Hospital Management System

Backend SpringBoot:-

The backend is built on Spring Boot using a microservices architecture to ensure scalability, modularity, and maintainability. Each core hospital function—patients, doctors, appointments, billing, notifications, and auditing—is implemented as a dedicated microservice. These services interact through REST APIs and event-driven communication via Kafka, ensuring efficient and real-time data flow.

Core Backend Microservices:

Patient Service

- Manages patient registration, authentication, and profiles
- Handles storage of patient data in MySQL (structured records)
- Integrates JWT/OAuth2 for secure access

Doctor Service

- Handles doctor registration, authentication, and scheduling
- Provides APIs for appointment lists, diagnosis updates, and prescriptions
- Manages doctor availability and department mappings

Appointment Service

- Core service for booking, updating, and canceling appointments
- Ensures real-time updates using Kafka events
- Links patients and doctors with schedule validations

Billing Service

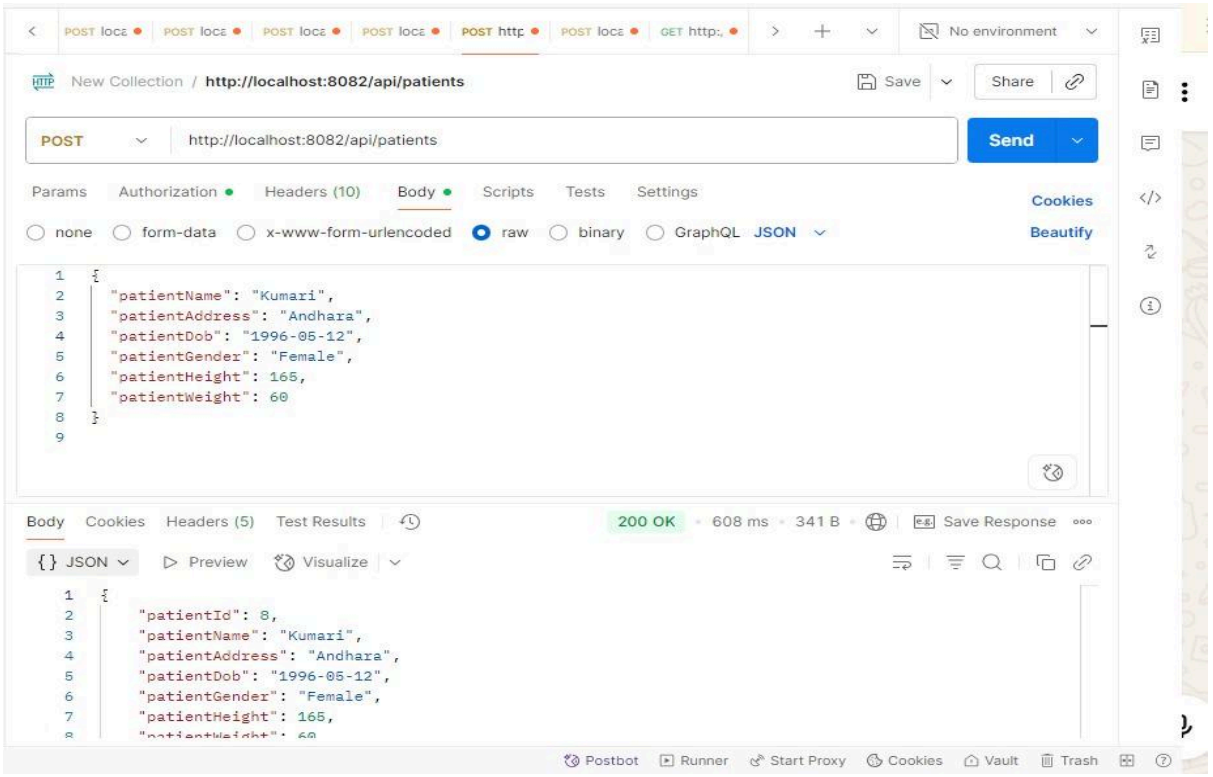
- Manages invoices, payments, and insurance claim
- Provides history and reports of billing activities
- Ensures transactional integrity using MySQL

Notification Service

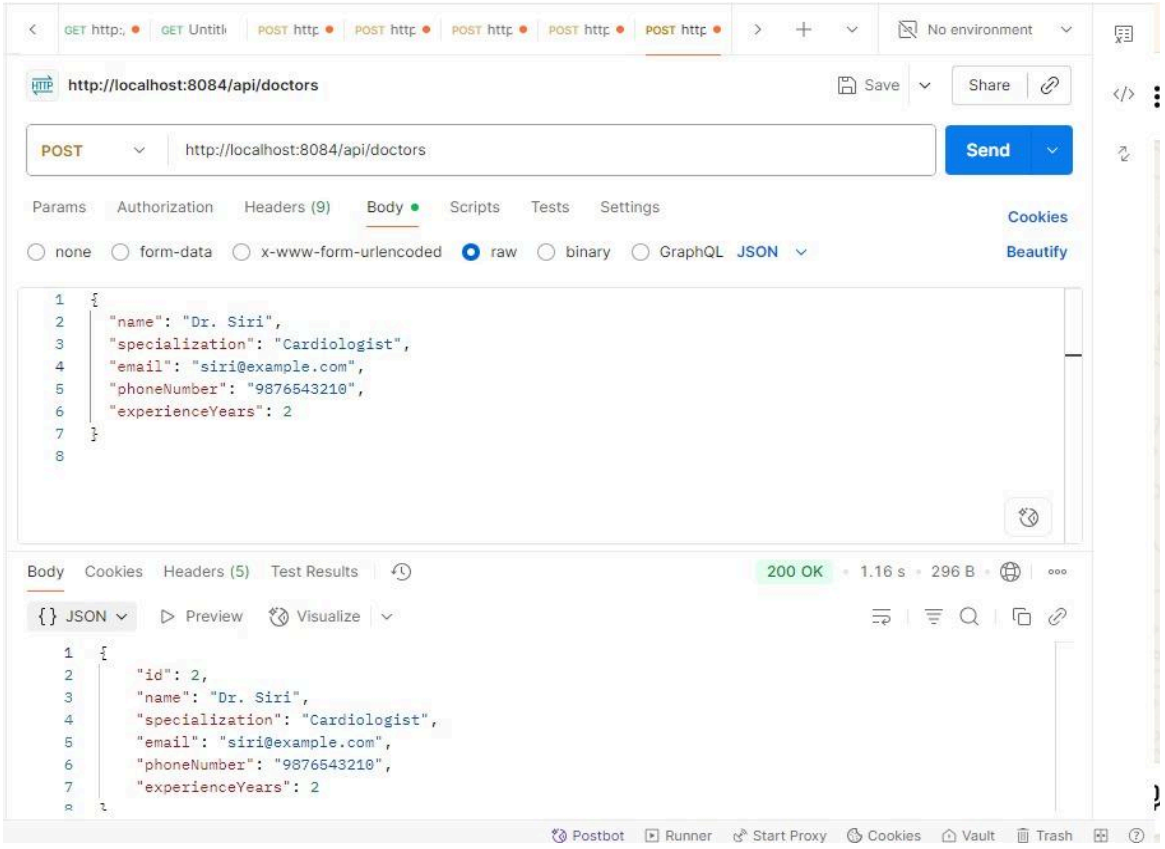
- Sends SMS and email notifications for appointment confirmations, reminders, and billing updates
- Kafka-based event-driven design to avoid delays and bottlenecks
- Configurable templates for doctor/patient communication

Audit & Logs Service

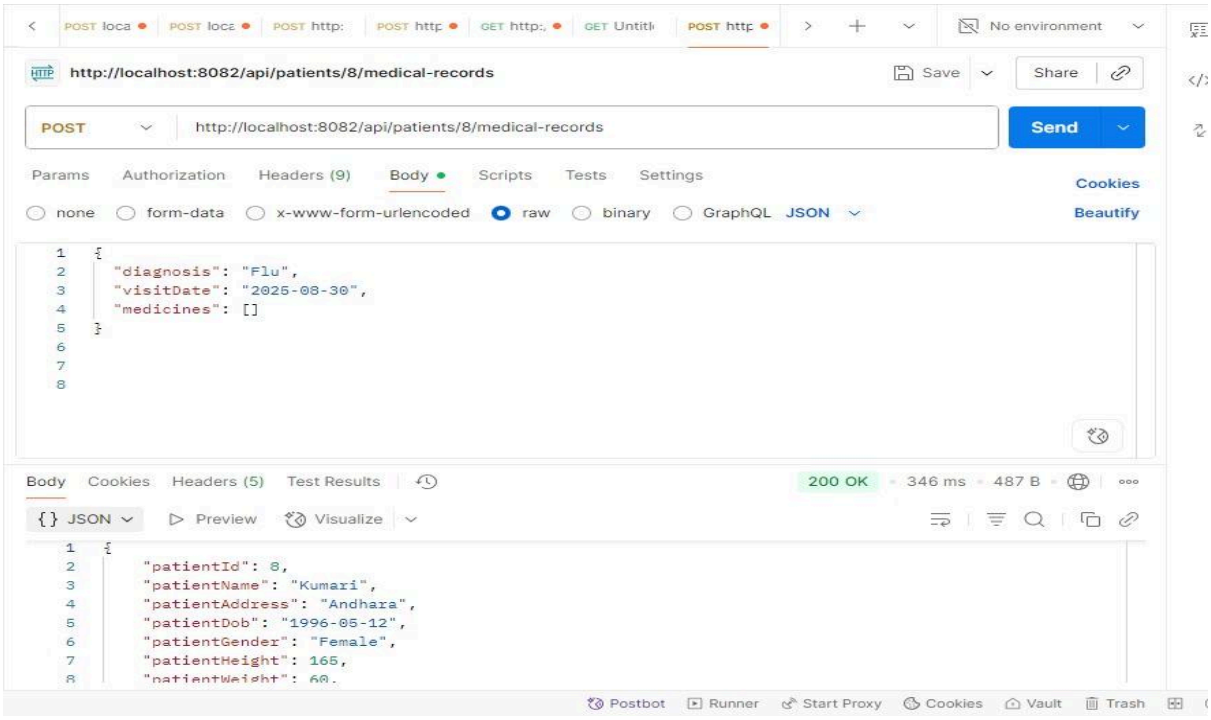
- Tracks sensitive system actions (e.g., diagnosis updates, billing transactions)



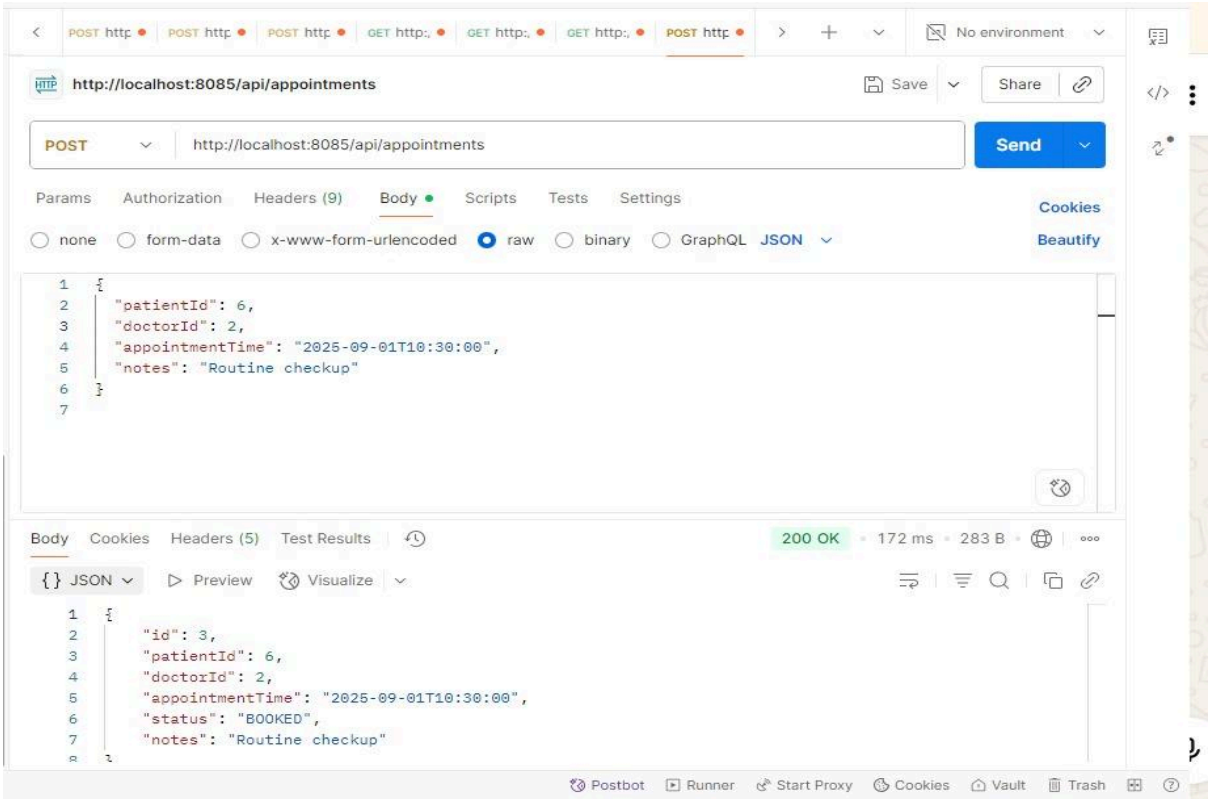
Patient-endpoint



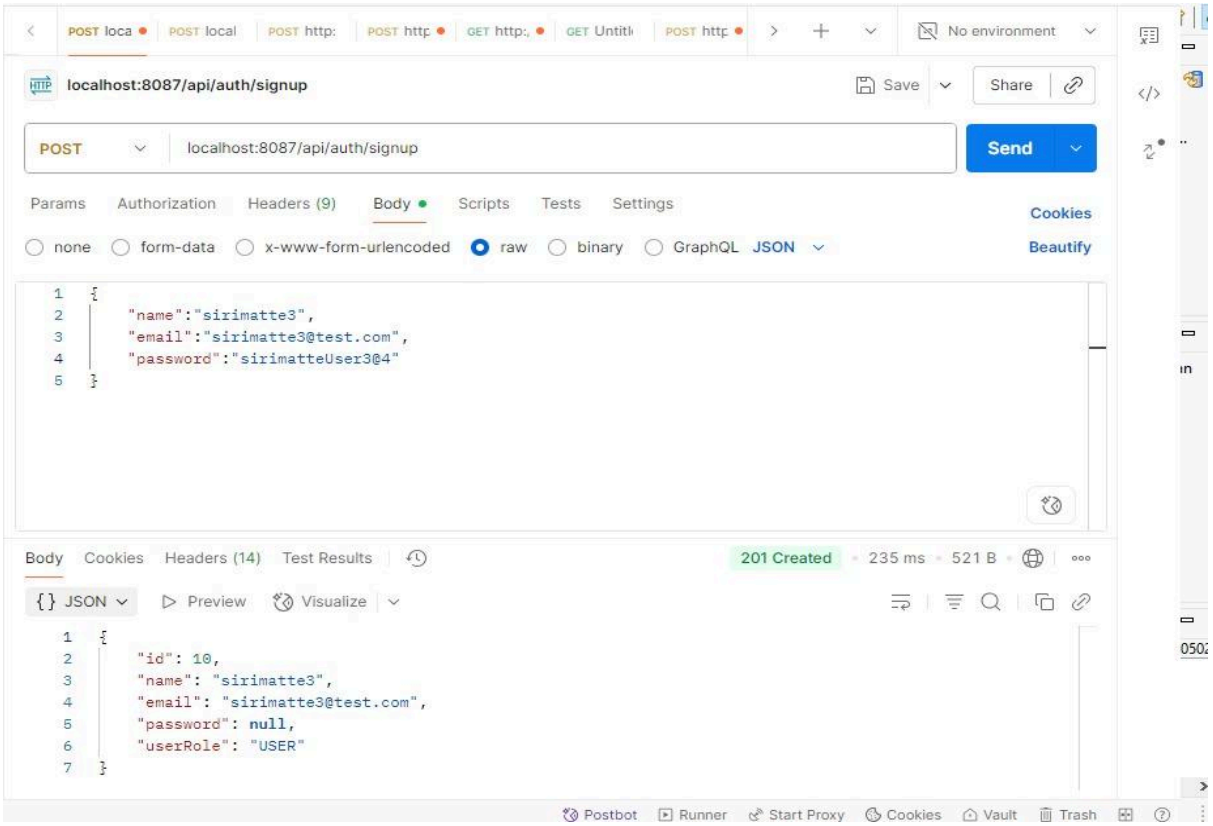
Doctor-endpoint



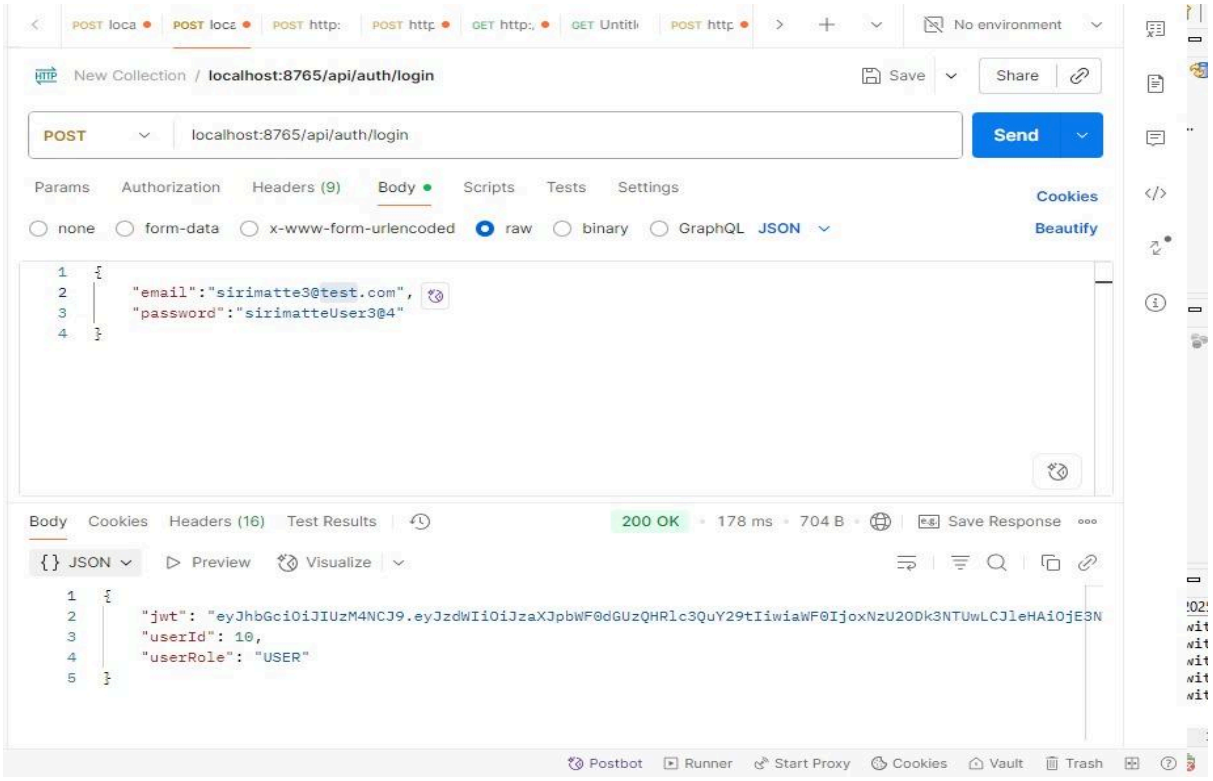
Medical-Records



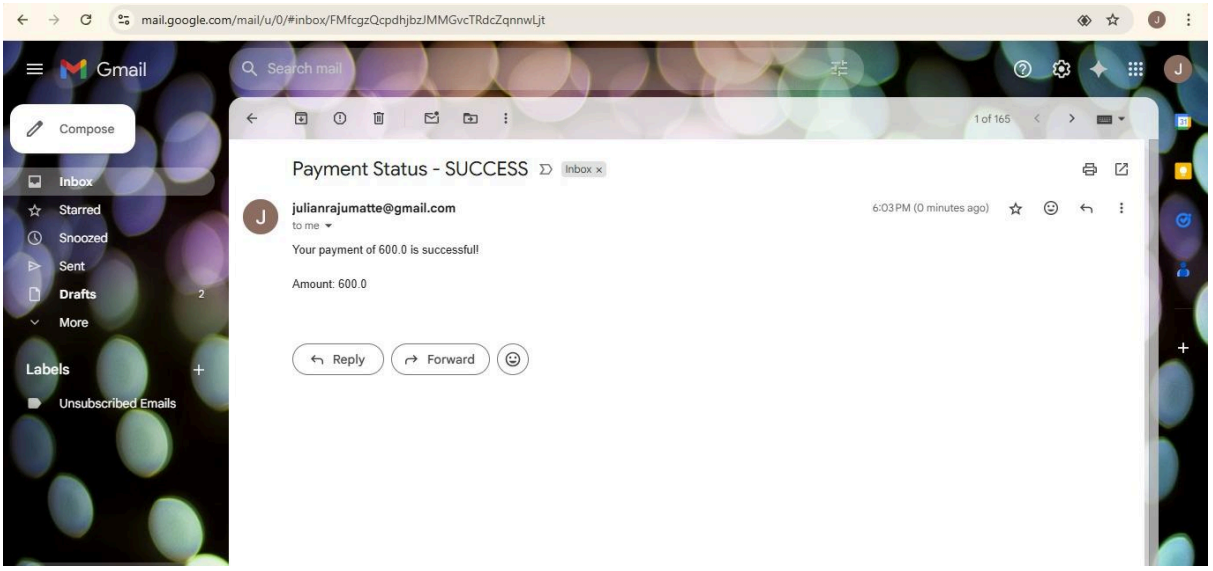
Appointment-endpoint



UserAuthSingup-endpoint



UserAuthLogin-endpoint



Email-Notification