



Healthcare Appointment Booking System

A **mini project** that demonstrates a complete **Frontend–Backend architecture** using:

- **Django + Django REST Framework (Backend)**
- **PyQt5 (Desktop Frontend)**
- **SQLite (Database)**

The system allows patients to:

- Login
 - View available doctors
 - Book appointments
 - View booked appointments
-



Project Architecture

Frontend (PyQt5)



HTTP Requests (REST API)



Backend (Django + DRF)



Database (SQLite)



Technologies Used

Backend

- Python 3
- Django
- Django REST Framework
- SQLite (default Django DB)

Frontend

- PyQt5
 - Requests (HTTP client)
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Project Structure

```
mini_project/
├── backend/
│   ├── healthcare_backend/
│   ├── hospital_app/
│   ├── manage.py
│   └── db.sqlite3
├── frontend/
│   ├── main.py
│   └── ui/
│       └── main.ui
├── requirements.txt
└── README.md
```

Installation & Setup

1 Clone the Repository

```
git clone <your-repo-url>
cd mini_project
```

2 Create Virtual Environment

```
python -m venv venv
source venv/bin/activate # Linux / macOS
# venv\Scripts\activate # Windows
```

3 Install Dependencie

```
pip install -r requirements.txt
```

How to Run

► Backend (Django)

```
cd backend
python manage.py migrate
python manage.py runserver
```

Backend will run at:

```
http://127.0.0.1:8000/
```

► Frontend (PyQt)

Open a **new terminal** (keep backend running):

```
cd frontend
python main.py
```

The PyQt desktop application will open.

API Endpoints (Backend)

Method	Endpoint	Description
GET	<code>/api/doctors/</code>	List all doctors
POST	<code>/api/login/</code>	Login user
POST	<code>/api/book-appointment/</code>	Book appointment
GET	<code>/api/appointments/?patient=<username></code>	View appointments



Frontend Features (PyQt)

- Login screen
 - Patient dashboard
 - Doctor selection dropdown
 - Date & time picker
 - Appointment booking
 - Appointment list (QTableWidget)
 - Logout & exit
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Key Concepts Demonstrated

- Django REST API design
 - Separation of frontend and backend
 - HTTP communication using JSON
 - Desktop GUI using PyQt
 - Real-world CRUD operations
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Why Django REST Framework?

- Converts Django models into JSON
 - Makes backend reusable for:
 - Web apps
 - Mobile apps
 - Desktop apps (PyQt)
 - Clean separation of concerns
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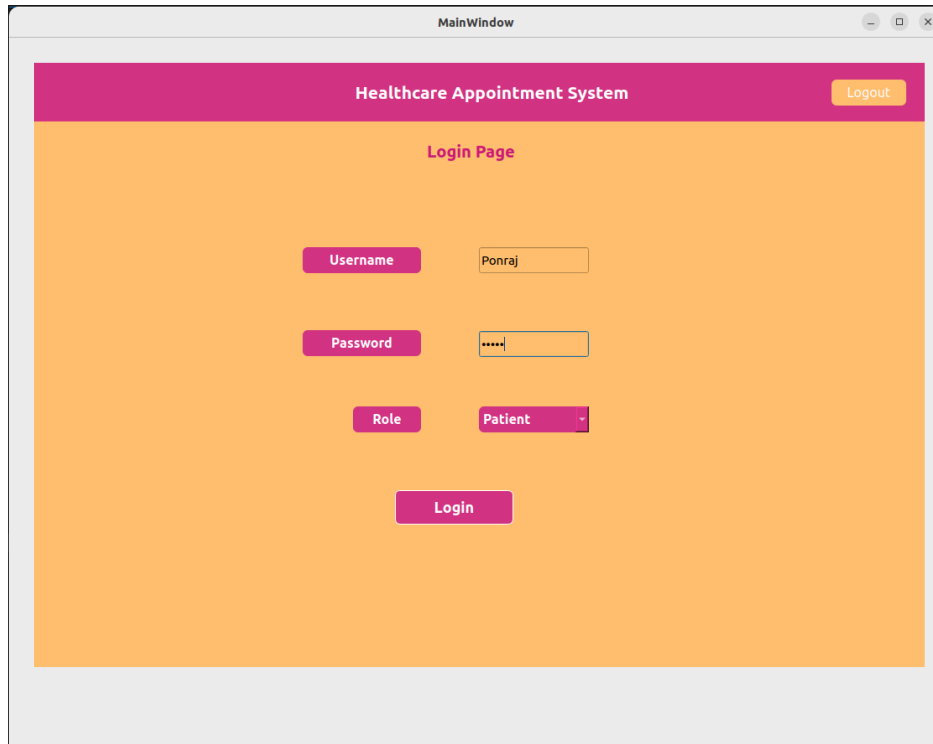


Sample Login Data

Username: Ponraj

Role: Patient

Screenshots



This screenshot shows the login interface of the Healthcare Appointment System. The window is titled 'MainWindow'. The header is a magenta bar with the text 'Healthcare Appointment System' and a yellow 'Logout' button. The main area has an orange background and is titled 'Login Page'. It contains three input fields: 'Username' with the value 'Ponraj', 'Password' with masked characters '****', and 'Role' with a dropdown menu showing 'Patient'. A yellow 'Login' button is positioned below these fields.

MainWindow

Healthcare Appointment System Logout

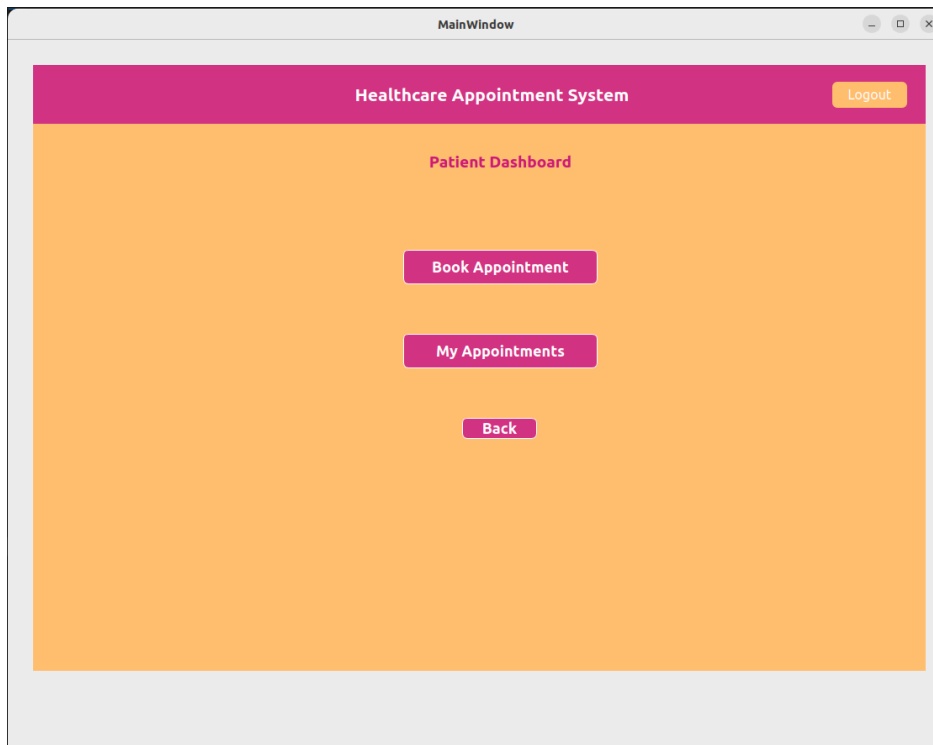
Login Page

Username Ponraj

Password ****

Role Patient

Login



This screenshot shows the patient dashboard of the Healthcare Appointment System. The window is titled 'MainWindow'. The header is a magenta bar with the text 'Healthcare Appointment System' and a yellow 'Logout' button. The main area has an orange background and is titled 'Patient Dashboard'. It contains three yellow buttons: 'Book Appointment', 'My Appointments', and 'Back'.

MainWindow

Healthcare Appointment System Logout

Patient Dashboard

Book Appointment

My Appointments

Back

MainWindow

Healthcare Appointment System

Logout

Book Appointment

Select Doctor

Dr.Kumar (Cardiology)

Select Date

03/02/26

Select Time

9:47 AM

Confirm

Back

MainWindow

Healthcare Appointment System

Logout

Appointments

	Doctor	Date	Time	Status
1	3	2031-06-02	19:41	BOOKED
2	3	2026-02-01	11:13	BOOKED
3	3	2026-02-01	11:09	BOOKED
4	3	2026-02-01	11:04	BOOKED
5	3	2026-01-31	20:05	BOOKED
6	3	2026-02-01	10:30	BOOKED

Back

Logout



Future Improvements

- Password authentication
 - Role-based access (Doctor / Admin)
 - Appointment cancellation
 - Token-based authentication (JWT)
 - Deployment (Docker / Cloud)
-



Author

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GitHub

If you like this project, give it a ★ and feel free to fork!