2024-2025 SPRING SEMESTER

CS319 – Object-Oriented Software Engineering

Deliverable #2

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Members:

Ege İpekçi 21902333

Ege Kaan Eren 21601625

Enes Özdemir 22102534

İdil Su Öztürk 22102729

Rasul Ibrahimzade 22201022

Ali Majidi (Didn't contribute at all)

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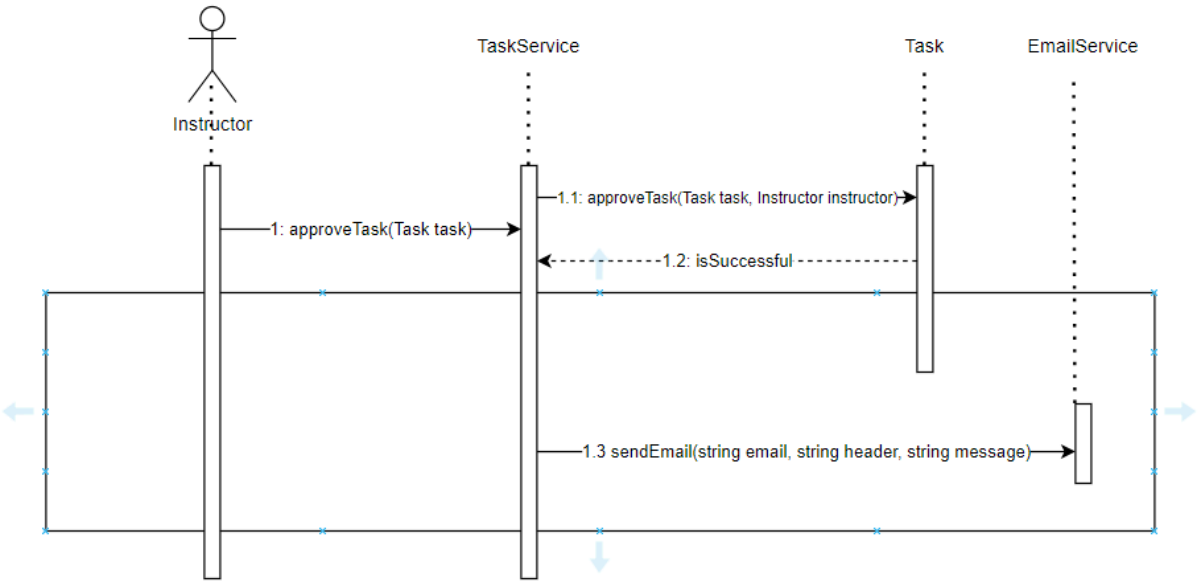
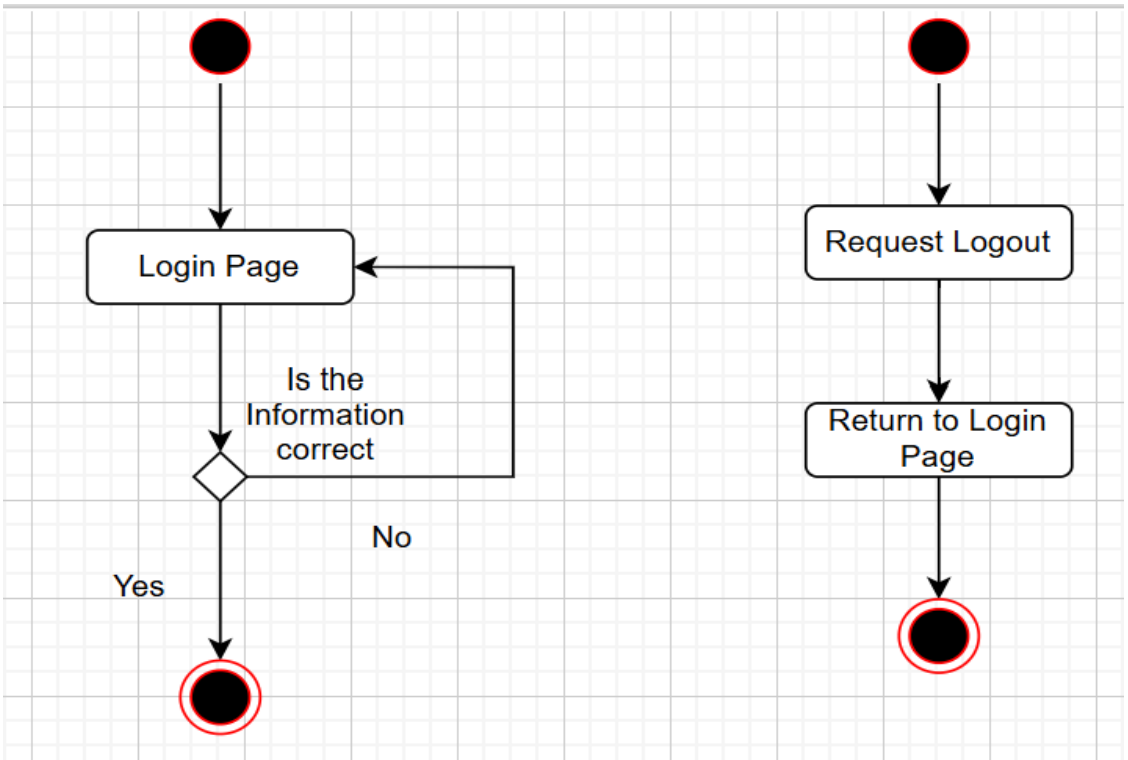
1. SEQUENCE DIAGRAM

1.1 Task Approval Sequence Diagram:

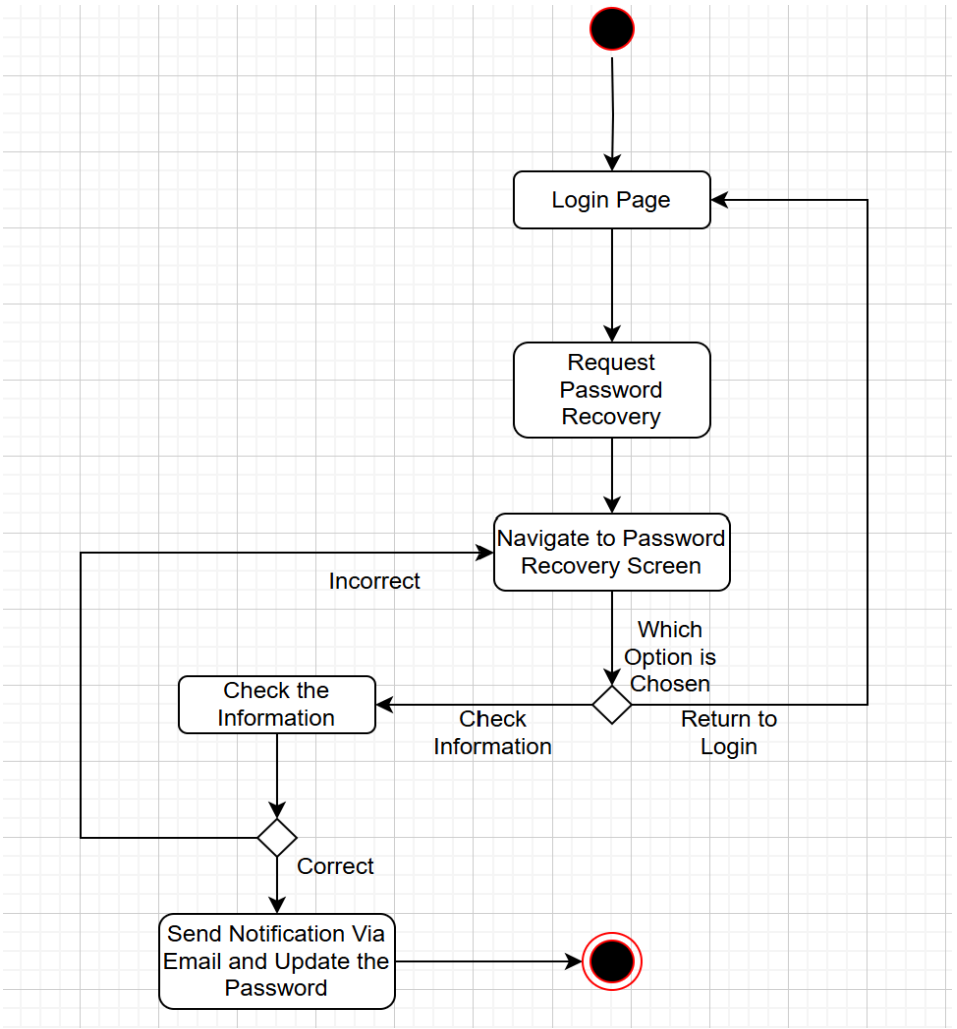


2. ACTIVITY DIAGRAMS

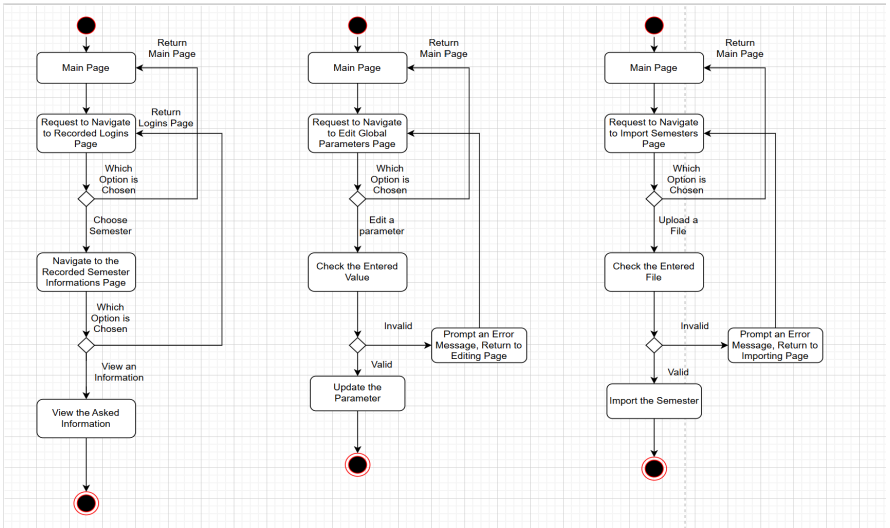
2.1 Login and Logout Activity Diagrams:



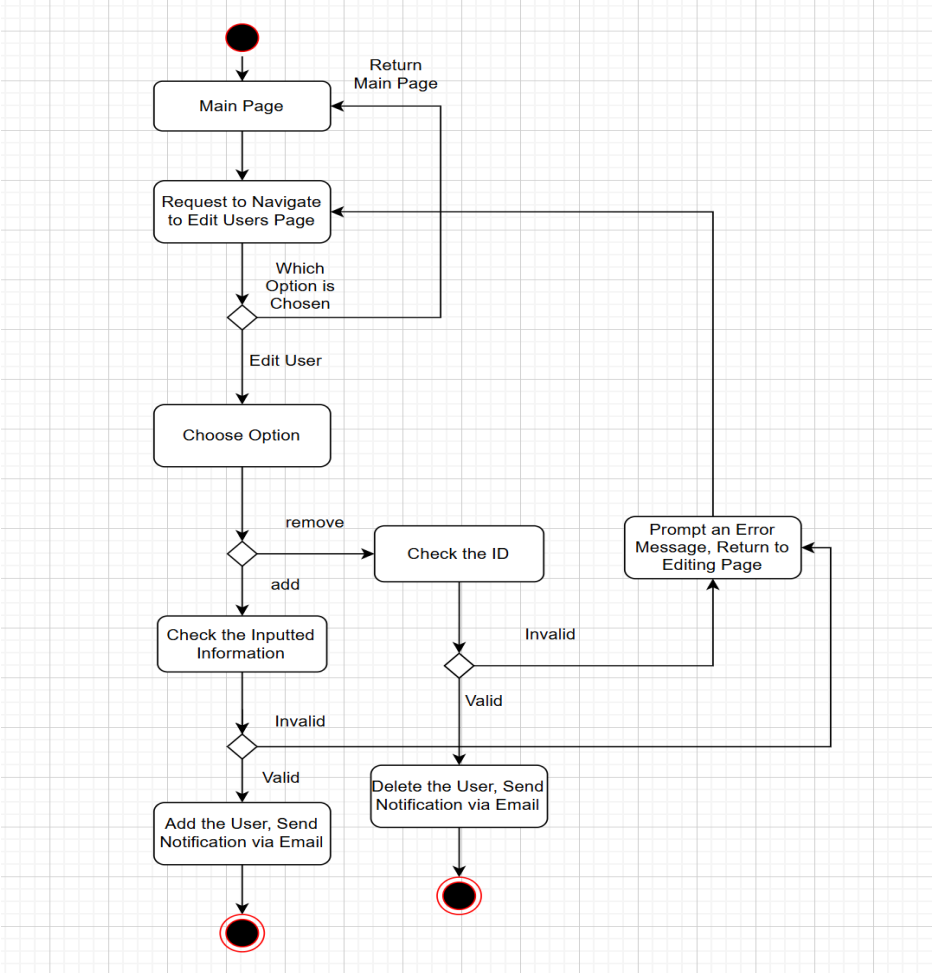
2.2 Recover Password Activity Diagram:



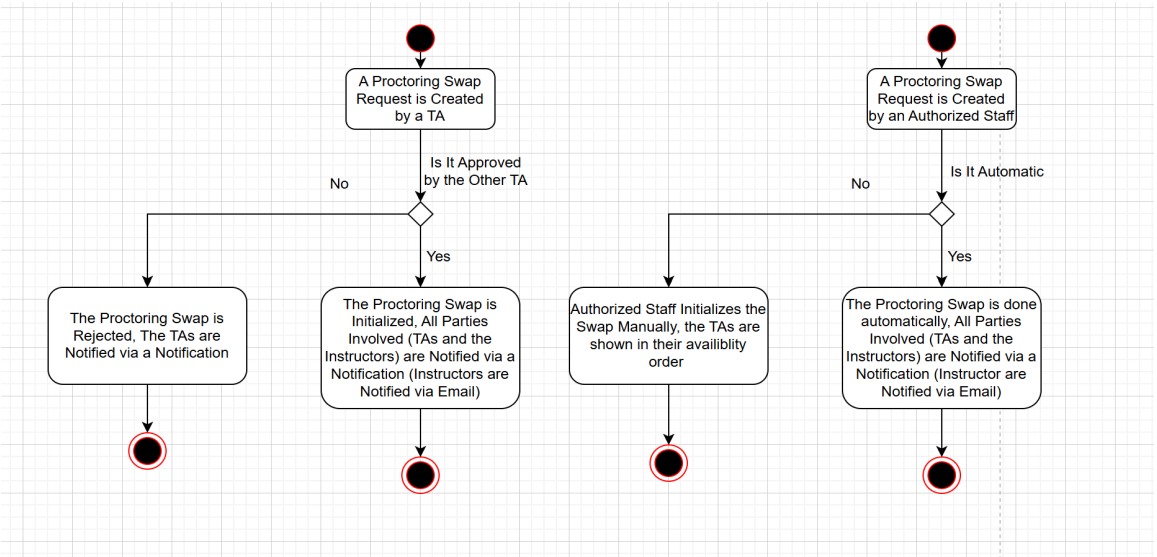
2.3 View Recorded Logins, Edit Global Parameters, and Import Semester Activity Diagrams (for Admin):



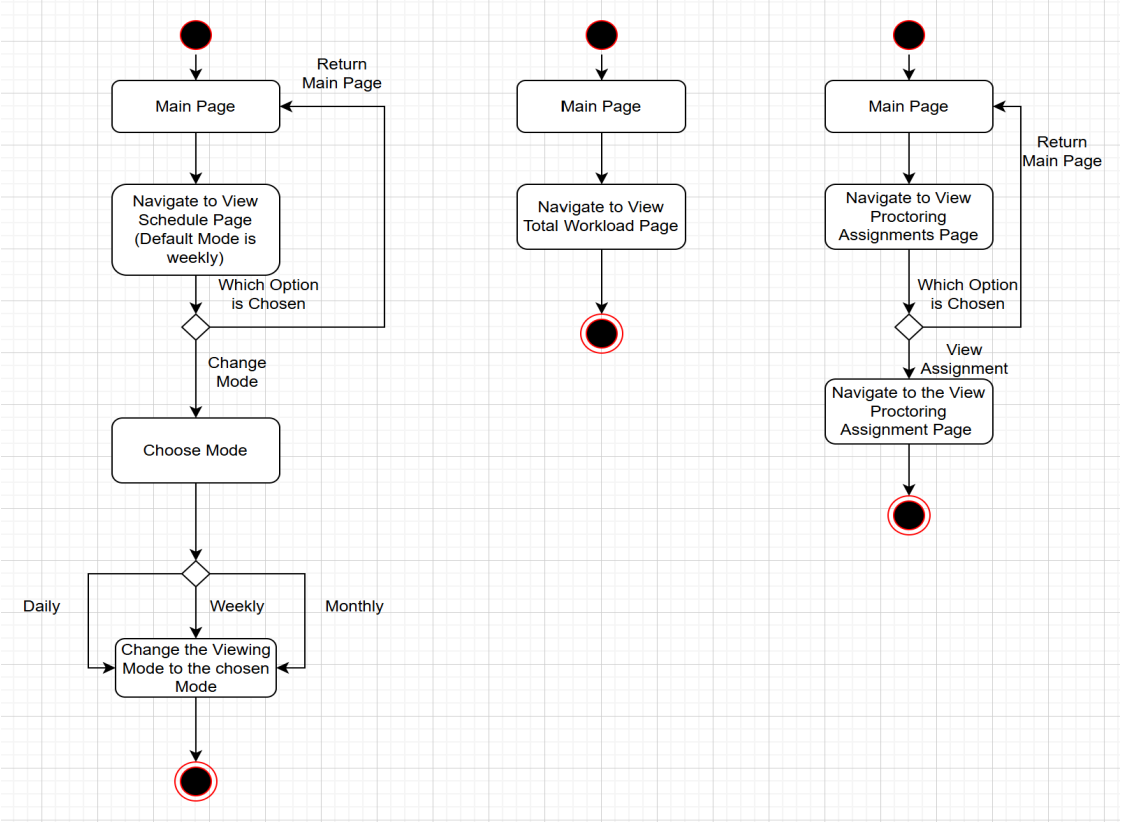
2.4 Edit User Activity Diagram (for Admin):



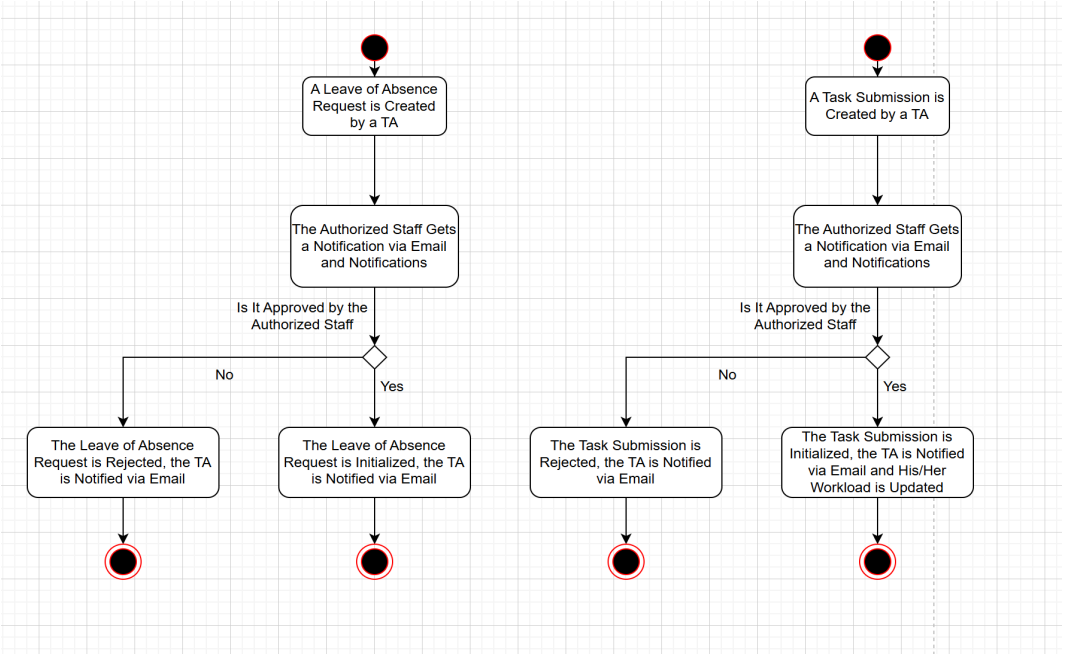
2.5 Proctoring Swap Activity Diagram (initiated by TA or Authorized Staff):



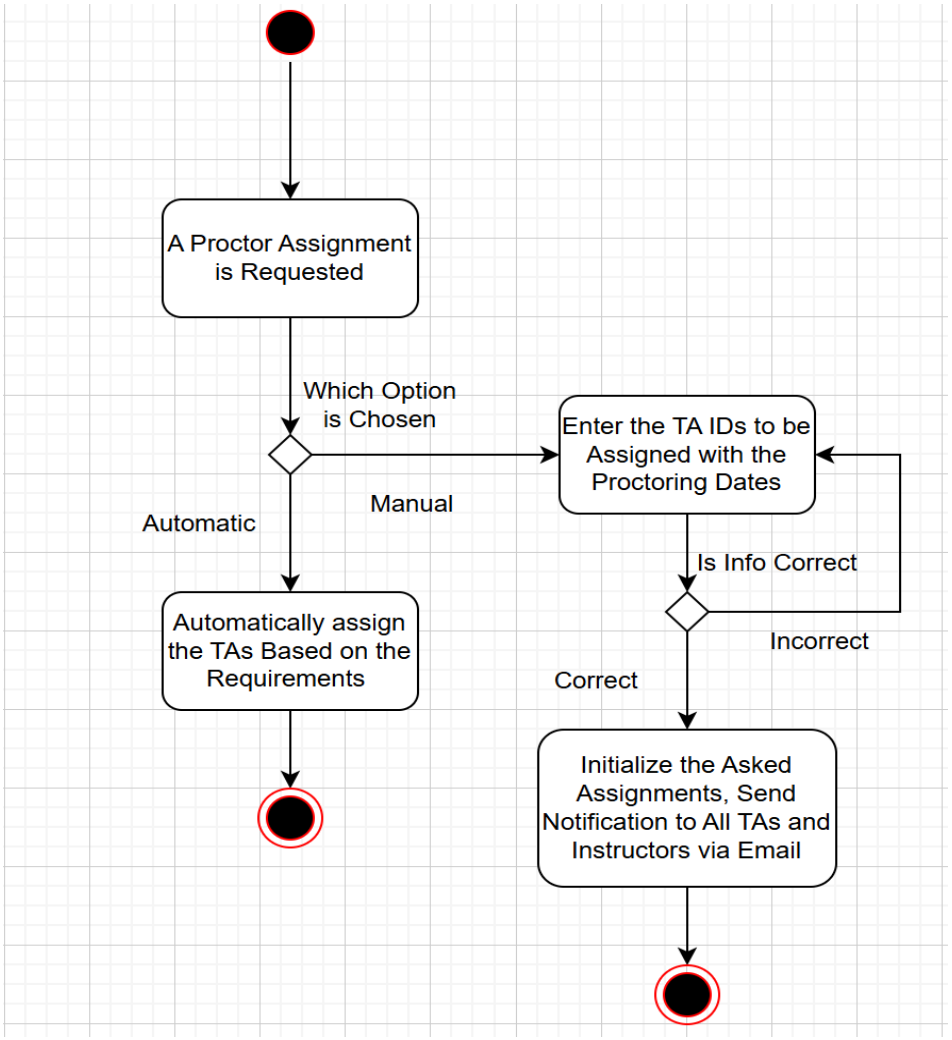
2.6 View Schedule, View Workload, and View Proctoring Assignment Activity Diagrams (for TA):



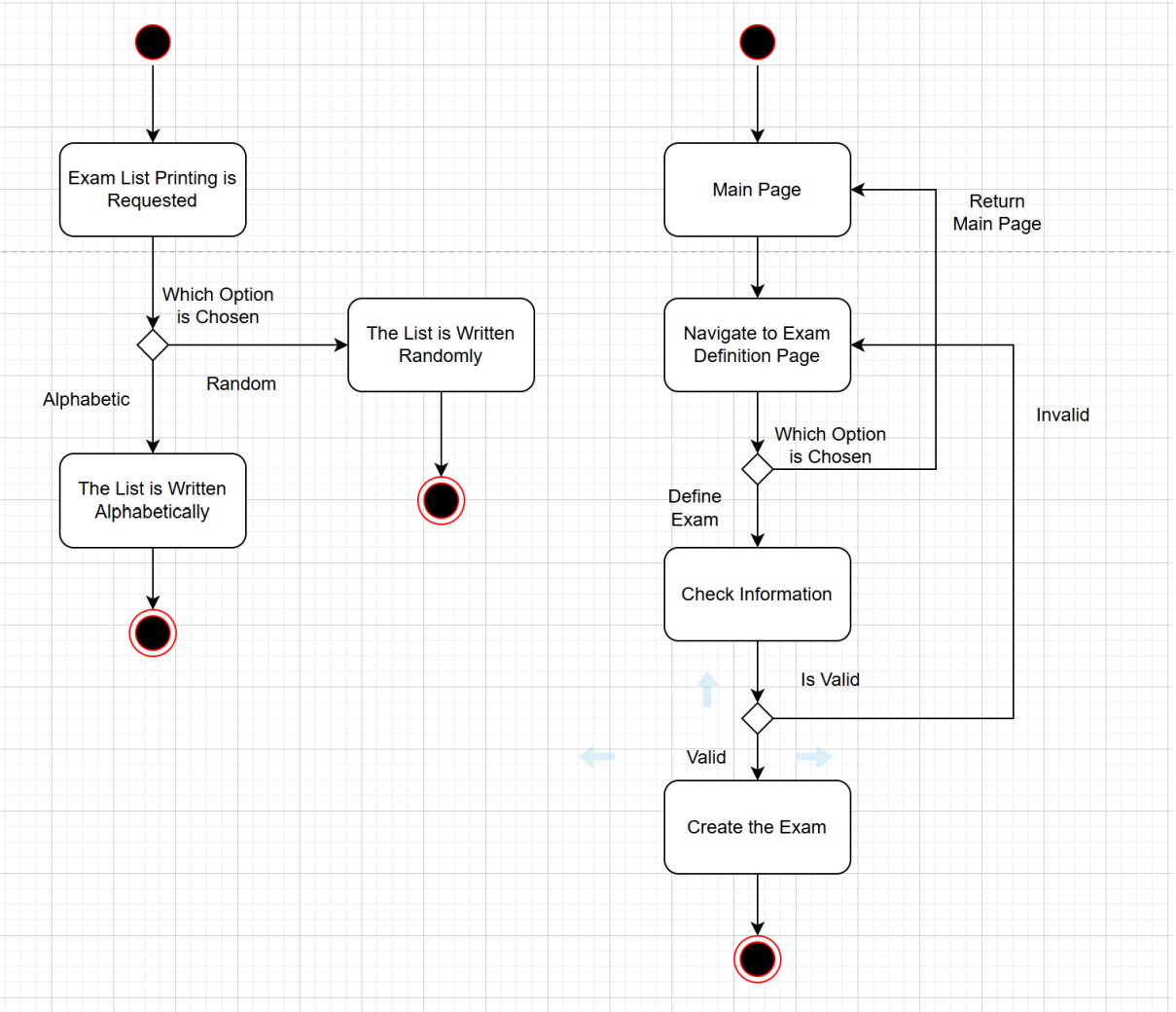
2.7 Leave of Absence and Task Submission Activity Diagrams (for TAs):



2.8 Proctor Assignment Activity Diagram (for Authorized Staff):

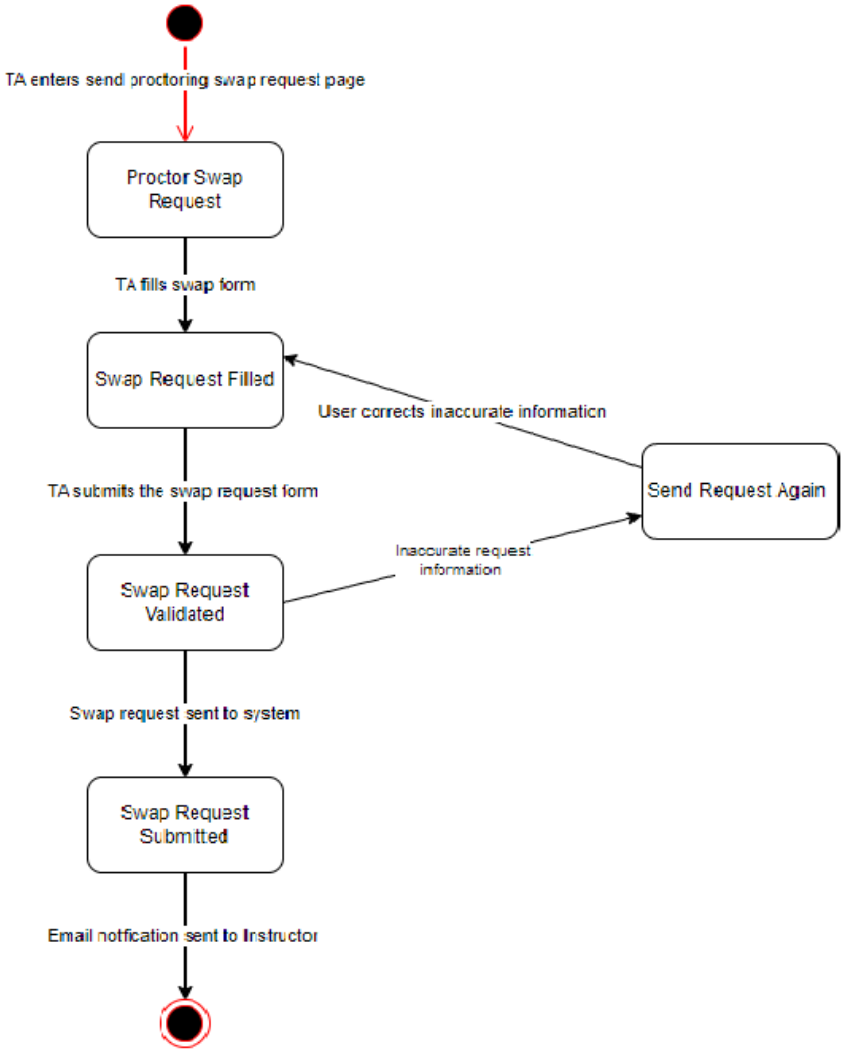


2.9 Exam Definition and Exam List Printing Activity Diagrams (for Authorized Staff):

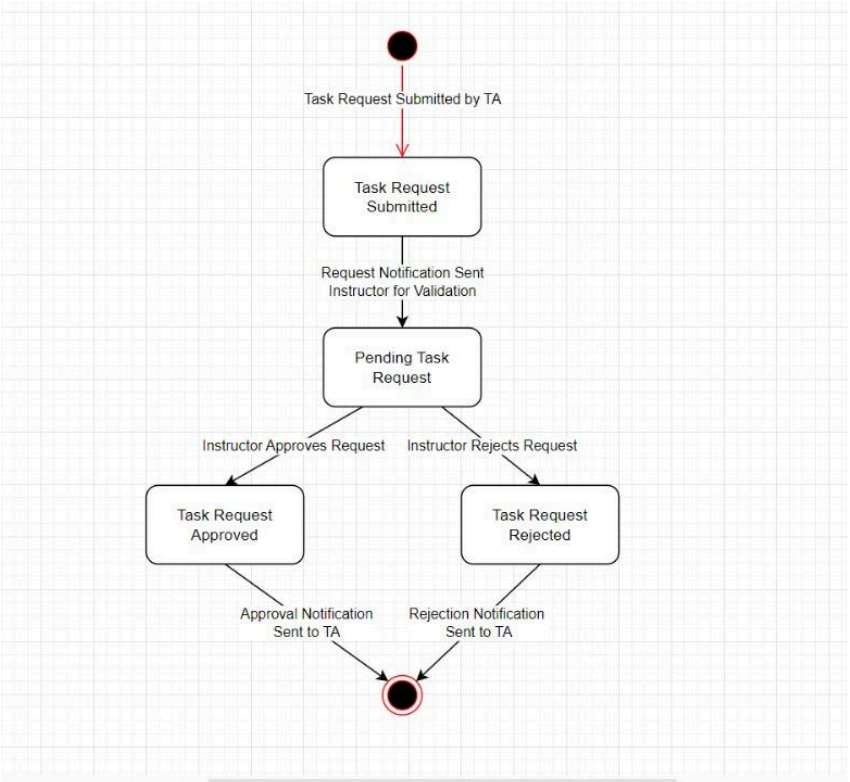


3. STATE DIAGRAM

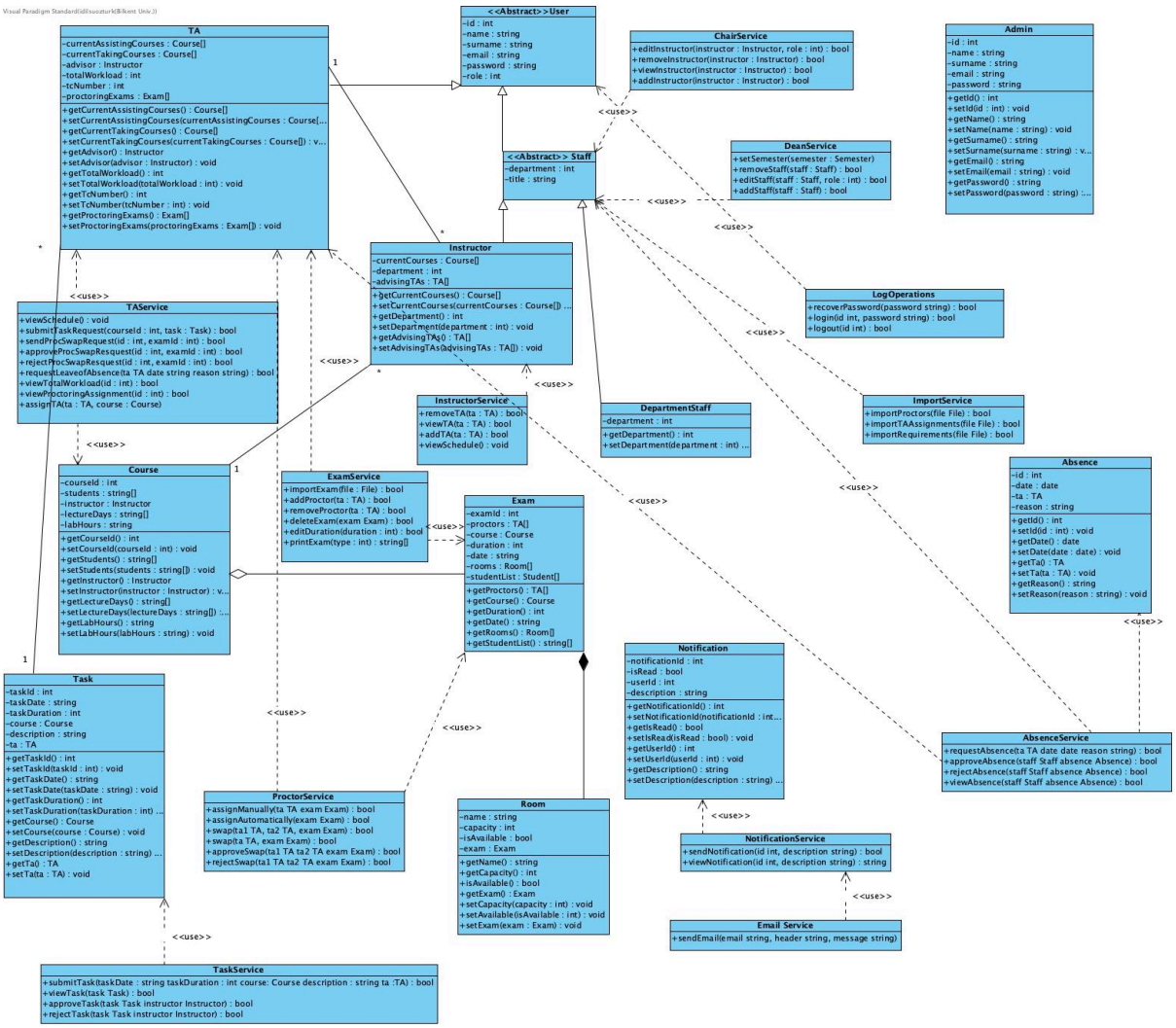
3.1 Send Proctor Swap Request State Diagram:



3.2 Task Request State Diagram:



4. CLASS DIAGRAM



5. NON-FUNCTIONAL REQUIREMENTS

Quality Requirements:

Usability: The system should be quite intuitive and easy to navigate through, thanks to the top bar menu listing all the necessary functions the user might use. This ensures that users (TAs, Instructors, Department Chairs, Department Staff and Dean's Office) can efficiently complete all of their tasks. The interface should be structured in a way that key functionalities, such as task approval, assignment viewing, and scheduling, can be accessed from the top bar.

● The whole system should be reliant on both the website and its data centre, which is basically built around the MySQL database and its background algorithms, where all the information is kept and calculated. ● Once entered into the website, a dashboard should be available for each user regardless of their role, displaying the necessary functionalities and buttons instantly once the login procedure is complete. The data the user is authorized to access should be retrieved in less than a second.

● A search functionality should allow users to quickly locate tasks, schedules, and personnel information. ● Notifications should be implemented in a way that makes them aware of the pending approvals, task rejections, and schedule updates in real-time, with a delay of no less than 2-3 seconds, both in the website and email form.

Reliability: System stability is crucial to avoid problematic timings in the website's performance. This means if the server fails, the only way to retrieve information is through the admin page.

● There should be a specific Admin role to ensure the proper history of changes and flow of work. ● The system should handle concurrent requests efficiently to prevent delays in critical operations, such as TA duty approvals or proctoring assignments. The system should handle at least 500 users at the same time, which is realistic given the staff size of the Engineering Faculty.

Database Usability: The database should be structured to provide easy access to important information without unnecessary complexity for all its users. This means optimizing the algorithms for proctor assignment, task sorting and information retrieval most efficiently. Maintaining the database in such a way that the repetition of data is avoided should provide that. A more compact database will increase the desired performance.

● Role-based access should be implemented to ensure that each user can only view or edit relevant data, maintaining security while promoting efficiency.

Constraints or Pseudo Requirements:

Mobility of Implementation: Each department operates differently in terms of handling TA responsibilities, proctoring assignments, and workflow approvals. The system must be flexible enough to accommodate these variations without requiring extensive reconfiguration.

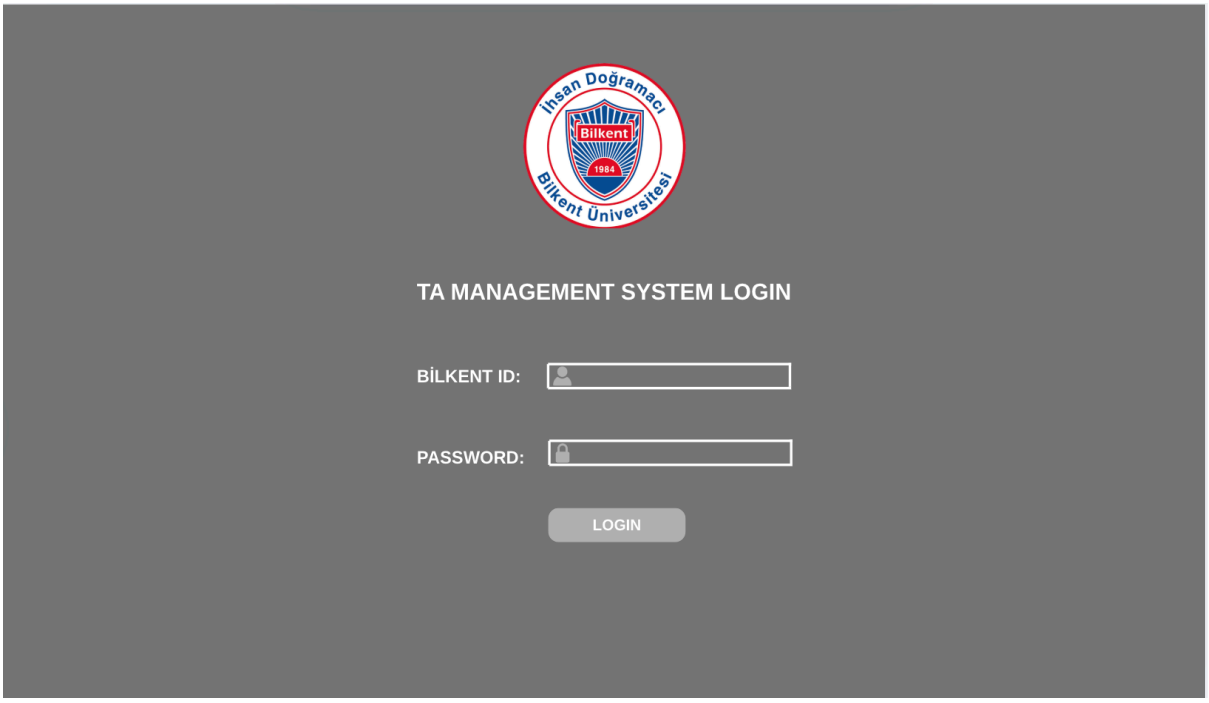
● Some departments may require automated proctoring assignment mechanisms, while others rely on manual selections by department staff or instructors. ● The system should allow departments to the most efficient way they prefer ●

Security: Given the sensitivity of academic records and personnel data, there needs to be clear definitions of the information each role can see on their screens.

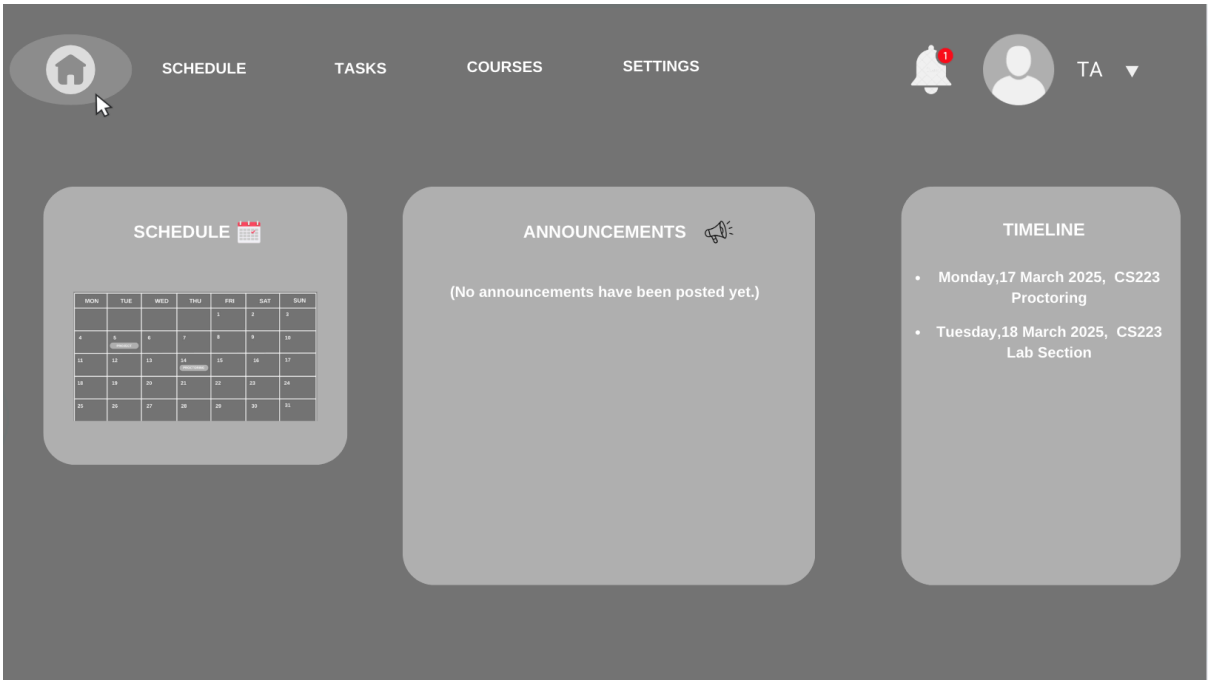
● All user actions, such as task approvals, rejections, and leave request modifications, should be logged to maintain accountability. ● Basic data encryption should be applied both at rest and in transit to safeguard user information against unauthorized access.

6.MOCK UP

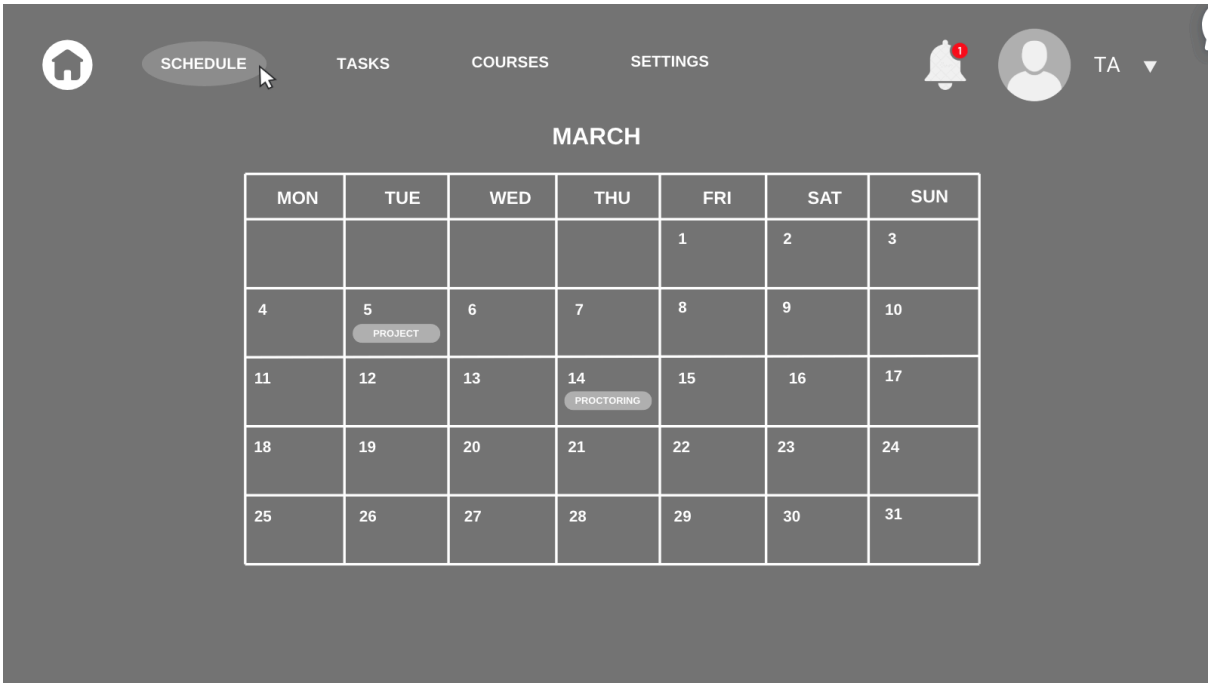
6.1 Login Page



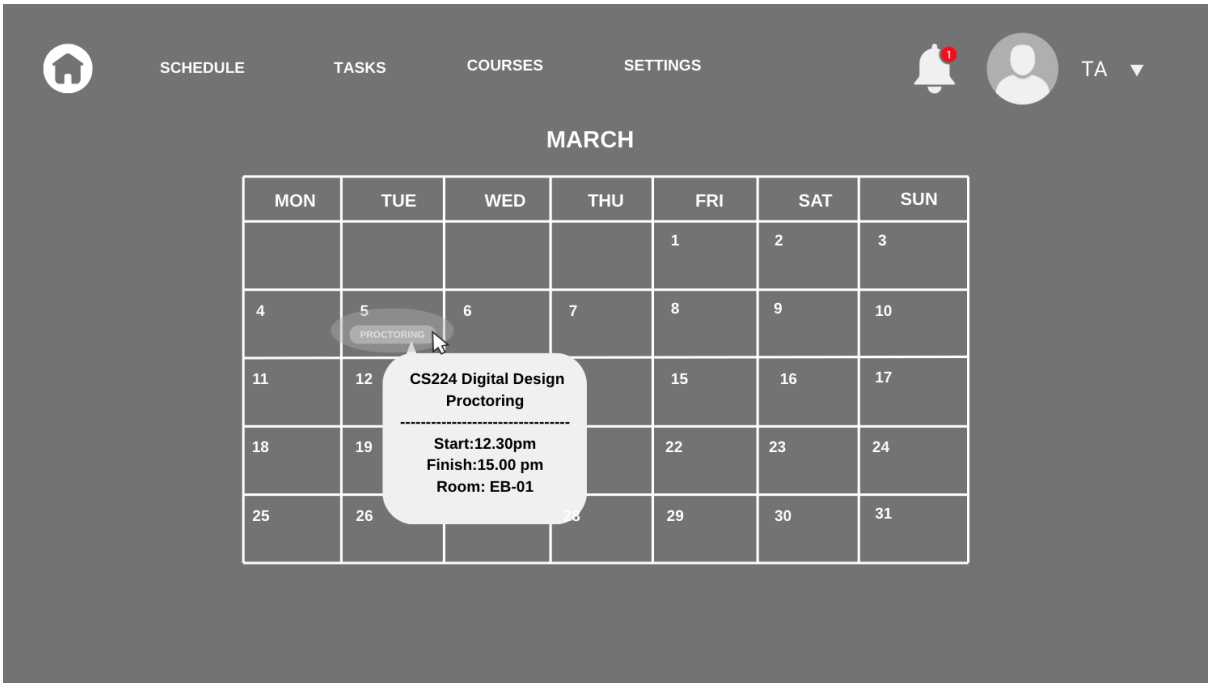
6.2 Home Page



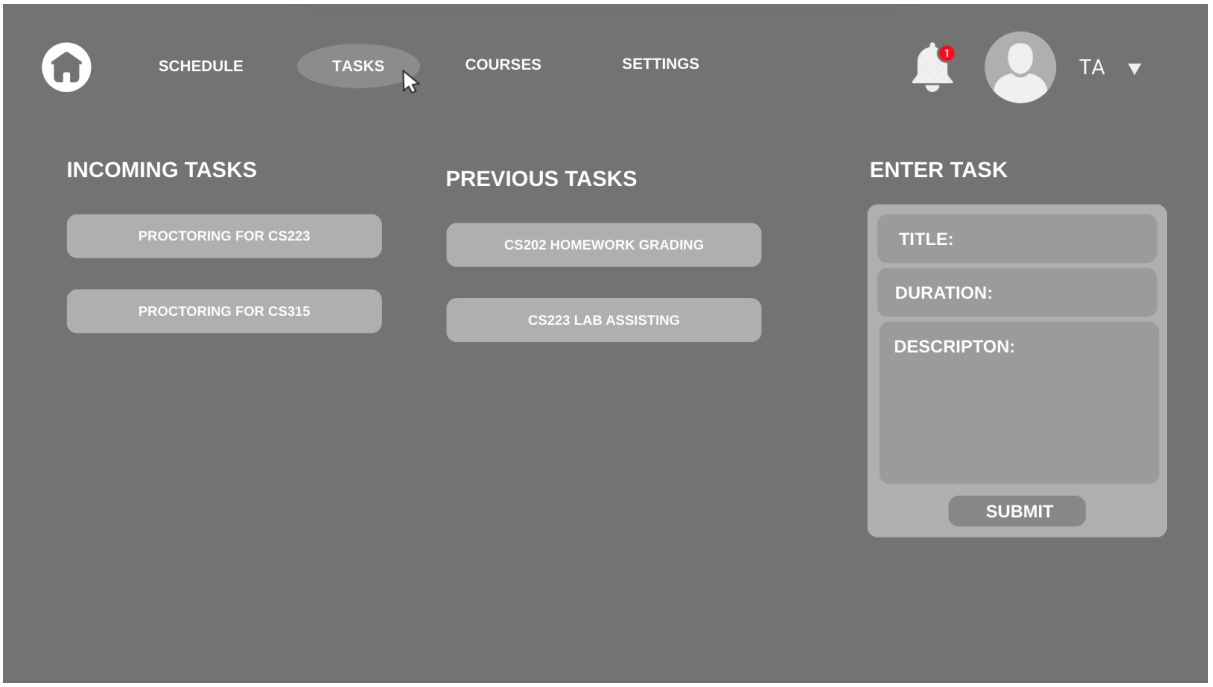
6.3 Schedule Page



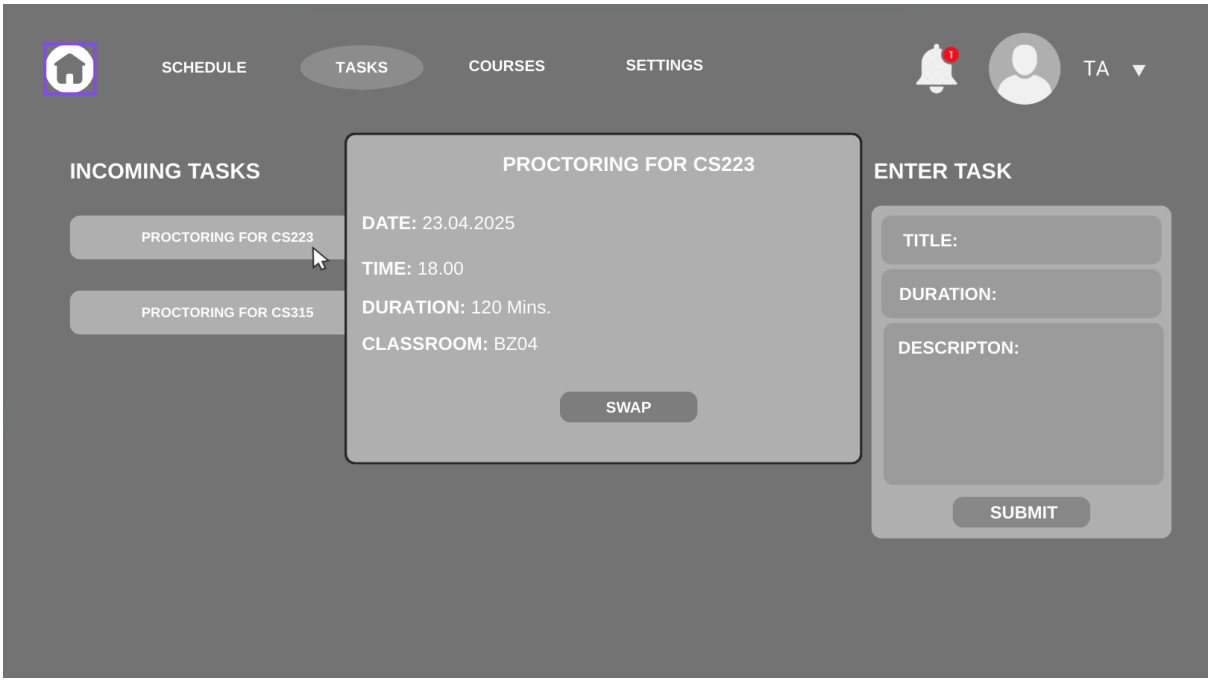
6.4 Schedule Task Information View



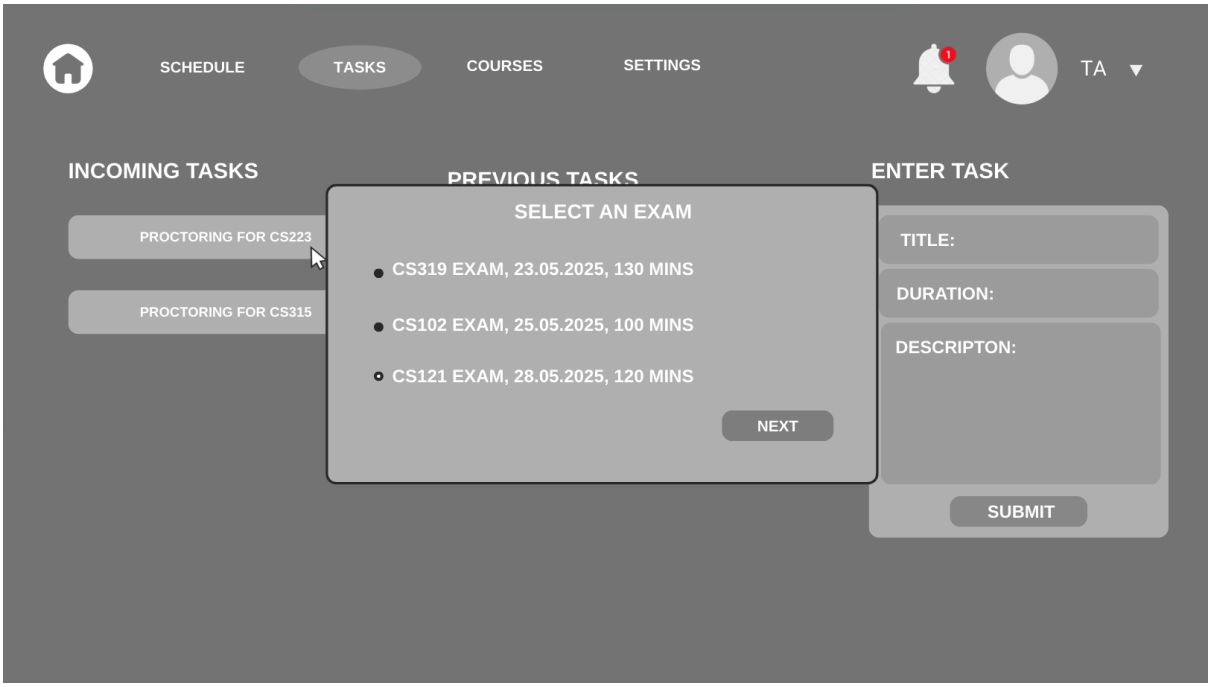
6.5 All Tasks View



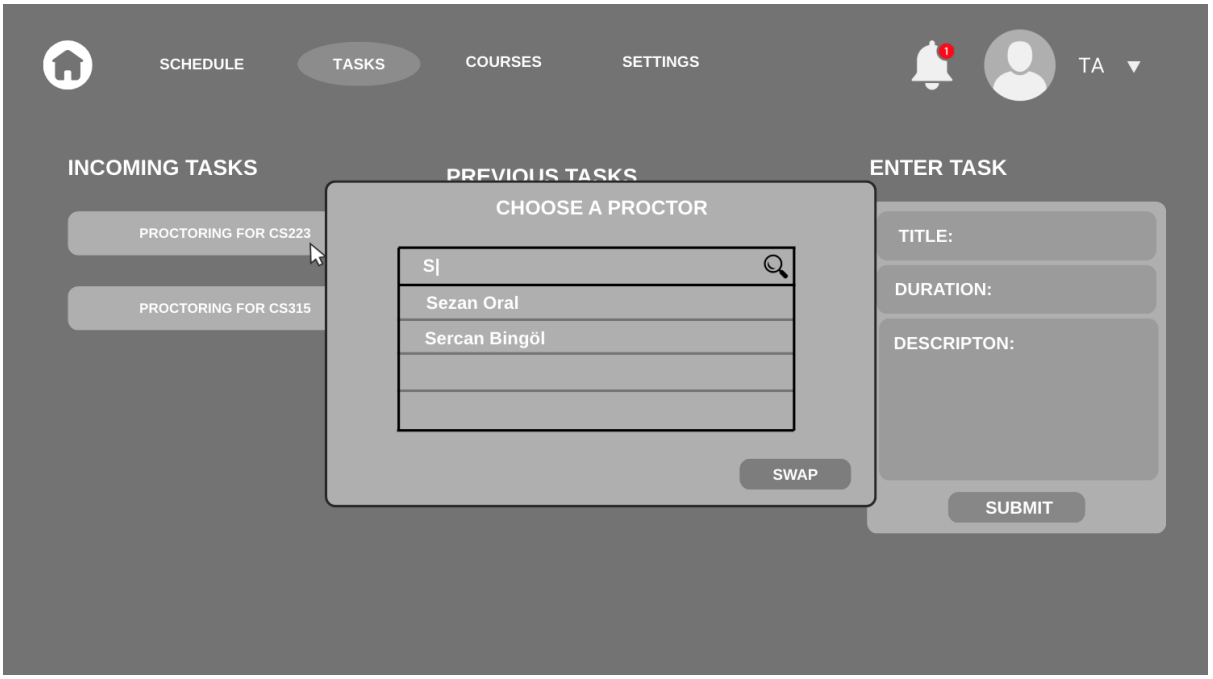
6.6 Proctoring Information Page



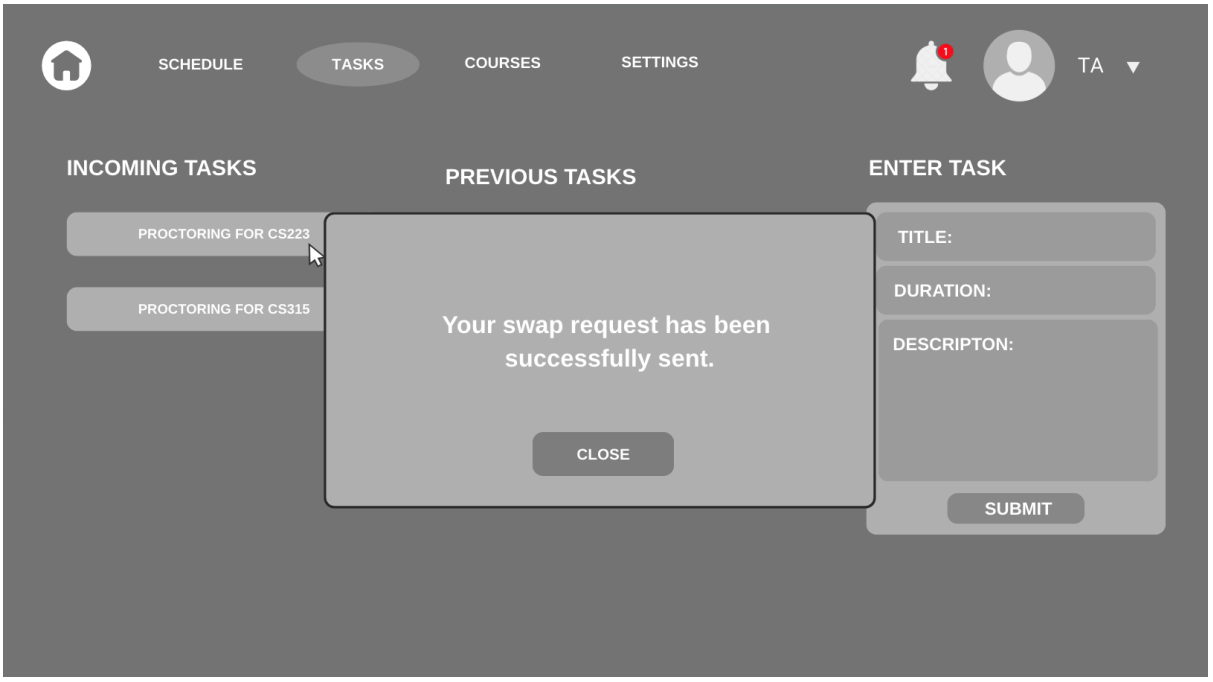
6.7 Swap Proctoring Request for Specific Exam View



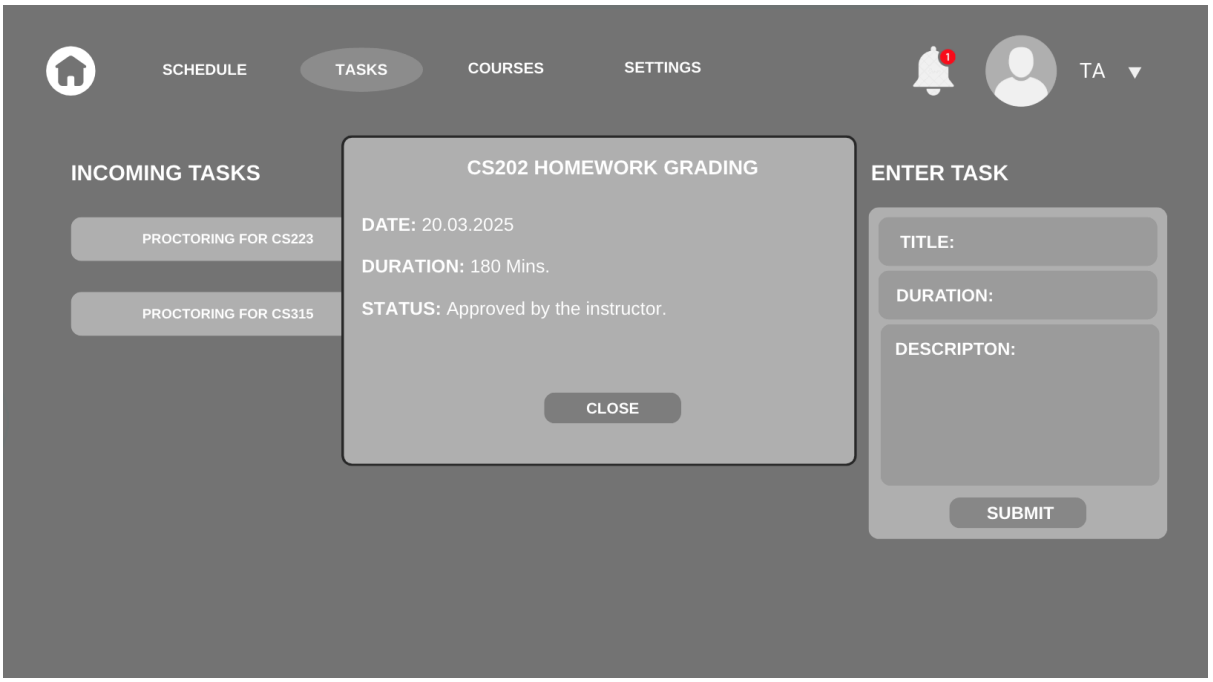
6.8 Select Swaping TA View



6.9 Completed Swap Request View

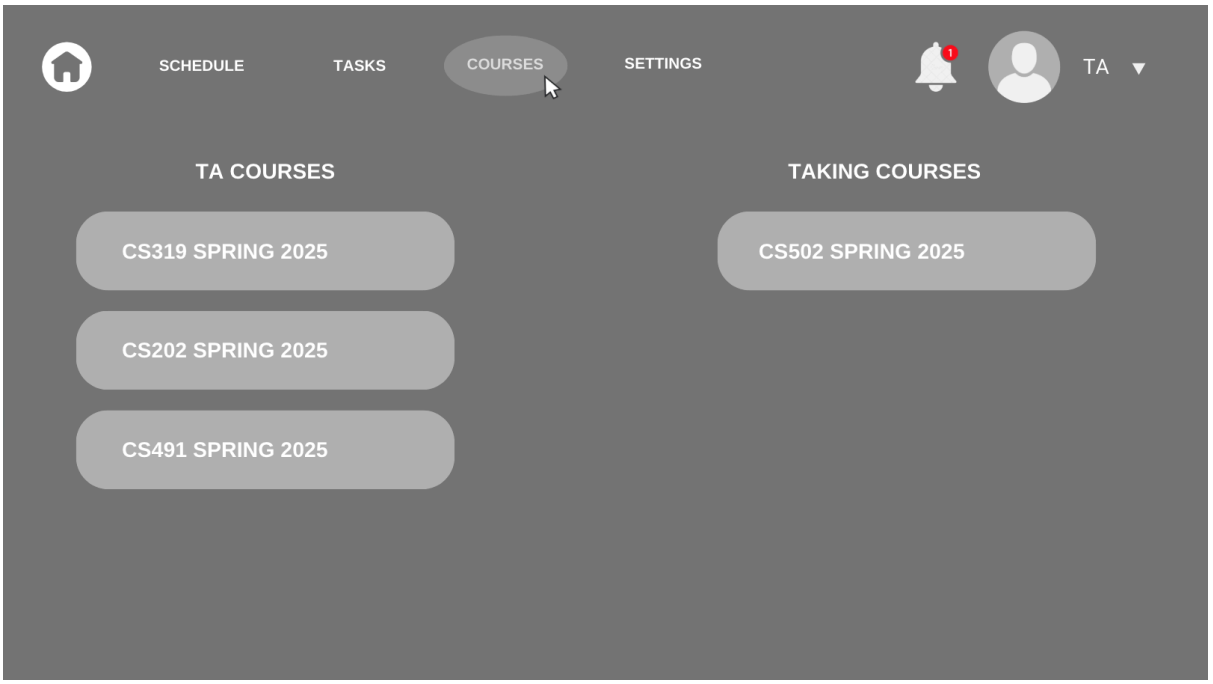


6.10 Task Grading Approval

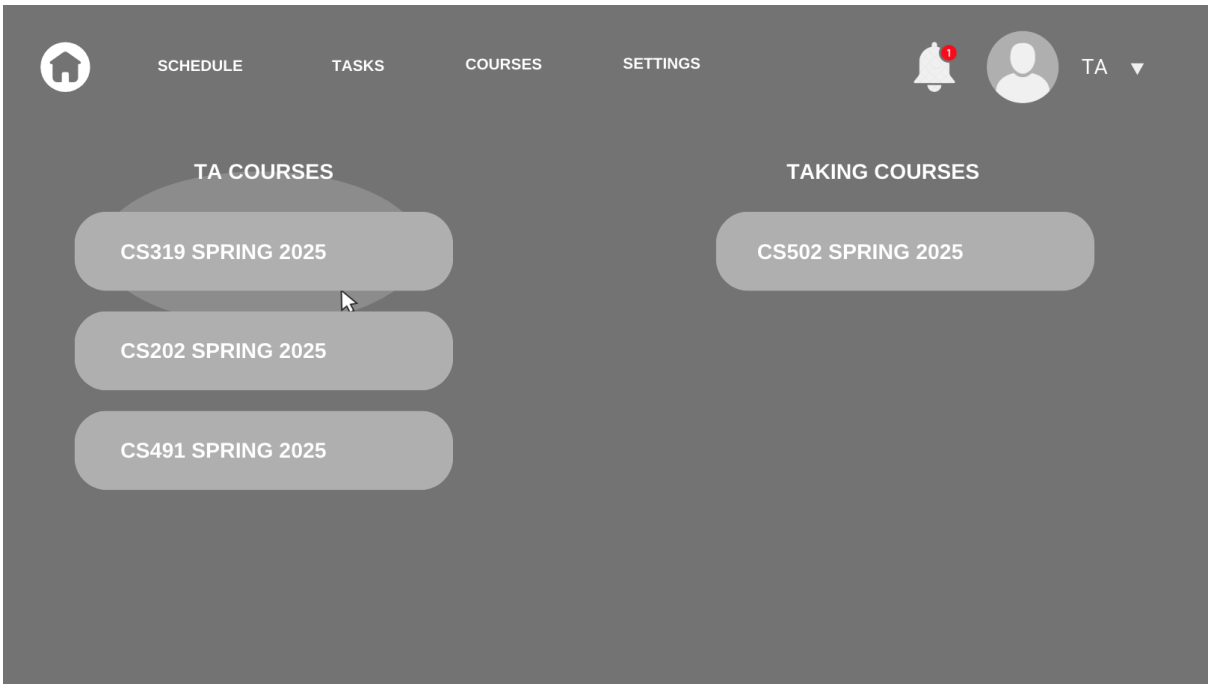


6.11 Task Editing Page

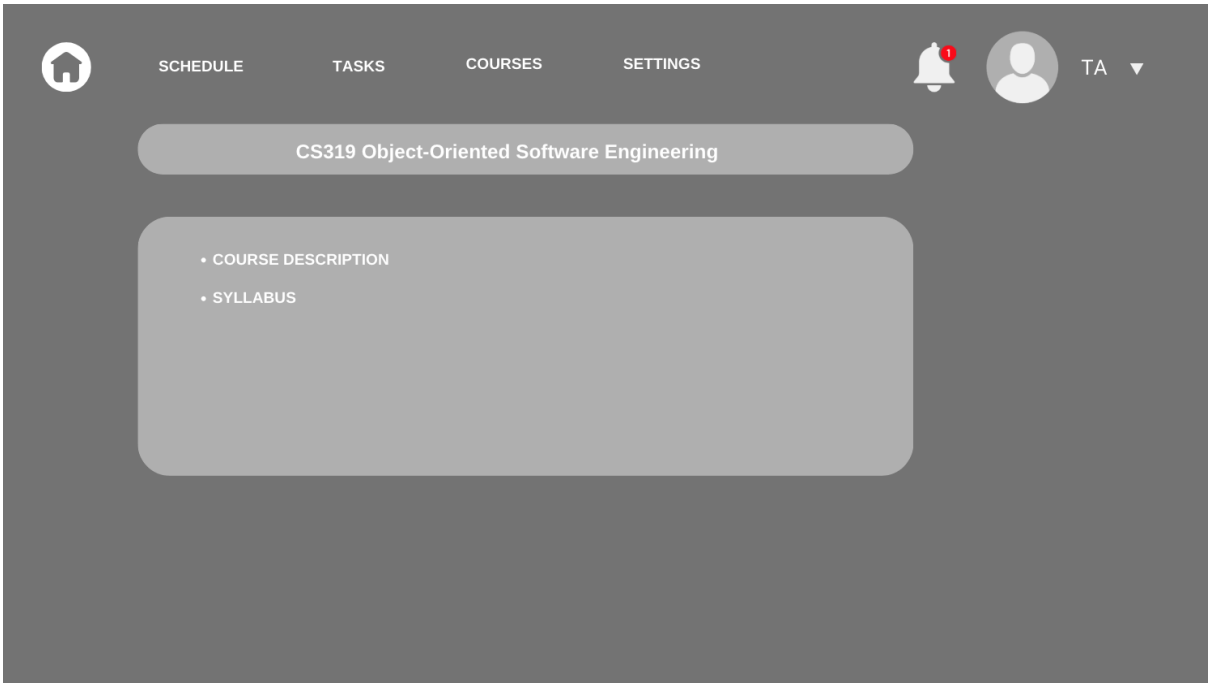
6.12 All Courses View



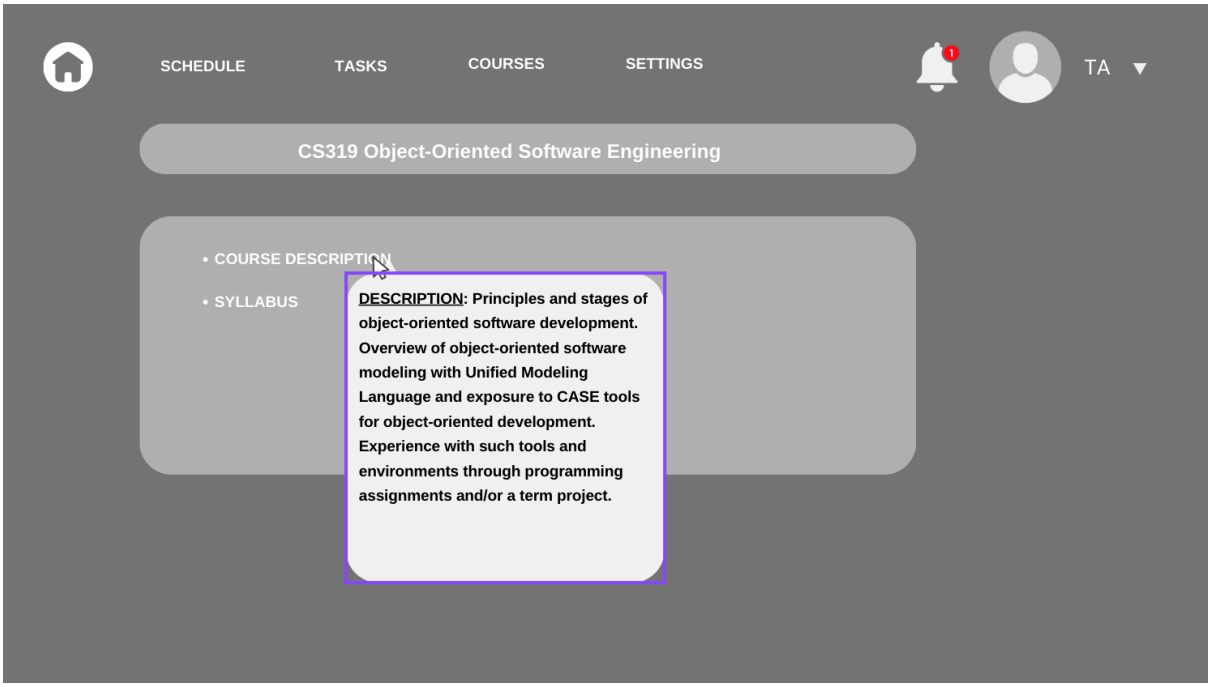
6.13 TA Courses View



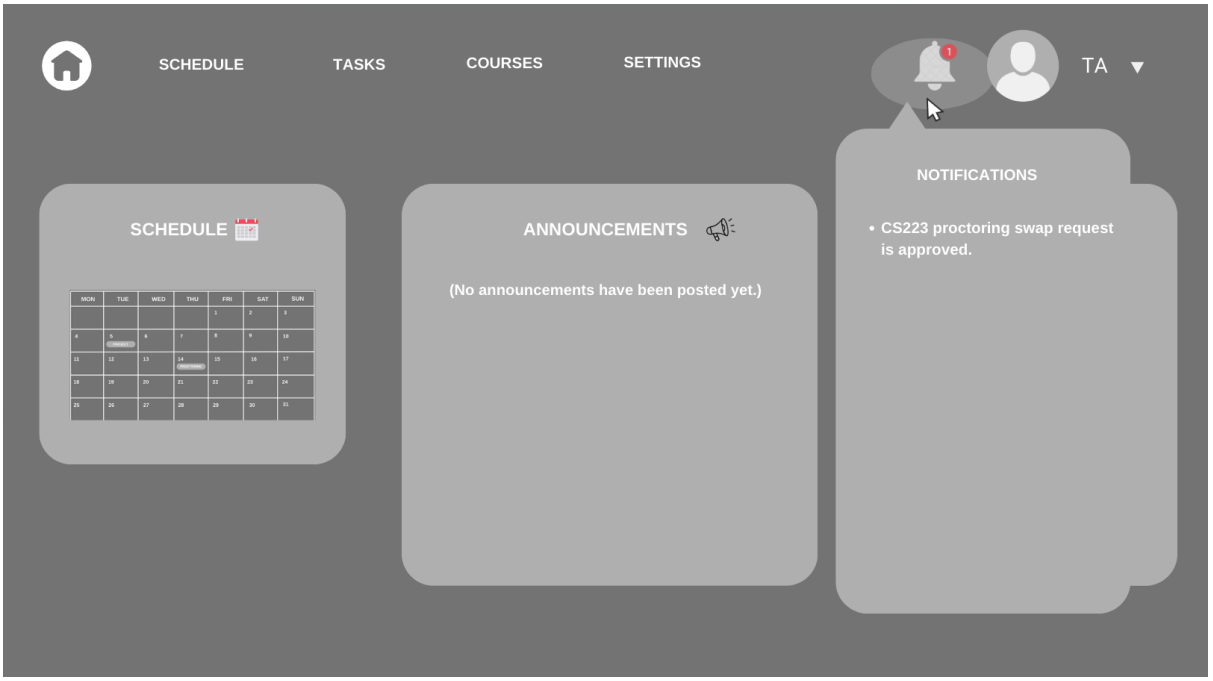
6.14 TA Course Information Page



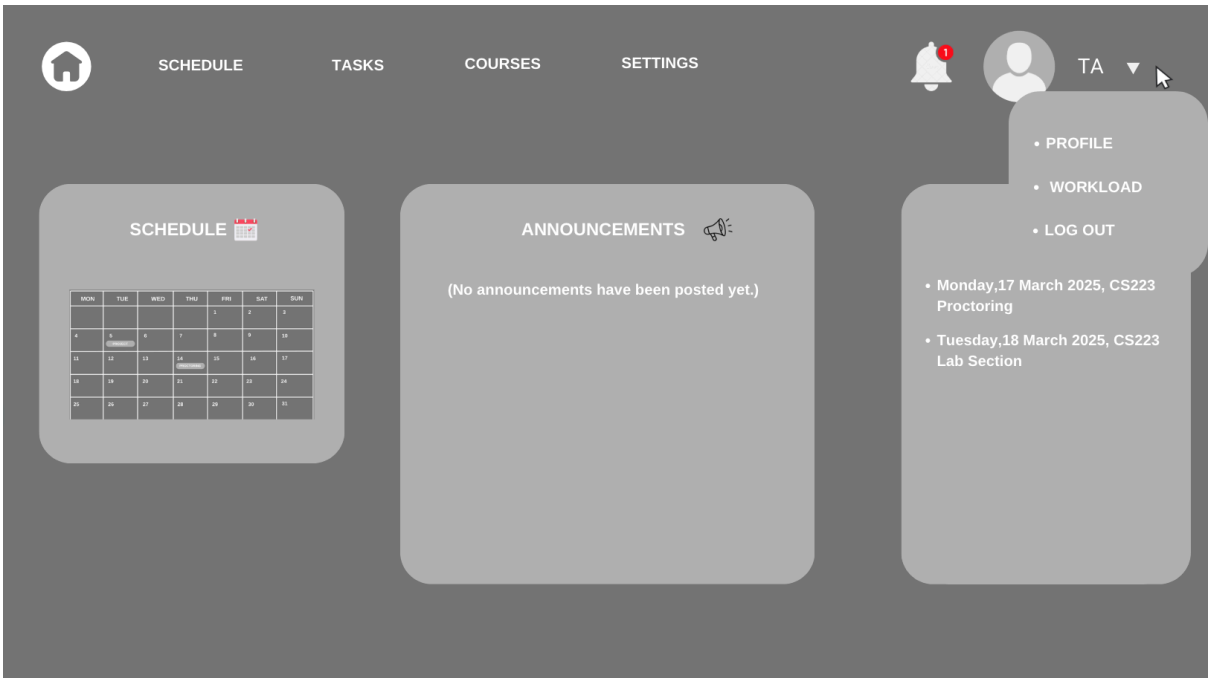
6.15 TA Course Description Page



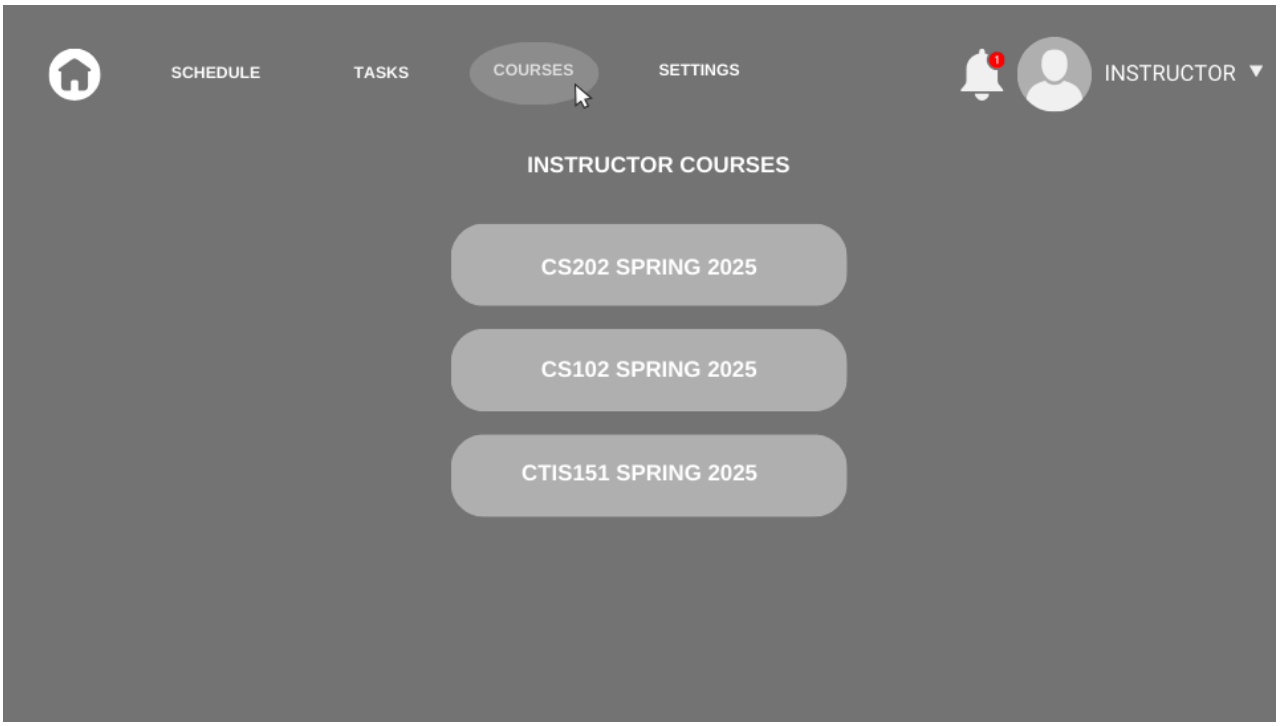
6.16 TA Notifications View



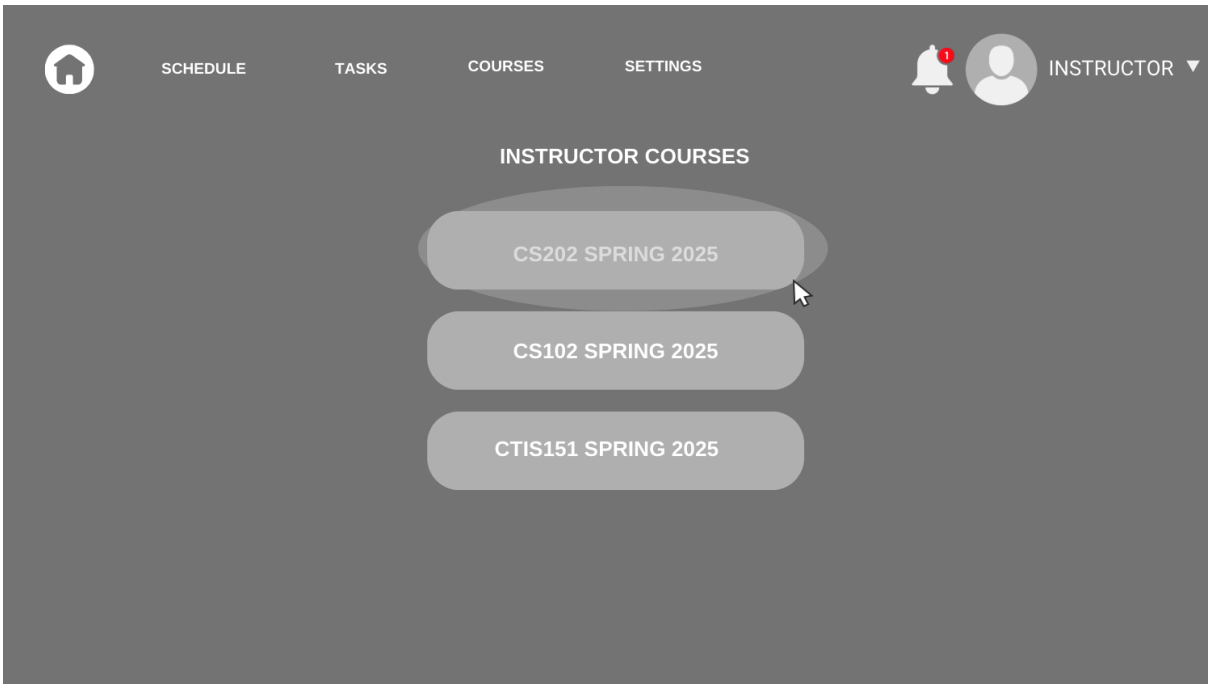
6.17 Profile Information Box View



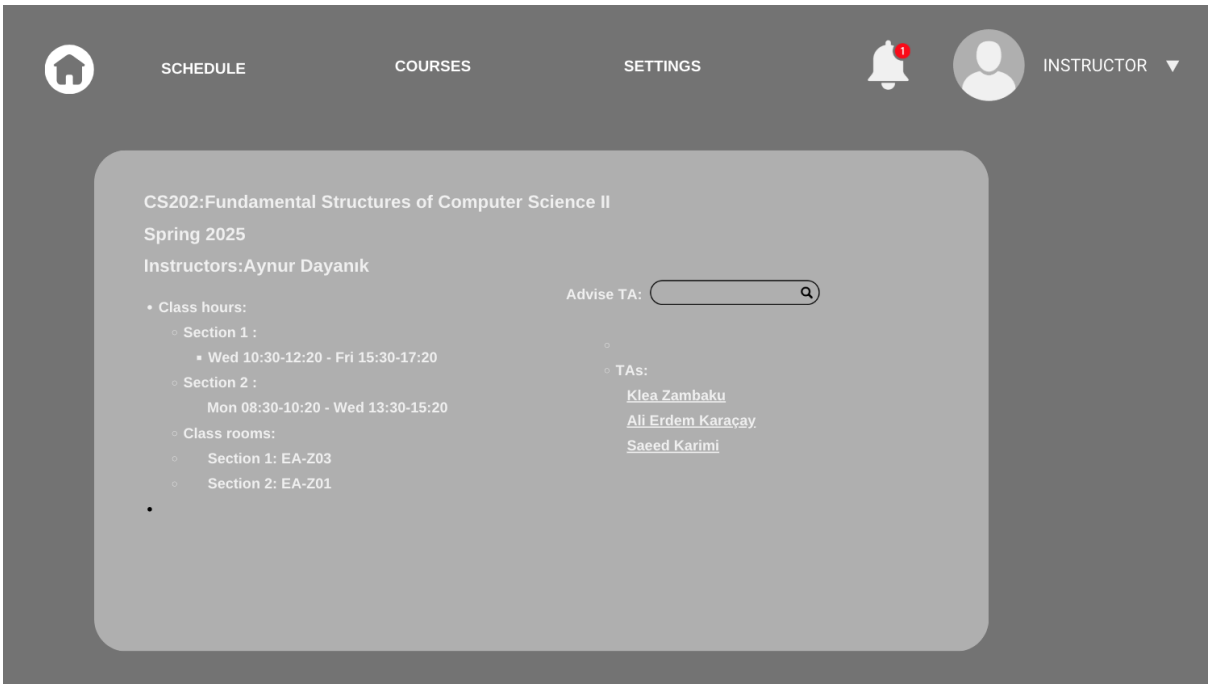
6.18 Instructor's Courses Page



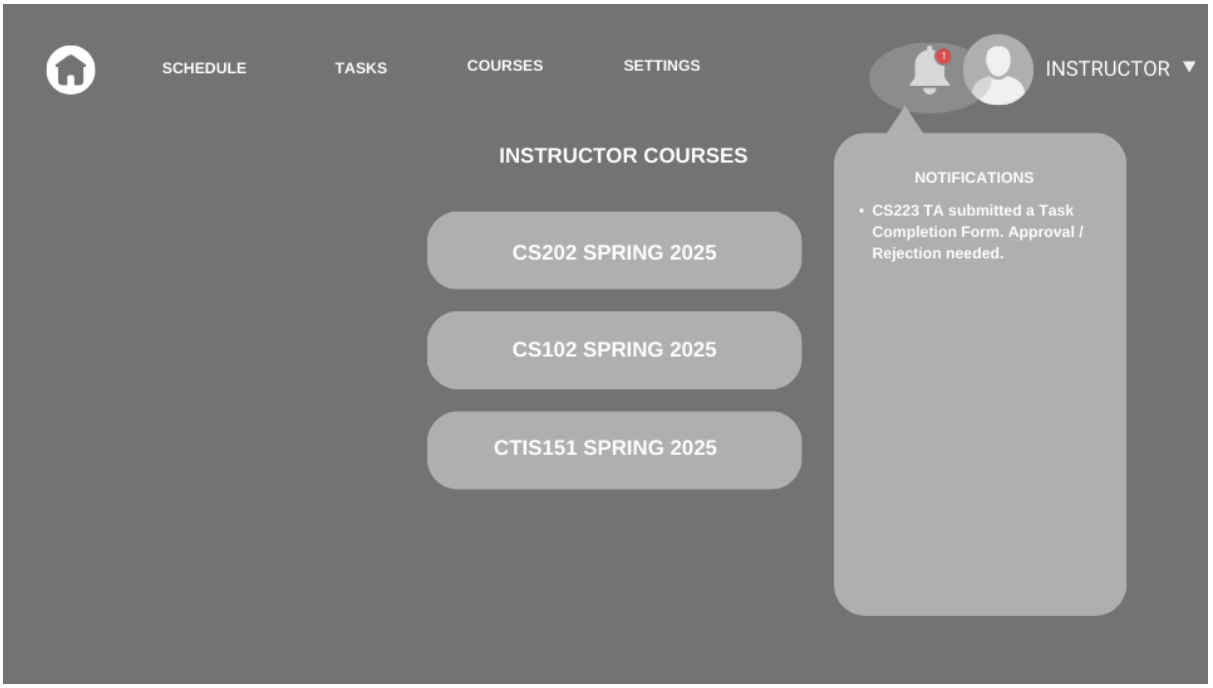
6.19 Instructor’s Courses View



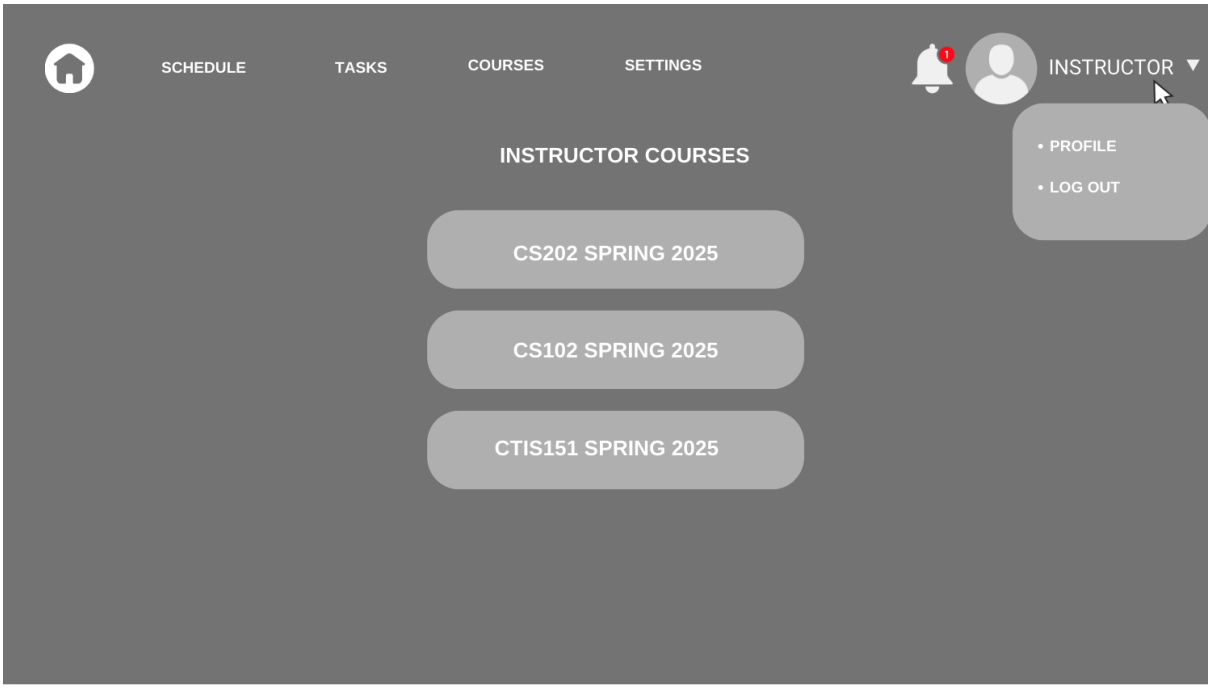
6.20 Instructor’s Course Detailed Page



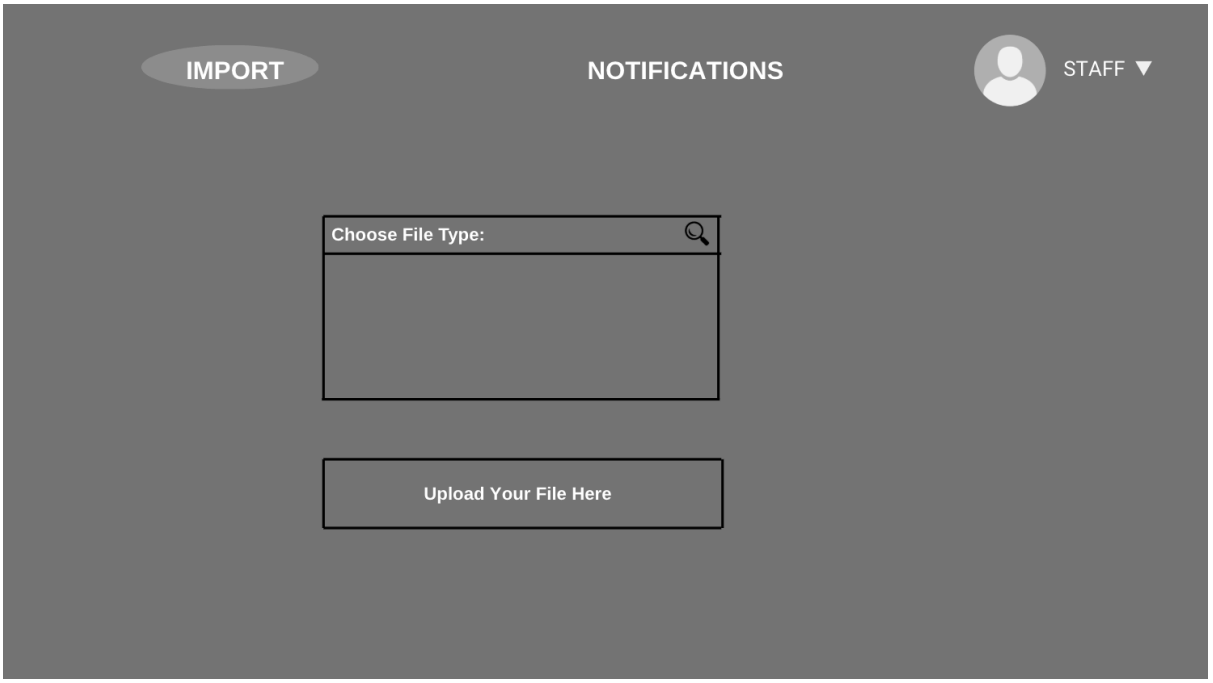
6.21 Instructor’s Notification View



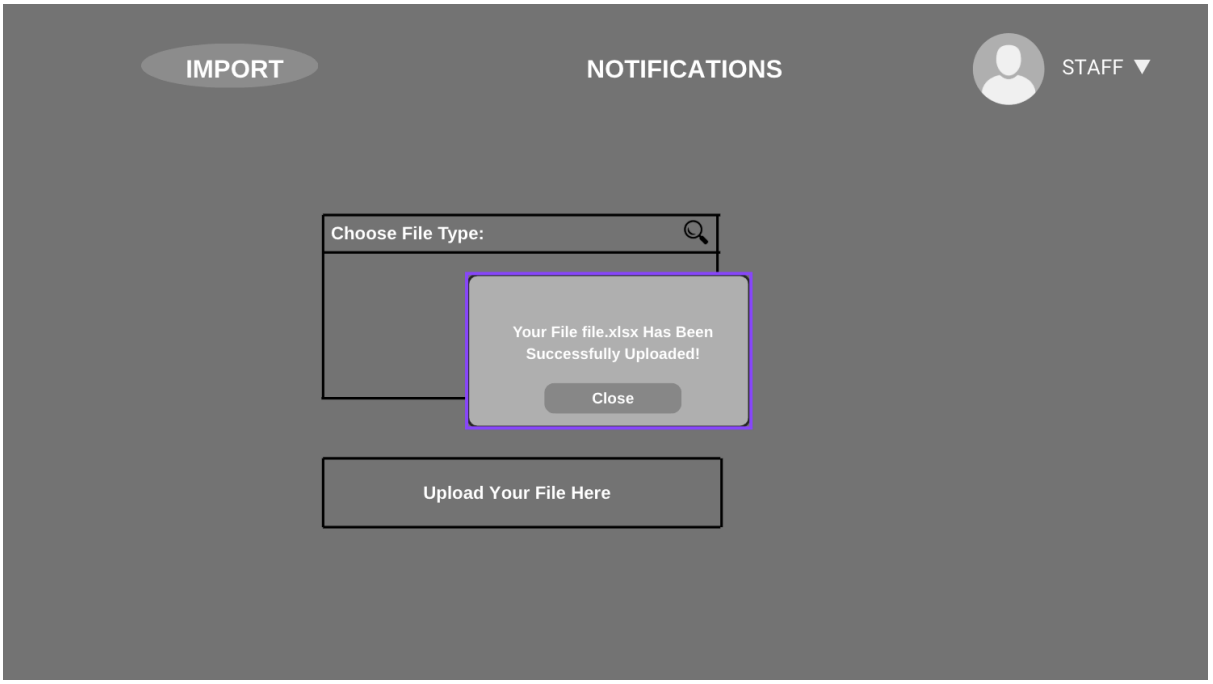
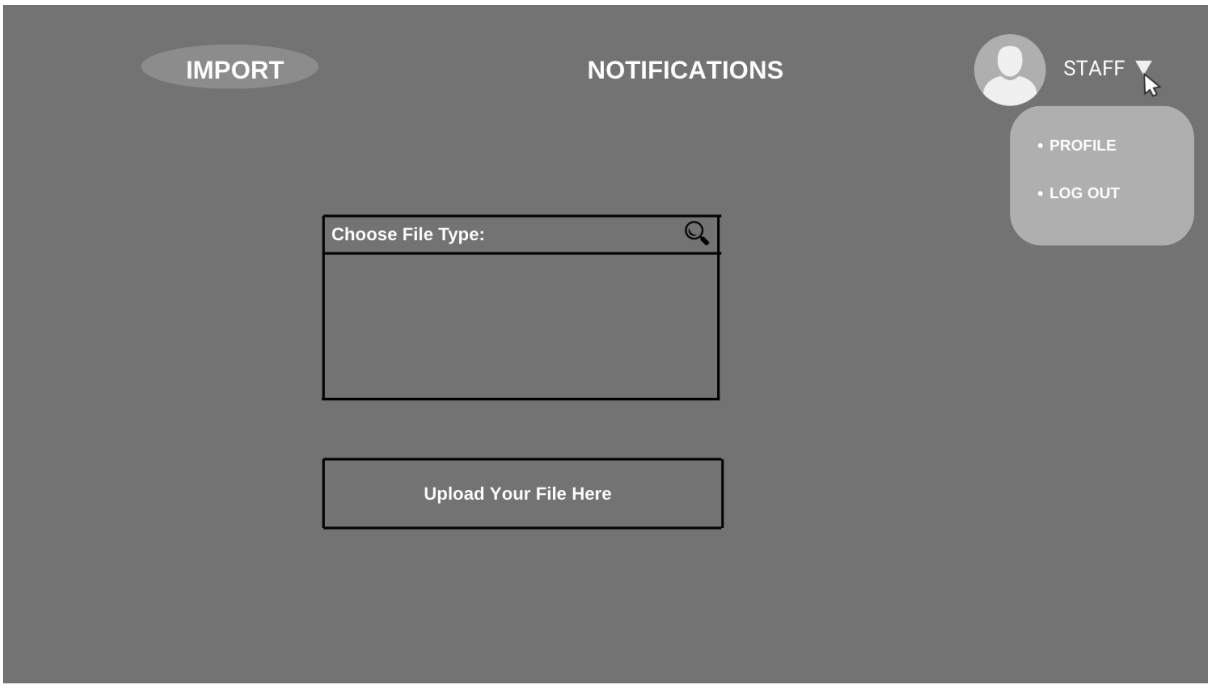
6.22 Instructor Profile Information Box View



6.23 Staff’s Import Page View



6.24 Staff’s Import Document Page



6.25 Profile Information Box View