TA Management System

Deliverable-5

11.05.2025

Course: CS 319

Section: 01

Group No.: 7

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1. Build Instructions:

1.1 Prerequisites:

OS Support:

Windows 10/11

macOS Monterey or later

Ubuntu 20.04+ or any modern Linux distribution

Requirements:

Python: 3.11+

Node.js: 18+

MySQL: Remote AWS MySQL server (already hosted)

Git: Latest

pip: Latest

npm: npm 9+ recommended

The source code for the applications is available on a Git repository. It is accessible through the following link: https://github.com/idilozis/TA-Management-System.git

To clone the repo, you must have proper git installations and run following in git bash:

```
git clone https://github.com/idilozis/TA-Management-System.git
```

1.2 Database (MySQL) Setup:

This project uses a remote MySQL 8.0 database hosted on an AWS EC2 instance. Therefore, no local installation is required unless you choose to use your own MySQL server. If you're using the provided hosted database, you can skip installation steps.

Current Configuration:

Version: MySQL 8.0+ (recommended)

Host: 13.51.13.127 (AWS EC2 Public IP)

Port: 3306

Database: cs319

Username: ta_management

Password: cs319

1.3 Running the Application:

1. Navigate to the backend folder by `cd ta-management-backend` and do the following:
    - Create a virtual environment:-
        - Run `python-m venv venv`
        - Activate the virtual environment:

          OnWindows: `venv/Scripts/activate`

          OnmacOS/Linux: `source venv/bin/activate`
    - Run `pip install -r requirements.txt`
    - Run `python manage.py runserver`
    - Django backend now should be running on https://localhost:8000

2. Navigate to the frontend folder by `cd ta-management-frontend`. Then install dependencies and create a static build as following:
    - Run `npm install`
    - Run `npm run build`

- Run `npm start` or `npm run start`
- Next.js frontend now should be running on https://localhost:3000
- If you want to run on development mode, instead of `npm start`:
    - Run `npm run dev`

1.4 Using the TA Management System:

Open any browser and navigate to https://localhost:3000. You should see the application's login page there. For users, normally all passwords are hashed and sent via mail. However, here's some users for to test of the system with all having the password "**12345678**"

TAs: ynsgunayy@gmail.com, daibm239@gmail.com

Instructors: ugurdogrusoz@example.com (CS)
example@gmail.com (IE)

Department Secretaries: begum@gmail.com (CS)
vegun@gmail.com (IE)

Dean's Office: dean@gmail.com

Admin User: admin@bilkent.tr

2. User Manual:

The system uses role-based authentication for each user, directing them to the specific interfaces designed according to the user.

1.1 Teaching Assistants (TAs) :

Home-Page:

- TAs can view their notifications by clicking the **bell icon** located at the top-right corner of the page.
- Next to the bell icon, the **Contact Users** button allows TAs to send emails directly to instructors or fellow TAs.
- It also includes their weekly schedule which can be edited and calendar which shows all of their assigned duties

Workload Approval:

- **Pending Request** tab shows all duty requests that are awaiting approval from instructors. While they have not been accepted, they can be edited.
- **New Duty** button pops up a form to create new duty requests with appropriate fields.
- **Past Requests** tab shows all approved and rejected workload approvals.

Leave Requests:

- **Pending Leave Request** tab shows all leave requests that are awaiting approval from the dean's office or department secretary. They can not be edited once sent.
- **Past Leave Requests** tab shows all approved and rejected leave requests.
- **New Leave Request** button pops up a form to create new leave requests with appropriate fields.

Proctoring:

- **Upcoming Exams** shows all the exams for which the current TA has been chosen as a proctor for. TAs see the **Swap** button which pops a list of available and unavailable proctors allowing them to make an informed decision and send a request to available TAs.
- **Past Exams** tab shows the list of exams the current TA user has proctor and its relevant details.

Swaps:

- **Incoming Swap Requests** tab shows the list of all swap requests sent to the current TA by other TAs. They either accept or reject it and relevant notification is sent to the requesting TA.
- **Pending Swap** tab shows the list of swaps that require acceptance/rejection from the TA to whom the request has been sent.
- **Swap History** shows the list of all swap actions taken place in the system.

Records:

- This page shows the list of all offerings, instructors, and TAs logged in the system.

Settings:

- Settings page allows the user to view information such as name, surname, email, current semester, and the workload for that semester. It also allows the user to change their password.

1.2 Instructors:

Home-Page:

- Instructors can view their notifications by clicking the **bell icon** located at the top-right corner of the page.
- Next to the bell icon, the **Contact Users** button allows instructors to send emails directly to TAs or fellow instructors.
- The home page displays the instructor's assigned courses for the current semester, along with a list of exams associated with those courses.
- Exams can be created by clicking the **"+ Exam" button** located at the top of the **My Exams** table.
- Exams can be edited or deleted using the corresponding **Edit** and **Delete** buttons under the **Actions** column of the exam table.
- A **Student List** can be generated either in alphabetical order or in random order by using the **Student List** button, which is also located in the **Actions** column.

Workload Approval:

- The **Workload Approval** page provides instructors with two tabs: **Pending Requests** and **Past Requests**.
- Pending Requests tab displays all duty requests awaiting instructor action. Under the **Actions** column, instructors can either approve or reject a request using their corresponding buttons.

- Past Requests tab displays the full history of previously approved and rejected duty requests.

TA Assignment (Visible to designated user only)**:**

- **Current Assignments** tab allows a designated user (an instructor who assigns TAs to courses) to assign TAs and graders for each offered departmental course in the system. Based on several information like load constraints, must-have TAs, preferred TAs, avoided TAs, and more, the user can make informed decisions to assign TAs to courses.
- **Assignment Preferences** allows the user to see all the preferences and constraints like must-have, preferred, avoid, required number of graders and TAs, etc., in one place. This allows them to assign TAs effectively in the other tab.
- **Legend** is a color legend key which assigns colors to must-have, avoided, preferred TA, and shows the workload of full-time and part-time TAs, and graders. These colors are reflected in the other two tabs as well.

Proctoring:

- The **Proctoring** page provides instructors with two tabs: **Unassigned Exams** and **Assigned Exams**.
- **Unassigned Exams** displays all exams that still require proctor assignments. Proctors can be assigned either automatically or manually using the corresponding **“Automatic”** and **“Manual”** buttons.

- Clicking the **“Automatic”** button opens a pop-up showing a set of automatically selected TAs. Some restrictions may be overridden based on TA availability. The instructor can either **confirm** or **cancel** the assignment.
- Clicking the **“Manual”** button displays all available TAs, along with indicators showing whether each TA falls into the **Assignable**, **Soft Restriction**, or **Hard Restriction** category. Depending on the needed proctor number, the instructor chooses the TAs according to their preference. At any point the instructor can cancel the process or confirm the selection.
- **Assigned Exams** displays exams that already have sufficient proctor assignments. The instructor can view the list of TAs assigned to each exam in this tab.

Reports:

The **Reports** page allows instructors to download three types of reports:

- **Proctoring Report:** Lists all proctoring assignments and corresponding TA allocations.
- **TA Duty Report:** Summarizes all recorded TA duty activities.
- **Workload Report:** Displays the current workload status for each TA.

Records:

- This page shows the list of all offerings, instructors, and TAs logged in the system.

Settings:

- Settings page allows the user to view information such as name, surname, email, current semester, and the workload for that semester. It also allows the user to change their password.

1.3 Department (CS, IE) Secretary:

Home-Page:

- Secretaries can view their notifications by clicking the **bell icon** located at the top-right corner of the page.
- Next to the bell icon, the **Contact Users** button allows instructors to send emails directly to TAs or instructors.
- It also includes two **charts** showcasing Top 10 TA workloads and department-wise proctoring and duties.

Leave Requests:

- **Pending Leave Requests** shows the list of all requests awaiting approval. Secretaires can approve/reject requests, read descriptions, perform global searches, and download attachments.
- **Past Requests** shows us the list of all approved/rejected leave requests with all their relevant information.

Swaps:

- **Proctoring Assignments** allows the secretary to swap TAs for all upcoming exams of their department courses and displays past exams as well (no swap for past ones). **Swap** button then shows a list of available and unavailable TAs.
- **Swap History** shows us the list of all approved/rejected swap requests with all their relevant information.

Reports:

The **Reports** page allows secretaries to download three types of reports:

- **Proctoring Report:** Lists all proctoring assignments and corresponding TA allocations.
- **TA Duty Report:** Summarizes all recorded TA duty activities.
- **Workload Report:** Displays the current workload status for each TA.

Records:

- This page shows the list of all offerings, instructors, and TAs logged in the system.

Settings:

- Settings page allows the user to view information such as name, surname, email, current semester, and the workload for that semester. It also allows the user to change their password.

1.4 Dean Office:

Home-Page:

- The Dean Office can view their notifications by clicking the **bell icon** located at the top-right corner of the page.
- Next to the bell icon, the **Contact Users** button allows instructors to send emails directly to TAs or instructors.
- Home page provides the Dean office with charts that show the top 10 TA workloads and department-wise proctoring and duties, which is a chart that shows the comparison between proctoring and TA duties distribution across departments.

Leave Requests:

- **Pending Leave Requests** shows the list of all requests awaiting approval from all departments. Dean office can approve/reject requests, read descriptions, perform global searches, and download attachments.
- **Past Requests** shows us the list of all approved/rejected leave requests with all their relevant information.

Exams:

- Dean office can view all of the exams created by themselves in this page including the paid proctoring ones, which refers to non-departmental courses.
- Exams can be created by clicking the **"+ Exam" button** located at the top of the **My Exams** table.

- Exams can be edited or deleted using the corresponding **Edit** and **Delete** buttons under the **Actions** column of the exam table.
- A **Student List** can be generated either in alphabetical order or in random order by using the **Student List** button, which is also located in the **Actions** column.

Swaps:

- **Proctoring Assignments** allows the secretary to swap TAs for all upcoming exam and displays past exams as well (no swap for past ones). **Swap** button then shows a list of available and unavailable TAs.
- **Swap History** shows us the list of all approved/rejected swap requests with all their relevant information.

Reports:

The **Reports** page allows instructors to download three types of reports:

- **Proctoring Report:** Lists all proctoring assignments and corresponding TA allocations.
- **TA Duty Report:** Summarizes all recorded TA duty activities.
- **Workload Report:** Displays the current workload status for each TA.

Records:

- This page shows the list of all offerings, instructors, and TAs logged in the system.

Settings:

- Settings page allows the user to view information such as name, surname, email, current semester, and the workload for that semester. It also allows the user to change their password.

1.5 Admin User:

Home-Page:

- Admins can view their notifications by clicking the **bell icon** located at the top-right corner of the page.
- Next to the bell icon, the **Contact Users** button allows instructors to send emails directly to TAs or instructors.
- It also includes two **charts** showcasing Top 10 TA workloads and department-wise proctoring and duties.

Logs:

- This page allows the admins to see a list of all log-ins and log-outs done by every user in the system and other relevant details. It is organized as All logs, Log-ins, and Log-outs, and a refresh button updates the logs.

Reports:

The **Reports** page allows admins to download three types of reports:

- **Proctoring Report:** Lists all proctoring assignments and corresponding TA allocations.

- **TA Duty Report:** Summarizes all recorded TA duty activities.
- **Workload Report:** Displays the current workload status for each TA.

Records:

- This page shows the list of all offerings, instructors, and TAs logged in the system. Actions like delete or create course/TAs/instructors are especially available to only admins. Search bar allows efficient lookups.

Settings:

- Settings page allows the admins to view information such as name, surname, email, current semester, and the workload for that semester. It also allows the admins to change their password and set the current semester and its workload.

3. Workload Allocation:

Yunus Günay:

- Built and configured the codebase with AWS-hosted MySQL, and an in-app mail and notification services
- TA weekly scheduling, TA event calendar, workload charts, leave requests and approvals (TA, secretary, dean's office)
- Exam creation for instructors and dean's office
- Manual and automatic proctoring, workload requests and approval (TA, instructors), settings page, and reports for total workload, proctoring, and duties

- Developed Excel import routines in backend
- Deliverable 1: finalized second-iteration use case diagram with İdil and helped Daib first-iteration textual description
- Deliverable 2: finalized class diagram with Daib for second-iteration, and state diagrams for both iterations
- Deliverable 3: finalized first-iteration subsystem decomposition diagram with İdil and Daib

Daib Malik:

- Implemented almost all the frontend pages and worked primarily on UI/UX.
- Implemented TA assignment logic in backend and frontend, in association with Yunus helping with backend.
- Fixed existing and added some new methods to the backend to implement editing logic in the applications.
- Contributed to Deliverable 1 by working on the use case diagram textual description during both the first and second iterations.
- Contributed to Deliverable 2 by writing the Non-functional requirements and making the sequence diagrams across both iterations. In second, iteration, collaborated with Yunus on class diagrams
- Contributed to Deliverable 3 first iteration by pitching a version of subsystem decomposition diagram.
- Contributed to Deliverable 5 by making demo video, writing User Manual with İdil and build instructions with Yunus.

Bilge İdil Öziş:

- Implemented the swapping functionality for proctoring assignments, including its backend logic, frontend integration, and corresponding database tables and updates.
- Fixed bugs.
- Contributed to Deliverable 1 by working on the use case diagram during both the first and second iterations.
- Contributed to Deliverable 2 by making the activity diagrams across both iterations.
- Contributed to Deliverable 3 across both iterations by working on the subsystem decomposition diagram and writing its textual description.
- Completed the Deliverable 4.
- Contributed to Deliverable 5 by writing User Manual with Daib.

Burak Kağan Gür:

- Constructed the loading state system for buttons in various pages.
- Contributed to Deliverable 2 with mockup UI designs.
- Implemented alerts and success messages to form confirmations.
- Implemented the forms for creating records in the system.

- Worked on determining the appropriate models for our django backend.
- Helped with requirement engineering, and QnA for desired features.
- Fixed bugs.

4. Demo Video Link: Link