Sign-up Page Documentation for Medicosphere

1. Introduction

This document serves as a comprehensive guide for the design and implementation of the sign-up page within the Medicosphere Spring Boot application. It outlines the functional requirements, design considerations, API documentation, database schema, security measures, testing strategy, and deployment instructions for the sign-up functionality.

2. Functional Requirements

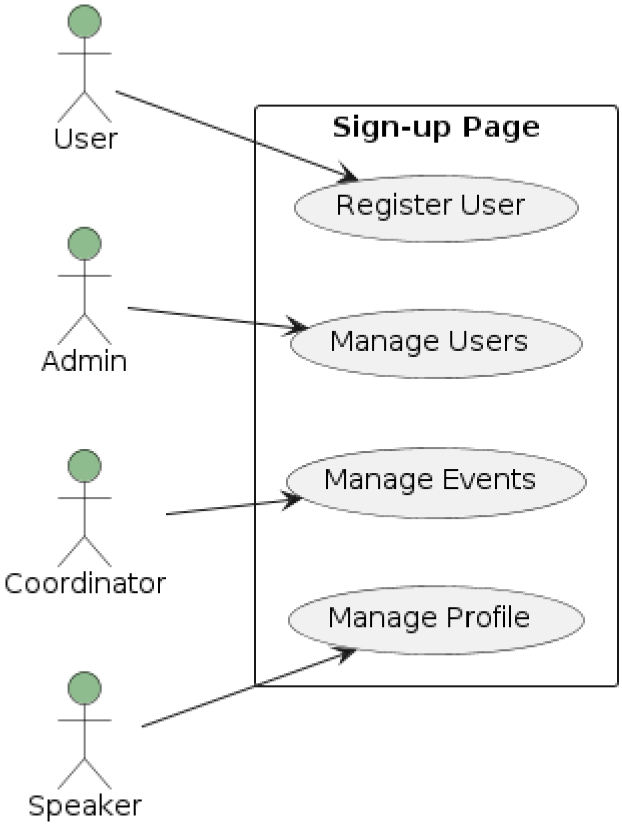
The sign-up page aims to provide a seamless user registration experience, catering to different user roles with distinct privileges:

Admin: Possesses full administrative rights, including user management and system settings.

Coordinator: Manages event-related activities, such as creating and managing events, inviting speakers, and overseeing attendee registrations.

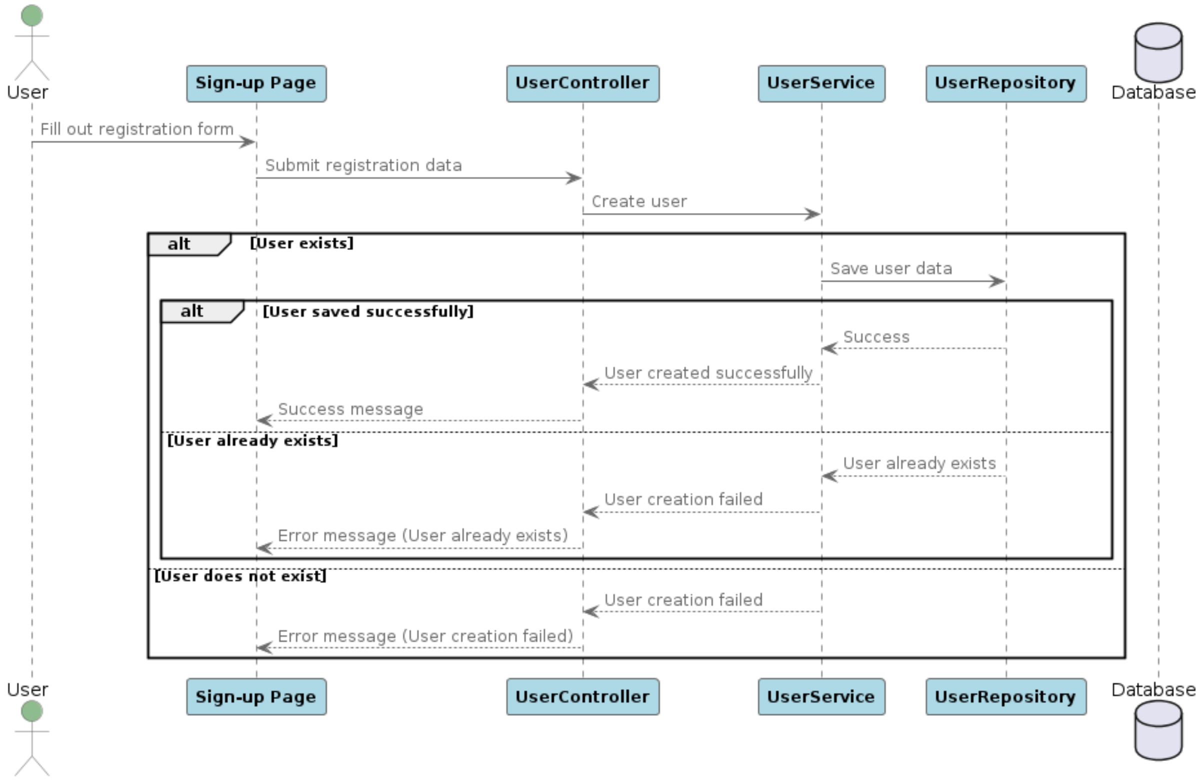
Speaker: Manages personal profile information and interacts with event attendees.

3. Use Case Diagram

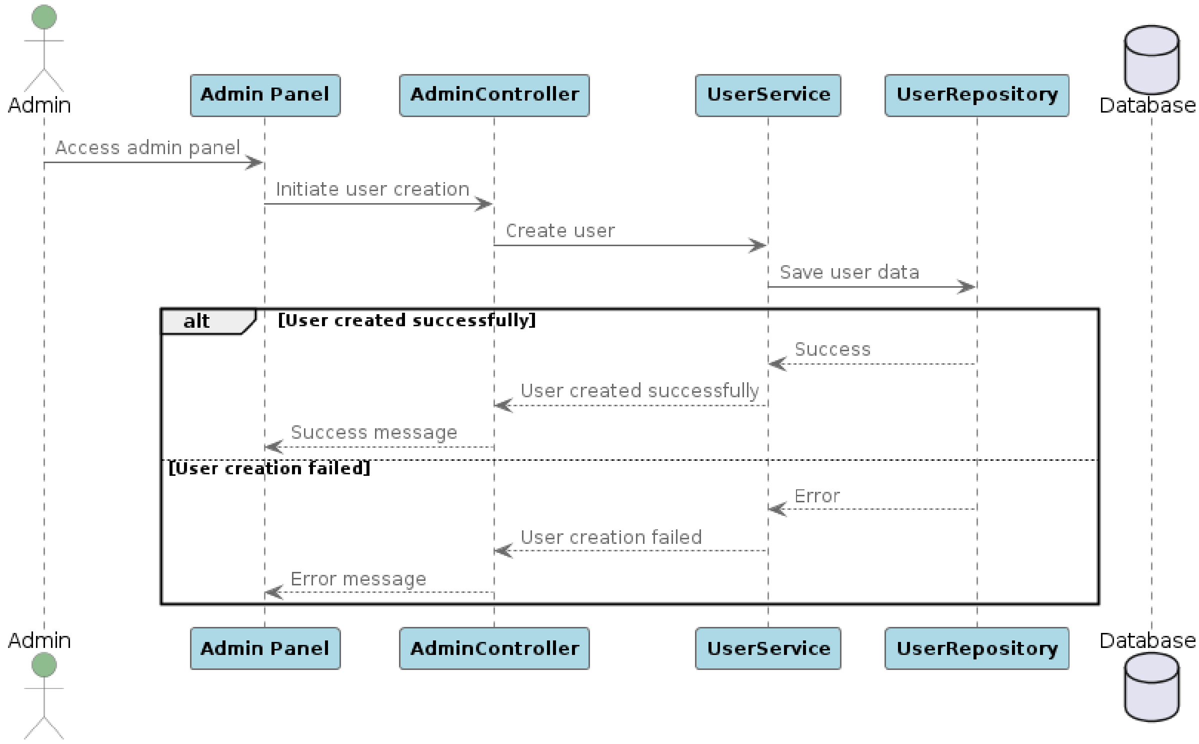


4. Sequence Diagrams

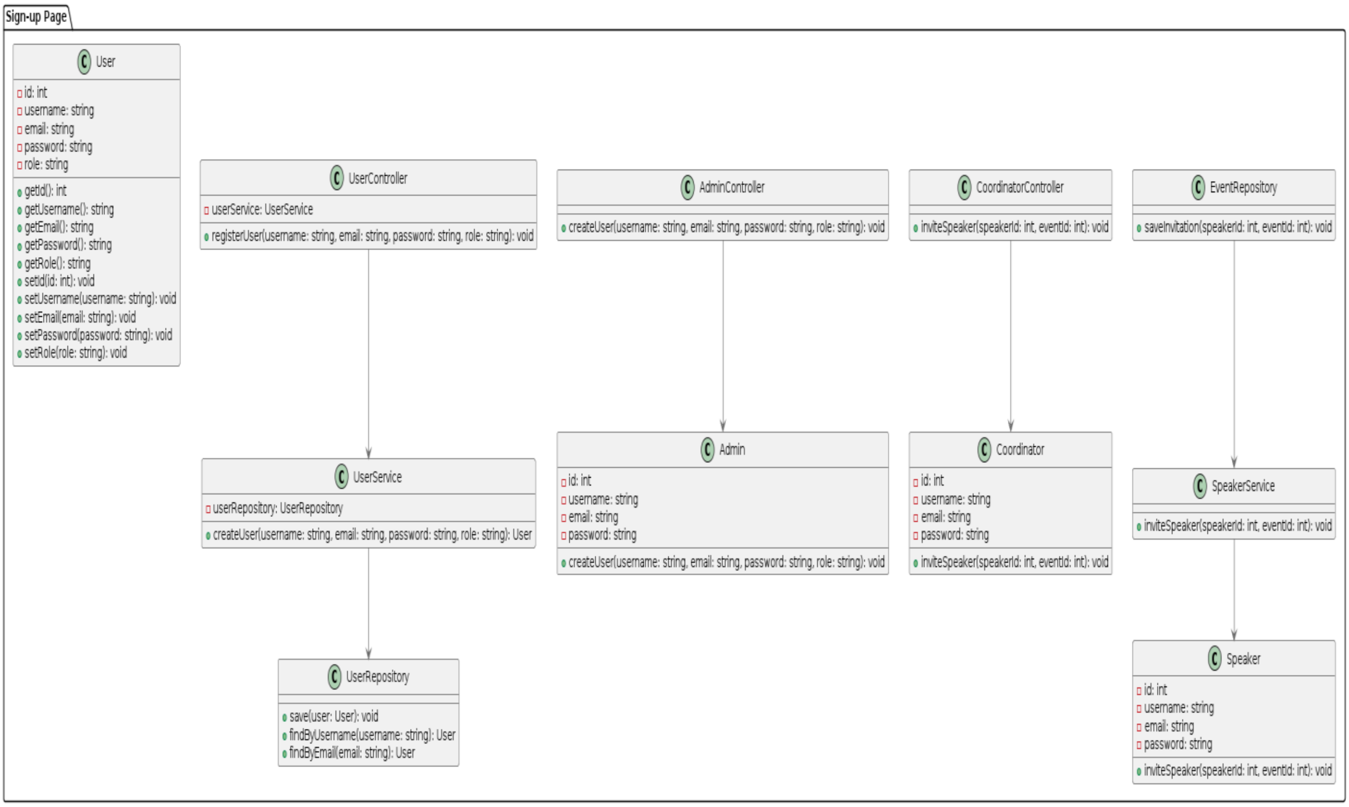
User Registration Process



Admin Creating a New User



5. Class Diagram


Sign-up Page
User
id: int
username: string
email: string
password: string
role: string
getId(): int
getUsername(): string
getEmail(): string
getPassword(): string
getRole(): string
setId(id: int): void
setUsername(username: string): void
setEmail(email: string): void
setPassword(password: string): void
setRole(role: string): void
UserController
userService: UserService
registerUser(username: string, email: string, password: string, role: string): void
UserService
userRepository: UserRepository
createUser(username: string, email: string, password: string, role: string): User
UserRepository
save(user: User): void
findByUsername(username: string): User
findByEmail(email: string): User
AdminController
createUser(username: string, email: string, password: string, role: string): void
Admin
id: int
username: string
email: string
password: string
createUser(username: string, email: string, password: string, role: string): void
CoordinatorController
inviteSpeaker(speakerId: int, eventId: int): void
Coordinator
id: int
username: string
email: string
password: string
inviteSpeaker(speakerId: int, eventId: int): void
EventRepository
saveInvitation(speakerId: int, eventId: int): void
SpeakerService
inviteSpeaker(speakerId: int, eventId: int): void
Speaker
id: int
username: string
email: string
password: string
inviteSpeaker(speakerId: int, eventId: int): void

6. API Documentation

POST /api/signup

Description: Endpoint for user registration.

Request Parameters:

username (string)

email (string)

password (string)

role (string)

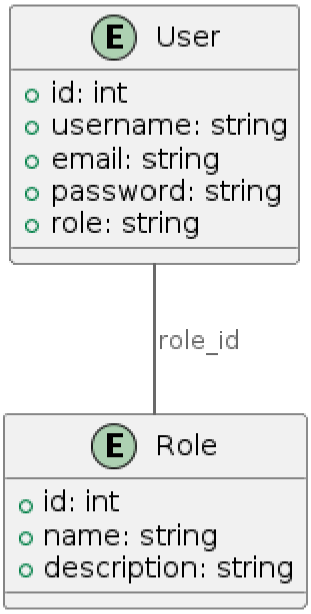
Response:

Success: HTTP 200 OK

Failure: HTTP 4xx or 5xx status codes with error message

Additional endpoints as needed...

7. Database Schema



8. Security Considerations

Implement secure password hashing algorithms (e.g., bcrypt) to protect user passwords.

Enforce strict input validation to prevent injection attacks and ensure data integrity.

Utilize industry-standard authentication and authorization mechanisms to control access to sensitive endpoints and data.

9. Error Handling

Provide clear and informative error messages for invalid requests or failed operations to aid in troubleshooting and user guidance.

Implement robust exception handling to gracefully manage unexpected errors and maintain system stability.

10. Testing Strategy

Develop a comprehensive suite of automated unit tests to verify the correctness of individual components.

Perform integration tests to validate the interaction between different layers and components.

Conduct end-to-end testing to ensure the seamless functionality of the user registration process.

11. Deployment Instructions

Configure environment-specific properties and settings for seamless deployment across development, staging, and production environments.

Utilize containerization technologies (e.g., Docker) and orchestration tools (e.g., Kubernetes) for efficient and scalable deployment.

12. Conclusion

This document provides a detailed and structured approach to implementing the sign-up page within the Medicosphere Spring Boot application. By adhering to the guidelines outlined herein, developers can ensure the successful integration of the sign-up functionality, maintaining security, reliability, and scalability across the application.

File Structure

```
signup-page/
│
├── build.gradle
├── src/
│   ├── main/
│   │   ├── java/
│   │   │   └── com/
│   │   │       └── medicosphere/
│   │   │           └── signupage/
│   │   │               ├── controller/
│   │   │               │   ├── UserController.java
│   │   │               │   └── AdminController.java
│   │   │               ├── service/
│   │   │               │   ├── UserService.java
│   │   │               │   ├── SpeakerService.java
│   │   │               │   └── CoordinatorService.java
│   │   │               ├── repository/
│   │   │               │   ├── UserRepository.java
│   │   │               │   └── RoleRepository.java
│   │   │               ├── model/
│   │   │               │   ├── User.java
│   │   │               │   └── Role.java
│   │   │               └── util/
│   │   │                   └── EncryptionUtil.java
│   │   ├── resources/
│   │   │   ├── static/
│   │   │   │   └── css/
│   │   │   │       └── style.css
│   │   │   ├── templates/
│   │   │   │   └── signup.html
│   │   │   └── application.properties
│   │   └── webapp/            (For Servlet based applications)
│   └── test/
│       ├── java/
│       │   └── com/
│       │       └── medicosphere/
│       │           └── signuppage/
│       │               └── controller/
│       │                   └── UserControllerTest.java
│       └── resources/
└── settings.gradle
```