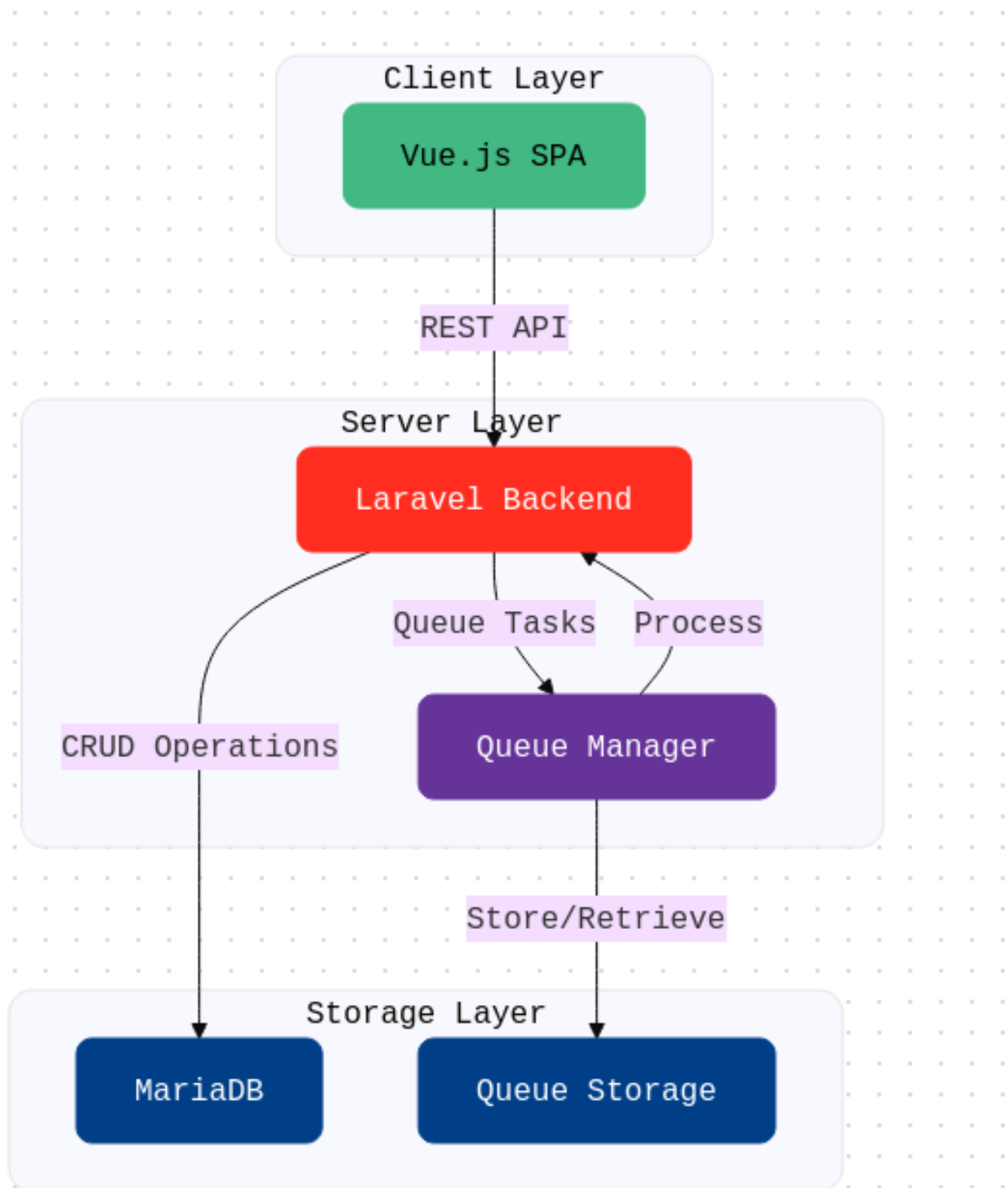


Hospital Appointment & Queue Management System

System Design

System Architecture Overview



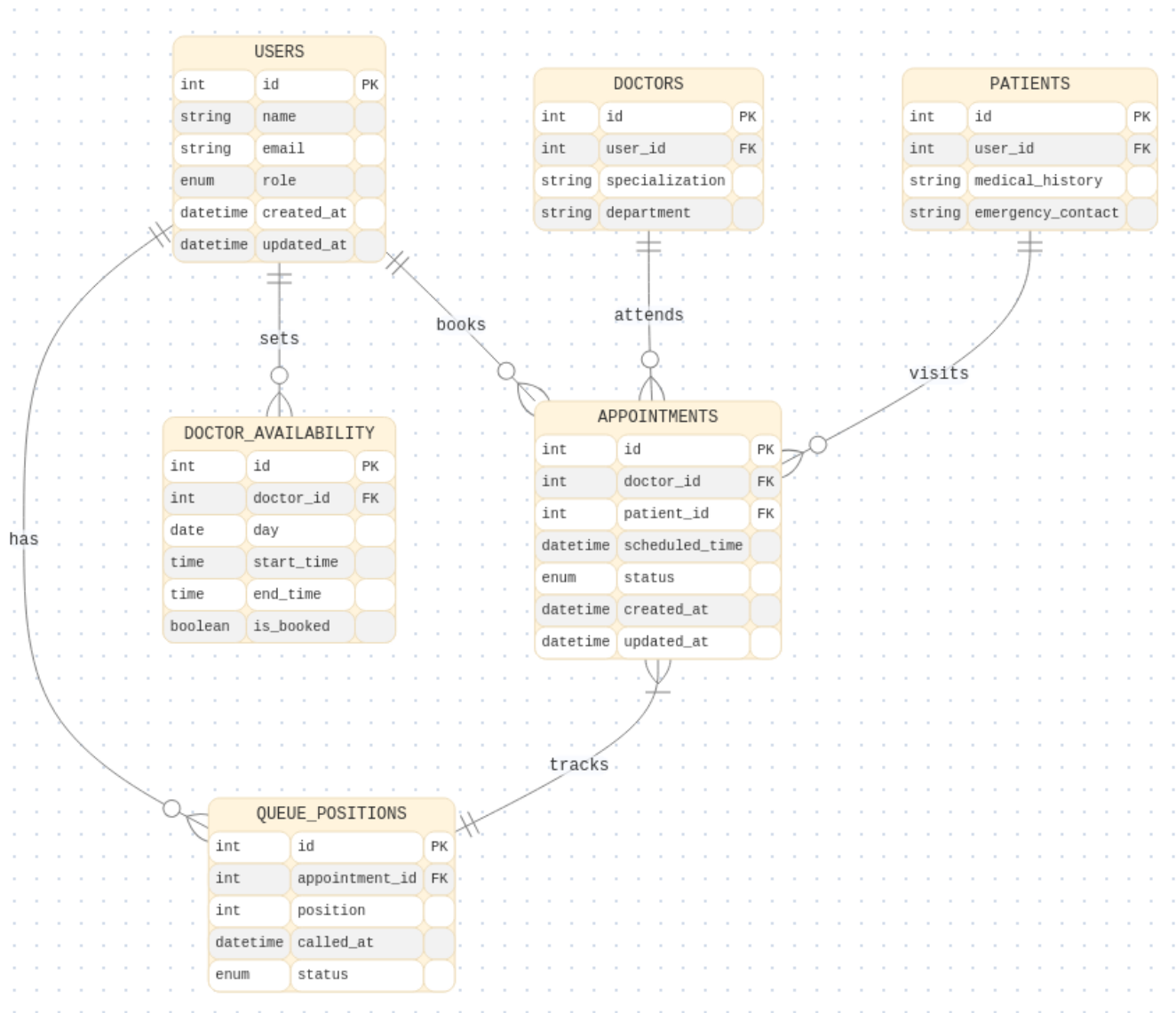
The system consists of four primary layers:

- a: Frontend Layer (Vue.js SPA)
- b: API Layer (Laravel Backend)
- c: Business Logic Layer
- d: Data Storage Layer (MariaDB)

The diagram above illustrates the system's architecture, where:

- a: Green components represent the client-side Vue.js application
- b: Red indicates the Laravel backend services
- c: Purple shows the queue management system
- d: Blue represents database storage components

Database:



The entity relationship diagram above shows the complete database schema, where:

- a: Lines with crowfoot notation (`||--o{`) indicate one-to-many relationships (e.g., one `USER` can have many `APPOINTMENTS`)
- b: Status enums in `APPOINTMENTS` and `QUEUE_POSITIONS` include values like `['pending', 'completed', 'cancelled']` and `['waiting', 'called', 'attended']` respectively
- c: `QUEUE_POSITIONS` tracks the real-time position of patients waiting for their appointments, linking directly to scheduled appointments