



INTERNATIONAL UNIVERSITY – VNU HCMC

SCHOOL OF COMPUTER SCIENCE AND ENGINEERING (CSE)

# THESISBOARD

The Impact of Lighting Design on Restaurant  
Ambience and Customer Experience

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BACHELOR OF ENGINEERING OF INFORMATION TECHNOLOGY



# OVERVIEW

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# Abstract

- THESISBOARD is a **web-based platform** to manage pre-thesis and thesis workflows
- Addresses **manual, fragmented processes** (emails, Google Sheets)
- Supports **students, teachers, moderators, administrators**
- Key functions: topic registration, scheduling, submission, grading
- Built with **React, Node.js, MySQL, Auth0**





# Background

- CSE faculty manages hundreds of thesis students each year
- Activities include:
  - Topic registration
  - Supervisor assignment
  - Document submission
  - Defense scheduling
- Existing workflow:
  - Emails
  - Google Sheets
- These tools do not scale and lack system state





# Problem

- No centralized system → fragmented information
- Common issues:
  - Duplicate registrations
  - Supervisor quota violations
  - Lost or delayed emails
  - Manual report compilation
- High administrative workload
- Low transparency for students



Example: Students cannot see real-time supervisor availability.





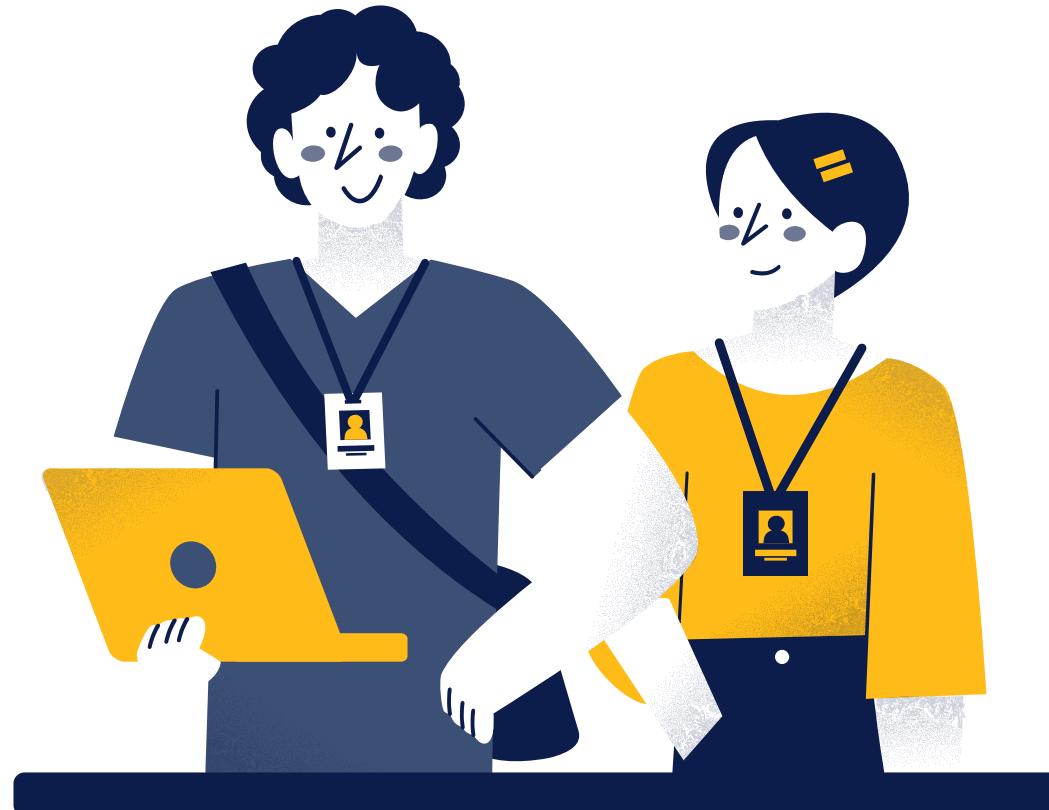
# Objectives

- Centralize thesis lifecycle management
- Provide **real-time transparency**
- Automate:
  - Topic registration
  - Defense scheduling
  - Evaluation workflows
- Enforce **role-based access control**
- Reduce administrative workload





# Literature Review



## Studied

- Moodle
- Blackboard
- Manual tools (Sheets, Email)



## Compared features

- Supervisor matching
- Custom workflow support
- Cost and flexibility



## Conclusion

- Existing systems are **too generic**
- Manual tools are error-prone



# Methodology

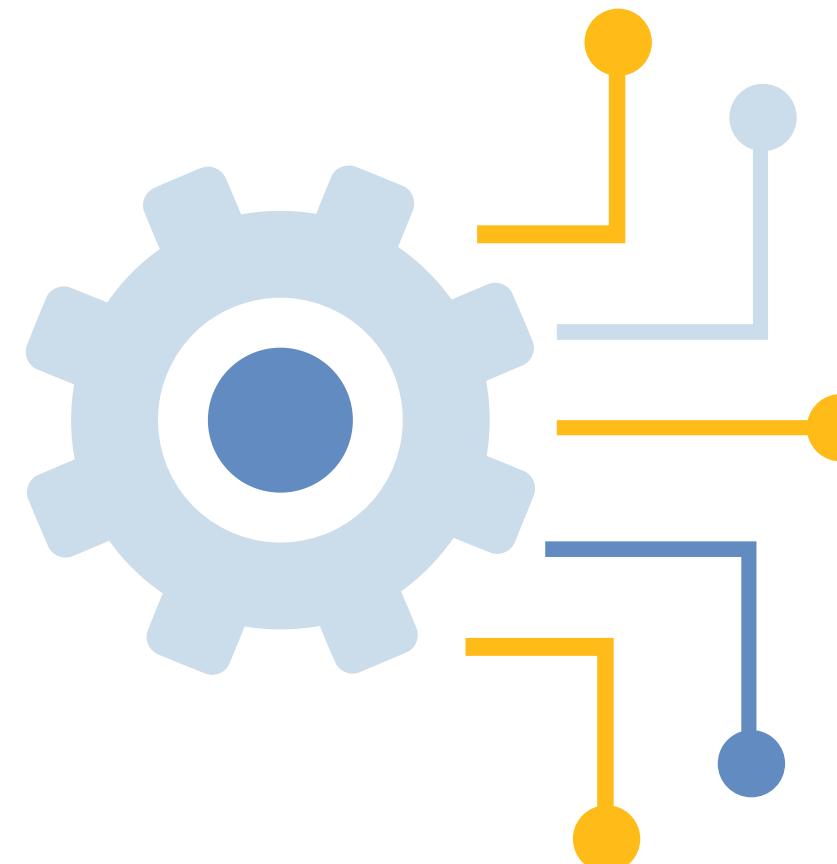


## Incremental Development Approach

- Development Model: The project followed an Incremental & Iterative model, where the system was broken down into manageable features (A, B, C...).
- Each Cycle (Iteration): Every feature underwent a full development life cycle before moving to the next:
  - Requirements Analysis: Defining specific goals for the feature.
  - System Design: Designing the UI/UX and database schema for that module.
  - Implementation: Full-stack coding (Frontend & Backend integration).
  - Testing & Evaluation: Unit testing and gathering feedback to refine the feature.
- Key Advantage: Ensures a functional prototype is available at each stage and reduces integration risks.



# System Overview



- Four roles:
  - Student
  - Teacher
  - Moderator
  - Administrator
- Central database
- Permission-specific data handling systems
- Automated workflow transitions



# Technology Stack

- Frontend: React + TypeScript
- Backend: Node.js + Express
- Database: MySQL + Sequelize ORM
- Authentication: Auth0 (JWT-based)
- UI: Ant Design + Tailwind CSS





# System Architecture

- MVC-based architecture
- Client–Server model
- RESTful API
- Separation of concerns:
  - View (React)
  - Controller (Express)
  - Model (Sequelize)

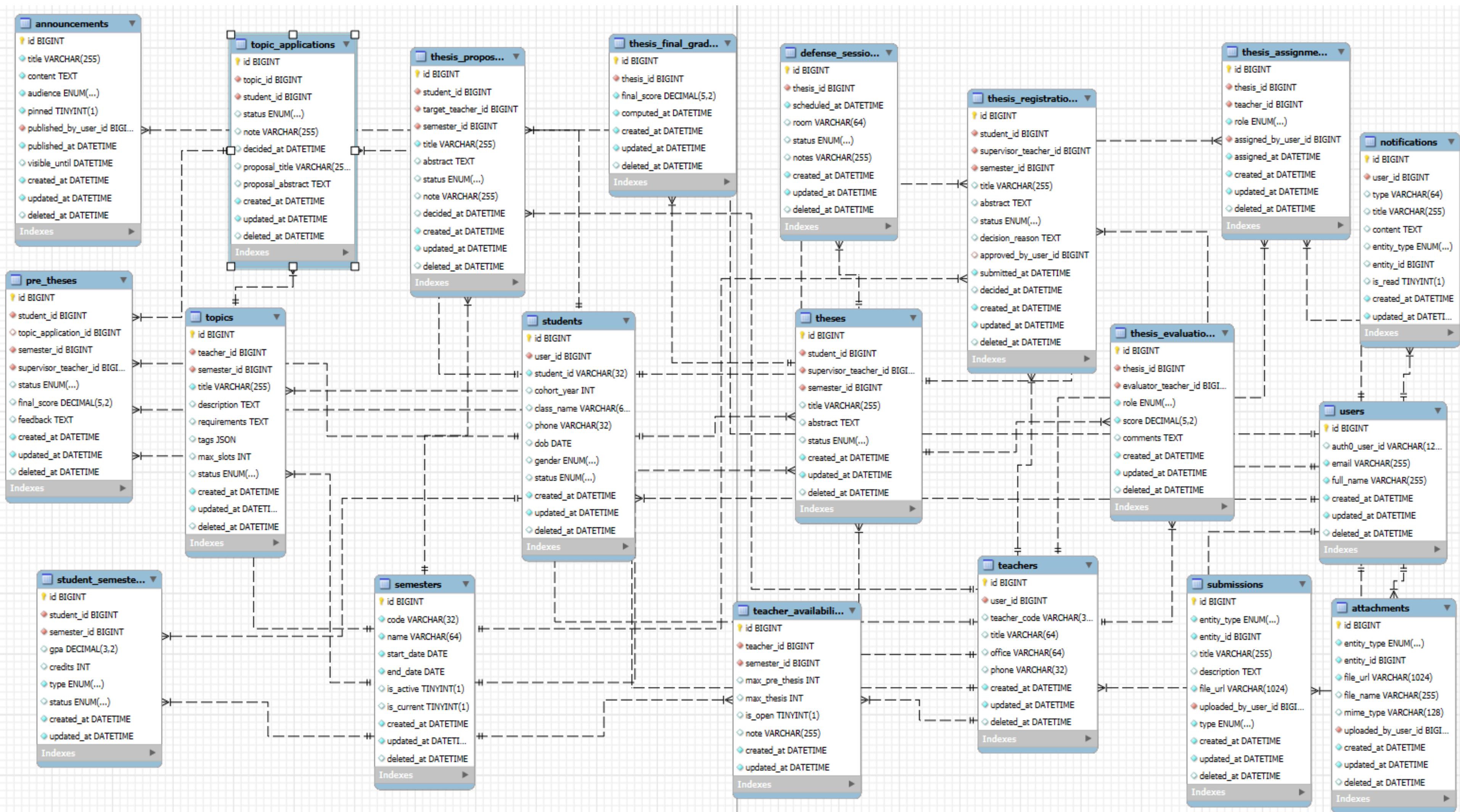




# Database Design

- Relational database design
- Key entities:
  - User, Student, Teacher
  - Topic, PreThesis, Thesis
  - DefenseSession, Evaluation
- Normalized to 3rd Normal Form (3NF)







# Key Feature 1: Topic Registration

- Supervisors create topics with quotas
- Students browse available topics
- Real-time slot validation
- Supervisor approval workflow
- Prevents over-registration





# Key Feature 2: Defense Scheduling

- Moderators configure:
    - Time slots
    - Rooms
    - Committees
  - Automatically linked to thesis records
- => Stress time-saving for staff—this resonates strongly.





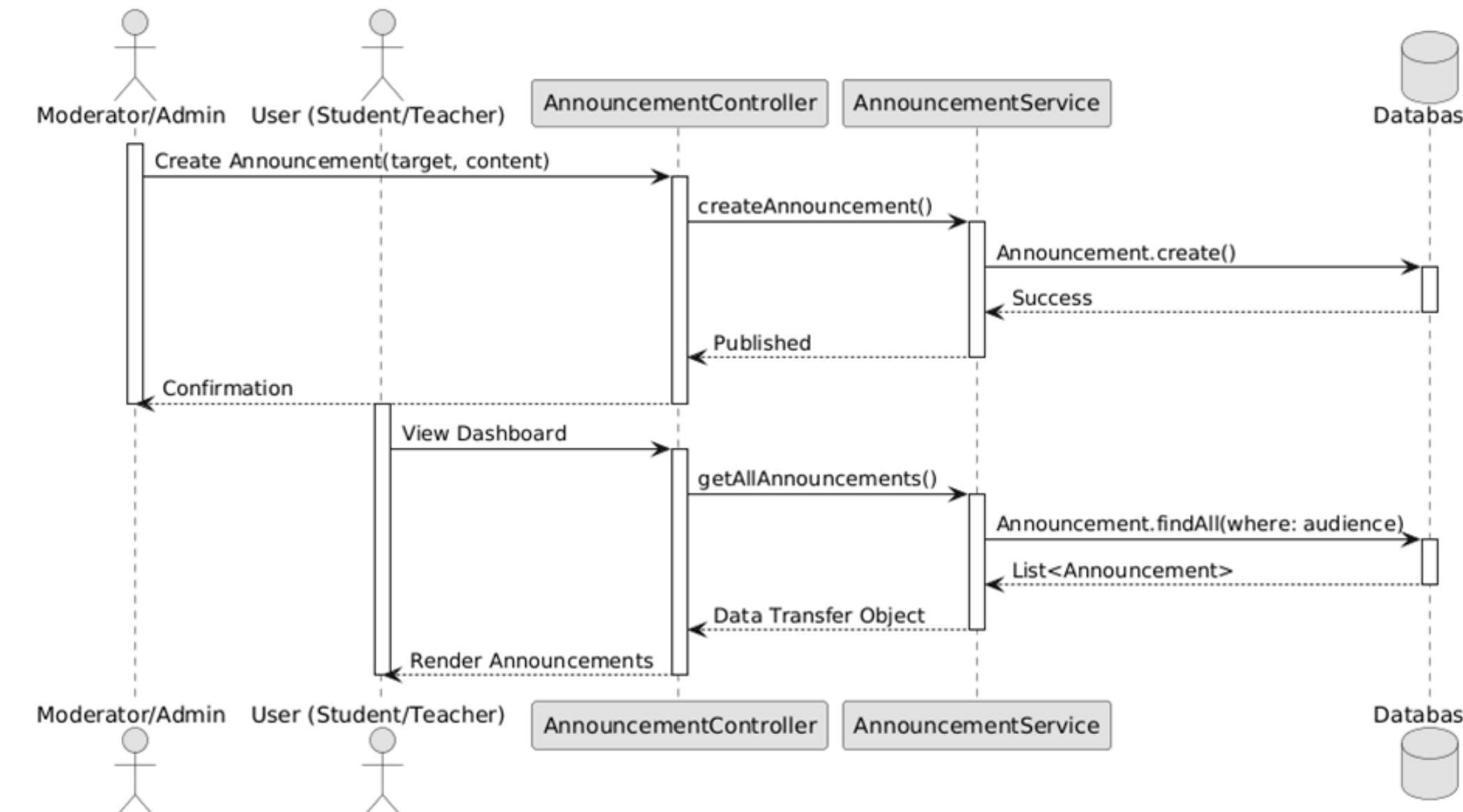
# Key Feature 3: Submission & Grading

- Students upload documents
- Version tracking
- Role-based grading:
  - Supervisor
  - Reviewer
  - Committee
- Centralized evaluation records
- Students can always see grades and feedbacks





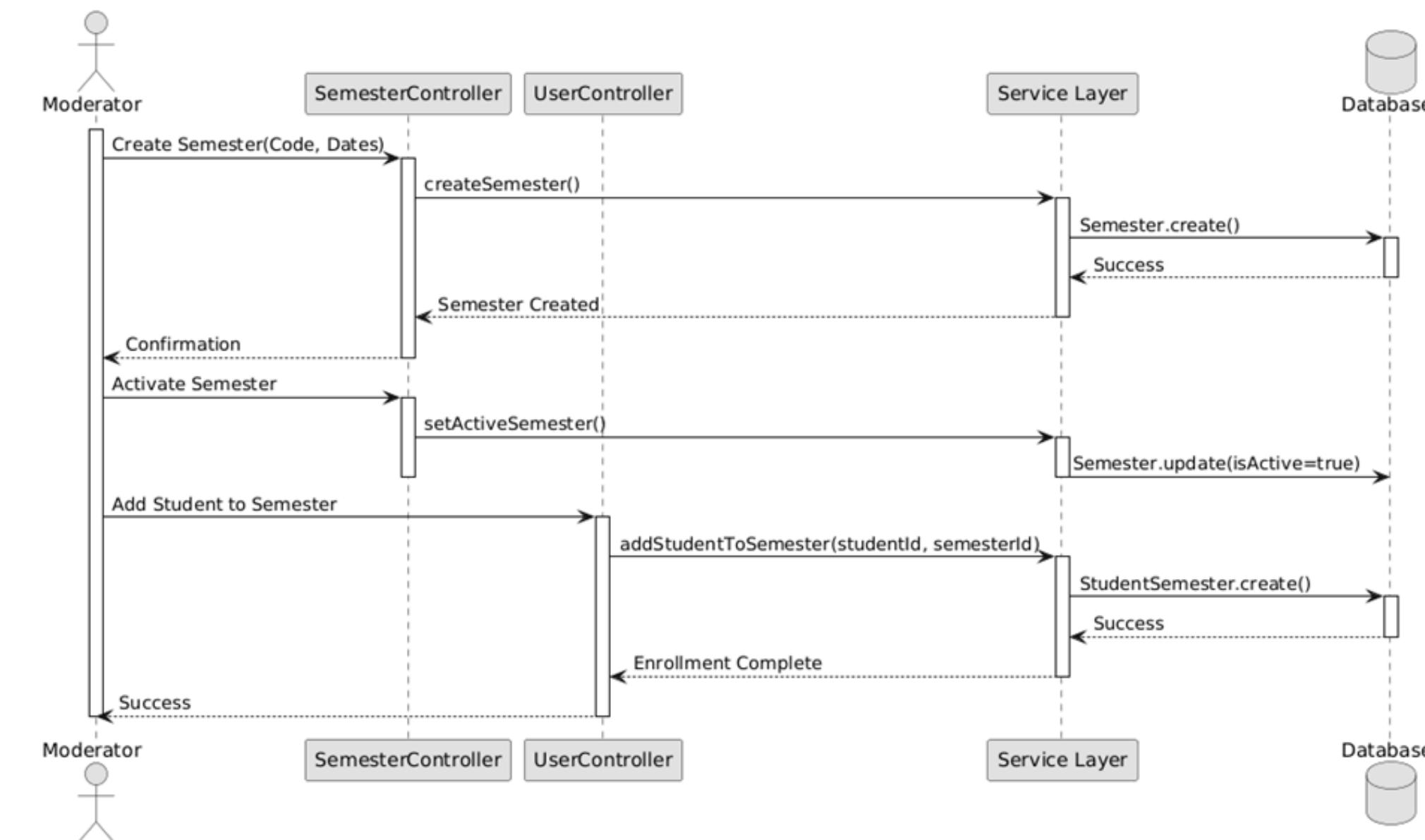
# Some Sequence Diagrams



Announcement System Sequence Diagram



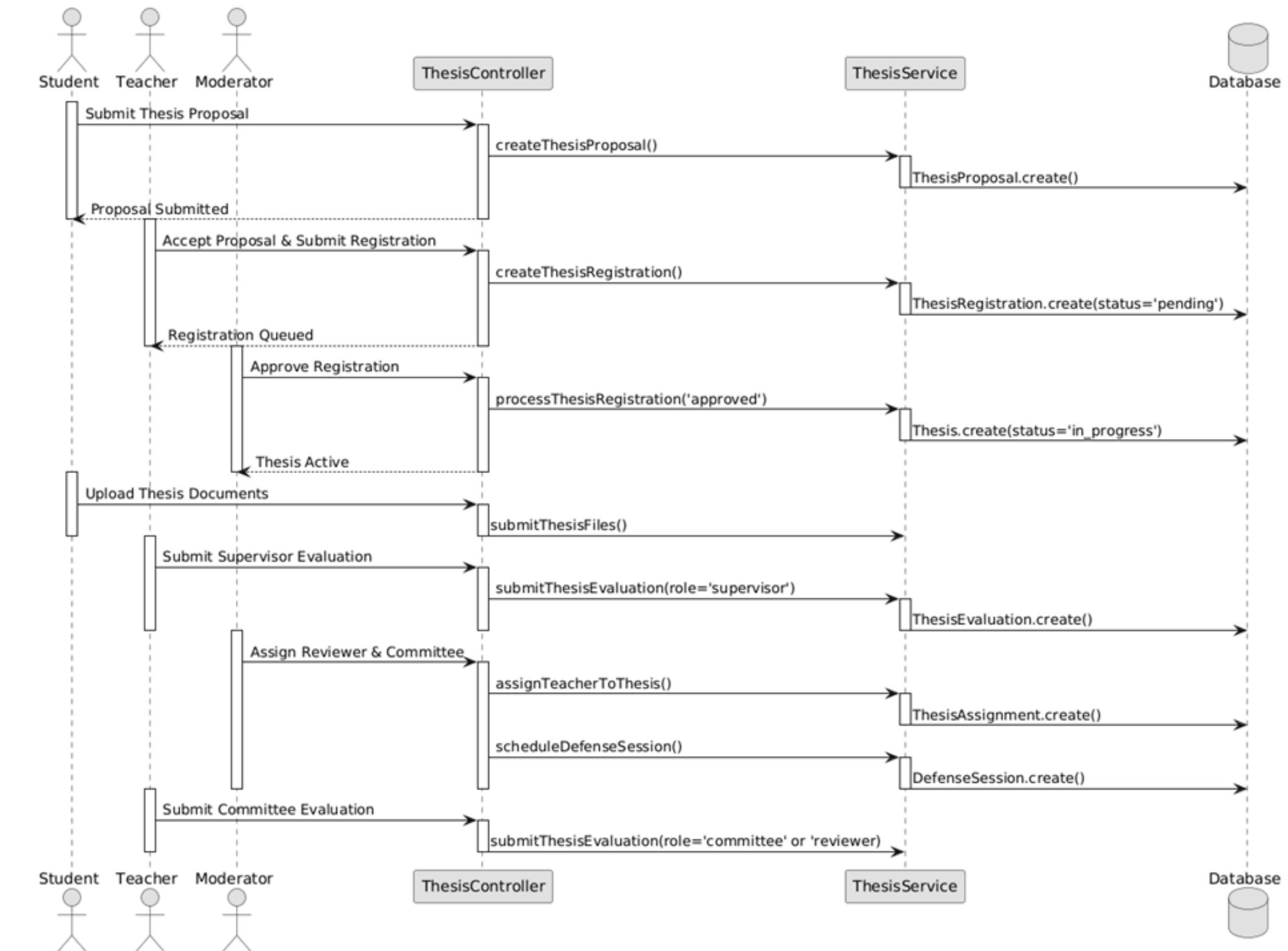
# Some Sequence Diagrams



Semester Management System Sequence Diagram



# Some Sequence Diagrams

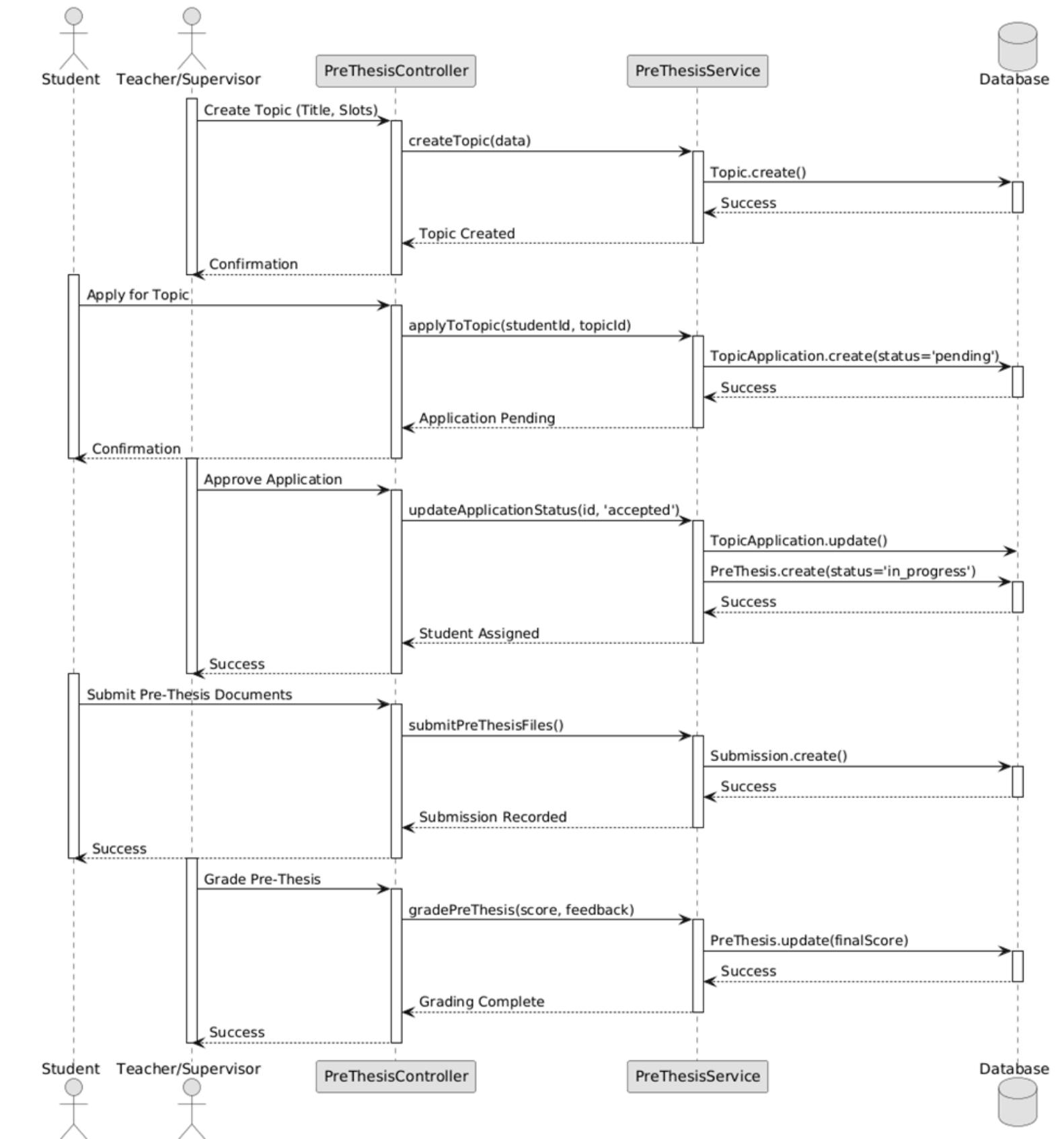


Thesis Lifecycle Sequence Diagram



# Some Sequence Diagrams

Pre-Thesis  
Lifecycle  
Sequence  
Diagram





# Results

- Objectives achieved:
  - Full thesis lifecycle covered
  - Automation reduces manual work
- Technical quality:
  - Secure RBAC
  - MVC architecture
  - Normalized database
- Positive usability outcome





# Conclusion



## Summary

- THESISBOARD replaces fragmented workflows
- Improves transparency and efficiency
- Scalable foundation for future systems



## Future Work

- Mobile application
- Email / push notifications
- SIS integration
- Advanced analytics dashboard



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# THANK YOU

For your time and interest



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