



## **UE22CS352B - Object Oriented Analysis & Design**

### **Mini Project Report**

### **Mental Health Counseling Booking System**

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Semester - 6 Section - J

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**January - May 2025**

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## **Problem Statement:**

In today's fast-paced and often stressful world, mental health issues such as anxiety, depression, and burnout are increasingly common. Despite growing awareness, many individuals face barriers in accessing professional mental health support due to factors such as geographical limitations, social stigma, lack of time, or high costs. Traditional in-person therapy often fails to meet the needs of users who require flexible, private, and easily accessible counseling services.

The need for a digital platform that bridges this gap has become critical. An efficient and user-friendly online counseling platform can empower individuals to seek professional mental health support discreetly and conveniently. However, developing such a system presents challenges in ensuring reliable appointment booking, maintaining user privacy, building trust with verified therapists, and delivering an intuitive interface for both clients and counselors.

This project aims to design and develop a Java Spring Boot-based Online Counseling Platform that allows users to register, browse therapist profiles, book appointments, and engage in sessions securely and efficiently. The system will prioritize ease of use, confidentiality, and responsiveness, contributing to broader accessibility to mental health care.

## **Key Features**

### **1. User Registration and Authentication**

- Secure sign-up and login functionality for clients and therapists.
- Role-based access control to differentiate features for users and therapists.

### **2. Therapist Profile Management**

- Verified therapist registration with qualifications, specialties, and availability.
- Profile viewing by users to select suitable counselors based on expertise.

### **3. Appointment Booking System**

- Real-time calendar view of therapist availability.
- Booking and rescheduling functionality for users.
- Email or in-app confirmation and reminders for scheduled appointments.

### **4. Search and Filter Functionality**

- Users can search therapists by name, specialization, language, and session type.
- Filters to sort therapists based on availability, ratings, or experience.

### **5. Secure Messaging (Optional)**

- In-app chat between clients and therapists for pre-session communication.
- Data encryption to ensure confidentiality.

### **6. Session Management**

- Integration with third-party video conferencing tools (like Zoom/Google Meet APIs).
- Links generated and shared securely with both parties.

### **7. Feedback and Rating System**

- Users can rate and review therapists after sessions.
- Helps maintain quality and trust across the platform.

### **8. Admin Dashboard (Optional)**

- Manage users and therapist approvals.
- View appointment analytics, user activity, and system logs.

## 9. Database Integration

- Persistent storage of user data, session history, and feedback using MySQL

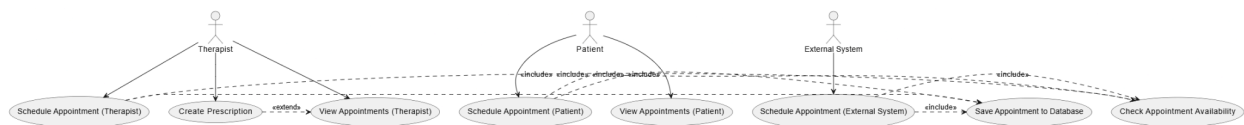
## 10. Responsive UI/UX

- Clean and intuitive front-end using Thymeleaf and other frameworks.
- Mobile-friendly interface for accessibility on all devices.

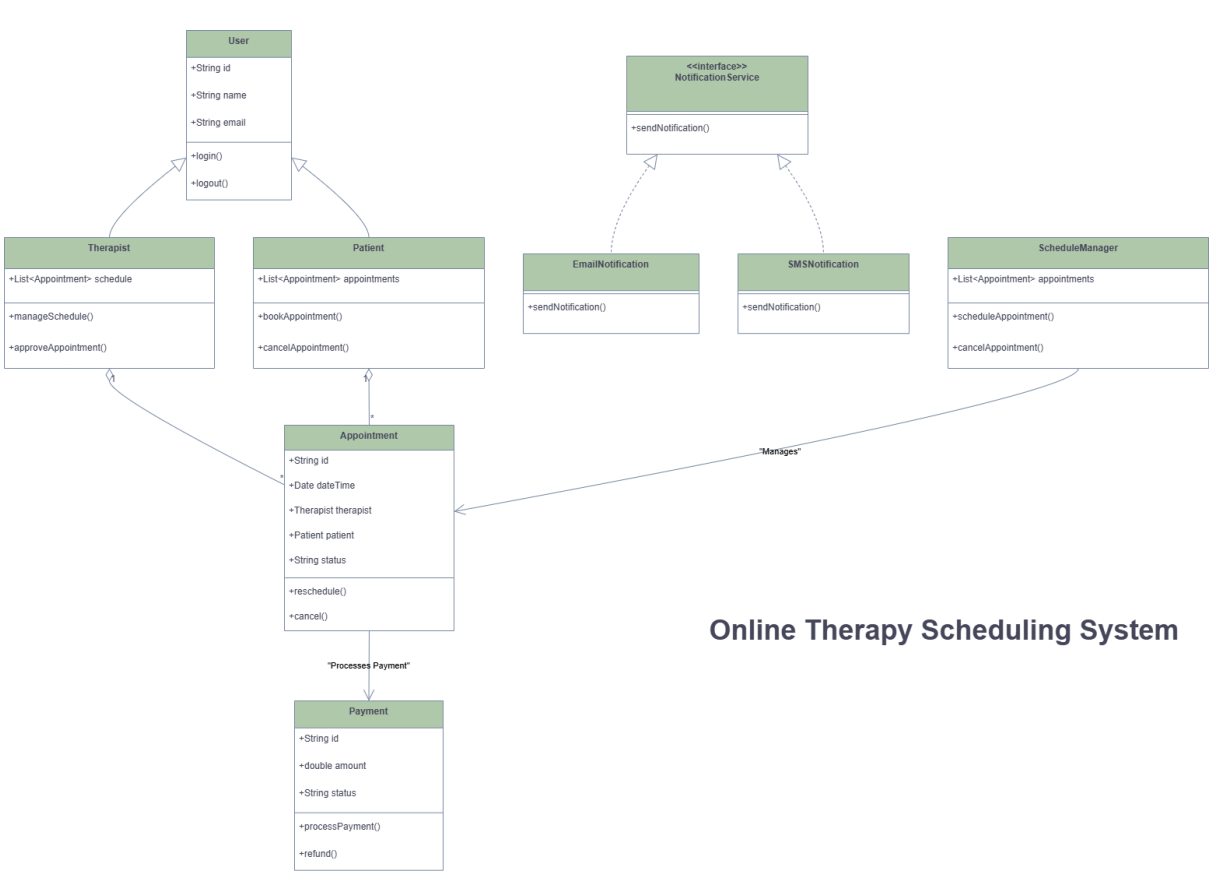
## 11. Security Features

- Password encryption, session timeout, and secure data handling.
- Follows best practices in Spring Security for user protection.

### Use Case Diagrams:

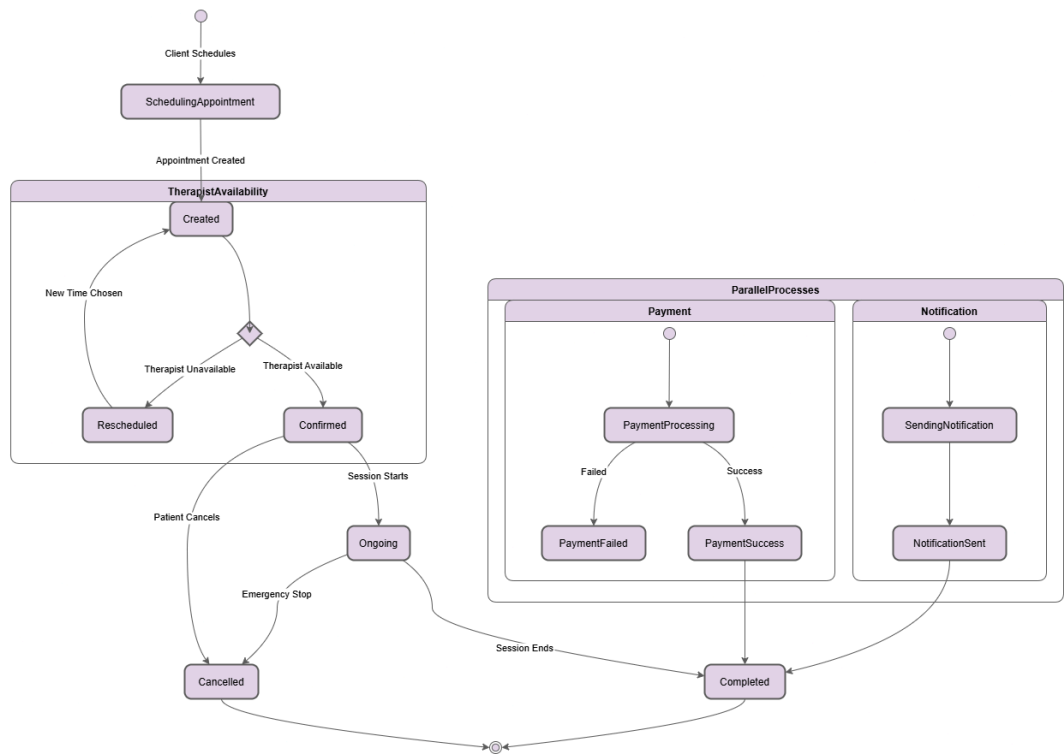


Class Diagrams:



Online Therapy Scheduling System

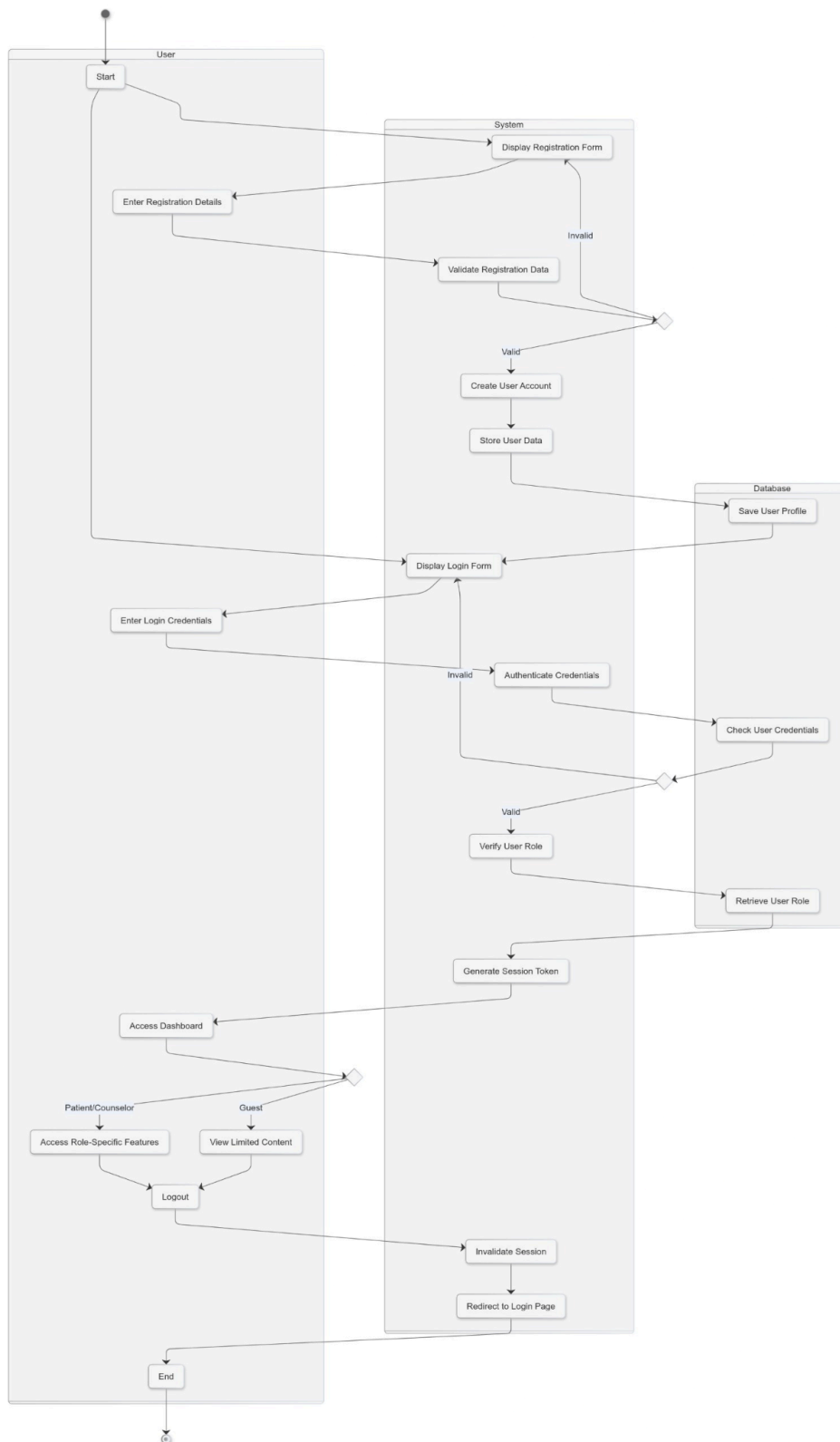
## State Diagrams:



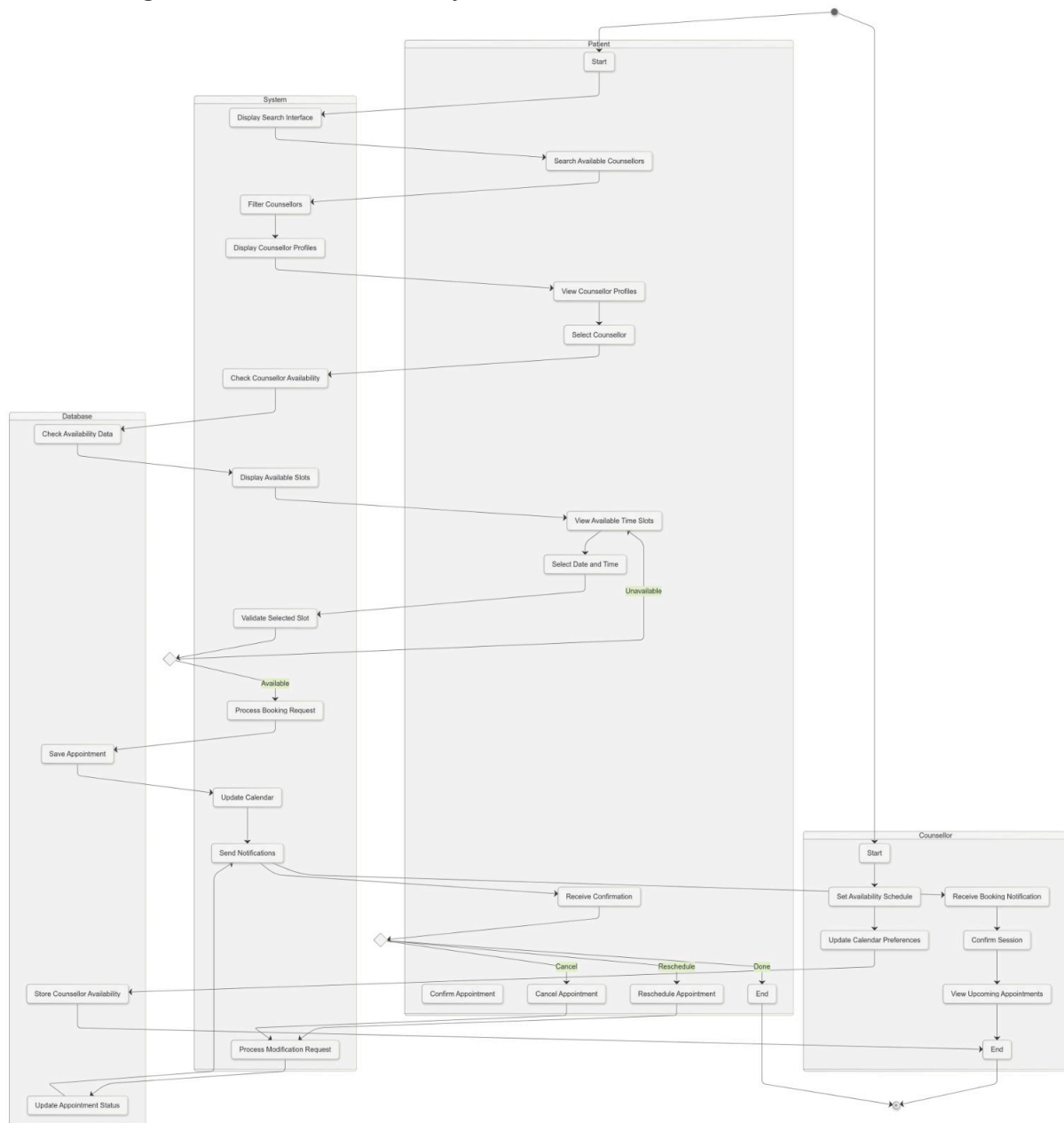
## Activity Diagram:

### Major Use cases

1. User Authentication & Authorization: Secure user registration, login, logout, and role-based access (patient vs. counsellor).

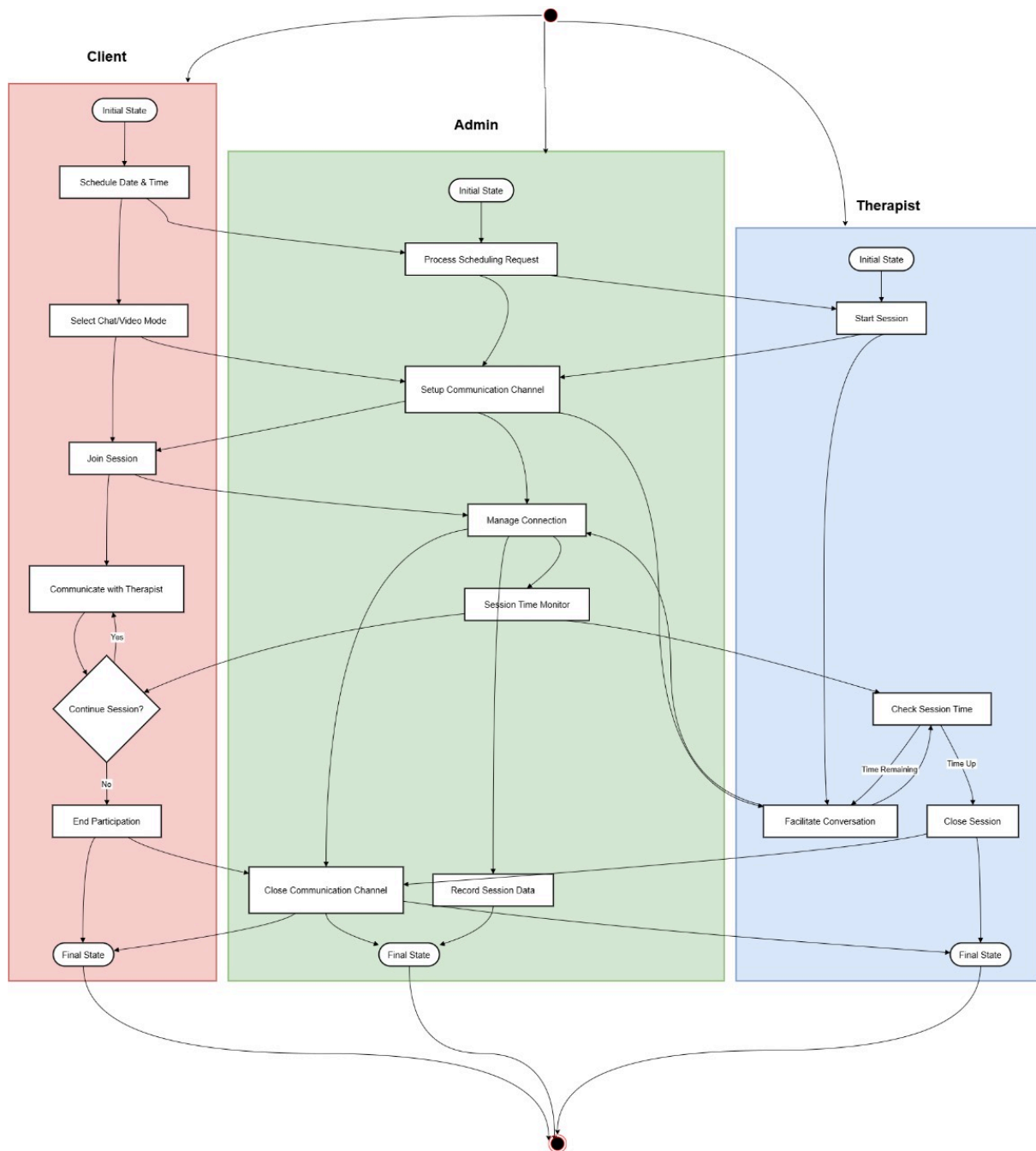


## 2. Counsellor-Patient Session Scheduling: Booking and managing appointments between patients and counsellors, including calendar integration and availability checks.





3. Online Session Management: Facilitating the actual counselling session via text chat (and optionally video/audio if feasible) with real-time session control.



## Design Patterns

### 1. Model-View-Controller (MVC):

- Where:
  - Model: Appointment, AppointmentService, TextAppointmentService.
  - View: Thymeleaf templates (therapist-appointments.html).
  - Controller: AuthController handles requests and updates the view.

### 2. Repository Pattern:

- Where: AppointmentRepository abstracts database access with methods like findByTherapistUsername.

### 3. Service Layer Pattern:

- Where: AppointmentService and TextAppointmentService encapsulate business logic (e.g., scheduleTherapistAppointment, createAppointment).

### 4. Template Pattern:

- Where: Thymeleaf templates render dynamic content (e.g., `{appointments}` in therapist-appointments.html).

### 5. Facade Pattern:

- Where: AppointmentService simplifies scheduling for AuthController by hiding conflict detection and persistence logic.