Department of Computer Engineering, Bilkent University
CS319 Object Oriented Software Engineering
Group 11
Use Case & Tech Stack Report - D1
Section 1 - Eray Tüzün
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Contents

Tech Stack

This section explains the technologies used in our project, which consists of two main parts: Backend and Frontend.

Backend

The backend will be developed using Python. We will also use Django as the chosen framework since Django simplifies web application development by handling database interactions, authentication, and API creation. It follows the MTV (Model-Template-View) pattern and this will help in keeping the structure organized for the TA Management System.

For data storage, we will use MySQL, a relational database system that will maintain records related to TA assignments, proctoring schedules, course details, and system logs.

To enable communication between the frontend and backend, we will implement RESTful APIs and this will allow data exchange through HTTP requests. These APIs will be documented and tested using Swagger and Postman.

Frontend

The frontend will be built using JavaScript, with the React library. React enables the development of dynamic and interactive interfaces through reusable components which are compatible with our project.

The UI will be designed using HTML and CSS, in order to obtain a clean and structured layout. Styling will be done with CSS to maintain a visually appealing and user-friendly experience.

The frontend will interact with the backend through API requests, allowing users to access their relevant data. The system will have different views for TAs, faculty, department staff, and administrators, ensuring that each user only sees the functionalities they need.

Use Cases

Actor Explanations

TA

TA stands for the Teaching Assistants who are hired to assist teachers with various academic activities. TAs are required to log in to see their workload, mark their completed work, and look at duties assigned. They are able to look at the information they are authorized to view and choose an action from the home page like other actors. TAs can input duty logs for instructor signatures, apply for leave of absence, and be assigned proctoring duties. They can also trade proctoring duties with other TAs if needed. TAs are to update their workload in the system and maintain fairness in duty distribution.

Instructor

Instructor actor describes the instructors of the system as they have to log in the system to the instructor page. They can view information and they can choose an action on the main page. Their most critical role in the system is that they can manipulate the duties that will be assigned to the TAs after creation. Duties can be created by the instructor, canceled or assigned. In addition, instructors can also evaluate the duty logs that are submitted by the TAs by either accepting or rejecting the logs. Finally instructors also can evaluate the leave of absence request by the TAs.

Admin

Admin describes the user that administers the system. Admins have to log in the system to administer the system. Admins can see the information they are allowed to see in the home page and they can choose an action they are allowed to do. Admins have permission to create new users, delete users and edit the existing users. They can also monitor the logs so that if any issue appears in the system, they can recognise the issue and solve it. Admins also can export the classroom student distribution just in case other actors couldn’t.

Dean

The Dean is a high level administrator and is responsible for checking multiple departments of the faculty. In the TA Management System, the Dean has access to department wide and faculty wide data. The Dean can review workload reports, check TA assignments across departments for common exams, and make decisions regarding resource allocation. He can also create, assign, and cancel TA duties. Additionally, the Dean has permission to export classroom student distribution and evaluates leave of absence requests. The Dean collaborates with the Department Chair and Secretary to manage TA assignments and overall faculty workload effectively.

Department Chair

Department Chair describes the department chair for each department. The Department Chair has to log in the system so that they have access to the system. They can view the information they are allowed to see and choose an action from the main page just like every other actor. They can also export the classroom student distribution for the exams.

Secretary

The Secretary (Authorized Staff) in the TA Management System is responsible for managing TA assignments, proctoring duties, and leave requests while ensuring fair workload distribution. They handle manual and automatic TA duty assignments, approve or reject TA leave requests, and oversee exam proctoring organization by defining exam details and assigning proctors. Additionally, they manage system data imports, generate student distribution lists for exams, and track TA workload logs and reports. The Secretary plays a key administrative role, collaborating with course instructors and the Dean's Office to maintain an efficient and organized TA management system.

Use Case Narratives

Main Page

Use case name: Login
Actors: TA, Instructor, Secretary, Department Chair, Admin, Dean
Description: Users authenticate themselves to access the system.
Preconditions:

- The user must have a registered account.
- The system must be online, connected to the database and run properly.

Basic Flow:

- User navigates to the login page.
- User enters their credentials (username/email and password).
- System verifies the credentials.
- If credentials are valid, the user is granted access to the system.
- User is redirected to the main dashboard, according to his/her role.

Postconditions:

- User is authenticated and logged into the system properly.

Exception Flow:

- If credentials are incorrect, an error message is displayed, and user is prompted to retry.
- If user forgets the password, they can request a password reset via email verification.
- After the email verification code is sent, the user must enter the verification code and his/her password twice to proceed properly.
- If login fails due to system errors, the user is advised to contact the admin.

Quality Requirements:

- The login process should complete within 2 seconds after credential submission.

Use case name: View Information
Actors: TA, Instructor, Secretary, Department Chair, Admin, Dean
Description: User views their profile information and system-related details.
Preconditions:

- User must be logged properly into the system.

Basic Flow:

- User selects the profile option from the main menu.
- System retrieves the user's information from the database.
- System displays the user's profile details, related information and if so upcoming events etc.

Postconditions:

- User's personal profile data, such as name, role, and system-related metrics, is displayed accurately.

Exception Flow:

- If there is no upcoming event, the relevant part can be empty.
- If the information cannot be retrieved due to a system error, an error message is displayed.
- In that case, the user is asked to refresh the page or try again later.

Use case name: Navigate to Manage Term Info Page
Actors: Admin, Department Chair, Dean
Description: User views and manages term-related information.
Preconditions:

- User must be logged properly into the system.
- User's role must be eligible to see this module.

Basic Flow:

- User selects "Navigate to Manage Term Info" from the navbar to navigate this module.
- The system displays the choices:
    - Import term related excel sheet
    - See general term information

Postconditions:

- The user views term-specific data such as semester start/end dates, deadlines, and course periods.
- System will direct the user to the chosen action.

Exception Flow:

- If the displaying relevant data fails due to a system error, an error message is displayed.
- In that case, the user is asked to refresh the page or try again later.

Quality Requirements:

- Term data must be displayed within 2 seconds upon request.
- Only authorized users must access term data, and changes must be reflected immediately.

Use case name: Navigate to Manage Users Page
Actors: Admin
Description: Admin sees and manages system users.
Preconditions:

- User must be logged properly into the system.
- User's role must be eligible to see this module.

Basic Flow:

- User selects "Manage Users" from the navbar to navigate this module.
- The system displays the user list and management options.
- The admin can perform an action related to user management. (create, edit, delete a user etc.).

Postconditions:

- The admin sees the full user list and any updates (create/edit/delete) are instantly reflected in the system.

Exception Flow:

- If the displaying relevant data fails due to a system error, an error message is displayed.
- In that case, the user is asked to refresh the page or try again later.
- If an error occurs while managing users, the system displays an appropriate message.

Quality Requirements:

- Admin actions (create/edit/delete) must be confirmed with visual feedback.
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Use case name: Navigate to Notifications Page
Actors: TA, Instructor, Secretary, Department Chair, Admin, Dean
Description: User views system notifications.
Preconditions:

- User must be logged properly into the system.
- User's role must be eligible to see this module.

Basic Flow:

- User selects “See Notifications” from the navbar to navigate this module.
- The system retrieves and displays the latest notifications.

Postconditions:

- User successfully sees system-generated notifications related to their role, including duty updates and approvals.

Exception Flow:

- If the displaying relevant data fails due to a system error, an error message is displayed.
- In that case, the user is asked to refresh the page or try again later.

Quality Requirements:

- Notifications must be updated dynamically and marked as read when viewed.

Use case name: Navigate to Manage Leave of Absence Page
Actors: TA, Department Chair, Admin
Description: User views and manages leave of absence requests.

Preconditions:

- User must be logged properly into the system.
- User’s role must be eligible to see this module.

Basic Flow:

- User selects “See Manage Leave of Absence” from the navbar to navigate this module.
- TA User will have choices:
    - Request leave of absence
- Instructor and Authorized Staff will have choices:
    - Review leave of absence requests
- The system retrieves and displays relevant information.

Postconditions:

- Leave requests are successfully reviewed or updated.

Exception Flow:

- If the displaying relevant data fails due to a system error, an error message is displayed.
- In that case, the user is asked to refresh the page or try again later.
- If an error occurs while managing leave of absences (view, approve, or reject etc.), the system displays an appropriate message.

Quality Requirements:

- The system should prevent submission of overlapping or past-dated leave requests.

Use case name: Navigate to Manage Duties Page
Actors: Instructor, Department Chair
Description: User views and manages TA duties.
Preconditions:

- User must be logged properly into the system.
- User's role must be eligible to see this module.

Basic Flow:

- User selects "See Manage Duties" from the menu to navigate this module.
- The system retrieves and displays duty assignments.
- User can view, assign, or modify duties. (due to their roles)
- Instructor and Authorized Staff will have choices:
    - Create Duty
    - Edit Duty
    - Assign Duty
- TA's will have choices:
    - Log Duty Workload

Postconditions:

- The user views existing duty assignments and, if authorized, modifies or reassigns them as needed.

Exception Flow:

- If the displaying relevant data fails due to a system error, an error message is displayed.
- In that case, the user is asked to refresh the page or try again later.
- ōof an update fails, the system notifies the user.

Quality Requirements:

- Duty filtering (by date/course/status) must be available to ease navigation.

Duty Management

Use case name: Create Duty
Actors: Instructor
Description: User creates duties specifying what type and time slot.
Preconditions:

- User must be logged properly into the system.
- User's role must be eligible to see this module.

Basic Flow:

- User selects "Create Duty" from the menu to navigate to this module.
- The system projects a selection to the user about the type of the duty.

Postconditions:

- The duty is stored in the system with the specified type and time slot, marked as unassigned.

Exception Flow:

- If the selected time slot is not available, the duty cannot be created.

Quality Requirements:

- The duty creation form must validate all required fields before submission and respond within 2 seconds.

Use case name: Create Course Assistance Duty
Actors: Instructor
Description: One of the selections from duty creation. Four different types will be selected afterwards.
Preconditions:

- User must be logged properly into the system.
- User's role must be eligible to see this module.
- User should select "Create Duty" from the menu.

Basic Flow:

- User selects "Create Course Assistance Duty" after choosing to create a duty.
- There are four types of course assistance duty for the user selection.

Postconditions:

- The system registers a course-related duty and waits for assignment based on selected type (e.g., lab, grading).

Exception Flow:

- If the selected time slot is not available, the duty cannot be created.

Quality Requirements:

- The system must categorize duties clearly (lab, grading, recitation, office hour) to reduce input errors.

Use case name: Create Course Assistance Duty - Lab Work

Actors: Instructor
Description: Subsection of course assistance duty. This duty is about being the respective TA of the assigned lab.
Preconditions:

- User must be logged properly into the system.
- User's role must be eligible to see this module.
- User should select "Create Course Assistance Duty" from the menu.

Basic Flow:

- User selects "Lab Work" after choosing to create a course assistance duty.
- After the selection, the time slot and the description of the duty is entered into the system.
- User clicks on the "Create Duty" button and the duty is created on the system.

Postconditions:

- The lab duty is registered with time and description, and appears in the duty list as "unassigned."

Exception Flow:

- If the selected time slot is not available, the duty cannot be created.

Quality Requirements:

- Duty creation must prevent time slot overlaps with existing duties for the same TA.

Use case name: Create Course Assistance Duty - Grading
Actors: Instructor
Description: Subsection of course assistance duty. This duty is about being the respective TA of grading an exam, quiz or any other assignment.
Preconditions:

- User must be logged properly into the system.
- User's role must be eligible to see this module.
- User should select "Create Course Assistance Duty" from the menu.

Basic Flow:

- User selects “Grading” after choosing to create a course assistance duty.
- After the selection, the time slot and the description of the duty is entered into the system.
- User clicks on the “Create Duty” button and the duty is created on the system.

Postconditions:

- The grading duty is saved with exam/assignment details and becomes available for TA assignment.

Exception Flow:

- If the selected time slot is not available, the duty cannot be created.

Quality Requirements:

- Description and time slot fields must be mandatory and validated before duty submission.

Use case name: Create Course Assistance Duty - Recitation
Actors: Instructor
Description: Subsection of course assistance duty. This duty is about being the respective TA of the assigned recitation.
Preconditions:

- User must be logged properly into the system.
- User’s role must be eligible to see this module.
- User should select “Create Course Assistance Duty” from the menu.

Basic Flow:

- User selects “Recitation” after choosing to create a course assistance duty.
- After the selection, the time slot and the description of the duty is entered into the system.
- User clicks on the “Create Duty” button and the duty is created on the system.

Postconditions:

- The recitation duty is recorded with time and section info, visible for scheduling and TA assignment.

Exception Flow:

- If the selected time slot is not available, the duty cannot be created.

Quality Requirements:

- Created duties must appear in the duty list within 2 seconds after creation.

Use case name: Create Course Assistance Duty - Office Hour
Actors: Instructor
Description: Subsection of course assistance duty. This duty is about being the respective TA of the assigned office hour.
Preconditions:

- User must be logged properly into the system.
- User's role must be eligible to see this module.
- User should select "Create Course Assistance Duty" from the menu.

Basic Flow:

- User selects "Office Hour" after choosing to create a course assistance duty.
- After the selection, the time slot and the description of the duty is entered into the system.
- User clicks on the "Create Duty" button and the duty is created on the system.

Postconditions:

- The office hour duty is stored in the system and appears under the corresponding course's duty list.

Exception Flow:

- If the selected time slot is not available, the duty cannot be created.

Quality Requirements:

- The interface should allow instructors to easily select recurring office hours with minimal input.

Use Case Name: Create Proctoring Duty
Actors: Dean, Secretary, Instructors
Description: Dean, Secretary and Instructors define an exam and assign proctoring duties. The system ensures that TAs are assigned fairly based on workload and availability.
Preconditions:

- The exam must be scheduled (course, section, date/time, and duration must be entered).
- The user (staff or instructor) must be logged into the system.
- The system must be connected to the database and functioning properly.

Basic Flow:

- The authorized staff/instructor navigates to the "Create Proctoring Duty" page.
- The user chooses the exam, quiz or duty created before to assign proctors to it.
- The system verifies the exam information and checks for any missing or conflicting data.
- The proctoring duty record will be saved into the system.
- The system notifies relevant users (TAs, staff, instructors) about the new proctoring duty.

Postconditions:

- The proctoring duty is recorded in the system.
- The duty is either ready for manual assignment or will be automatically assigned based on the workload at the Assign Duty use case.

Exception Flow:

- If mandatory details are missing, the system prompts the user to complete the missing fields.

- If there are conflicts (e.g., overlapping exam times, unavailable rooms), the system alerts the user.
- If no suitable TAs are available, the system provides suggestions:
    - Override certain restrictions (e.g., consecutive proctoring days)
    - Request additional TAs from other departments via the Dean's Office

Quality Requirements:

- System should automatically check TA availability before finalizing proctoring duty.
- The creation process should complete within 3 seconds.

Use Case Name: Cancel Duty
Actors: Instructors, Secretary, Admin, Department Chair
Description: Course instructors or authorized staff can cancel previously assigned TA duties (including TA tasks and proctoring duties). The cancellation may occur due to schedule conflicts, incorrect assignments, or changes in exam organization.
Preconditions:

- The duty must already exist in the system.
- The user must have sufficient privileges to cancel a duty (TAs cannot cancel their own duties).

Basic Flow:

- The course instructor or authorized staff navigates to the "Duty Management" page.
- The user selects the duty they want to cancel from the list of assigned duties.
- The system verifies the duty status (e.g., whether it has already been completed, is upcoming, or in progress).
- The system asks for a reason for cancellation (e.g., incorrect assignment, changes in scheduling, TA leave approval).

Postconditions:

- The duty is removed in the system.
- Affected users (TAs, instructors, or staff) receive notifications about the cancellation.

Exception Flow:

- If the duty has already been completed, the system prevents cancellation.
- If system errors occur (e.g., database issues), an error message is displayed, and the user is advised to retry later.

Quality Requirements:

- Once a duty is cancelled, all affected users must be notified instantly via system message or email.

Use Case Name: Assign Duty
Actors: Secretary, Admin, Instructors, Secretary
Description: The authorized staff or course instructor assigns a TA to an existing duty. The user selects whether the assignment will be manual or automatic. The system processes the assignment based on the selected method.
Preconditions:

- The duty must already exist in the system.
- The user must have sufficient privileges to assign the duty.

Basic Flow:

- The authorized staff or instructor navigates to the "Assign Duty" page.
- The user sees a list of unassigned duties and selects one.
- The system prompts the user to choose an assignment method:
- Manual Assignment (The user selects a TA manually from the available list).
- Automatic Assignment (The system selects a TA based on workload and eligibility rules).
- The system redirects the user to the appropriate assignment process:
    - If Manual Assignment is selected → The system proceeds with the Manual Assignment use case.
    - If Automatic Assignment is selected → The system proceeds with the Automatic Assignment use case.
- Once the assignment process is completed, the system updates the duty record and notifies relevant users.

Postconditions:

- The selected duty is now assigned to a TA.
- The system updates the TA's workload records.
- Affected users (TAs, instructors, or staff) receive notifications.

Exception Flow:

- If the user does not select an assignment method, the system prompts them to do so.
- If the system detects a scheduling conflict, the user is notified and must select another TA or modify constraints.
- If the TA's total workload has already exceeded the allowed limit, the system prevents the assignment and suggests choosing another TA.
- If the duty has already reached the maximum number of required TAs, the system prevents further assignments.
- If the selected TA is not compatible with the duty (e.g., MS/PhD course restrictions, proctoring rules, etc.), the system alerts the user and provides alternative suggestions.
- If the system encounters an error (e.g., database issues), an error message is displayed, and the user is advised to retry later.

Quality Requirements:

- The system must offer both manual and automatic assignment within a single unified interface, loading within 2 seconds.

Use Case Name: Assign Duty Manually
Actors: Secretary, Dean, Department Chair, Instructor
Description: The authorized staff or course instructor manually selects and assigns a TA to a proctoring duty or TA-related task. The system provides a list of available TAs, prioritizing those with the least workload while displaying any warnings for potential conflicts. The system ensures that only eligible TAs can be assigned.
Preconditions:

- The duty must already exist in the system.
- The user must have sufficient privileges to manually assign a TA.

- The TA must be eligible for the duty (e.g., no scheduling conflicts, workload within limits).
- The system must be online and functioning properly.

Basic Flow:

- The authorized staff or instructor navigates to the "Assign Duty" page.
- The user selects a duty from the list of unassigned duties.
- The system provides an option for manual assignment.
- The user selects "Manually Assign", and the system displays a sorted list of available TAs, prioritizing:
    - TAs with the least workload.
    - TAs from the same department or course.
    - TAs who have no scheduling conflicts or leave requests.
- The user selects a TA from the list and confirms the assignment.
- The system:
    - Updates the TA's workload records.
    - Marks the duty as "Assigned."
    - Notifies the assigned TA and relevant faculty members.

Postconditions:

- The duty is now assigned to the selected TA.
- The system updates the TA's workload records.
- The TA and faculty members receive notifications about the assignment.

Exception Flow:

- If the TA's total workload has already exceeded the allowed limit, the system prevents the assignment and suggests choosing another TA.
- If the TA has a scheduling conflict or is on leave, the system prevents the assignment and prompts the user to select another TA.
- If the TA is not eligible for the duty (e.g., PhD requirement for an MS/PhD course), the system displays a warning and prevents the assignment.
- If no suitable TAs are available, the system suggests:
    - Overriding certain restrictions (e.g., allowing an extra workload).
    - Requesting additional TAs from other departments via the Dean's Office.
- If the system encounters an error (e.g., database issues), an error message is displayed, and the user is advised to retry later.

Quality Requirements:

- TA list must prioritize candidates by lowest workload and be sortable within the interface.

Use Case Name: Assign Duty Automatically
Actors: Department Chair, Secretary, Admin, Instructors
Description: The authorized staff or course instructor chooses the automatic assignment option for a duty. The system automatically selects the most suitable TA(s) based on workload and eligibility criteria. The system ensures fair workload distribution while considering constraints such as TA leave, academic level, and conflicts with other duties or exams.
Preconditions:

- The duty must already exist in the system.
- The user must have sufficient privileges to assign a TA.
- The system must have eligible TAs available for assignment.
- The system must be online and functioning properly.

Basic Flow:

- The authorized staff or instructor navigates to the "Assign Duty" page.
- The user selects a duty from the list of unassigned duties.
- The system provides an option for automatic assignment.
- The user selects "Automatically Assign."
- The system scans the list of available TAs and selects candidates based on the following priority:
    - TAs with the least workload.
    - TAs from the same course (for course-related duties).
    - TAs from the same department (for proctoring duties).
    - TAs who have no conflicts (e.g., exams, leave, prior assignments).
- If multiple TAs meet the criteria, the system balances the assignments by selecting the one with the lowest total workload.
- If the required number of TAs are found, the system assigns them to the duty.
- The system updates the TA's workload records and marks the duty as "Assigned."
- The system notifies the assigned TAs and relevant faculty members.

Postconditions:

- The duty is automatically assigned to the most suitable TA(s).
- The system updates the TA's workload records.
- The assigned TA(s) and faculty members receive notifications.

Exception Flow:

- If no suitable TAs are found, the system suggests options:
    - Override restrictions (e.g., allow extra workload, break MS/PhD assignment rule).
    - Request additional TAs from other departments via the Dean's Office.
- If a TA reaches their workload limit, the system prevents their assignment and selects another TA.
- If all eligible TAs are unavailable due to conflicts (e.g., leave, exams, prior assignments), the system alerts the user.
- If system errors occur (e.g., database issues), an error message is displayed, and the user is advised to retry later.

Quality Requirements:

- Automatic assignment must ensure fairness based on workload and eligibility rules, completing the operation within 2 seconds.

Use Case Name: Log Duty Workload
Actors: TA
Description: TAs enter details of the tasks they have completed into the system. The system tracks and logs the total workload of each TA. Course instructors approve or reject the logged tasks before they are counted toward the TA's total workload.
Preconditions:

- The TA must be assigned to a course.
- The task must be relevant to TA duties (e.g., grading, lab work, recitations, office hours).
- The TA must be logged into the system.
- The system must be online and functioning properly.

Basic Flow:

- The TA navigates to the "Log Duty Workload" page.
- The TA selects the duty assigned to them to log workload for.
- The TA enters the work hours.
- The TA submits the workload entry for approval.
- The course instructor receives a notification and reviews the submission.
- The instructor approves or rejects the submitted workload:
    - If approved, the system updates the TA's total workload.
    - If rejected, the TA receives a notification and may need to resubmit.
- The system logs the final workload status and updates reports accordingly.

Postconditions:

- If approved, the workload is added to the TA's total workload for the semester.
- The system updates the TA workload report.
- The TA and the instructor receive notifications regarding the approval status.

Exception Flow:

- If the TA tries to log a duty they are not assigned to, the system prevents submission.
- If required fields (e.g., duration, course) are missing, the system prompts the TA to fill in the missing details.
- If the instructor rejects the submission, the TA receives a notification with a reason for rejection.
- If the TA's workload exceeds the allowed limit, the system warns the instructor before approving.
- If system errors occur (e.g., database issues), an error message is displayed, and the TA is advised to retry later.

Quality Requirements:

- TA cannot submit workload logs for unassigned duties.

- Workload logs must be submitted and visible to instructors within 1 second.

Use case name: Evaluate Duty Log Request
Actors: Instructors
Description: Instructor displays the workload entered by the TA and takes an action.
Preconditions:

- Duty log must be entered by the TA.
- Instructor must be logged in.

Basic Flow:

- Instructor receives an e-mail that one of the TAs entered the workload.
- Instructor displays the entered workload.
- Instructor takes an action to accept/reject the entered workload.

Postconditions:

- TA's workload is evaluated.

Exception Flow:

- If the workload cannot be displayed, the software will display a proper error message.
- Instructor can refresh the page or log in again.
- If the issue remains, the instructor can contact the admin.

Quality Requirements:

- Evaluation decision (accept/reject) must be recorded and reflected in the TA's profile instantly.

Use case name: Accept Log
Actors: Instructors
Description: Instructor accepts the workload entered by the TA.
Preconditions:

- Duty log must be entered by the TA.
- Duty to be accepted must be selected.
- Instructor must be logged in.

Basic Flow:

- Instructor selects the workload log that TA entered.
- Instructor clicks on the accept button.

Postconditions:

- TA's workload is accepted.
- Accepted workload will be added to that TA's total workload.

Exception Flow:

- If the workload cannot be selected, the instructor can refresh the page and try again.
- If the issue remains, the instructor can contact the admin.

Quality Requirements:

- Once accepted, the workload should be locked from further modification and appear in the semester report.

Use case name: Reject Log
Actors: Instructors
Description: Instructor rejects the workload entered by the TA.
Preconditions:

- Duty log must be entered by the TA.
- Duty to be rejected must be selected.
- Instructor must be logged in.

Basic Flow:

- Instructor selects the workload log that TA entered.
- Instructor clicks on the reject button.

Postconditions:

- TA's workload is rejected.
- Rejected workload will not be counted in that TA's total workload.

Exception Flow:

- If the workload cannot be selected, the instructor can refresh the page and try again.
- If the issue remains, the instructor can contact the admin.

Quality Requirements:

- Rejection must trigger a notification to the TA with the reason specified.

Use case name: Enter Leave of Absence
Actors: TA
Description: TA enters when he/she won't be available for TA duties.
Preconditions:

- TA must be logged in.
- TA doesn't have a duty for that date.

Basic Flow:

- TA opens up the calendar.
- TA selects the dates that he/she won't be available.

Postconditions:

- TA will be assigned as absent for selected dates.
- TA cannot be assigned to a duty for the dates he/she is absent.
- An e-mail that informs the dean that TA will be absent for the specific dates is sent by the system automatically.

Exception Flow:

- If the absence limit is exceeded, TA cannot select a date to be absent.
- If TA cannot assign himself/herself as absent for a specific date, he/she can refresh the page. If the issue persists, TA can contact admin.

Quality Requirements:

- The system must prevent leave entries that overlap with already assigned duties and validate against max allowed days.

Data Management

Use case name: Import Excel Sheet
Actors: Secretary
Description: The secretary imports various data lists (offerings, staff, TA, classrooms) into the system.
Preconditions:

- User must be logged properly into the system.
- The user's role must be eligible to see this module.

Basic Flow:

- The secretary selects "Import Excel Sheet."
- The system displays available import options (offerings, TA list, staff, classrooms).
- The user selects the type of data to import.

Postconditions:

- The system updates the relevant database based on the imported data.

Exception Flow:

- If the file format is incorrect, the system rejects the upload.

Quality Requirements:

- The system must validate file type and structure before importing, and complete the operation within 3 seconds.

Use case name: Import Offerings
Actors: Secretary
Description: The secretary imports course offerings data from an Excel sheet into the system.
Preconditions:

- The user must be logged into the system.
- File format must be proper.
- User should select “Import Offerings” from the menu.

Basic Flow:

- The secretary selects the "Import Offerings" option.
- The system prompts the user to upload an Excel file.
- The secretary uploads the file.
- The system validates the format, if it is correct, course offerings are added to the system.

Postconditions:

- Course offerings are imported and stored in the system.

Exception Flow:

- If the file format is incorrect, an error message is displayed.

Quality Requirements:

- Duplicate entries should be detected and flagged before import is finalized.

Use case name: Import Assistant Information List
Actors: Secretary
Description: The secretary imports a list of teaching assistants into the system.
Preconditions:

- The user must be logged into the system.
- File format must be proper.
- User should select “Import Assistant Information List” from the menu.

Basic Flow:

- The secretary selects the "Import Assistant Information List" option.
- The system requests an Excel file upload.

- The secretary uploads the file.
- The system verifies the format, if it is correct, the assistant information is added to the system.

Postconditions:

- TA data is imported and stored in the system.

Exception Flow:

- If the file format is incorrect, an error message is displayed.

Quality Requirements:

- Each TA record must include a unique identifier; otherwise, the system should reject the file with an error message.

Use case name: Import Exam Classroom - Student Distribution List
Actors: Secretary
Description: The secretary imports a list mapping students to exam classrooms.
Preconditions:

- The user must be logged into the system.
- File format must be proper.
- User should select “Import Exam Classroom - Student Distribution List” from the menu.

Basic Flow:

- The secretary selects "Import Exam Classroom - Student Distribution List."
- The system prompts for an Excel file upload.
- The secretary uploads the file.
- The system verifies the format, if it is correct, the Exam Classroom - Student Distribution information is added to the system.

Postconditions:

- Student distributions for exam classrooms are imported and stored in the system.

Exception Flow:

- If the file format is incorrect, an error message is displayed.

Quality Requirements:

- The import must ensure one-to-one mapping between classrooms and students, and complete within 5 seconds.

Use case name: Import Staff List
Actors: Secretary
Description: Secretary imports faculty and administrative staff data.
Preconditions:

- The user must be logged into the system.
- File format must be proper.
- User should select “Import Staff List” from the menu.

Basic Flow:

- The secretary selects "Import Staff List."
- The system requests an Excel file upload.
- The secretary uploads the file.
- The system verifies the format, if it is correct, the Staff List information is added to the system.

Postconditions:

- Staff List information is imported and stored in the system.

Exception Flow:

- If the file format is incorrect, an error message is displayed.

Quality Requirements:

- Uploaded data must be cross-validated with existing users to avoid conflicts.

Use case name: Import Classroom Information List
Actors: Secretary
Description: Secretary imports classroom data including details such as capacity.
Preconditions:

- The user must be logged into the system.
- File format must be proper.
- User should select “Import Classroom Information List” from the menu.

Basic Flow:

- The secretary selects "Import Classroom Information List."
- The system requests an Excel file upload.
- The secretary uploads the file.
- The system verifies the format, if it is correct, the Classroom Information List is added to the system.

Postconditions:

- Classroom information is imported and stored in the system.

Exception Flow:

- If the file format is incorrect, an error message is displayed.

Quality Requirements:

- The system must verify that all classroom entries have capacity information; incomplete rows must be rejected.

Use case name: Export Classroom Student Distribution List
Actors: Department Chair, Dean, Instructor, Secretary, Admin
Description: Authorized users export the student-classroom assignment list for exams.
Preconditions:

- The user must be logged into the system.
- The distribution list must be available in the system.

Basic Flow:

- The user selects "Export Classroom Student Distribution List."
- The user downloads the file.

Postconditions:

- The user receives an exported file with the student-classroom mapping.

Exception Flow:

- If there is an issue generating the file, the system prompts the user to retry.

Quality Requirements:

- Exported files should be in .xlsx format and generated within 3 seconds upon request.

Admin Page

Use case name: Manage Users
Actors: Admin
Description: Admin can display, update, add and block the users.
Preconditions:

- Admin must be logged in.
- A specific user has to be selected.

Basic Flow:

- Admin selects a specific user from the user list.

- Admin chooses the action (update, add or block).
- Admin confirms the action.

Postconditions:

- A specific user will be either updated, added or blocked.

Exception Flow:

- If an action cannot be taken, an error message will be displayed. Admin can refresh the page and try again.

Quality Requirements:

- All changes to user accounts (add/edit/block) must be reflected immediately and confirmed with a success message.

Use case name: Monitor Logs
Actors: Admin
Description: Admin can display logs and filter them.
Preconditions:

- Admin must be logged in.
- Logs must be entered into the system automatically.

Basic Flow:

- Admin lists the logs.
- Admin can filter the logs to distinguish them easily.

Postconditions:

- Admin will receive the logs saved in the system.

Exception Flow:

- If the logs cannot be displayed, the admin can refresh the page.

Quality Requirements:

- Logs must be filterable by date, user, and action type, and queries should return results within 2 seconds.

Use Case Diagram

For a better experience, click here.
If the hyperlink does not work, try this.