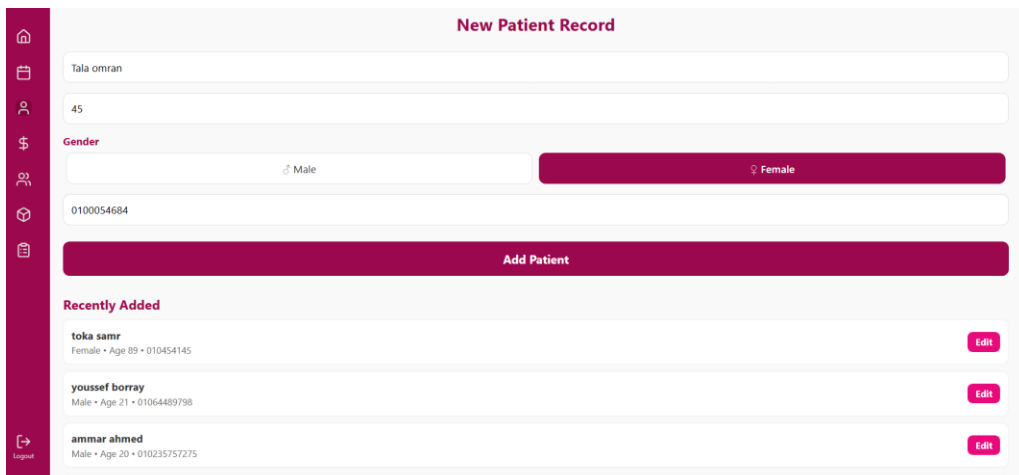
Screenshots

Receptionist Dashboard



The Receptionist Dashboard features a sidebar with navigation icons and a main content area. The main area includes a welcome message, a summary of today's appointment load (6 sessions), and three action buttons: Book Appointment, Add Patient, and Process Payment. Below this is a section for Today's Appointments, which includes a search bar and filters for All, Pending, and Confirmed. A table lists appointments with columns for Patient Name, Service, Time, and Status. The status column shows 'Checked In' for Omar Samy and 'Pending' for Mohamed Ali, rahma kamal, Marwan Sameh, and Amina Radwan. To the right of the dashboard is a calendar for December 2025, showing the 20th as the current date. Below the calendar is a list of appointments for the 20th, including Omar Samy at 09:00 AM (Checked In), Mohamed Ali at 09:00 AM (Pending), rahma kamal at 09:30 AM (Pending), and Marwan Sameh at 10:00 AM (Pending).

New Patient



The New Patient Record form is a vertical layout with a sidebar on the left. The form fields include: Patient Name (Tala omran), Age (45), Gender (Male), and a unique ID (0100054684). Below these fields is a large red button labeled 'Add Patient'. Underneath the button is a section titled 'Recently Added' which lists three patients: toka samr (Female, Age 89, ID 010454145), youssef borray (Male, Age 21, ID 01064489798), and ammar ahmed (Male, Age 20, ID 010235757275). Each patient entry has an 'Edit' button.

Appointment Booking

Home

Calendar

Appointment

Payment

Inventory

Report

Logout

Book Appointment

Schedule a new patient visit

Appointment Details

Patient *

Tala omran

Doctor *

Dr. nour • dermatologist

Service Type

Beauty Facial

Date *

2025-12-22

Time *

09:00 AM

Initial Status

Booked

Additional Notes

Payments

Home

Calendar

Appointment

Payment

Inventory

Report

Logout

Payments Dashboard

Process new invoices, edit existing records, and review comprehensive payment history.

New Invoice & Processing

Invoice Details

Patient ID: 11

ammar alamed

01003757275

Gender: male | Age: 20

DESCRIPTION	QTY	PRICE	AMOUNT
Diagnosis	1	LE 150	LE 150.00
Add Service Item			
Subtotal:			LE 150.00
Discount (LE):	0		LE 0.00
Insurance:		AXA Insurance	
Insurance Coverage (%):		10%	
Insurance Amount:			LE 15.00
TOTAL DUE:			LE 135.00

Search Patient

Search by Name or Phone...

Payment Processing

Payment Status

Pending Payment

Current:

Pending

Payment Method

Visa / Card

Insurance Provider

AXA Insurance

Insurance Coverage (%)

10

Save Changes

Back

Done

Receptionist Inventory

Home

Calendar

Appointment

Payment

Inventory

Report

Logout

Stock & Inventory Management

Receptionist View: Add, Track, and Report Stock Levels

Total Items: 7 | Total Quantity: 152 | Low Stock: 2 | Expiring Soon: 7

Add New Inventory Item

Item Name *

Type or pick an existing item...

Category *

Select the Material Type

Quantity *

1.0

Unit

Select unit

Supplier

Type or select known supplier...

Expiry Date *

Select expiry date

Save Stock Item

Current Inventory Details (7 items)

Search by item name...

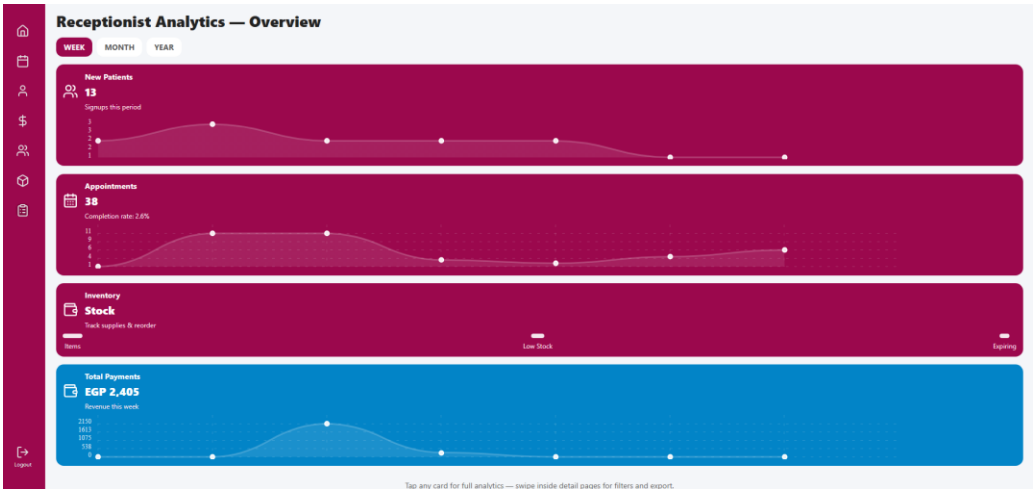
All Categories

Name

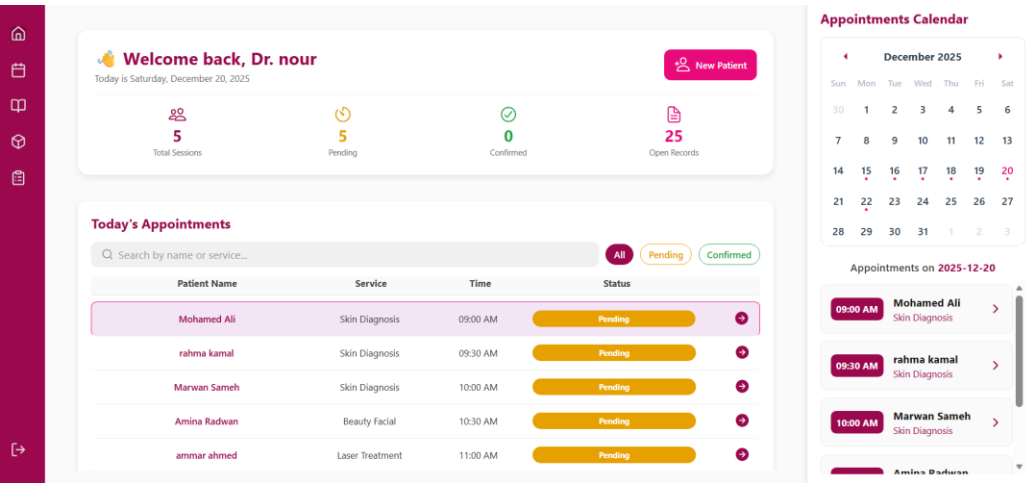
Asc

Item Name	Category	Qty	Supplier / Expiry
BD Springe 1cc Insulin	Consumable (Syringe/Needle)	49 unit	Becton Dickinson Exp: 2025-12-31
Dysport 300U	Hyaluronic Acid Filler	10 syringe	Becton Dickinson Exp: 2025-12-31 • EXPIRED
GLOVES	Equipment/Tool	15 pack	Galectra Exp: 2026-02-07
Isopropyl Alcohol Wipes	Cleaning/Sterilization	2 wipe	Cleanflo Exp: 2025-12-31
Xeomin 100U	Botulinum Toxin (Neurotoxin)	6 vial	Mylan Exp: 2025-12-31
alcohol	Cleaning/Sterilization	0 bottle	PharmSupply Exp: 2026-09-30
wipes	Cleaning/Sterilization	71 wipe	Cleanflo Exp: 2025-12-31

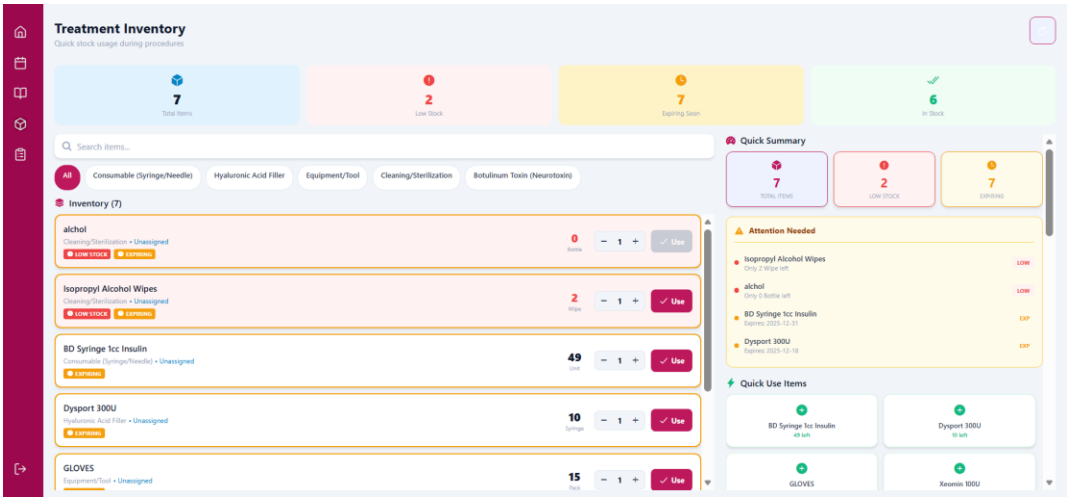
Receptionist Analytics



Doctor Dashboard



Inventory Management



Diagnosis & Prescription

TO

Tala omran

45 Y/O | Female | ID: 14

9100054684

Return to Patients History

Patient Page

ALLERGIES

No known allergies

MEDICAL HISTORY

No medical history

SURGERIES

No previous surgeries

Clinical Diagnosis

Laser Session

Clinical Diagnosis

Search standardized disease

Manage Templates

Search or filter templates...

Acne Vulgaris

Acne Vulgaris

Prescription / General Instructions

e.g. Avoid sun exposure, drink water, follow-up in 2 weeks...

Medication Database

Patient Photos (2)

Sort: Newest

12/09/2023, 4:28:41 PM

12/09/2023, 4:28:37 PM

Lab Tests & Scans (0)

TO

Tala omran

45 Y/O | Female | ID: 14

9100054684

Return to Patients History

Patient Page

ALLERGIES

No known allergies

MEDICAL HISTORY

No medical history

SURGERIES

No previous surgeries

Clinical Diagnosis

Laser Session

Laser Treatment Session

Treatment Area

Face

Neck

Arms

Legs

Back

Full Body

Underarms

Bikini

Or specify custom area...

Skin Type (Fitzpatrick Scale)

I

II

III

IV

V

VI

Laser Intensity

Low

Medium

High

Very High

Number of Passes

1

Consumables/Inventory Used

Add Consumable from Inventory

Session Notes

Patient tolerance, reactions, recommendations...

Patient Photos (0)

Sort: Newest

No clinical photos uploaded.

Lab Tests & Scans (0)

No labx/scans uploaded. (Supports Images/PDFs)

A

Edit Info

Name

Amina Radwan

Patient ID

P-4

Age

30

Gender

Female

Phone

010255866

Email

aminaan2654@gmail.com

Allergies

Penicillin

Notes

No notes

Medical History

high pressure, low pressure

Surgeries

labor

Visit #2 - Visit with Dr. nour

December 17, 2023 - Diagnosis

Visit #1 - Visit with Dr. nour

December 17, 2023 - Diagnosis

Diagnosis

Complaint:

Findings

Final Diagnostic: Eczema

Prescriptions

Derma Clinic

Dr. Emily Carter

Name: Amina Radwan

Age: 30

Gender: female

Patient ID: P-4

Medication

Dose

Frequency

Duration

Notes

Brufen

400mg

1x/day

30 days

Rosacutane

20mg

1x/day

7 days

Zymec

10mg

1x/day

7 days

Doctor's Signature

Thank you for visiting Derma Clinic

Download

Treatment

Patient Photos

Sort by: Newest

Oldest

2023-12-18 12:02

2023-12-18 12:02

Visit #2

Visit #1

Contribution Guidelines

1. Fork the repository
 2. Create a new branch for your feature or fix
 3. Follow coding standards and naming conventions
 4. Add tests where applicable
 5. Submit a clear pull request
-

Notes & Future Enhancements

- Patient portal
 - Before/after image comparison
 - SMS or WhatsApp notifications
 - Advanced analytics dashboards
 - PostgreSQL deployment
 - Cloud file storage
-

Developed By

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Focused on AI, Healthcare Security, and Clinical Software Systems.

Conclusion

This system models real dermatology clinic workflows:

- Receptionist manages bookings and payments
- Doctor handles diagnosis and medical decisions
- All clinic data is centralized, structured, and secure