

Academy

1 Introduction

In modern educational institutions, streamlined communication and organized resource management are crucial for academic success. However, universities often rely on fragmented platforms like email threads, WhatsApp groups, and shared Google Drives to manage interactions between students, faculty, and administrative staff. This results in inefficiencies, missed deadlines, and lack of accountability.

Academy aims to be a centralized, role-based platform that connects students, teachers, and administrators in a university environment. The platform offers real-time communication, course material sharing, notice boards, assignment submission, scheduling, and attendance tracking — all in one place.

2 Scope of the System

Academy will support the academic and administrative activities of a university by offering:

- **Communication:** Announcements and real-time messaging between students, teachers, and admins.
- **Resource Sharing:** Uploading and downloading of course materials like lecture slides, class notes, past questions, etc.
- **Assignment Management:** Upload, submission, and grading of assignments with deadline enforcement.
- **Scheduling:** Manage class and exam timetables with visibility for both students and teachers.
- **Attendance:** Teachers can mark attendance; students can view summaries.
- **Admin Controls:** A central dashboard to manage users, academic terms, departments, and system-wide notices.

3 Users and Their Roles

User Role	Responsibilities / Permissions
Student	View courses and download materials; Submit assignments; View notices and attendance; Chat with teachers
Teacher	Upload materials and assignments; Post announcements; Mark attendance; Communicate with students
Admin	Manage users and roles; Create and schedule semesters; Moderate announcements and messages; Generate reports

4 Use Case Summary

Use Case 1: Student Registration/Login

Students can register or log in using secure authentication to access the platform.

Use Case 2: Teacher Uploads Resources

Teachers upload PDF files, slides, or notes. Files are automatically organized.

Use Case 3: Student Downloads Materials

Students can browse and download available resources.

Use Case 4: Notice Board System

Teachers or admins post notices, which notify users in real-time.

Use Case 5: Assignment Handling

Teachers upload assignments with deadlines; students submit before deadline.

Use Case 6: Class Scheduling

Admin creates class schedules; students and teachers can view them.

Use Case 7: Attendance System

Teachers mark attendance; students view attendance summaries.

Use Case 8: Messaging System

Real-time role-based chat and project team communications.

5 Technology Stack

Component	Technology Used
Frontend	React.js
Backend	Spring Boot (Java)
Database	PostgreSQL
API Documentation	Swagger / OpenAPI
Authentication	Spring Security with JWT
File Storage	AWS S3 or local disk
Messaging	WebSockets / Socket.IO
Testing	JUnit, Jest, Cypress
Deployment	Docker, GitHub Actions, Render / AWS
Security	HTTPS, CORS, Rate-limiting, Secure headers