Bilkent University

CS 319 Object-Oriented Software Engineering

Final Report

Group “BOSGII”

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1. INTRODUCTION

Regarding implementation, we are pleased to announce that we have successfully developed an application that fulfills nearly all of the requirements we outlined at the beginning of the semester. The core functionalities of the application are fully operational and functioning smoothly without encountering any issues.

User Management:

- Admin Users can add one type of user: Secretary.
- Secretary creates internships and evaluators.
- After creating internships, students get automatic mail with passwords.
- Different types of users see different screens and are able to perform different operations when necessary.

Secretary:

- Secretary creates internships by uploading an excel file with required format.
- After creating internships, the secretary assigns internships to evaluators according to their max internships they can have or equally.

Student:

- Students' accounts are created in the system automatically.
- They can upload versions.
- Give responses to the comments.

Evaluators:

- Evaluators can see internships assigned to them.

- Instructors can see uploaded versions by students and give feedback by uploading a file and comments.
- Then the instructor can request a new version of the report.
- Instructor also can create Summer Training Grade Form with finalizing internship.

We tried not to deviate too much from our initial design, and we actually did not make some negligible changes. However, there were also some minor parts that we were not able to implement in time. Turnitin and Grammarly, for example, we were planning to implement these two features to our application. However it needs much consideration because it needs some extra knowledge about implementing a third-part program. Then, we preferred to focus on more important parts of the application first and in the end decided we could remove Turnitin and Grammarly. But other than that our all functionalities work near perfect.

2. LESSONS LEARNED

We can confidently say that we have accomplished a commendable job and are proud of our achievements. Each team member gave their best and fulfilled their responsibilities.

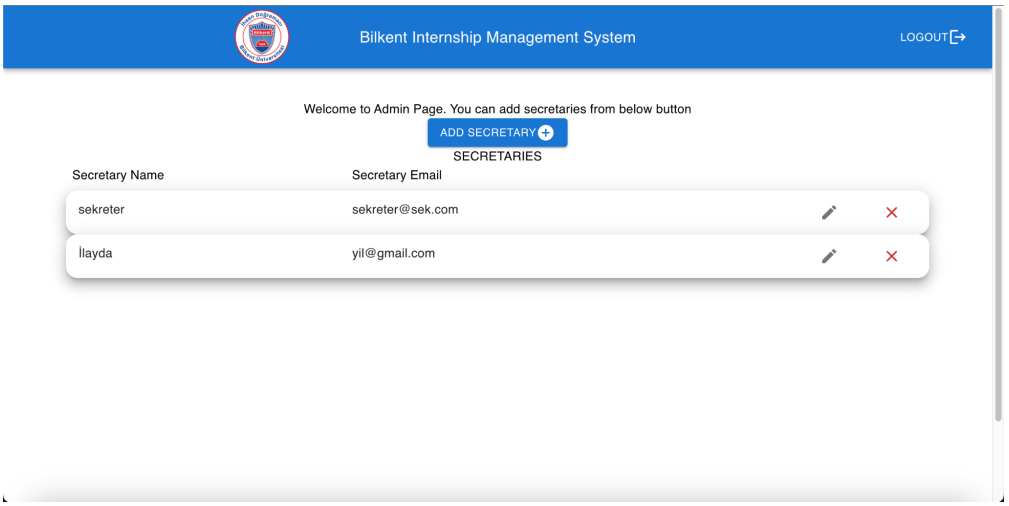
We have started to learn the necessary tools, programming languages, and technologies earlier. We knew this was one of the most important points and started as early as we could. We started implementation early, about 1 month before the presentation. But processing was not fast enough to complete early because of other duties and lectures.

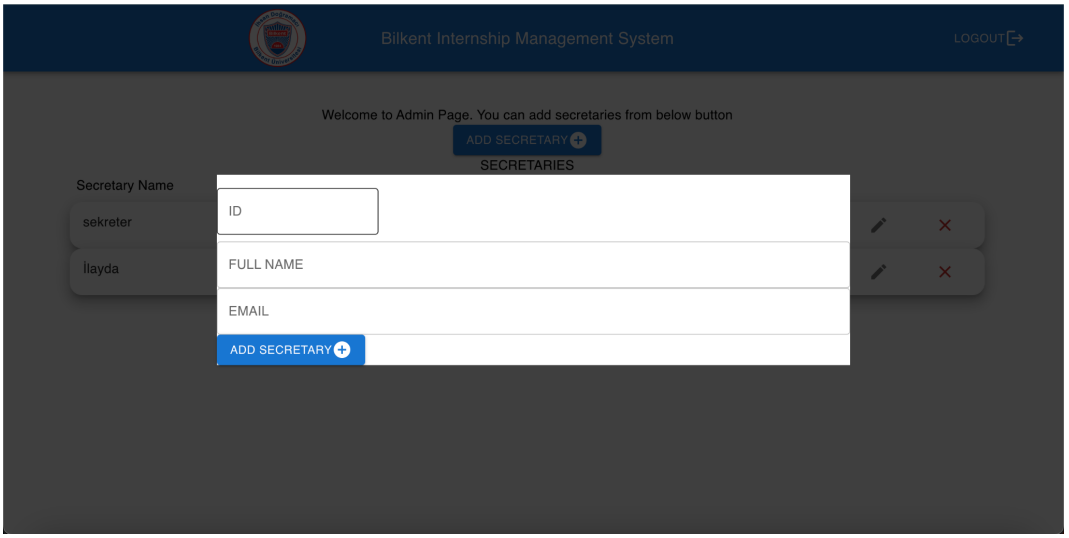
The way we divided tasks between us was mainly related to front-end and back-end tasks. In other words, some of us started working on the back-end part and some of us on the front-end part. But then someone focused two parts at the same time to connect back-end and front-end while implementing. This was a good idea because our course instructor mentioned that other groups who took this course previous years faced the biggest problems while connecting two parts.

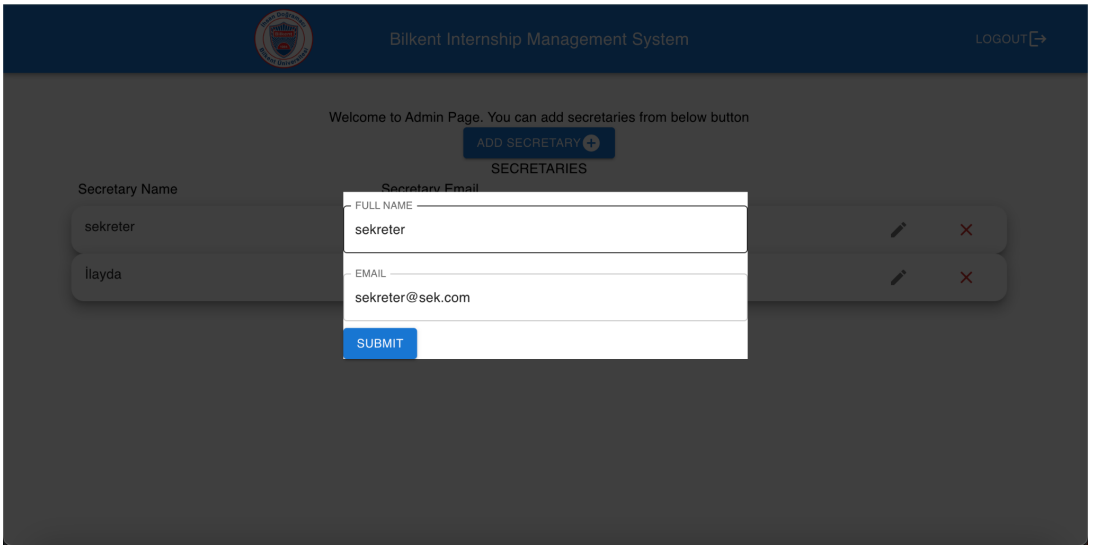
We all are definitely going to bear in mind these few points in the future while doing our work in different groups, in order to have a more efficient and less stressful process.

3. USER’S GUIDE

3.1. Admin

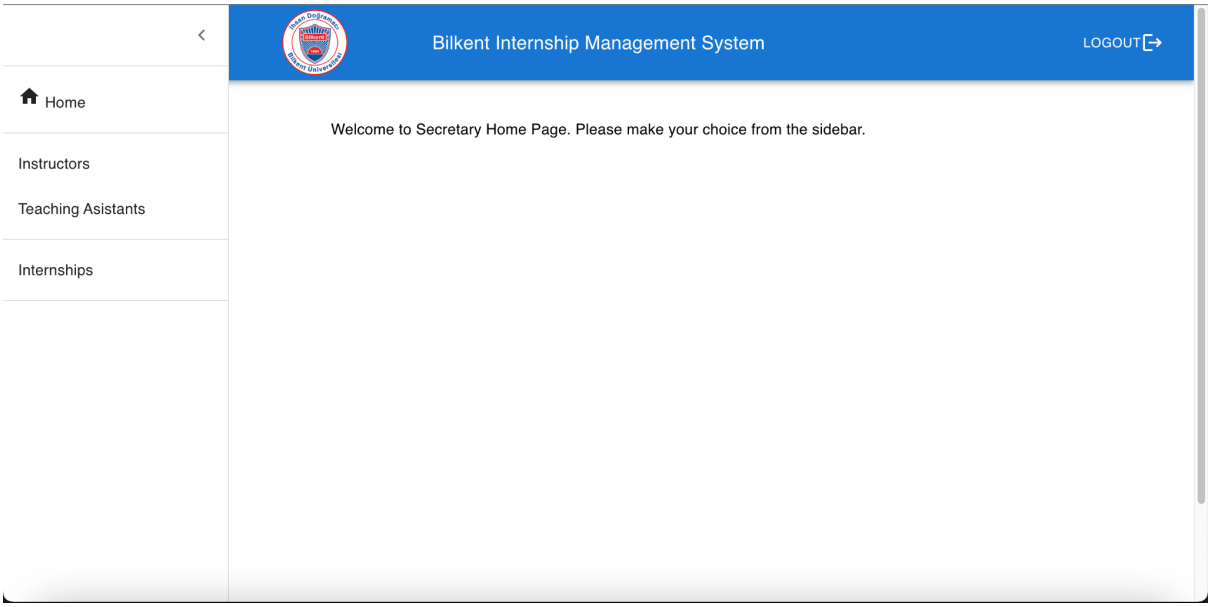

Bilkent Internship Management System
LOGOUT
Welcome to Admin Page. You can add secretaries from below button
ADD SECRETARY
SECRETARIES
Secretary Name
Secretary Email
sekreter
sekreter@sek.com
İlayda
yil@gmail.com

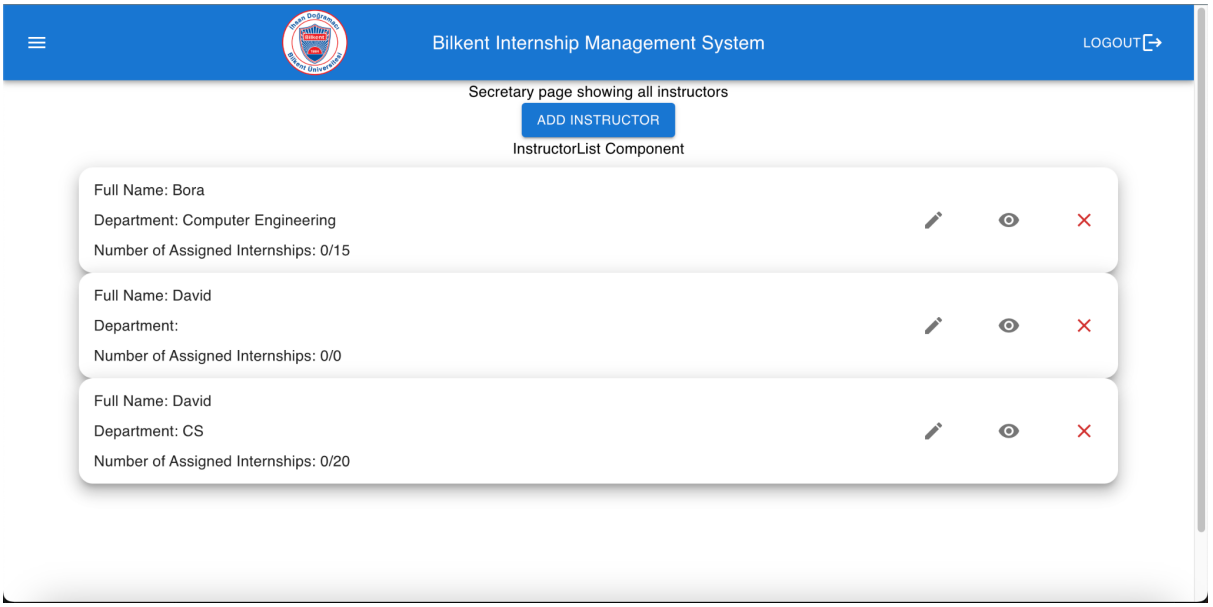

Bilkent Internship Management System
LOGOUT
Welcome to Admin Page. You can add secretaries from below button
ADD SECRETARY
SECRETARIES
Secretary Name
sekreter
İlayda
ID
FULL NAME
EMAIL
ADD SECRETARY

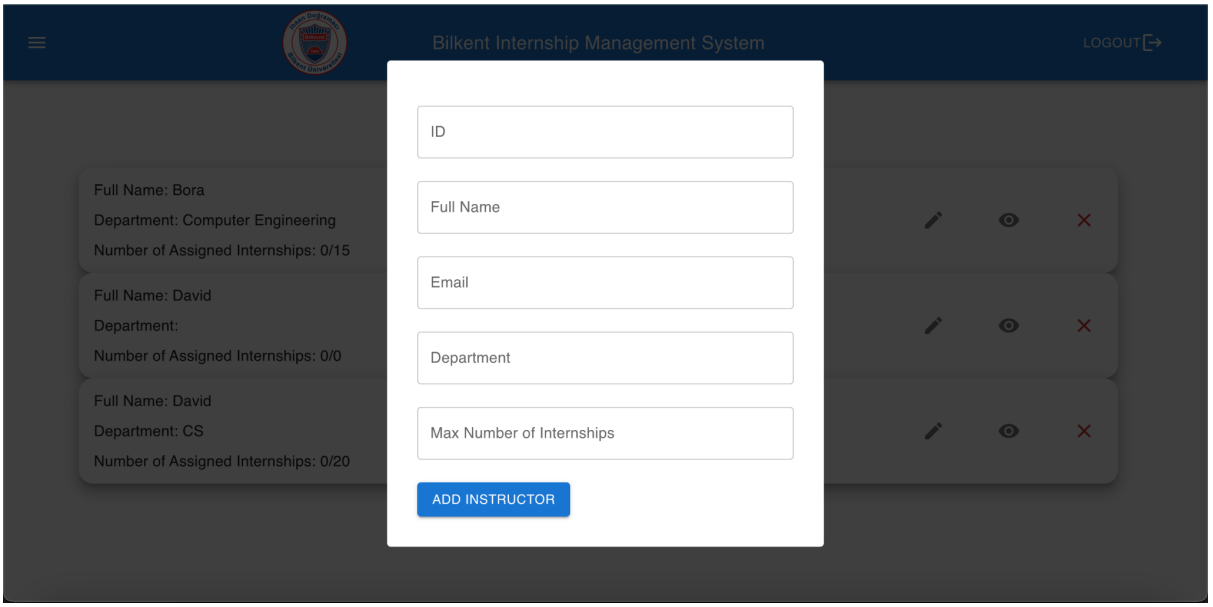

Bilkent Internship Management System
LOGOUT
Welcome to Admin Page. You can add secretaries from below button
ADD SECRETARY
SECRETARIES
Secretary Name
sekreter
İlayda
FULL NAME
sekreter
EMAIL
sekreter@sek.com
SUBMIT

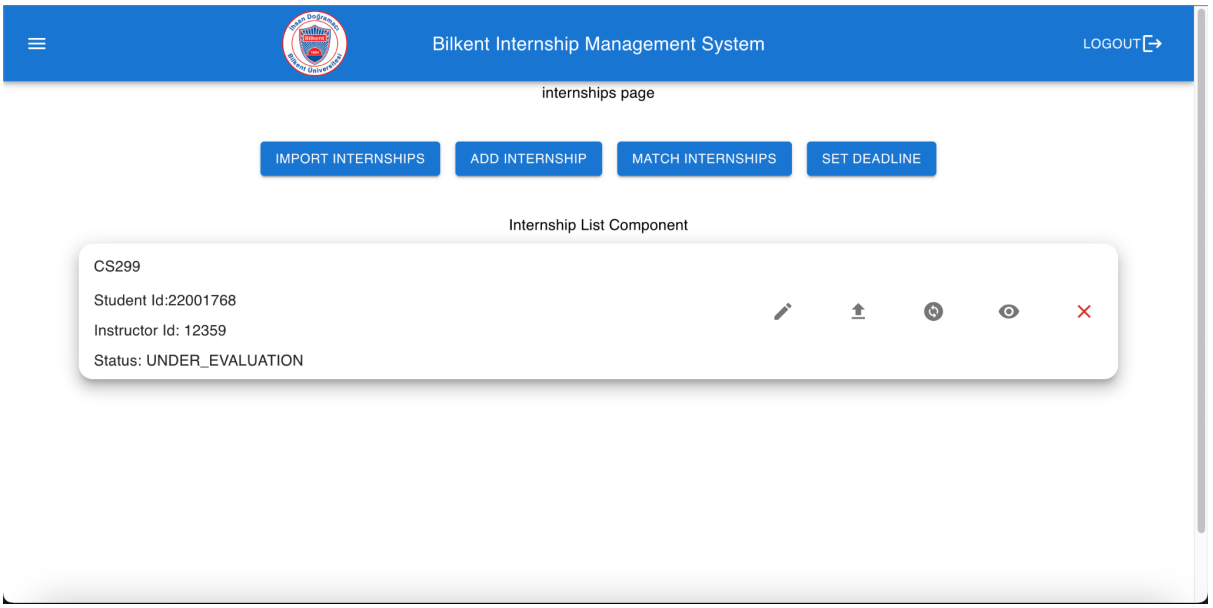
Admin enters the system by entering their id and password and clicking the login button in the login page. After this they are directed to admin home page where they see the secretaries list in the system if there are any secretaries. If the admin wants to add a secretary to the system admin can click the first button below the navigation bar that writes “ADD SECRETARY”. Clicking the button a pop up opens which has text fields to enter the secretary’s Id, Full Name and Email. After entering this information clicking the “ADD SECRETARY” button at the end of the popup the secretary can be added to the system. Below the “ADD SECRETARY” button in the home page, the secrataries in the system are listed if tehre are any below “SECRETARIES” title. Every secretary is listed in a box with their name below “Secretary Name” column and email below “Secretary Email” column. Also at the end of this box clicking the “Edit” icon enables admin to change the secretaries name, email and id from the pop up that opens after clicking this button. Moreover, by clicking the button next to it, the “Delete” icon, admin can delete the secretary chosen form the system.

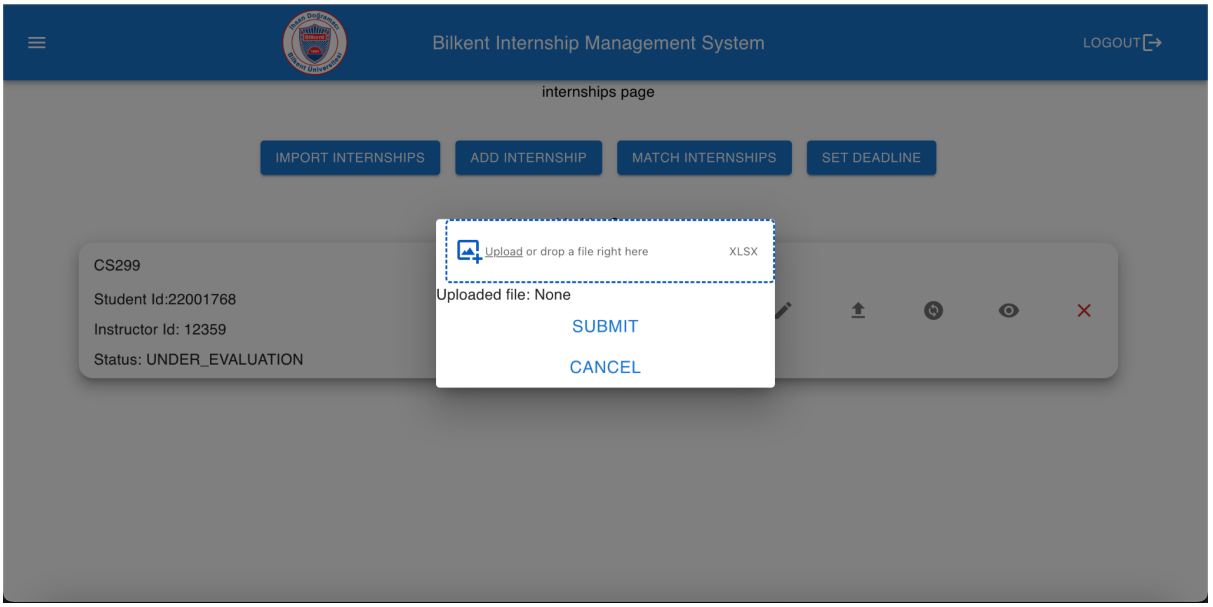
3.2. Secretary

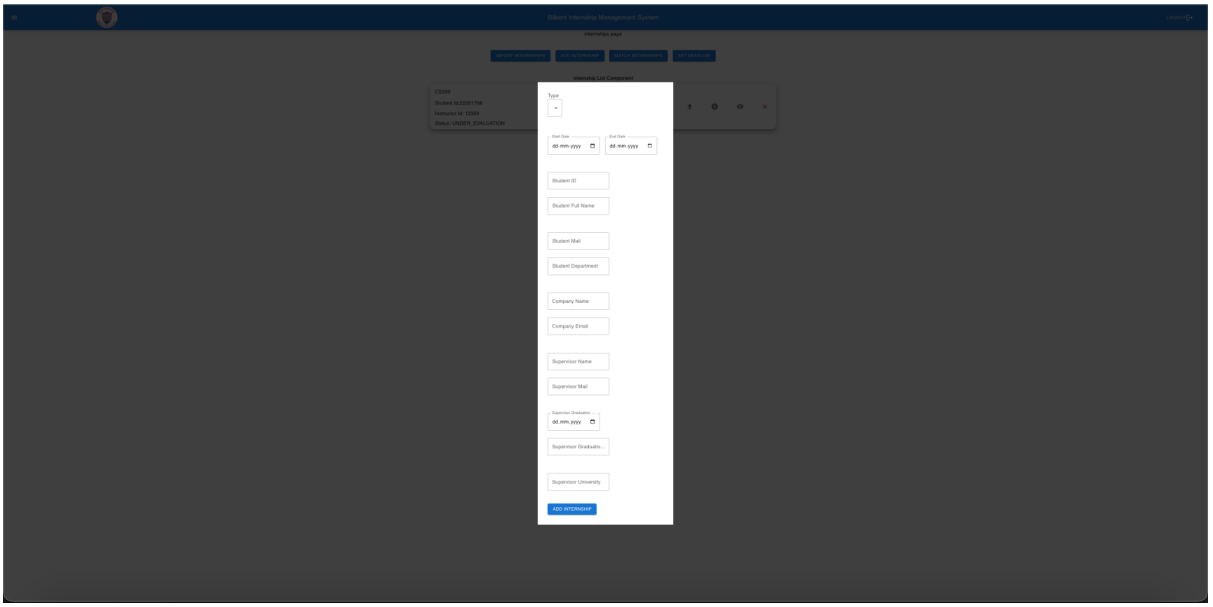


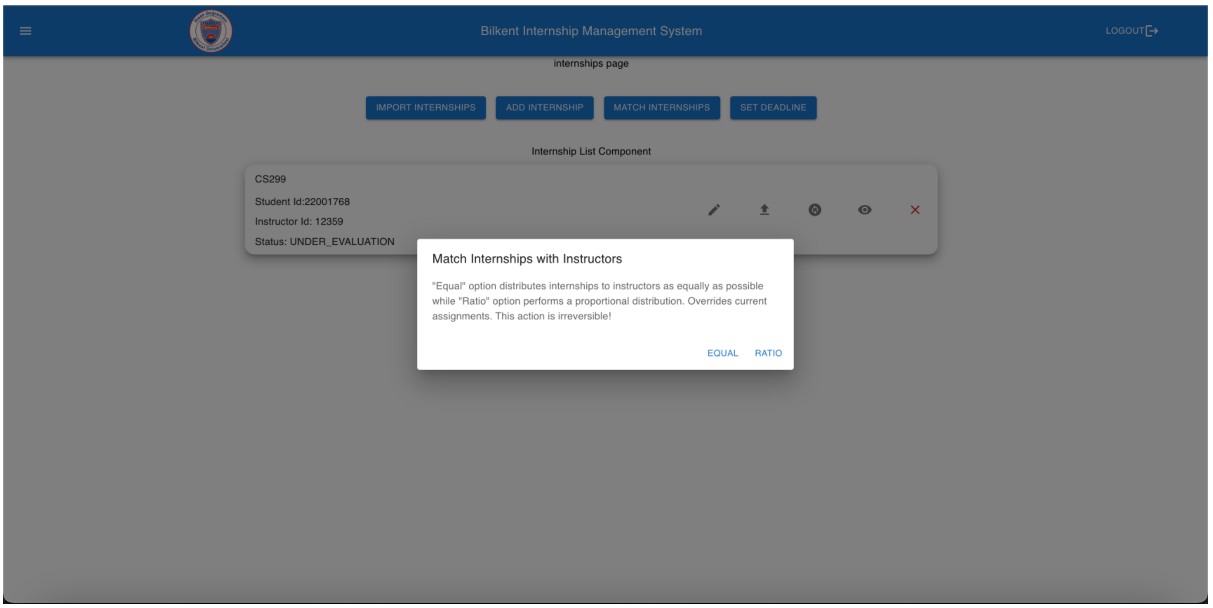

Bilkent Internship Management System
LOGOUT
Secretary page showing all instructors
ADD INSTRUCTOR
InstructorList Component
Full Name: Bora
Department: Computer Engineering
Number of Assigned Internships: 0/15
Full Name: David
Department:
Number of Assigned Internships: 0/0
Full Name: David
Department: CS
Number of Assigned Internships: 0/20

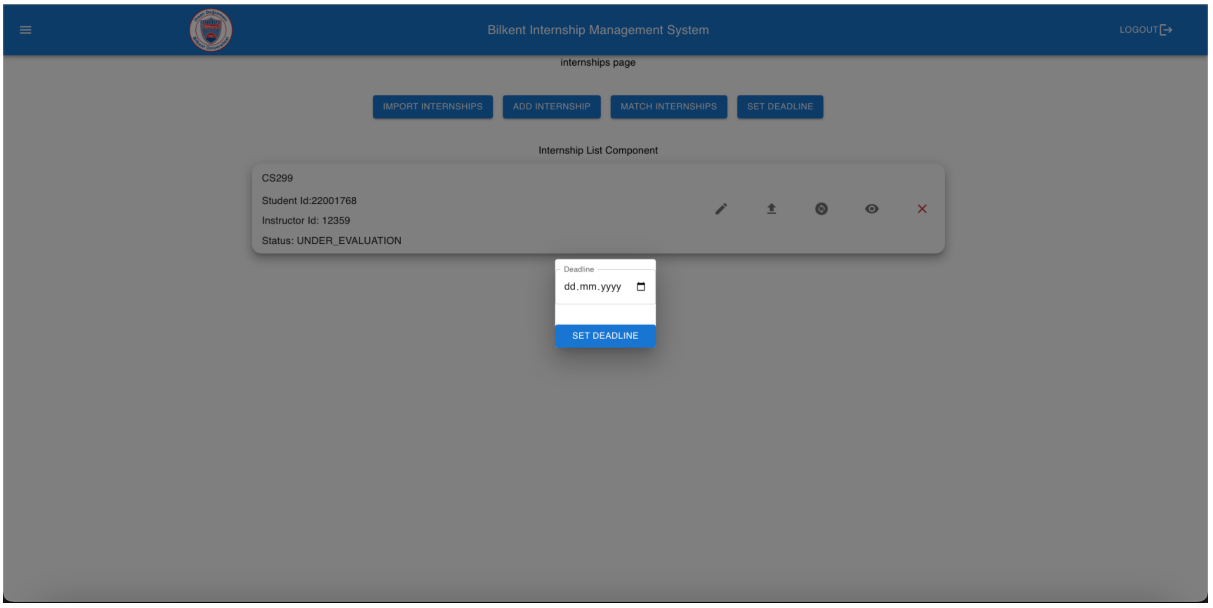

Bilkent Internship Management System
LOGOUT
ID
Full Name
Email
Department
Max Number of Internships
ADD INSTRUCTOR
Full Name: Bora
Department: Computer Engineering
Number of Assigned Internships: 0/15
Full Name: David
Department:
Number of Assigned Internships: 0/0
Full Name: David
Department: CS
Number of Assigned Internships: 0/20


Bilkent Internship Management System
LOGOUT
internships page
IMPORT INTERNSHIPS
ADD INTERNSHIP
MATCH INTERNSHIPS
SET DEADLINE
Internship List Component
CS299
Student Id:22001768
Instructor Id: 12359
Status: UNDER_EVALUATION


Bilkent Internship Management System
LOGOUT
internships page
IMPORT INTERNSHIPS
ADD INTERNSHIP
MATCH INTERNSHIPS
SET DEADLINE
CS299
Student Id:22001768
Instructor Id: 12359
Status: UNDER_EVALUATION
Upload or drop a file right here
XLSX
Uploaded file: None
SUBMIT
CANCEL

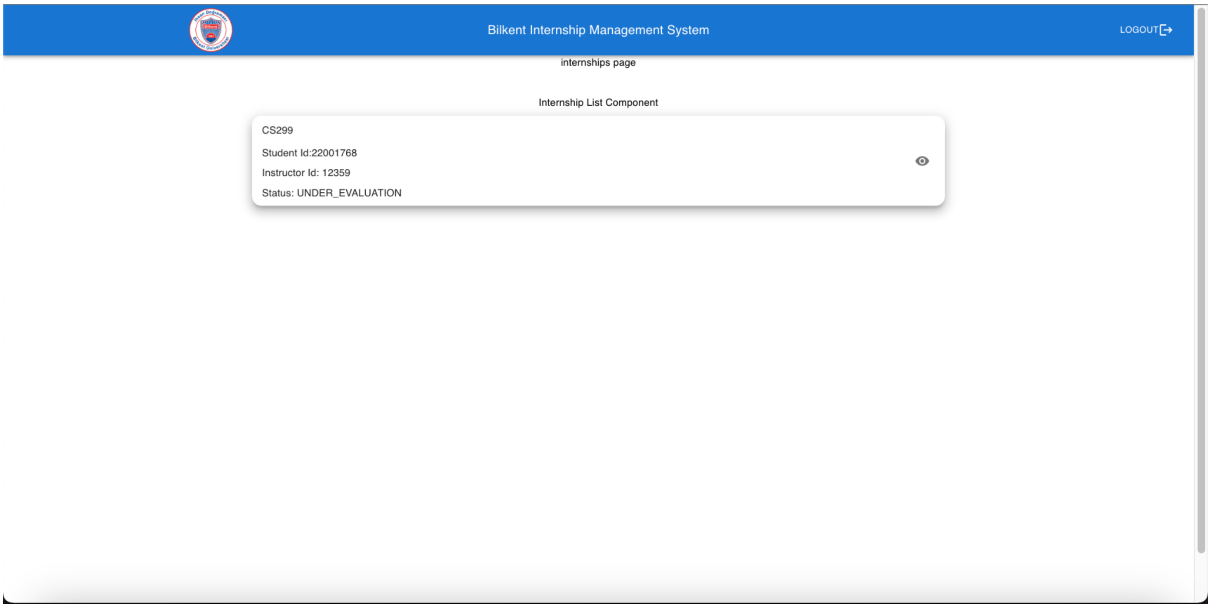


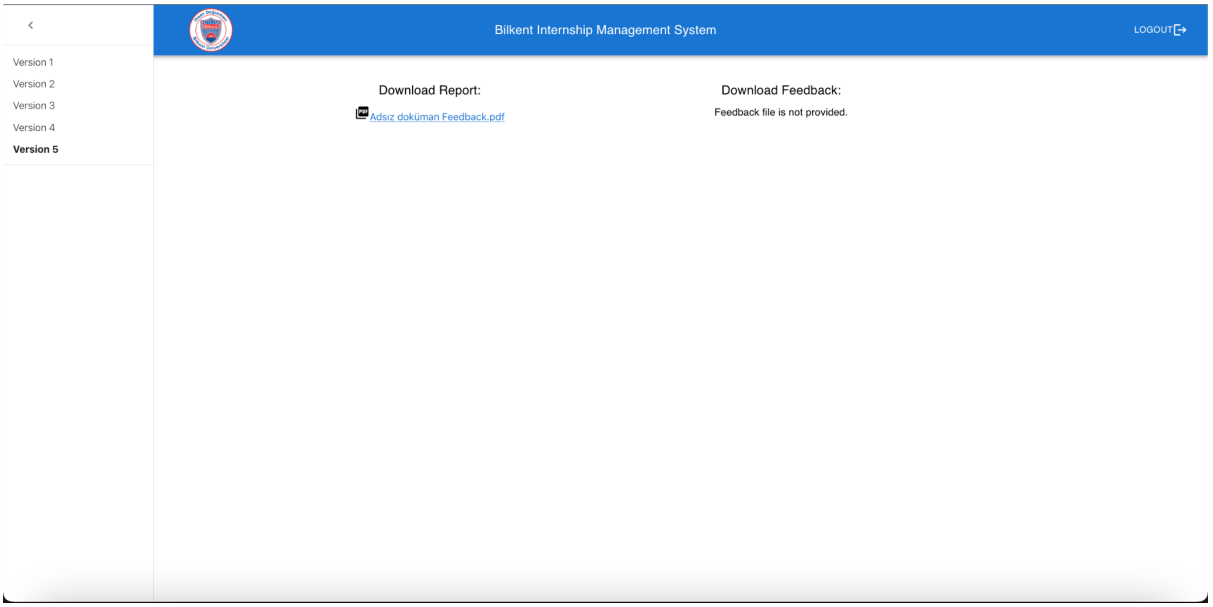

Bilkent Internship Management System
LOGOUT
internships page
IMPORT INTERNSHIPS
ADD INTERNSHIP
MATCH INTERNSHIPS
SET DEADLINE
Internship List Component
CS299
Student Id:22001768
Instructor Id: 12359
Status: UNDER_EVALUATION
Match Internships with Instructors
"Equal" option distributes internships to instructors as equally as possible while "Ratio" option performs a proportional distribution. Overrides current assignments. This action is irreversible!
EQUAL
RATIO



When a secretary enters the system using their id and password, they are directed to the “Secretary Home Page”. On the sidebar of the secretary, there are 4 pages they can select to go: Home Page, Internships, Instructors, and Teaching Assistants pages. On the “Instructors page”, secretaries can add a new instructor, delete an existing instructor, edit properties, and set the maximum number of reports that an instructor should be assigned. Later, on the Internships page secretaries can match internships with instructors using the “Match Internsiphs” button. This button provides two options for matching “equal” or “ratio”. Equal option assigns internships equally between instructors as much as possible without exceeding the maximum limit, and if this is not possible you will see a warning. The ratio option distributes internships proportionally to instructors' max limit. Also, on the Instructors page secretaries can set the deadline for the first iteration. They can click on the import button to add internships from an Excel file. If the Excel file has some problematic lines, the secretary will see a warning saying the problematic line. This process will automatically create students' accounts and sends their passwords to their emails. Also, secretaries can add internships manually using add internships button. They can reassign internships to instructors using the “Assign to an Instructor” button.

3.3. Student

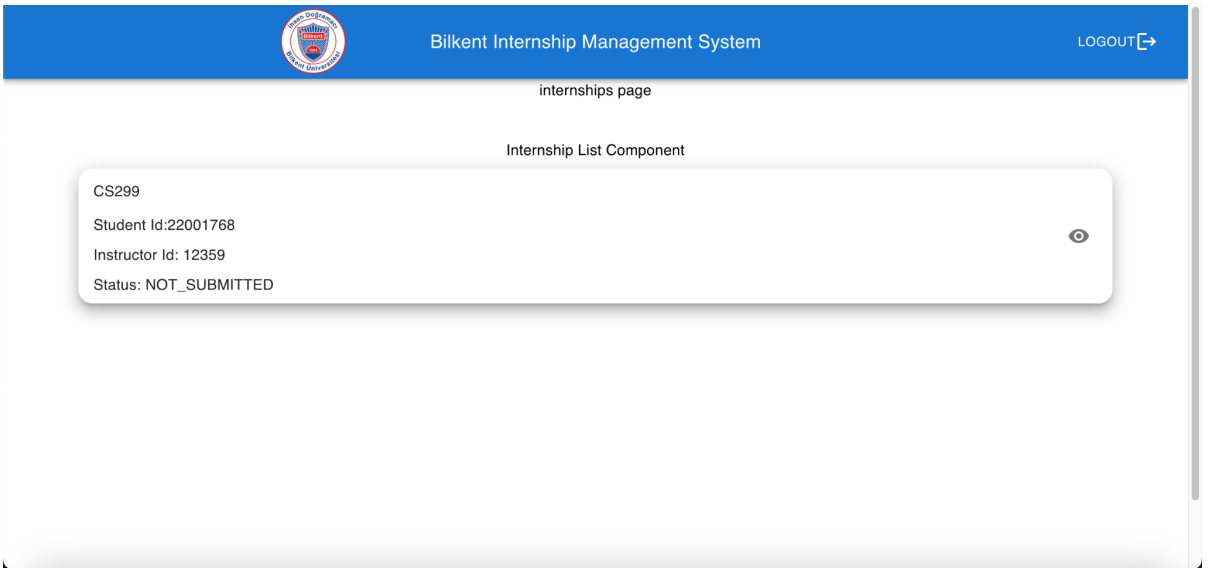


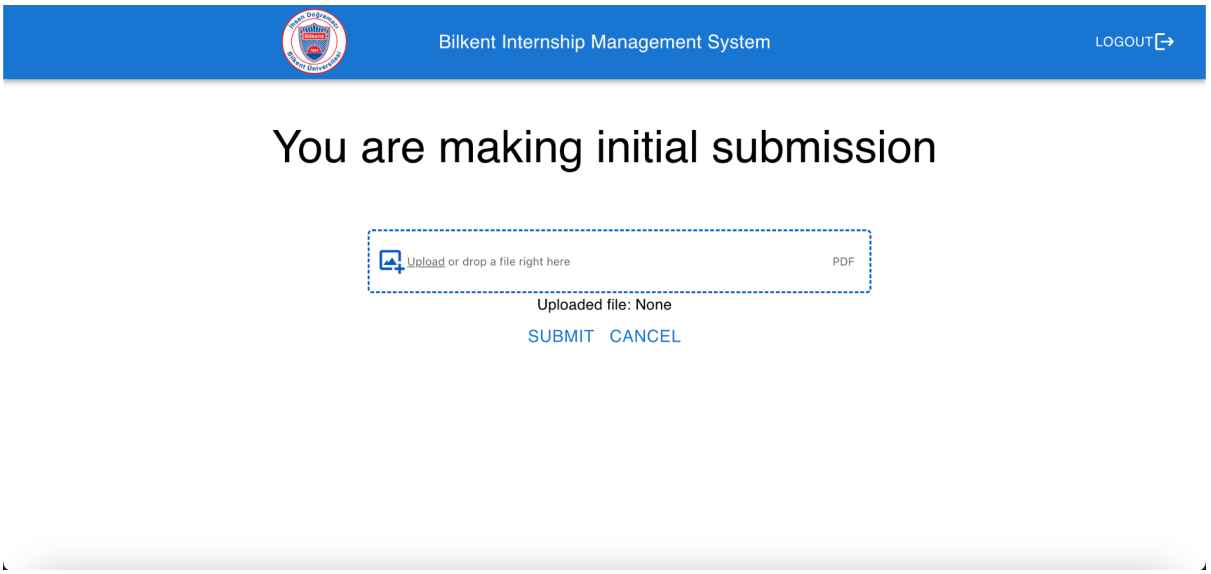


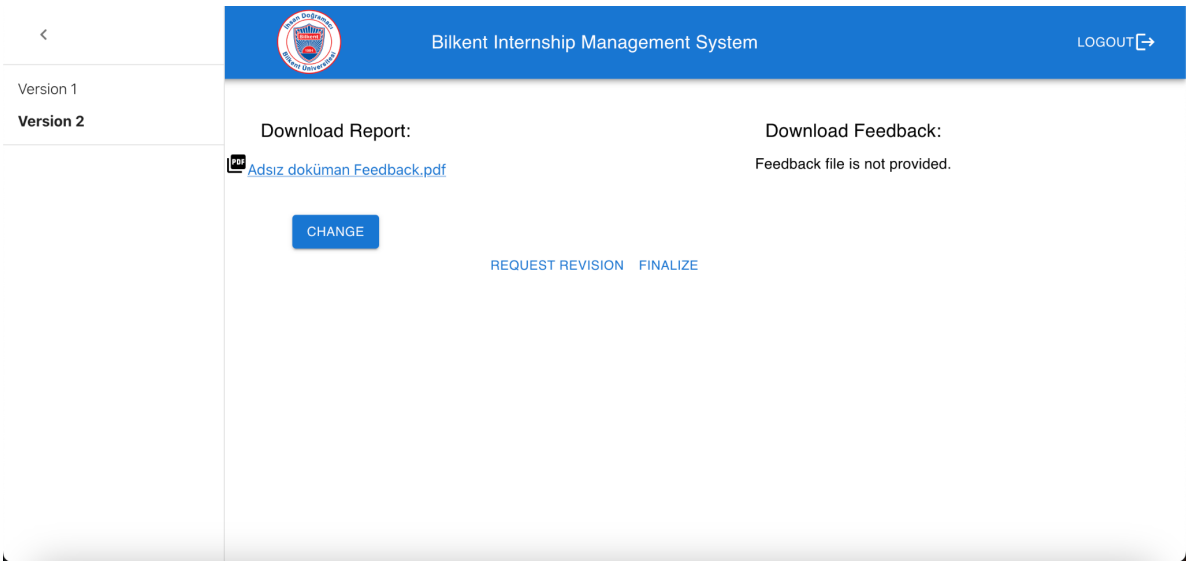
Students are directed to the “Student Home Page” from the “Login Page” after they log in with their id and password. On the home page, they can see their all past and current internships along with the status, the instructor who is evaluating his/her reports, and the type (299/399). In order to see their submissions, revisions, and feedback they need to click one of the “See Submission” buttons next to the internships. This will open up the page for that internship, and from the sidebar, students can choose the version (draft), they want to look at. For past versions that did not except by the instructor, students can view the report

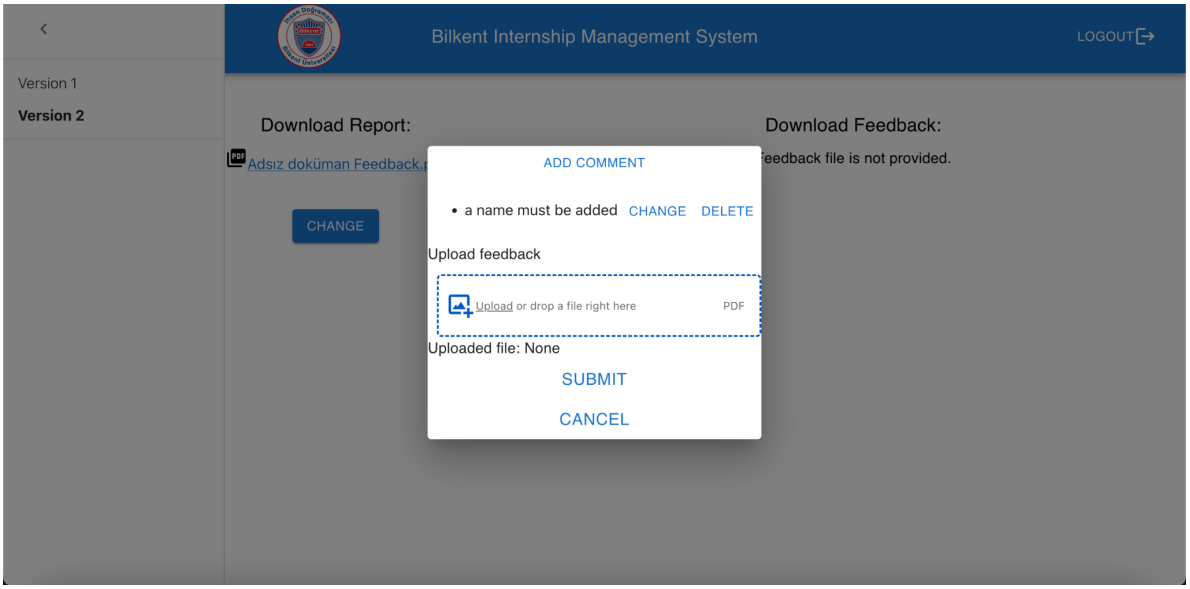
uploaded, feedback file uploaded (if exist), comments (if exist) by the instructor, and their answers to those comments. If they have not uploaded a new version of the report yet, they can click on the button “Add New Version” and upload the draft they corrected. However, if the instructor has made some comments, students have to provide an answer on that page for every single comment to be able to submit their reports.

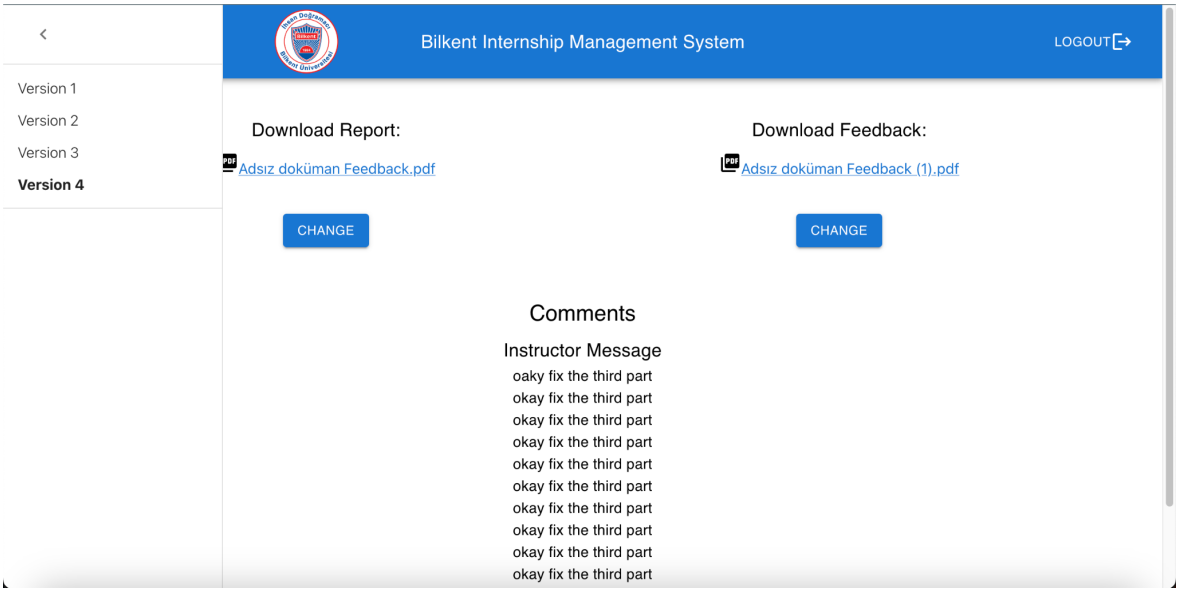
3.4. Instructor

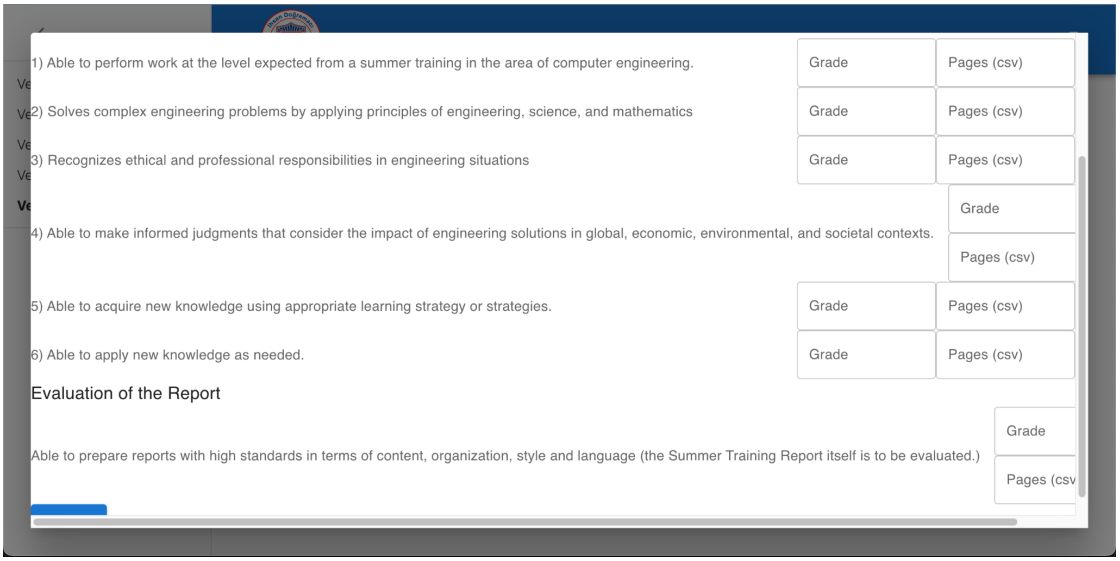





Version 1
Version 2
Bilkent Internship Management System
LOGOUT
Download Report:
Adsız doküman Feedback.pdf
Download Feedback:
Feedback file is not provided.
CHANGE
REQUEST REVISION
FINALIZE


Version 1
Version 2
Bilkent Internship Management System
LOGOUT
Download Report:
Download Feedback:
CHANGE
ADD COMMENT
• a name must be added
CHANGE
DELETE
Upload feedback
Upload or drop a file right here
PDF
Uploaded file: None
SUBMIT
CANCEL


Version 1
Version 2
Version 3
Version 4
Bilkent Internship Management System
LOGOUT
Download Report:
Adsız doküman Feedback.pdf
Download Feedback:
Adsız doküman Feedback (1).pdf
CHANGE
CHANGE
Comments
Instructor Message
oaky fix the third part
okay fix the third part
okay fix the third part
okay fix the third part
okay fix the third part
okay fix the third part
okay fix the third part
okay fix the third part
okay fix the third part
okay fix the third part



On the instructor page, the instructor that is logged in can see the internships assigned to him listed in boxes that contain the internship information: internship type, the internships' student id, instructors' own id and the status of the internship. This box also contains a button at the rightmost of the box that enables the instructor to see the submission that was made to the internship. This button takes the instructor to a page where they can download the report submitted, make a feedback which they can comment on the report and add a feedback report. They can also download this new report and change both of the reports. They can also can give a final grade by filling a form and download the final grade report.

4. BUILD INSTRUCTIONS

1. Install MySQL. Then, ensure that the root MySQL server is running on localhost:3306. Create a database named “internship_management” from the MySQL workbench (execute: create database internship_management;)
2. Clone our repository. To run the server, install Java extensions on VSCode and run “backend\src\main\java\com\bosgii\internshipmanagement\InternshipManagementApplication.java” Navigate to frontend directory and run “npm install”, then run “npm start” to start the React app.
3. Go to the browser and type “”localhost:3000”.
4. You should see a login screen. You should be able to enter to an admin account using ID 22222 and password 222, and enter a secretary account using 11111 as ID and 111 as password.
5. We provided an Excel file that imports internships which you can find in the root directory of the repository. From the secretary page, you can create internships by importing that Excel file from the Import Internships button.
6. If you encounter any problems, please contact us on Slack from our channel.

5. WORK ALLOCATION

- İsmail Emre Deniz:
    - Analysis Report:
        - Textual descriptions of use cases of student and grader
        - Proposed System section
        - Student/Secretary mock-up screens
    - Design Report
        - Introduction section
        - Subsystem decomposition subsection
    - Implementation
        - 5 features and 8 bug fixes implemented
        - Following Controller and Service Classes are implemented in backend:
            - Deadline Controller/Service
            - TA Controller/Service
            - Internship Controller/Service
            - Instructor Controller/Service
            - Import Controller/Service
        - Custom Exceptions and their checks are implemented in backend:
            - UserIdExistsException
            - InvalidMailAddressException
        - Styling improvements and minor features implemented in frontend
- Oğuz Kuyucu
    - Analysis Report:
        - Textual descriptions of use cases of admin and secretary
        - Current system and introduction
        - 2 mockup screens
        - Co-author of activity diagram about submissions.
    - Design Report
        - User Interface diagram
        - Final object design co-author
    - Implementation
        - Authentication-authorization for backend and frontend
        - Entities' repositories (admin, secretary, student, etc)
        - Styling of secretary, student and instructor's pages.
        - Implementation of minor errors in the front-end like wrong password error.
        - Testing of the application.
        - Debugging of CORS error.
        - Debugging of 401 error.
    - Presentation
        - Preparation of scenarios of video.
- Berkay Inceisci
    - Analysis Report

        - Drew class diagram and provided explanations for the class diagram.
    - Design Report
        - Drew web server layer diagram and data management diagram. Co-writer of final object design.
        - Wrote design patterns section.
    - Implementation
        - Implemented all of the pages and React components (except admin side) used in the frontend (including state management and how components communicate with the backend). Provided styling for some of them.
        - Set up a basis for the backend with respect to the object class diagram (created all of the entity classes), defined api endpoints, implemented some controller and service classes (internship controller/service, submission controller/service, version controller/service, comment controller/service) with respect to the web server layer diagram, implemented upload version && ask for revision && suggest comments && reply comments && add new version workflow both in frontend and backend, merged Goktug's storage service implementation to the current code base which resulted in fully functional submission-version-feedback system, applied design patterns for matching internships with instructors functionality.

- Göktuğ Yılmaz
    - Analysis Report
        - Write text of nonfunctional requirements.
        - Drew Use Case Model
    - Design Report
        - Write the text of and drew Access Control and Security
        - Write the text of and drew Boundary Conditions
    - Implementation
        - Implementation of backend:
            - AdminController/Service SecretaryService
            - PDFGenerator (FinalPDFRequestService) and its needed classes
            - Local File Storage (DocumentService)

    - Presentation and Final Report
        - Introduction and Lesson Learned
        - Edit of demo video

- İlayda Zehra Yılmaz
    - Analysis Report
        - Made the activity diagrams and wrote their explanations and general check of the report
        - Cowrote the state diagrams
        - Made the UI mock-up of 2 of the Secretary Screen in the first iteration and all 3 Student Screen in the second iteration

    - Design Report
        - Made the Object Design Trade-Offs part
        - Helped to make the Final Object Design Diagram
    - Implementations
        - Wrote the code for the Admin user's home page and connected to the backend
        - Worked on some mistakes at the backend of this page
        - Styling of the Navigation Bar, Secretary, and Admin pages
    - Final Report
        - User's Guide Admin and Instructor part texts and general style of report

- Safa Eren Kuday-21902416
    - Analysis Report:
        - State Diagrams and Their Explanations
        - Class diagram coauthor
        - 2+3 mockup screens
        - Pseudo Requirement
        - Constraints of Usability
    - Design Report
        - Hardware Software Mapping
        - Persistent Data Management
        - Constraints of Usability
    - Implementation
        - Excel Importing and Student/Internship/Company/Superv Creation
        - Async Email-Notification upon revision request and registering
        - Services: Import, Version, Submission, Secretary
        - Controllers: Import, Version, Admin
        - Request: Add/Change Version/Submission/Secretary
        - Impaired Excel Exception Handling
        - Generate Random Passwords and setting/send encoded passwords
        - Testing of the application.
    - Presentation
        - User's Guide
        - Video Director/ Shooting

Demo Video Link: https://youtu.be/NKBaf75i2DY