# EDUTrack: Modern Web-based Academic Records and Data System

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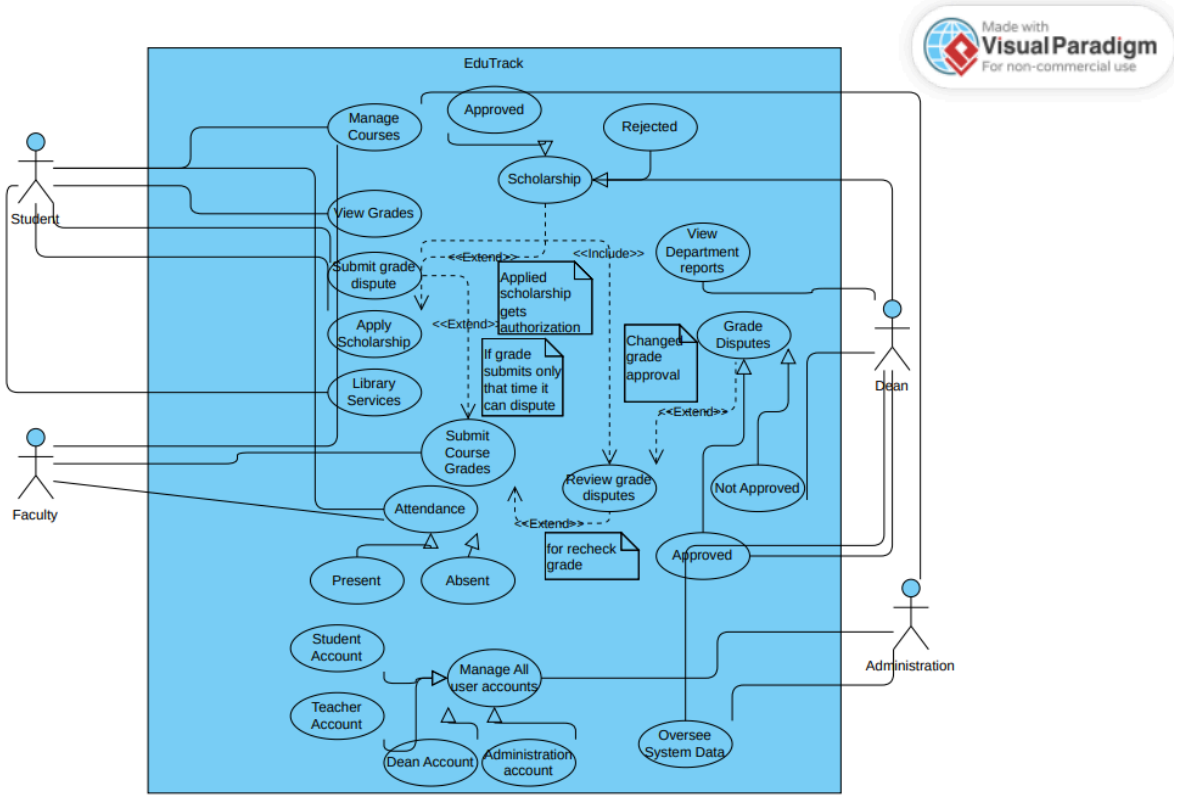
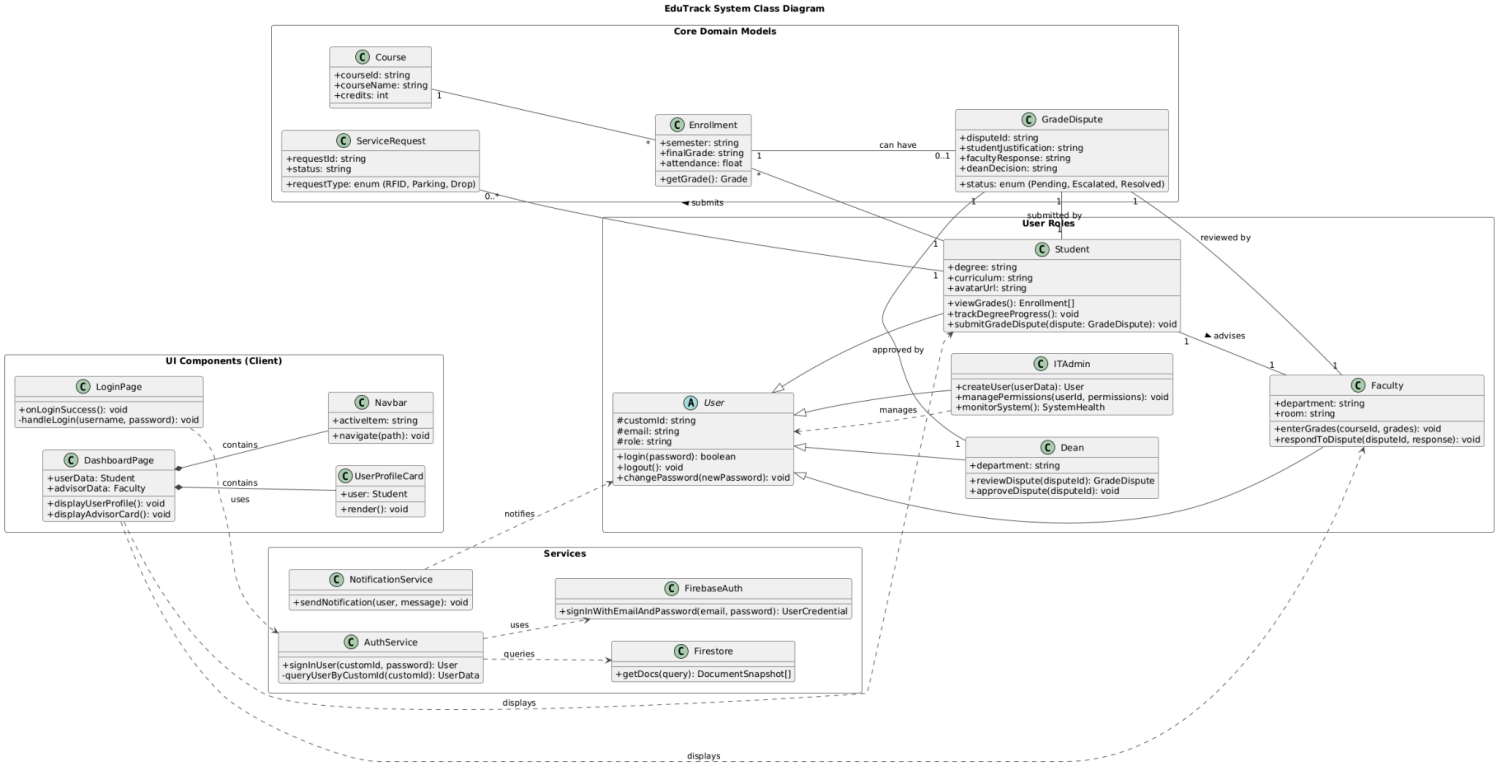
## 1. Use Case Diagram:

**Description**:
The Use Case Diagram provides a high-level view of the system's functionality as seen by the actors interacting with it. The diagram identifies the various actors (users, external systems) and their respective use cases (specific functionalities). Each use case represents a specific action or service provided by the system. Relationships such as associations between actors and use cases, and extend/include relationships that capture the optional or conditional behaviors are illustrated. This diagram helps to understand the interactions between users and the system and identifies the scope of the system's functionalities. **Done by Suimee**



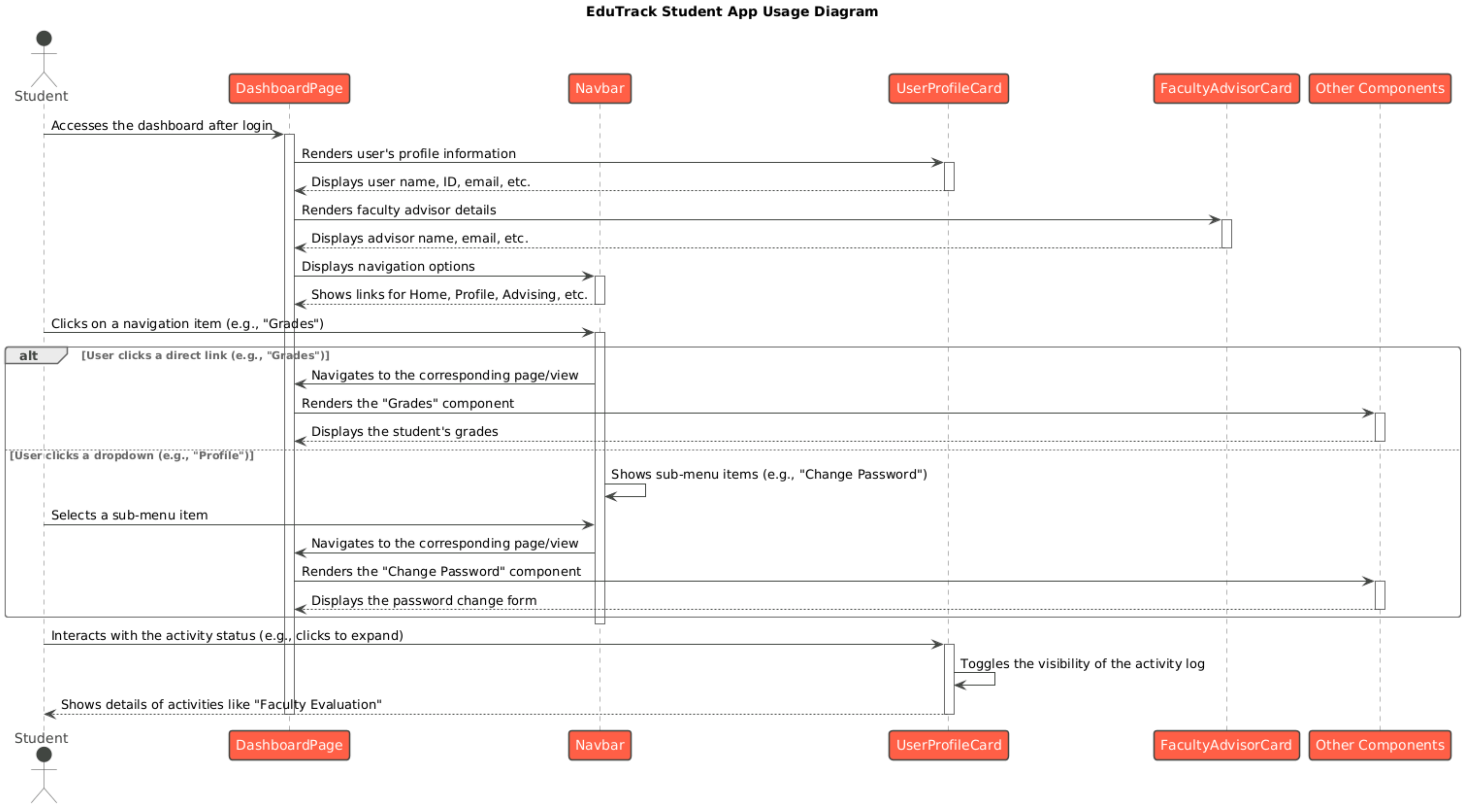
## 2. Class Diagram:

**Description**:
The Class Diagram represents the static structure of the system, showing the system's classes, their attributes, and the relationships between them. Each class defines a blueprint for objects, including the variables (attributes) and functions (methods) that define its behavior. The diagram also displays associations, generalizations (inheritance), and dependencies between classes. This diagram provides insight into the object-oriented design of the system and is essential for understanding how different components interact and how data is modeled. Done by **Atique.**

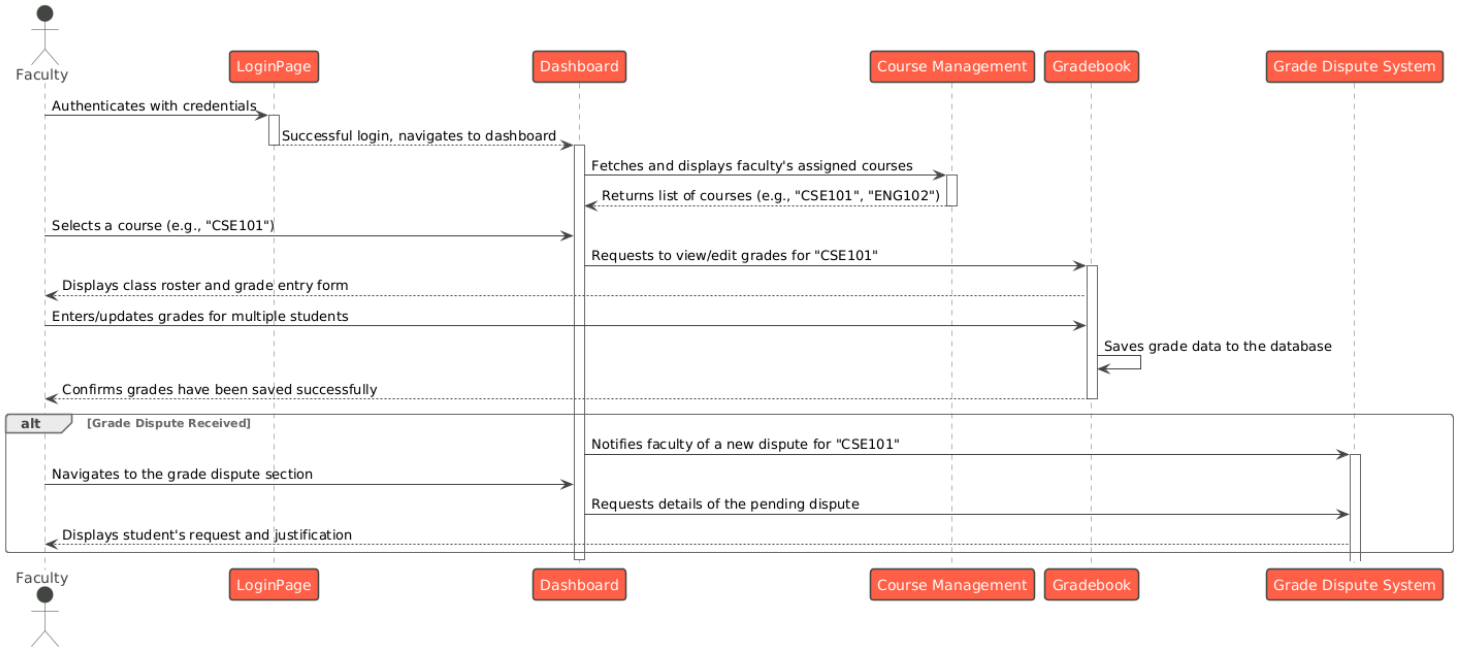


## 3. Sequence Diagram:

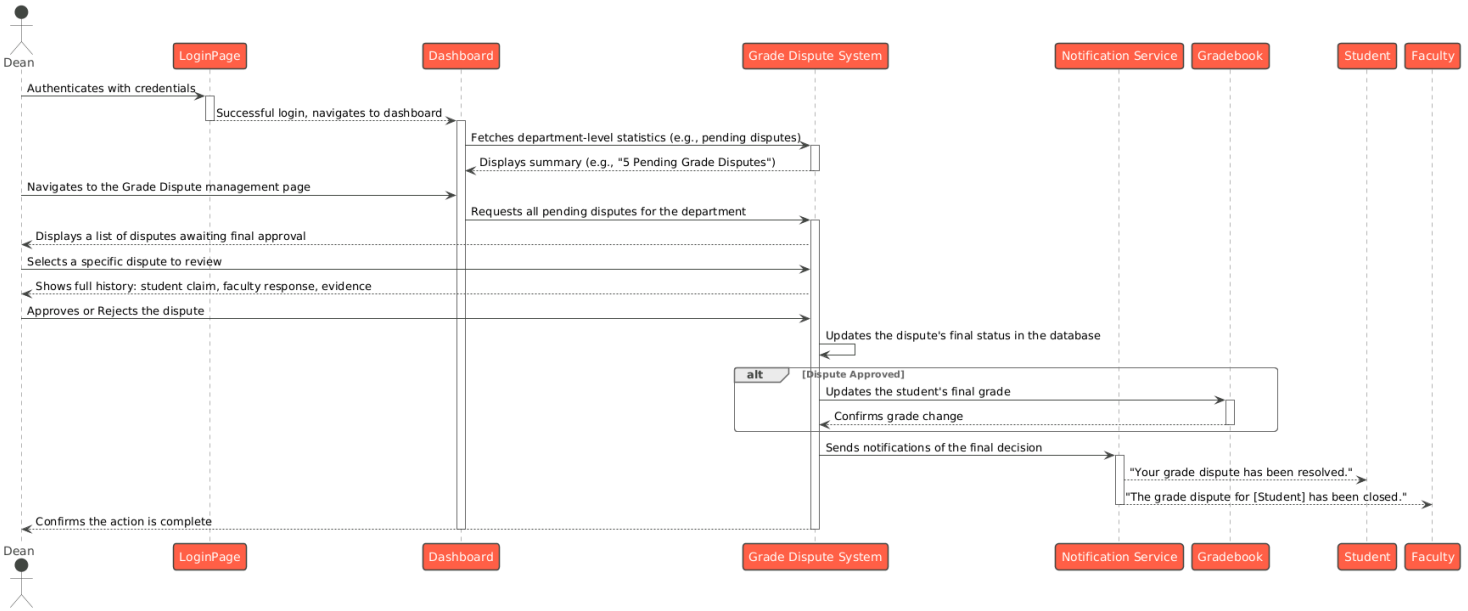
**Description**:
The Sequence Diagram illustrates the dynamic interactions between various objects or components in the system over time. It shows the sequence of method calls or messages exchanged between objects to complete a particular task or scenario. The diagram focuses on the chronological order of messages, including synchronous and asynchronous communications. Objects are represented along the top, and interactions are shown as arrows between them. These diagrams show the flow of interactions between users and the system for various tasks, including app usage, faculty actions, grade disputes, admin management, and Firebase authentication, detailing method calls and responses. **Done by Samiyeel.**

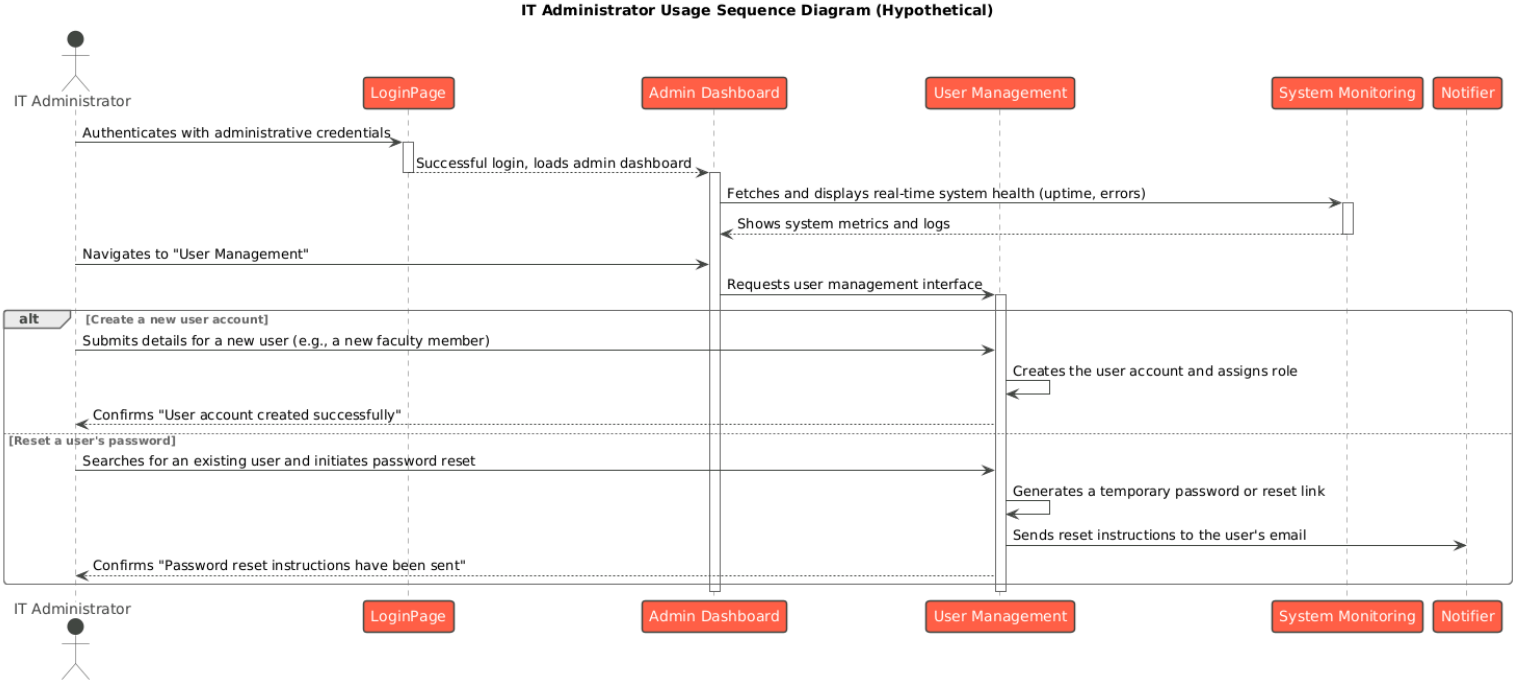


**Faculty Usage Sequence Diagram**

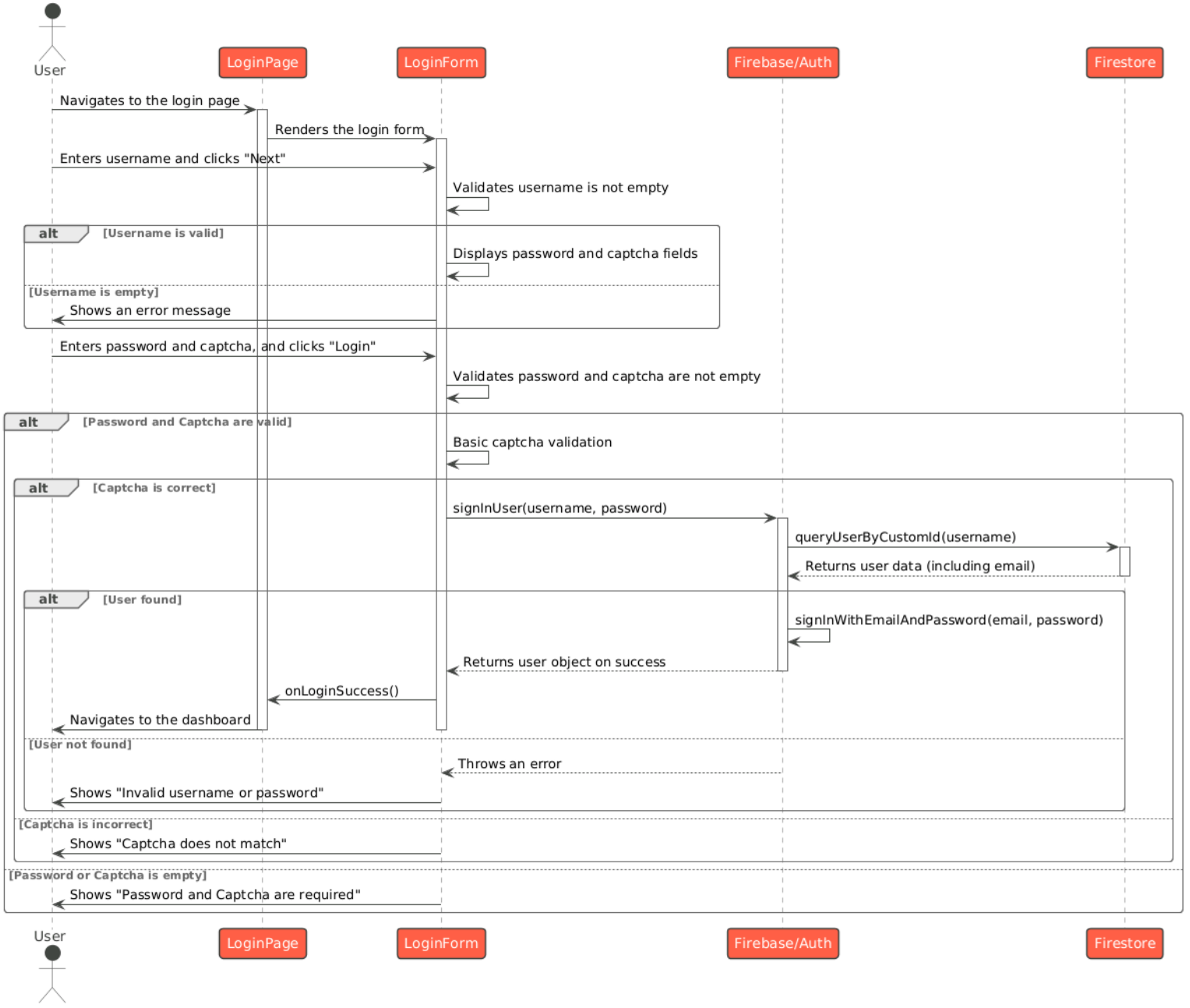


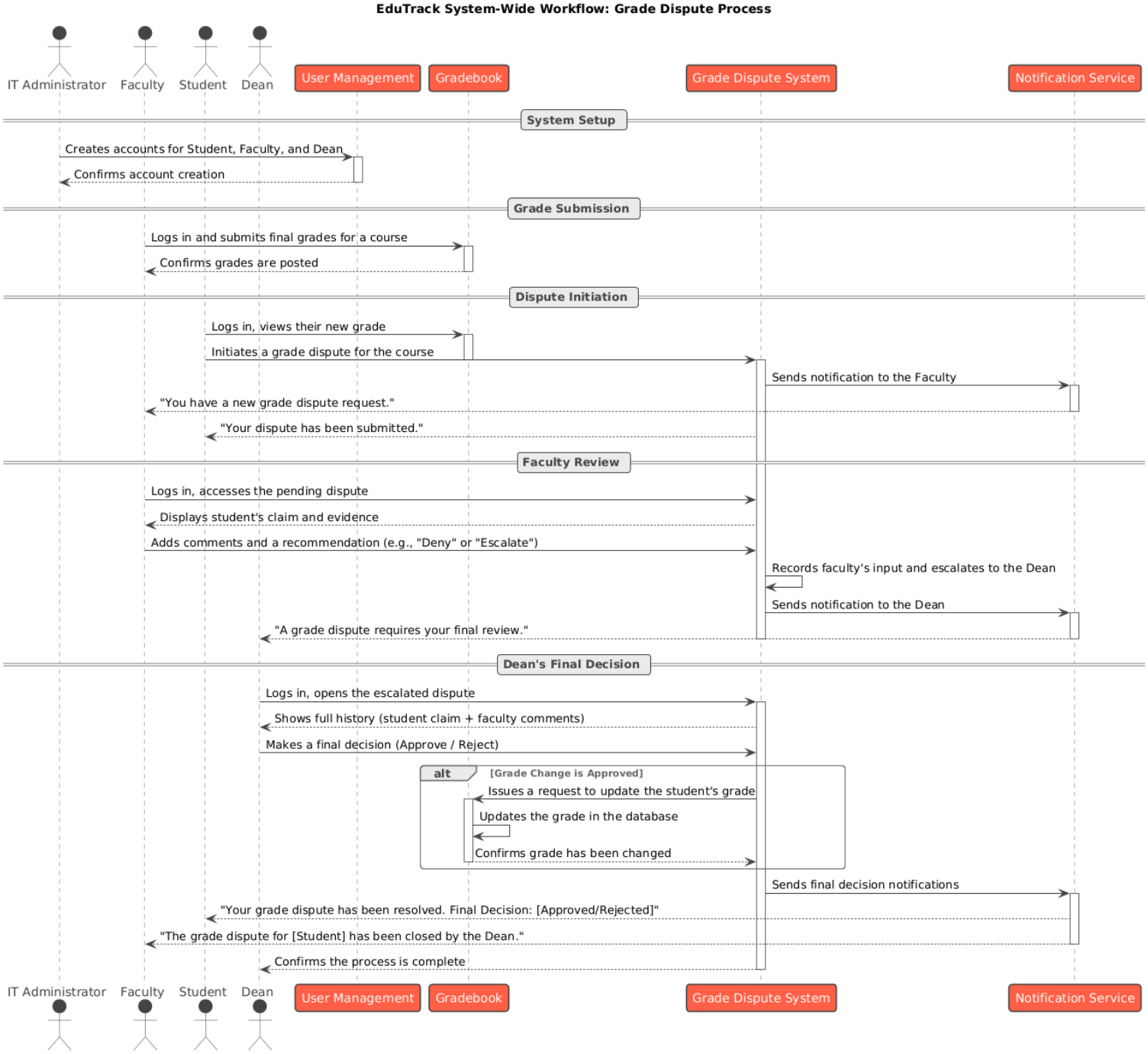

**Dean Usage Sequence Diagram (Hypothetical)**



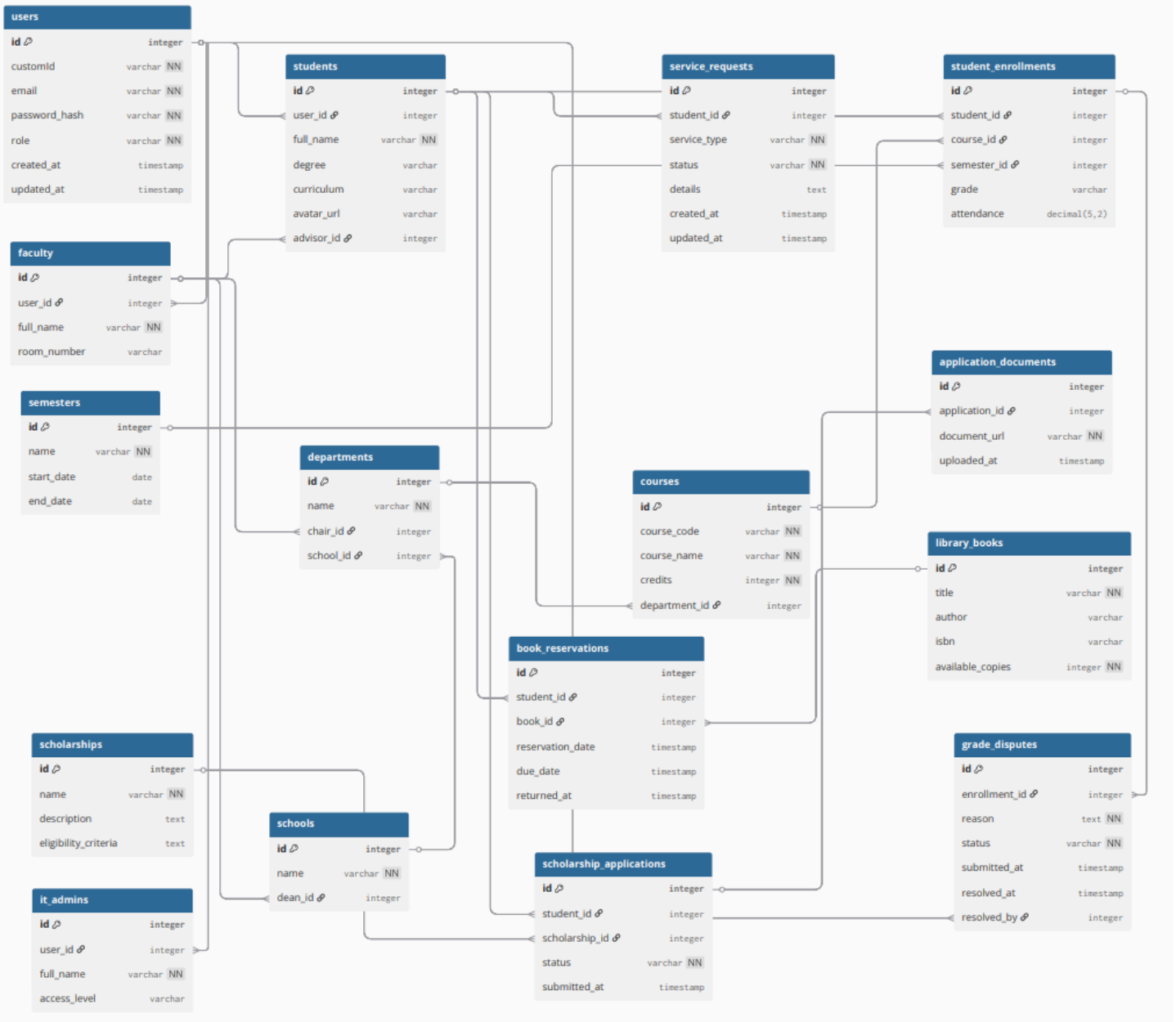

IT Administrator Usage Sequence Diagram (Hypothetical)
IT Administrator
LoginPage
Admin Dashboard
User Management
System Monitoring
Notifier
Authenticates with administrative credentials
Successful login, loads admin dashboard
Fetches and displays real-time system health (uptime, errors)
Shows system metrics and logs
Navigates to "User Management"
Requests user management interface
alt
[Create a new user account]
Submits details for a new user (e.g., a new faculty member)
Creates the user account and assigns role
Confirms "User account created successfully"
[Reset a user's password]
Searches for an existing user and initiates password reset
Generates a temporary password or reset link
Sends reset instructions to the user's email
Confirms "Password reset instructions have been sent"
IT Administrator
LoginPage
Admin Dashboard
User Management
System Monitoring
Notifier

**User Authentication Sequence Diagram**




EduTrack System-Wide Workflow: Grade Dispute Process
IT Administrator
Faculty
Student
Dean
User Management
Gradebook
Grade Dispute System
Notification Service
System Setup
Creates accounts for Student, Faculty, and Dean
Confirms account creation
Grade Submission
Logs in and submits final grades for a course
Confirms grades are posted
Dispute Initiation
Logs in, views their new grade
Initiates a grade dispute for the course
Sends notification to the Faculty
"You have a new grade dispute request."
"Your dispute has been submitted."
Faculty Review
Logs in, accesses the pending dispute
Displays student's claim and evidence
Adds comments and a recommendation (e.g., "Deny" or "Escalate")
Records faculty's input and escalates to the Dean
Sends notification to the Dean
"A grade dispute requires your final review."
Dean's Final Decision
Logs in, opens the escalated dispute
Shows full history (student claim + faculty comments)
Makes a final decision (Approve / Reject)
alt
[Grade Change is Approved]
Issues a request to update the student's grade
Updates the grade in the database
Confirms grade has been changed
Sends final decision notifications
"Your grade dispute has been resolved. Final Decision: [Approved/Rejected]"
"The grade dispute for [Student] has been closed by the Dean."
Confirms the process is complete

## 4. Entity-Relationship Diagram (ERD):

### Description:

This Entity-Relationship Diagram (ERD) provides a visual representation of the database schema for an educational system. It illustrates the relationships between various entities such as users, students, faculty, courses, books, and scholarships. Key entities include users (with roles like students, faculty, and IT admins), service requests, book reservations, and student enrollments. The diagram highlights the connections between tables, showing foreign key relationships and detailing attributes like student IDs, course details, semester dates, and book availability. The structure of departments, courses, and scholarship applications is also shown, along with grade disputes and the system's ability to manage administrative and academic data. **This diagram was done by Samiyeel and Yeanur.**