AN-NAJAH NATIONAL UNIVERSITY

FACULTY OF ENGINEERING AND INFORMATION TECHNOLOGY

Computer Engineering Department

Software Graduation Project

Let's Graduate

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Yours sincerely
Rawan, Ahd

Disclaimer

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Abstract

Let's Graduate is a mobile application designed to streamline the graduation process for students and supervisors working on graduation projects. It provides a range of features and processes that simplify the work stage, ensure a hassle-free experience for all parties involved, and mitigate the issues caused by face-to-face communication.

Students interested in graduation projects can register on the app, request to obtain a graduation project, search for partners based on specific criteria, and watch demos of previous projects for inspiration and valuable insights. The application also enables them to nominate supervisors based on their preferences and facilitates communication between students and supervisors through a chat feature.

Each project has a dedicated page on the app that brings together all the students and supervisors working on it. This page includes a chat feature that allows for easy coordination and follow-up. Supervisors can create task lists for students to complete and monitor their progress throughout the project. Students can upload videos to keep supervisors informed of their work, and at the end of the project, they can submit their final report and demo through the same page.

The app also includes a browser for administrators, with two different access levels. The department head can manage the request process for students who want to obtain a graduation project, control various aspects of the application, including adding and removing students and supervisors, and download diagrams and information in PDF format. The Dean can access general information about the number of students, supervisors, project details, and view the history of all previous information.

1 Introduction

1.1 Problem Statement

The current process of obtaining a graduation project for students is inefficient and time-consuming

- As a student:
  - Students can easily check their eligibility for the graduation project by accepting or rejecting their requests, eliminating the need to visit the department head in person.
  - Students can confirm a supervisor's reservation through the app, eliminating the need for in-person visits and reducing waiting times caused by limited supervisor availability.
  - Students can use our app to search for compatible supervisors and project partners based on comprehensive information, streamlining the process and increasing the likelihood of finding suitable matches.
  - Our platform provides a unified communication platform for team members, eliminating challenges caused by dispersed communication channels.
  - Students can access demos of past projects through our app, making it easy to find relevant examples that fit their needs.

- As a supervisor:
  - - "The supervisors accept or reject students according to their capacity through the application, which reduces the need for personal visits from students when their capacity is full.
  - Our platform provides a common communication platform for supervisors and students, making it easy to confirm meeting reservations and communicate during project work.
  - Supervisors can easily track the progress and achievements of their students through our app, providing an efficient way to monitor their students' work and offer support."
- As head of the department:
  - The head of the department confirms eligibility for the graduation project based on the requests received, reducing the number of students visiting the supervisors' offices and improving efficiency.
  - The department head can easily add or remove students from their supervision, which saves time and increases efficiency.
  - Our platform provides a list of students who need partners with their information and capabilities, making it easier for students to find suitable partners without relying on department heads for help, reducing workload and saving time.

- As a dean:
  - Dean can access and track business information, with advanced filtering options.
  - The dean can easily retrieve information from previous years, eliminating the challenges caused by manual searches and saving time and effort.

1.2 Project Objectives

Our objective is to develop a mobile application and website that provides students and all parties involved in graduation projects with a dynamic electronic environment, streamlining the process for them.

- As a student:
  - To verify eligibility for a graduation project, students are required to visit the department chair in person.
  - To secure their reservation, students must visit their supervisor's office in person, which may take time due to limited availability of supervisors with capacity to accommodate them.
  - Students face difficulty searching for a compatible supervisor based on limited information, and finding suitable project partners based on their needs.

  - Coordination between team members can be difficult due to the lack of a unified platform for communication, which causes dispersion for students.
  - Students have limited access to previous project demos, making it challenging to find relevant examples that suit their needs.

- As a supervisor:
  - Supervisors are frequently visited by students in their offices even when their capacity is full.
  - Lack of a common communication platform between supervisors and students, making it difficult to confirm meeting reservations and communicate during project work.
  - Supervisors having difficulty tracking the progress and achievements of their students in projects.

- As head of the department:
  - The high number of students visiting supervisors' offices to confirm their eligibility for a graduation project is causing inefficiencies in the process.
  - The process of adding or removing students from a supervisor's supervision requires personal communication and agreement, which is time-consuming and inefficient.

  - Some students do not have project partners and rely on the heads of departments to help them find suitable partners, further adding to the workload and time required.

- As a dean:

  - Difficulty accessing and following up on working information and filtering it effectively.
  - Difficulty in retrieving information from previous years.

1.3 Project Scope

A project focuses on the Faculty of Engineering and Information Technology, and connects each user with the things he needs from his own section.

1.4 Project Importance

In today's fast-paced world, coordinating and communicating face-to-face can be a time-consuming and cumbersome process. This is where the Let's Graduate emerges as a crucial tool, providing a streamlined solution for all parties involved in graduation projects at every level. By leveraging the power of technology, the Let's Graduate enables seamless organization and communication, saving valuable time and effort while ensuring optimal collaboration and success.

2 Constraints, Standards and Course work

2.1 Constraints

2.1.1 Limited resources

The documentation for React and React Native covers only the fundamentals, which requires additional searching to accomplish our objectives. Furthermore, to work with these technologies, one must have knowledge of Android Studio, Expo Go, JSX, and other libraries. Additionally, utilizing MySQL database,AWS and Firebase requires significant effort and research to achieve optimal results.

2.1.2 Time Limit

Building the entire application, including learning new technologies and languages, researching and exploring various topics, designing the UI, and implementing it as a mobile application and website on both front-end and back-end, all within a four-month time frame, while also balancing our main courses, labs, and training, presented a significant challenge.

2.2 Standards

2.2.1 React Native Application Front-end

We chose to use React and React Native libraries for the front-end development of our project due to several reasons. React supports building

user interfaces and web applications for the front-end web. It follows the concept of reusable components. React Native allows us to use ReactJS to build reusable components and communicate with native components. JavaScript provides strong support for many libraries and tools, and is an object-oriented programming language that supports interfaces, classes, abstraction, inheritance, and many other features. Additionally, React and React Native have well-written documentation that provides a smooth learning curve for basics, making them an ideal choice for our application.

2.2.2 Database Back-end

For our project, we wanted to use modern and efficient technology, so we chose Node.js as our server-side platform. Node.js is an open-source platform built on Google Chrome's V8 engine, which provides scalability and parallel code execution. Its lightweight and fast performance made it the ideal choice for our project. In addition, we found that Node.js is widely used in the industry, including by large companies like LinkedIn.

To manage our database, we selected MySQL, a popular relational database management system. MySQL is well-suited for handling structured data and can scale to manage large data sets. It is known for its robust features and high performance, and its active community provides ample support and resources for developers. MySQL proved to be a powerful and reliable choice for our project.

For our real-time chat feature, we utilized Firebase Realtime Database, a

tool developed by Google that offers real-time database, authentication, hosting, and other services. Firebase Realtime Database is a popular option for building real-time applications such as chat apps and was a perfect fit for our needs. However, it is important to note that Firebase was used specifically for building real-time features in our application and not for handling all of our data.

2.2.3 Waterfall Model

The Waterfall model was adopted for project management during the development of the application, following the below tasks and steps:

- Firstly, the problem was understood, and all the necessary requirements, constraints, and data required for development were captured and analyzed.
- Secondly, the requirements specifications from the first phase were studied, and the system design was prepared, including the algorithms and languages that would be used to implement the ideas.
- Thirdly, small programs called units were developed and tested for functionality, such as the chat, notification, student profile, supervisor profile, and admin page.
- Fourthly, all the small units were integrated into a system and tested for faults and failures.

- Finally, the application was deployed in the customer environment using the Android Package (APK) format.

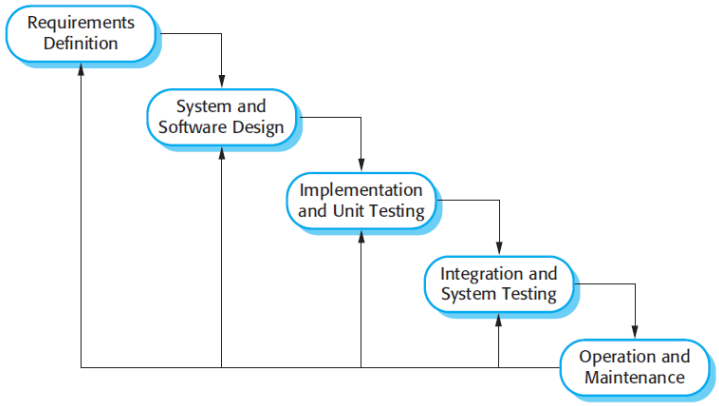


Figure 2.2.1: Water flow model

2.3 Earlier course work

During our studies in the Computer Engineering Department, we learned various fundamentals and concepts that were instrumental in the development of this app. These included Object-Oriented Programming, Web Programming, Artificial intelligence, Algorithms and Complexity, Critical Thinking and Research skills. We also took online courses on React, React Native, Node.js, Firebase, and GitHub that aided us in the implementation and development of our project, and enabled us to produce a comprehensive report.

3 Literature Review

The development of a mobile application and website that provides a dynamic electronic environment to streamline the graduation project process for students and all parties involved is a topic of interest in recent studies. The objective of this idea is to improve communication, collaboration, and efficiency during the graduation project process.

Several studies propose the development of mobile applications, online platforms, and web-based systems to manage and streamline final year projects. For example, Alshammari et al. (2021) in his stydy "Towards a Mobile Collaborative Learning Application for Graduation Projects" propose the development of a mobile collaborative learning application that facilitates communication and collaboration among students, supervisors, and external stakeholders. Choo et al. (2021) in his study "A Systematic Review of the Use of Mobile Applications for Final Year Projects in Higher Education" provide a comprehensive review of the use of mobile applications in final year projects, highlighting their benefits and challenges.

Online platforms and web-based systems have also been proposed to manage and assist final year undergraduate projects. Olanrewaju and Adetunmbi (2019) in thier study "An Online Platform for Managing and Assisting Final Year Undergraduate Projects" propose an online platform that includes project tracking, resource sharing, and communication tools, while Ogundele et al. (2018) in theirr study "A Web-Based System for Manag-

ing Final Year Projects in Higher Education Institutions" present a web-based system that includes project tracking, supervisor allocation, and assessment tools. Oluwadare et al. (2017) in his study "Development of an Online Management System for Final Year Projects" propose an online management system that includes project tracking, resource sharing, and communication features.

Access to information about previous successful graduation projects is important for students. Al-Emran et al. (2018) in his study "Exploring the Critical Challenges and Factors Influencing the Use of Mobile Applications in Supporting the Final Year Project Process" found that students were highly interested in seeing the projects from previous years and the technologies they used. This information can provide valuable insights for students and help inspire new ideas for their own projects.

Finding the appropriate supervisor for a graduation project can be challenging for students. Alqahtani et al. (2019) in his study "An Online Platform for Managing and Assisting Final Year Undergraduate Projects" found that some students found it challenging to find the appropriate supervisor for their project, which led to delays in the project timeline. A mobile application or website that facilitates the supervisor allocation process can help alleviate this challenge.

Meeting project requirements and deadlines is also a common challenge faced by students during the graduation project process. Oluwadare et al. (2017) in his study "Development of an Online Management System for

Final Year Projects" propose an online management system that can help students track their project progress, deadlines, and resources, ensuring that they meet project requirements and deadlines.

The development of a mobile application and website that provides a dynamic electronic environment for students and all parties involved can help address several challenges faced during the graduation project process and improve communication between students and their supervisors. Access to information about previous successful projects and technologies can also provide valuable insights for students. However, challenges such as finding the appropriate supervisor, meeting project requirements and deadlines, and obtaining necessary resources and materials still need to be addressed in order to ensure the success of graduation projects.

4 Methodology

4.1 Frameworks and Libraries

React Native

React Nativeiiis a framework for building mobile apps with a native look and feel using JavaScript and React. It uses a virtual DOM to create consistent apps for both iOS and Android and allows code readability. Its approach allows developers to use web development skills to create native-like apps. It's widely adopted by developers due to its ability to create apps that look and feel like they were built using the native platform and its active community support.

Expo

Expo is a framework and a platform for universal React applications. It is a set of tools and services built around React Native and native platforms that help you develop, build, deploy, and quickly iterate on iOS, Android, and web apps from the same JavaScript/ Typescript codebase.

4.2 Packages and modules

1.react-native

The core package for React Native development.

2.react-navigationen

A package for handling navigation in React Native apps.

3.axios

A library for making HTTP requests.

4.react-native-vector-icons

A library for using customizable icons in React Native apps.

5.react-native-image-pickers

A package for selecting images and videos.

6.react-native-firebase

A comprehensive package for integrating Firebase services.

7.react-native-gesture-handler

A library for gesture recognition and touch handling.

8.react-native-svg

A library for rendering SVG graphics.

9.redux

A state management library.

10.react-redux

A package that provides bindings for Redux with React components.

11.prop-types

A package for type-checking React component props.

12.moment

A library for parsing, validating, manipulating, and formatting dates.

13.react-native-element

A set of UI components for React Native apps.

14.react-native-animatable

A package for creating animations.

15.react-native-camera

A module for accessing the device's camera and capturing media.

16.react-native-webview

A package for displaying web content within a React Native app.

17.react-native-video

A module for playing videos in React Native apps.

18.react-native-paper

A UI library following the Material Design guidelines.

19.react-native-datepicke

A component for selecting dates.

4.3 Servers and API‘s

4.3.1 Express.js

Express.js is a popular web application framework for Node.js. It provides a simple and minimalistic approach to building web applications and APIs. Express.js is known for its flexibility, scalability, and ease of use, making it a widely adopted framework in the Node.js ecosystem.
Here are some key features and use cases of Express.js:

API Development

Express.js is often used for building RESTful APIs, allowing you to define routes for different API endpoints and handle JSON data. It provides a straightforward way to implement CRUD (Create, Read, Update, Delete) operations for data manipulation.

Integration with Databases

Express.js can easily integrate with various databases and ORMs (Object-Relational Mappers). It supports multiple database systems, such as MongoDB, MySQL, PostgreSQL, and more. This allows developers to build database-backed applications efficiently.

4.3.2 Python

n Python, you can leverage the power of vectorization and cosine similarity to implement a feature recommendation system. Term Frequency-Inverse Document Frequency is a popular technique for converting text data into numerical representations.

Here are some key features of python library:

Vectorization

preprocessing and cleaning text data using Python libraries such as pandas and nltk,TfidfVectorizer class from the sklearn feature extraction.text module to transform your text documents into TF-IDF vectors. This vectorization process converts each document into a numerical vector representation, where each element corresponds to the importance of a particular word in that document.

Cosine similarity

then calculating the cosine similarity between the TF-IDF vectors of different documents or items in your system. The cosine similarity algorithm measures the similarity between two vectors by computing the cosine of the angle between them. A higher cosine similarity indicates a closer match or similarity between the documents.

4.3.3 MySQL

MySQL is an open-source relational database management system (RDBMS) that is widely used for storing, managing, and retrieving structured data. It is known for its reliability, scalability, and ease of use. MySQL uses the SQL (Structured Query Language) language to interact with the database, allowing you to create, modify, and query data efficiently.

SQL Workbench

SQL Workbench is a popular graphical user interface (GUI) tool for working with relational databases, including MySQL. It provides a user-friendly environment for database administrators, developers, and analysts to interact with MySQL databases. SQL Workbench supports various features such as query writing, data modeling, data import/export, and database administration tasks.

4.3.4 Amazon S3

Uploading a demo to the cloud via Amazon S3 involves a straightforward process. First, you need to select the desired demo file that you wish to transfer. Once you have identified the file, you can initiate the upload process. This entails establishing a connection to your Amazon S3 storage account, ensuring you have the necessary permissions to perform the upload.

Next, you must specify the target location within your S3 bucket where the demo file will reside. This typically involves defining a unique key or path that represents the file's location within the bucket's directory structure. This step is essential for organizing and retrieving the demo file later.

After determining the destination, you can proceed with the actual file transfer. The demo file is divided into smaller chunks, which are sent over the internet to Amazon S3. This ensures a reliable and efficient upload process, especially for larger files.

4.3.5 Firebase

Firebase is a robust cloud-based platform that provides a wide range of services and tools for mobile and web development. One of its standout features is the Realtime Database, which enables seamless real-time data synchronization across various devices and platforms.

Firebase Realtime Database is commonly used for building chat applications. By leveraging Firebase's capabilities, developers can create chat applications that are highly reliable, scalable, and secure, making it an excellent choice for integrating chat functionality into our app.

4.3.6 API Endpoints Testing:

Insomnia

Insomnia API refers to the Application Programming Interface (API) provided by the Insomnia application. Insomnia is a popular open-source API testing and documentation platform that helps developers design, test, and manage APIs.

The Insomnia API allows developers to interact with the Insomnia application programmatically, enabling automation and integration with other tools and systems. With the API, developers can perform tasks such as creating and updating workspaces, managing API requests and responses, synchronizing data across multiple devices, and more.

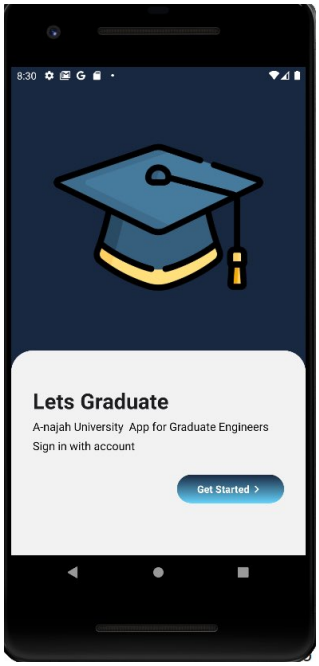
Nodemon

Nodemon is a popular development tool for Node.js applications that automatically restarts the server whenever changes are detected in the source code. It helps developers in the development process by saving time and effort that would otherwise be spent manually restarting the server after making changes.

5 Results and Discussion

We will present in this section the final results of our project, showcasing the various functionalities and features through screenshots. Each section will focus on a specific aspect of the project, providing a comprehensive overview of its capabilities and benefits.

5.1 start Page



5.2 Sign up / Sign in Page

The project begins with carefully designed registration and login pages that provide a seamless user experience. The registration page enables new users to create an account, while the login page allows easy access for existing users. All registration and login processes are subject to validation and constraints based on the app's features to ensure system security. User credentials are securely stored and encrypted, ensuring only authorized access to the system and protection of personal information.

this is for the type

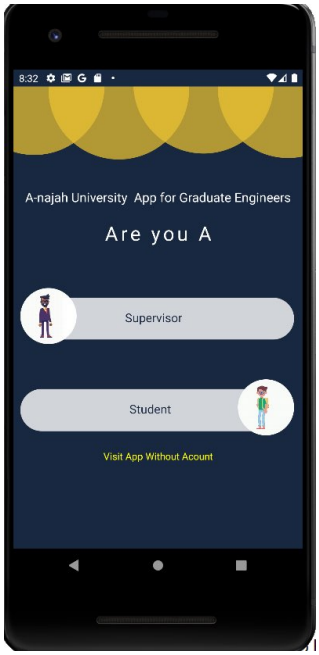


Figure 5.2.1: The type is

For the student

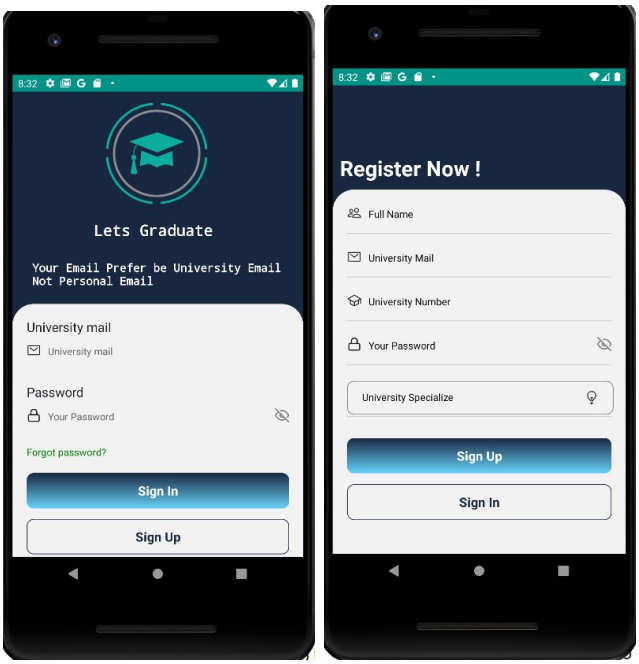


Figure 5.2.2: sign in/ up student

For the supervisor

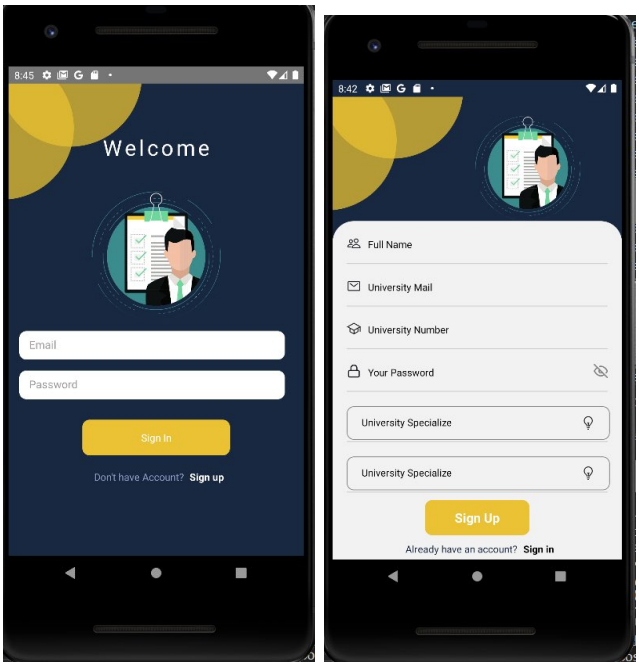


Figure 5.2.3: sign in/ up supervisor

5.3 Change Password

To change their password, the supervisor or the student can request an optimal number to be sent to their email. Once they receive the number, they can enter it and proceed to change their password

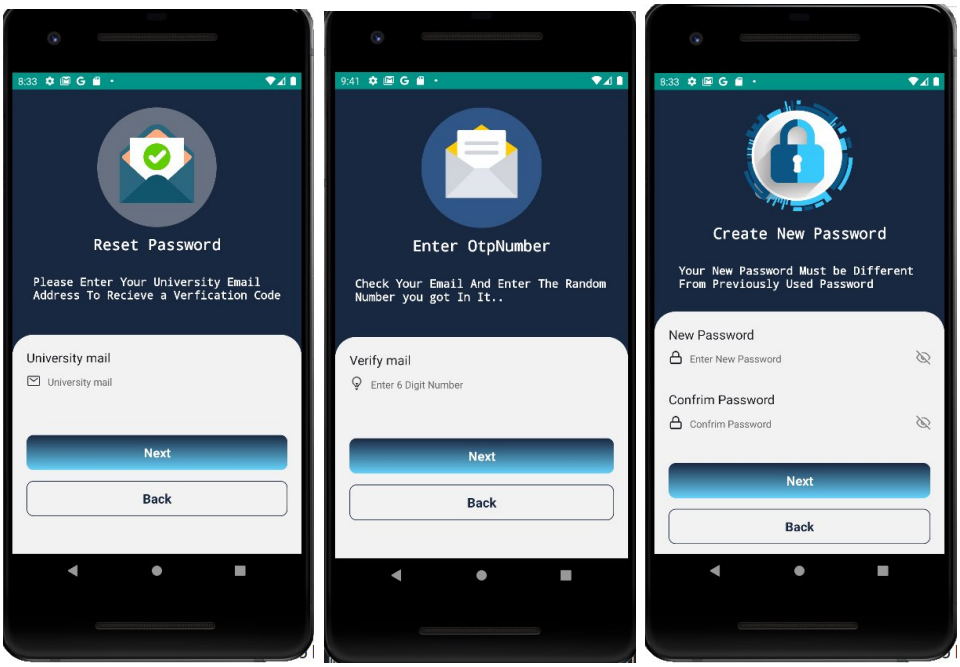


Figure 5.3.1: Change Password

5.4 Update Profile

Both the supervisor and the student can edit their profile

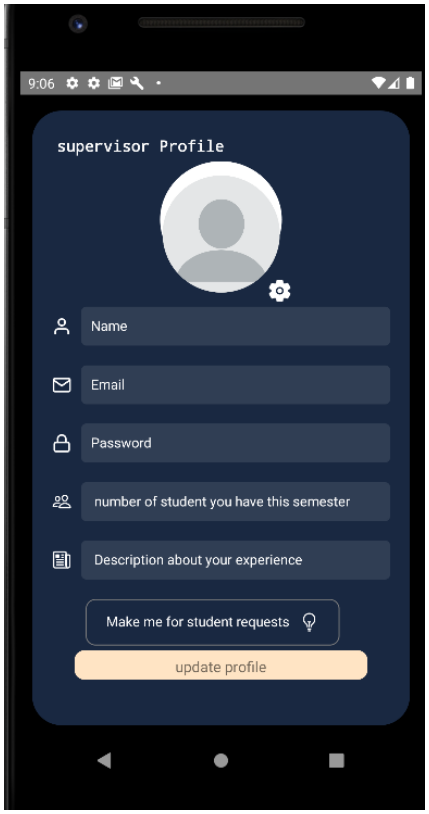


Figure 5.4.1: Supervisor update profile

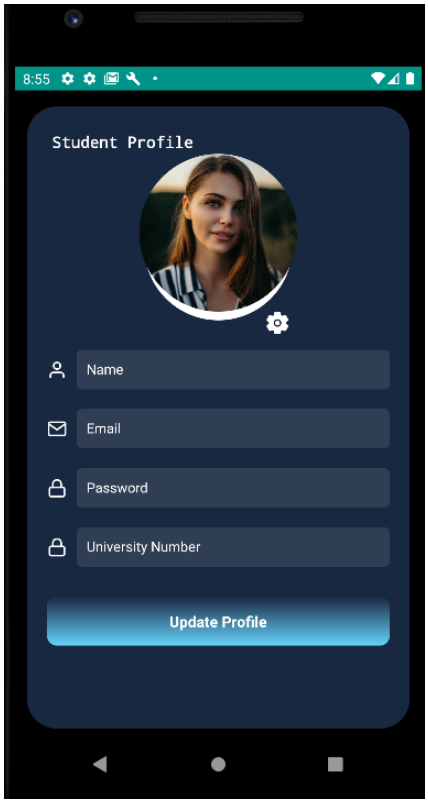


Figure 5.4.2: Student update profile

5.5 Navigation bar

Both supervisors and students can easily navigate through the application's pages using their respective navigation bars. These navigation bars provide a smooth and intuitive way for users to access the various features and functionalities of the application.

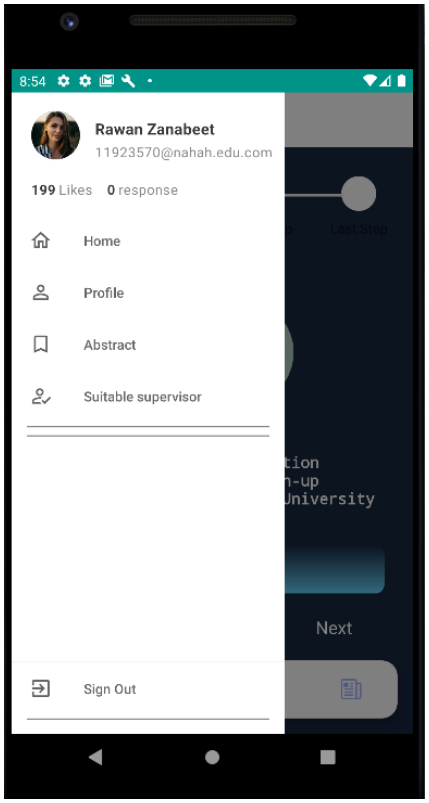


Figure 5.5.1: Student Navbar

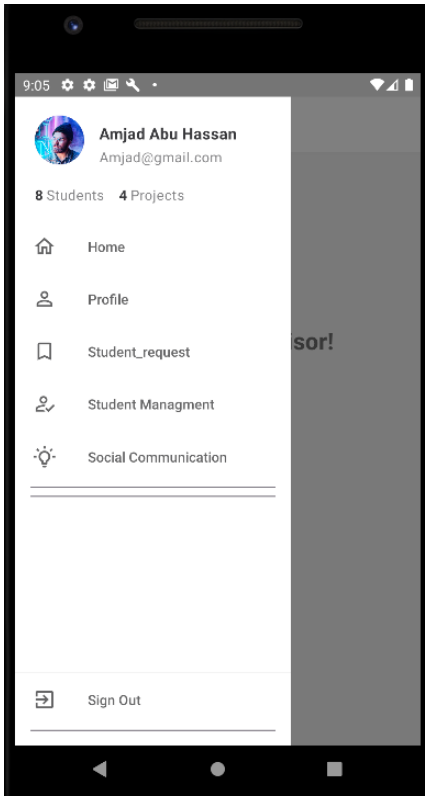


Figure 5.5.2: Supervisor Navbar

5.6 Request

5.7 List of supervisors

5.8 Supervisors suggestion

Our application utilizes artificial intelligence to suggest potential supervisors for students based on the proximity of their project ideas. Students can enter their project idea into the application, and the recommendation system will identify the three supervisors whose expertise aligns most closely with the student's idea. The system uses sophisticated algorithms to analyze the student's idea and compare it to the supervisors' areas of expertise, enabling it to provide highly accurate recommendations. This feature streamlines the process of finding a suitable supervisor and helps students connect with the right professionals who can guide them through their project.

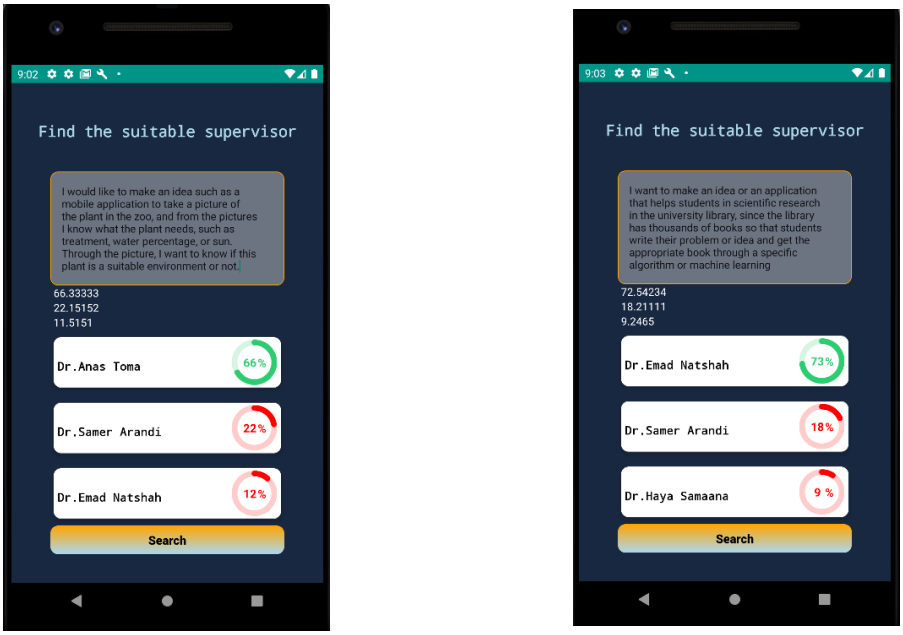


Figure 5.8.1: Supervisors Suggestion

5.9 Chat system

The application enables communication between students, allowing them to search for and contact specific students. This feature simplifies the process of finding a partner, since students can view each other's information and students can communicate to determine if they are a suitable partner and agree on project details. This functionality enhances potential conversations between students.

We have implemented a chat feature within our application using Firebase.

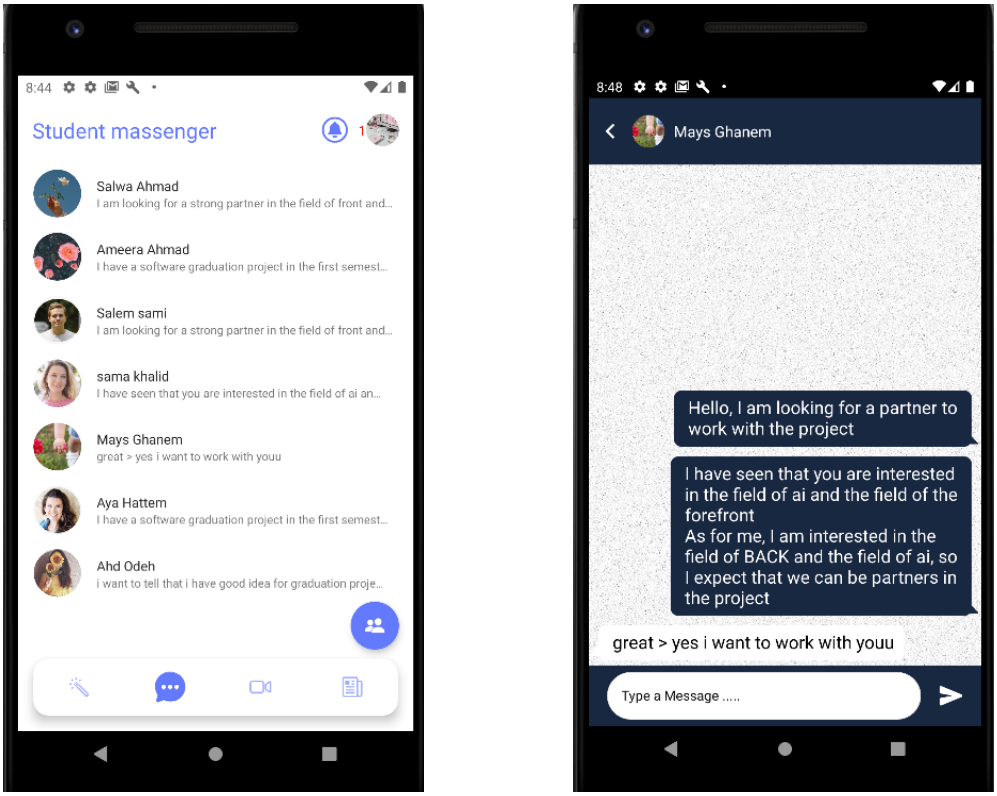


Figure 5.9.1: Chat system for students

5.10 Project Page

Within the application, each supervisor has a dedicated page that lists the projects he or she is currently supervising. This feature provides supervisors with an easy way to keep track of their projects and stay up-to-date with their progress. Additionally, supervisors can use the search functionality to filter the project list and quickly find specific projects. The projects

that a supervisor is supervising are automatically displayed on their dedicated page within the application.

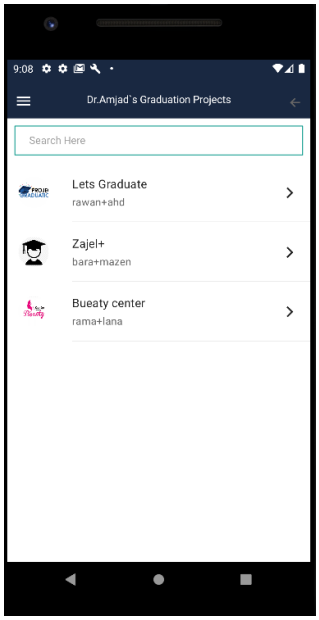


Figure 5.10.1: Project List

Supervisors have the ability to add students to their projects by entering the student's email address within the application. This feature streamlines the process of adding students to projects and helps ensure that the correct students are assigned to each project.

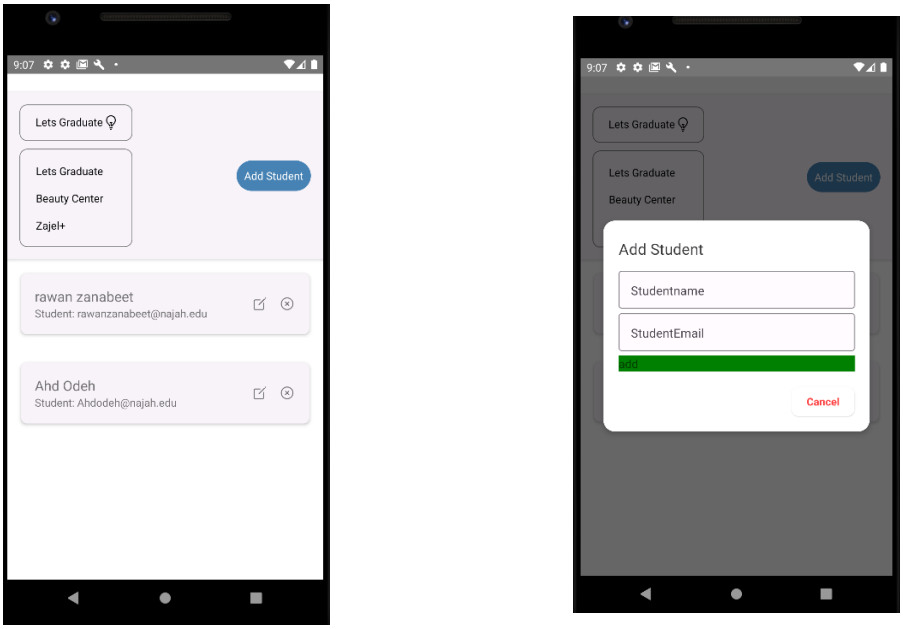


Figure 5.10.2: Supervisor adding student

Students have the ability to create posts within the application that include written explanations and photos. This feature allows students to share their achievements and progress with their team members and provides a platform for collaboration and communication.

When creating a post, students can write a detailed explanation of their progress and include a photo that illustrates their work.

The post is shared with the entire team, allowing everyone to stay updated on each other's progress and achievements. Team members can like and comment on each other's posts, providing feedback and support to their peers. This feature creates a collaborative and supportive environment that encourages teamwork and mutual support.

By providing a platform for students to share their progress and achievements, the application helps students stay motivated and engaged in their projects. It also provides supervisors with a valuable tool for monitoring their students' progress and providing feedback and support where necessary. Overall, this feature enhances the collaborative nature of the application and helps students achieve their goals more effectively.

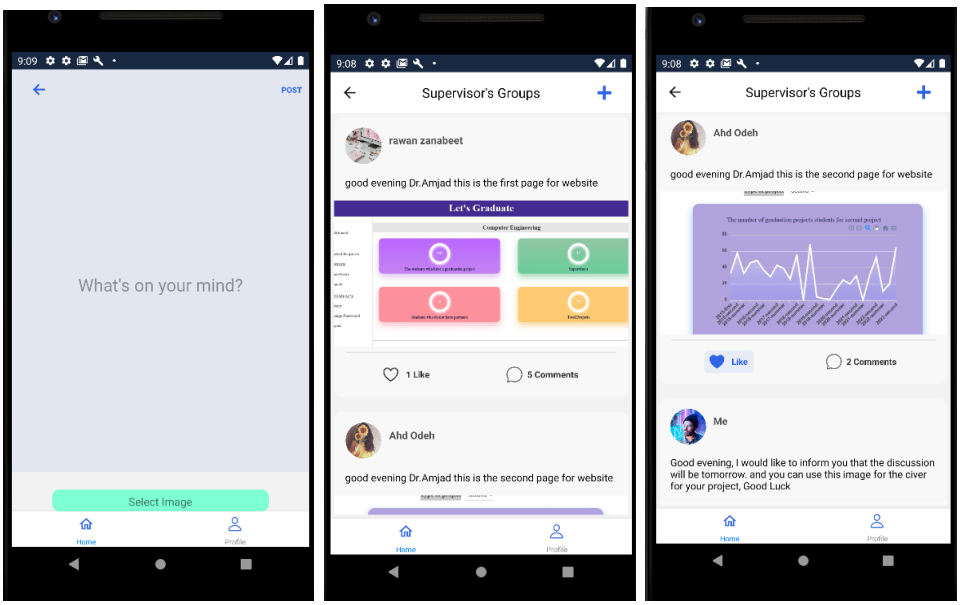


Figure 5.10.3: Students add posts in project page

5.11 Demo Pages

Within the application, students have the ability to browse and view all previous project demos. This feature allows students to gain inspiration and ideas for their own projects. Additionally, students can search for specific demos using various search criteria such as the demo's name, description, or technology used. This feature makes it easier for students to find relevant information and saves them time by filtering out irrelevant demos. By utilizing the search functionality, students can efficiently find demos that align with their interests and requirements. Overall, this feature provides a valuable resource for students to learn and grow within their academic pursuits.

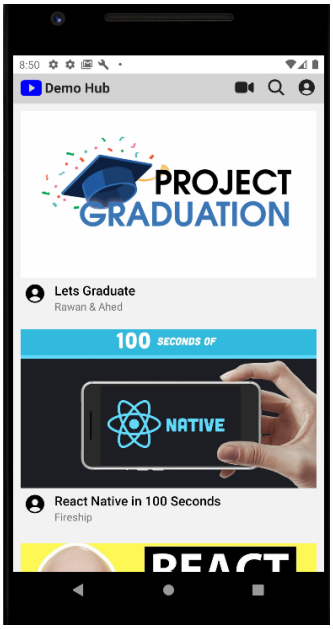


Figure 5.11.1: Home page

Figure 5.11.2: Search for a Demo

5.12 Ideas Pages

If a student only wishes to view project ideas, they can do so by accessing the application's idea browsing feature. This feature allows students to view project ideas, read their explanations, and see the number of likes they have. Additionally, students can interact with the ideas by adding likes to them. The ideas are filtered according to the class that the student selects, providing them with relevant and meaningful information. Overall, this feature offers students a valuable resource for discovering project ideas, interacting with them, and exploring their interests.

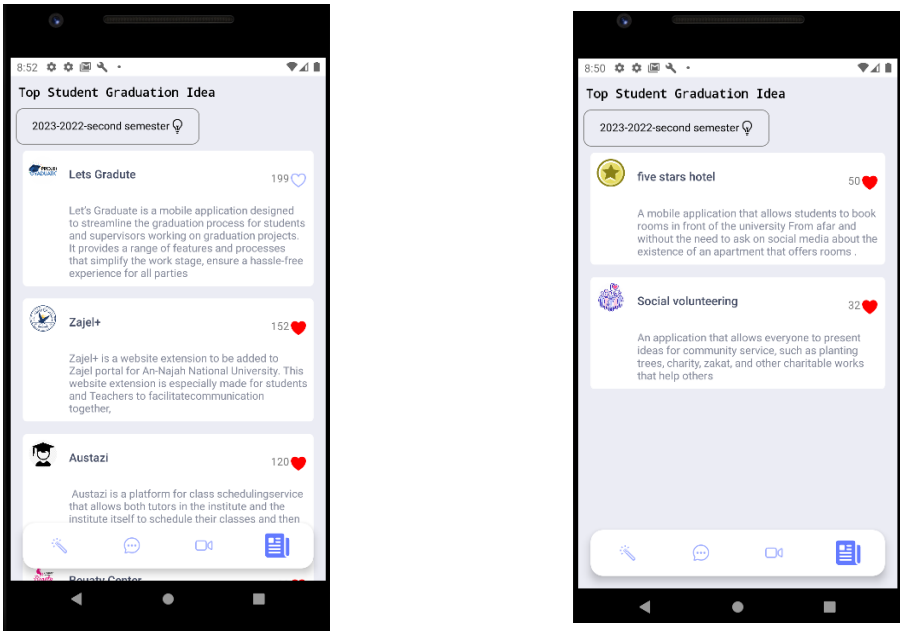


Figure 5.12.1: Ideas Page

5.13 Dean Panel

The Admin Panel is a powerful tool designed exclusively for administrators, providing them with the ability to manage and control the data of the website. With this feature, administrators can easily access and modify data, ensuring the website runs smoothly and efficiently.

The dean's plane provides up-to-date data on all departments, including information on supervisors and projects. This database allows for easy access to important information and can collaboration across departments

5.13.1 Dashboard

The dean has access to a dashboard that displays key metrics related to projects in the College of Engineering, including the total number of students with projects, supervisors, and projects. This provides a comprehensive overview of the College's projects activity.

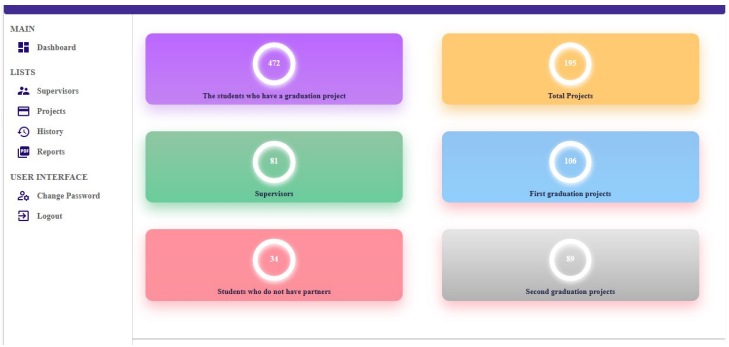


Figure 5.13.1: Dean Dashboard 2

By clicking on a card, Dean can access department-specific information tailored to their needs

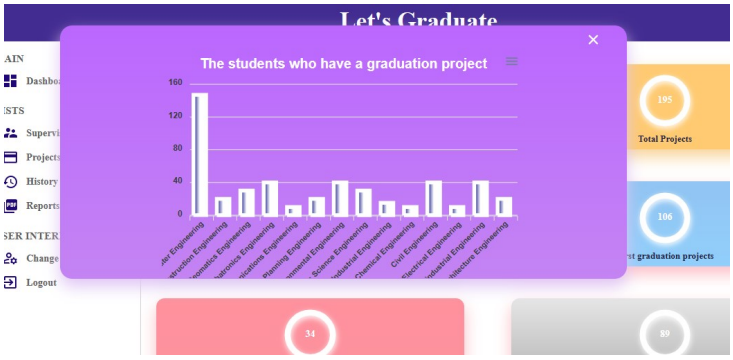


Figure 5.13.2: Number of Students in each department

This display shows the number of students who have had a project each semester since 2015. Dean can filter the data by project type and department to find the information they need.

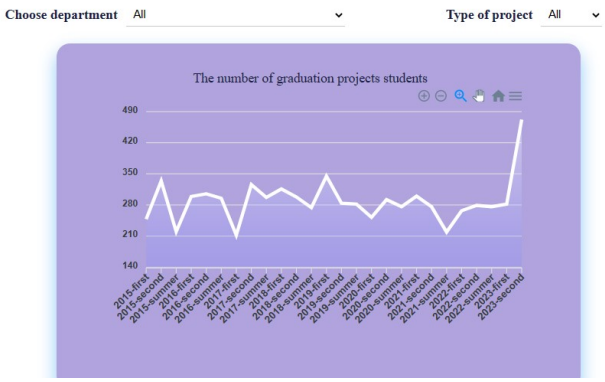


Figure 5.13.3: Dashboard

5.13.2 Supervisors List

The dean has access to a comprehensive view of all supervisors and their associated information, including the projects they are supervising and the students they are mentoring. The system allows for easy search and filtering by name, email, project type, and department. Additionally, the dean can sort the data by supervisor with the least number of students.

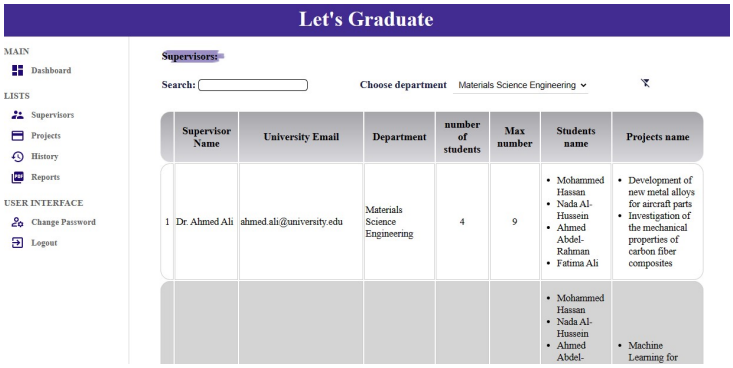


Figure 5.13.4: Supervisors List

The system includes pagination to navigate between pages of information (Each page displays information for two supervisors).

Figure 5.13.5: Supervisors pagination

5.13.3 Projects List

The dean has access to information on all projects too, and associated details. The system allows for easy search and filtering by name, email, or any information connected to the project. Moreover, project type and department.

The dean can access the demo and final report of any project through dedicated buttons.

Also here, pagination was used through 3 projects on each page.

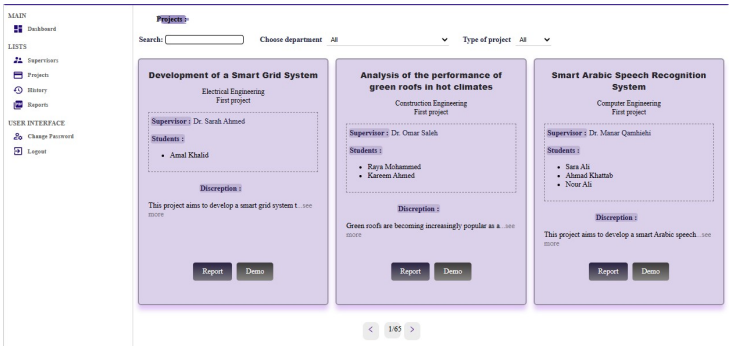


Figure 5.13.6: Projects List

5.13.4 History Page

The dean can refer back to information from previous semesters and choose whether to view information on supervisors or projects. The search filters and time period remain consistent.

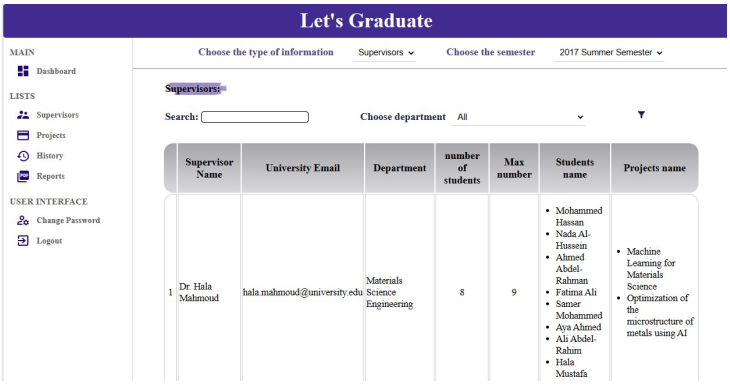


Figure 5.13.7: History

5.13.5 Report page

The system allows the dean to easily convert information into a PDF file at the click of a button, selecting the desired semester and department.

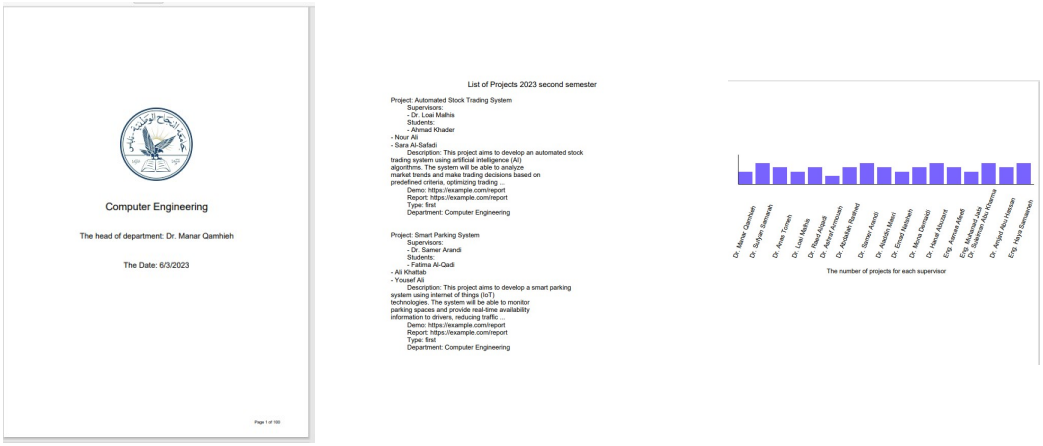


Figure 5.13.8: The Report for computer engineering department at second semester in 2023.

5.13.6 Change Password

The dean has the ability to change their password. To ensure security, the system verifies the old password before allowing the dean to change it

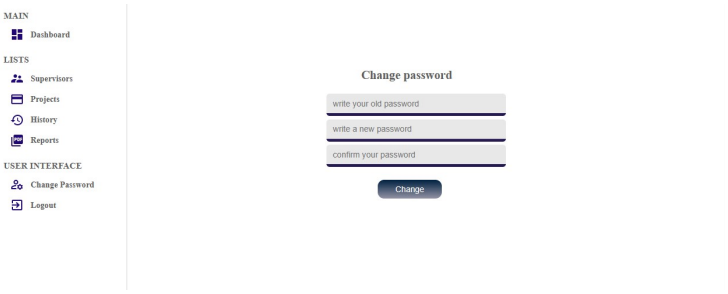


Figure 5.13.9: Change Password

5.14 Head of Department Panel

The department head is responsible for maintaining up-to-date data on their department, including information on supervisors and projects. This data is stored in a database that allows for easy access to important information . The department head is authorized to make necessary modifications to the database.

5.14.1 Dashboard

The Head of department has access to a dashboard that shows key metrics related to projects in their department, including the total number of students with projects, supervisors, projects, and students without partners. This provides a comprehensive overview of the department's project activity.

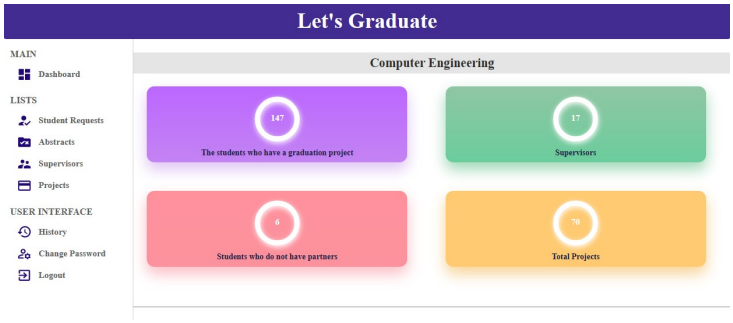


Figure 5.14.1: Head of Department Dashboard

By clicking on a card, the Head of Department can access detailed information on a specific aspect of the department's activity, such as number of projects in each department. This allows the Head of Department to quickly and easily access the information they need to make informed decisions.

Figure 5.14.2: Head of Department Dashboard 2

This display shows the number of students who have had a project each semester since 2015. Head of Department can filter the data by project type to find the information they need.

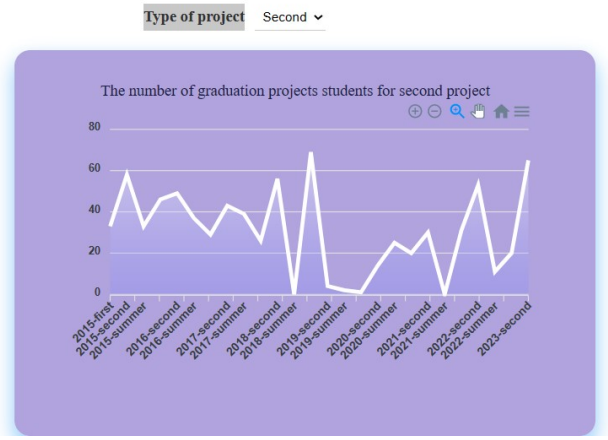


Figure 5.14.3: Head of Department Dashboard 3

5.14.2 Student Requests

The Head of Department receives requests from students regarding their graduation project, including inquiries about whether they have been assigned to a project or not. The department is responsible for determining if a student is actively working on their graduation project or not.

The page includes a general search feature that allows the Head of Department to search for any information within the system. In addition, a filter function is available that enables users to sort data by the oldest batch.

When an student is rejected, the department head sends a letter to the submitter, explaining the reason for the rejection. The letter includes a set of pre-approved options for the reason of rejection, with the option for the department head to add additional comments if necessary.

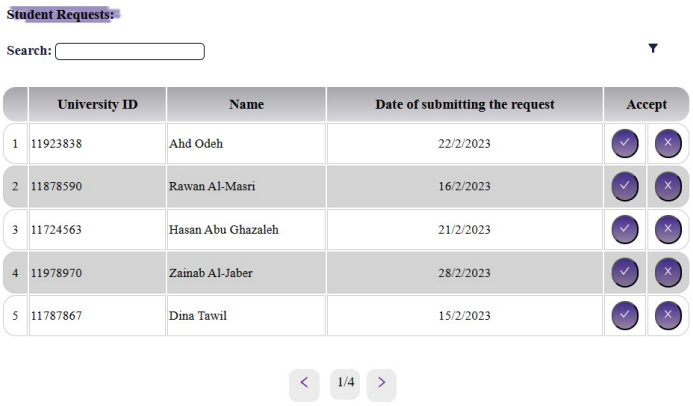


Figure 5.14.4: Student Requests 1

the available choices:

- You have not completed the required number of hours.
- You have courses that you have not completed yet.
- You are not allowed to register to give a chance for larger batches.
- Or Other reason

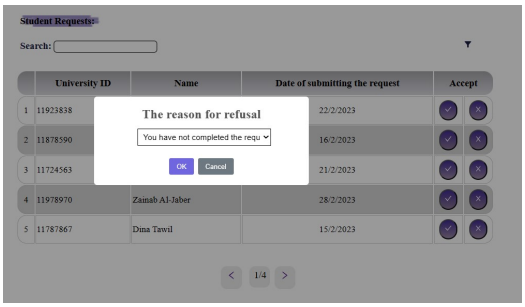


Figure 5.14.5: Student Requests 2

5.14.3 Abstract

The department head would typically review the abstract and then make a decision to either approve or reject it based on their evaluation of the quality and relevance of the research. If the department head decides to reject the abstract, they may have a set of pre-existing rejection options that they can choose from to provide feedback to the student. These options include The idea is not acceptable or The idea needs modification and more features . The department head may also choose to provide additional feedback beyond these pre-existing options, depending on their specific concerns about the abstract.

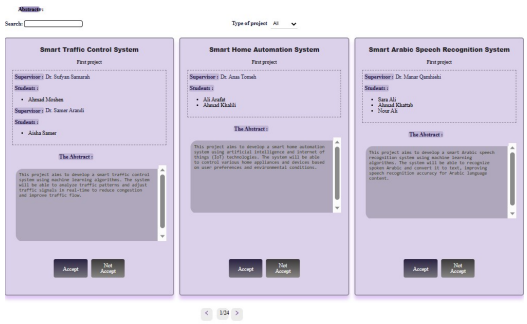


Figure 5.14.6: Abstracts

5.14.4 Supervisors List

The Head of department has access to a comprehensive view of all supervisors and their associated information, including the projects they are supervising and the students they are mentoring. The system allows for easy search and filtering by name, email, and project typet. Additionally, the dean can sort the data by supervisor with the least number of students.

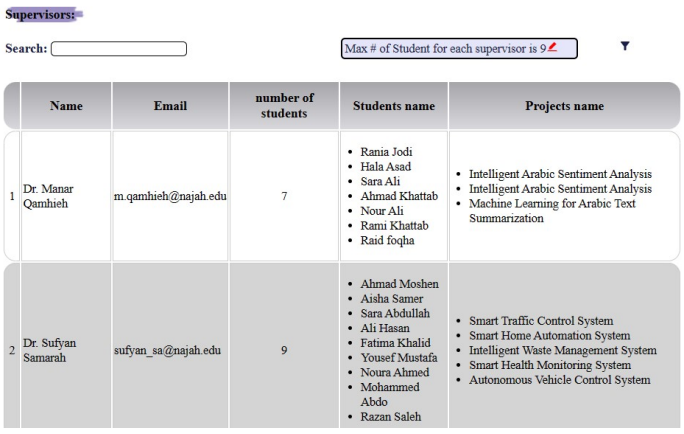


Figure 5.14.7: Supervisors List

The department head has the authority to adjust the maximum number of students assigned to each supervisor. This flexibility allows for adjustments to be made based on the needs of the department, such as changes in staffing or fluctuations in student enrollment. By having the ability to make these changes, the department head can ensure that each supervisor is able to provide adequate support and guidance to their assigned students.

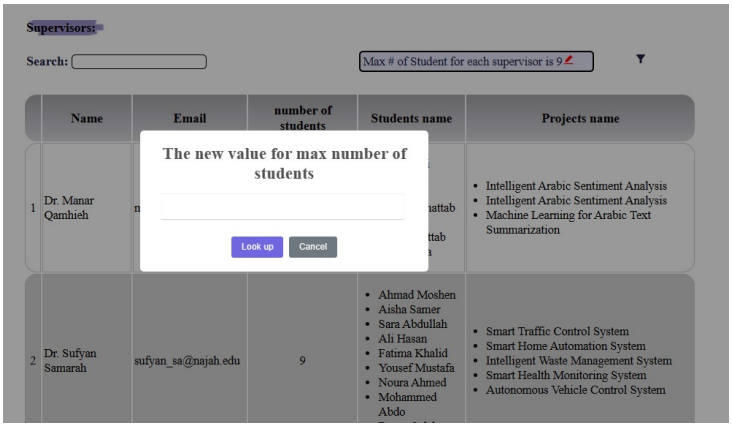


Figure 5.14.8: Supervisors max massage

5.14.5 Projects List

The department head has access to information on all projects too, and associated details. The system allows for easy search and filtering by name, email, or any information connected to the project. Moreover, project type.

The department head can access the demo and final report of any project through dedicated buttons.

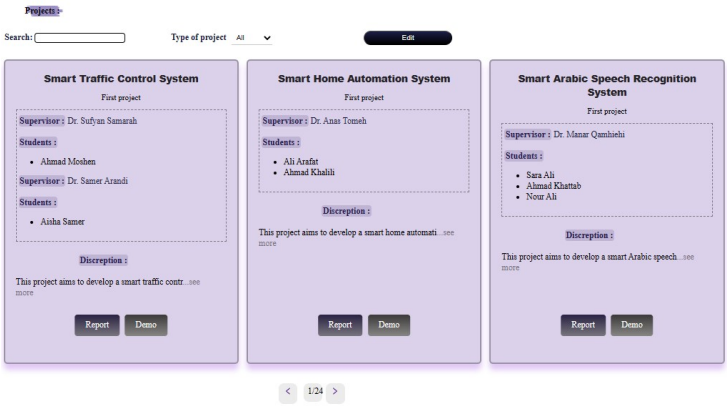


Figure 5.14.9: Projects List

The department head can edit work when necessary to ensure accuracy and quality, but should avoid making unnecessary changes. It is important to use this authority responsibly.

When pressed Edit :

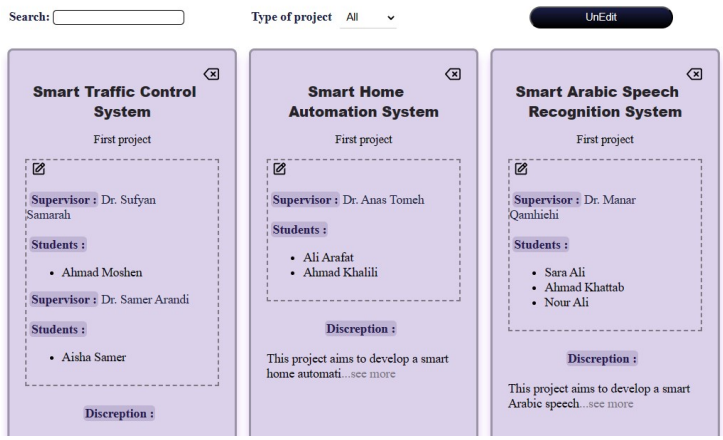


Figure 5.14.10: Projects List when press in Edit button

Clicking the X button at top will allow you to delete the entire project. So I have a confirmation message

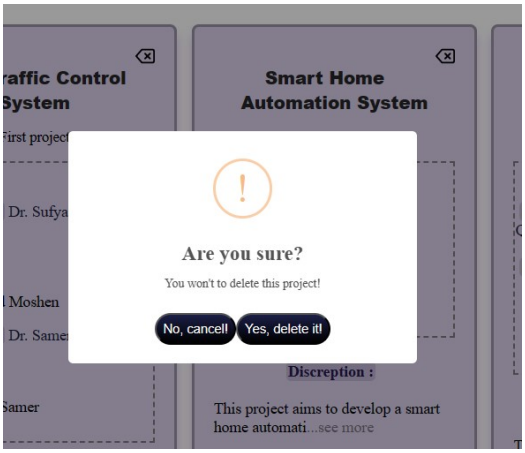


Figure 5.14.11: Page when press in x top button

Clicking the X button below will allow you to edit supervisors or students in the project

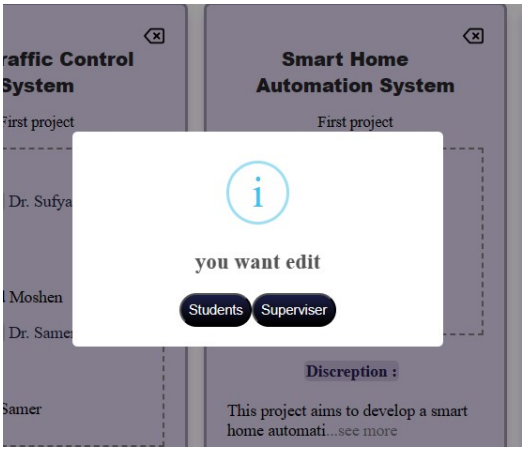


Figure 5.14.12: Page when press in x bellow button

If the department head choose the supervisor.

The department head can choose to add or delete a supervisor and then must enter the corresponding supervisor's email address.

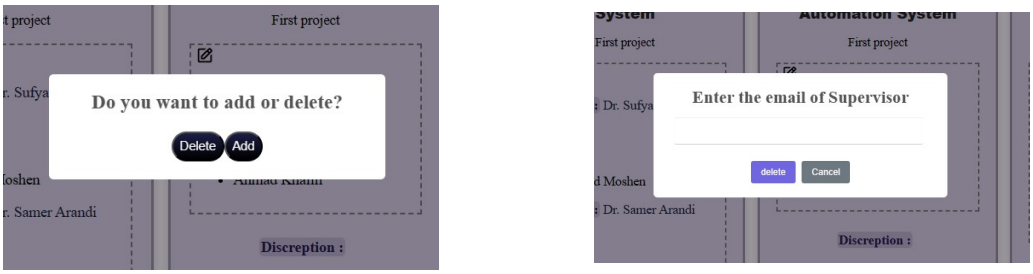


Figure 5.14.13: This is the process for both (delete or add supervisor)

Adding or deleting a student follows a similar process as that of a supervisor. However, when adding a student, it is necessary to choose a supervisor.

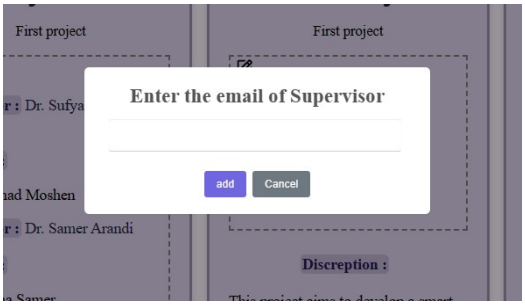


Figure 5.14.14: Adding student in a project with specific supervisor

5.14.6 History Page

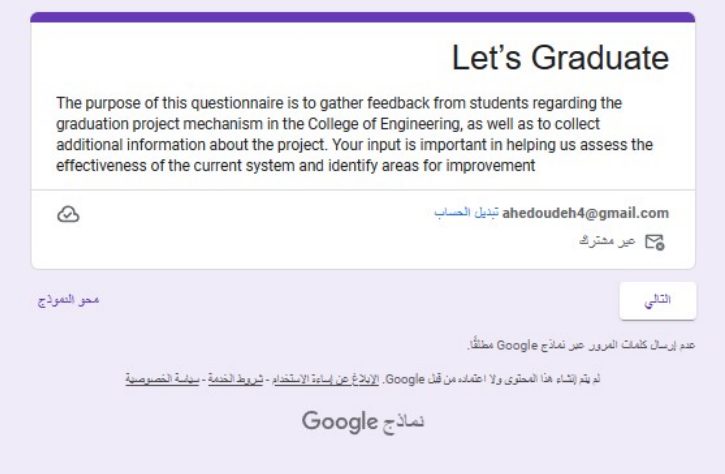
The department head can refer back to information from previous semesters and choose whether to view information on supervisors or projects.

5.14.7 Change Password

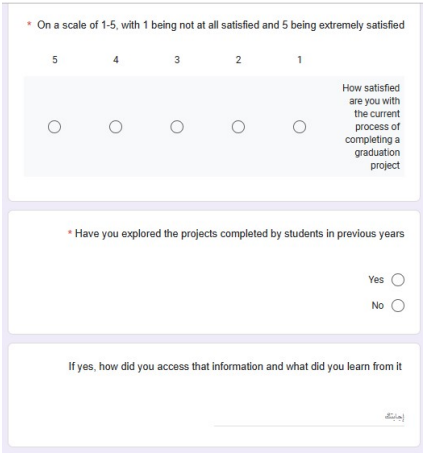
The department head has the ability to change their password. To ensure security, the system verifies the old password before allowing the dean to change it

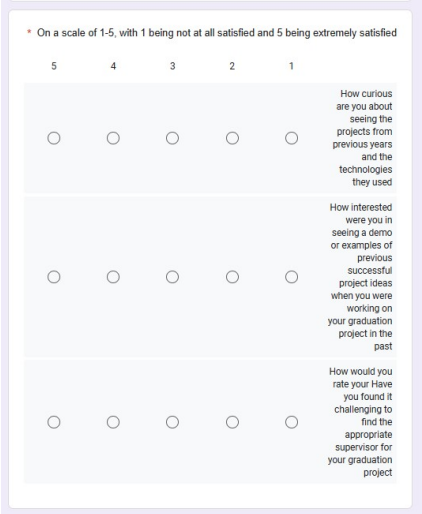
5.15 Questionnaire

In order to gain a better understanding of the topics addressed by our application and to gather feedback on its potential usefulness, we conducted a questionnaire among students in Engineering collage. The questionnaire was designed to elicit students' opinions and perspectives on the problems that the application aims to solve. The insights gathered from the questionnaire were used to inform the development of the application and ensure that it meets the needs and expectations of its target users.



The Questionnaire showed that 70% of students are dissatisfied with the current process to complete their graduation project (high percentage voted B1 and A2).





Interestingly, despite 87% of students not exploring previous projects, 78% of their feedback (rating 4 and 5) indicated a strong curiosity about these projects.

Our findings suggest that students would benefit from having a dedicated platform to access previous projects and videos. Our application provides such a platform, which can help students easily explore from past projects.

According to the Questionnaire results, 50% of the participants reported experiencing difficulty in finding a suitable supervisor for their graduation project. This challenge was attributed to various factors, including a lack of information about potential supervisors, limited availability of supervisors, and mismatched research interests. On the other hand, 68% of the participants indicated that they had an idea for their project but were unsure whom to choose as their supervisor. The findings suggest that our application, which includes features to facilitate supervisor allocation and

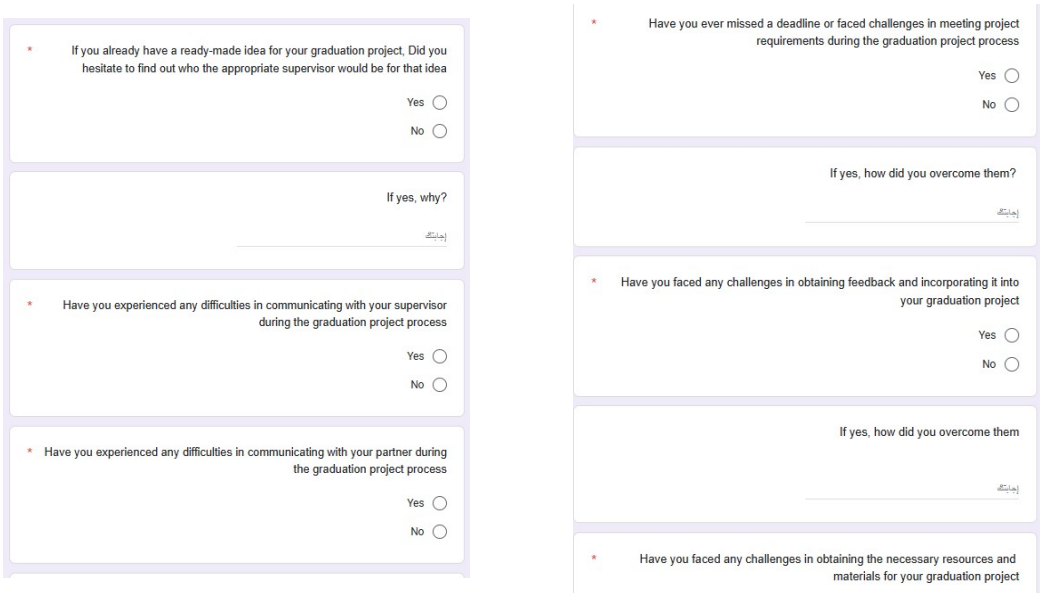


Figure 5.15.1: Questionnaire

communication, can help address this challenge and improve the graduation project experience for students.

Our Questionnaire results revealed that 47% of students reported difficulty in communicating with their supervisors, while 42% reported difficulty in communicating with their project partners. These challenges were attributed to a lack of clarity and structure in the communication process, as well as differences in communication styles and expectations. Additionally, 60% of the participants faced challenges in tracking the project progress and taking notes, which led to difficulties in adding them to the project. These issues were mainly due to the absence of a centralized platform for project tracking and collaboration among team members.

Our application addresses these challenges by providing a centralized platform for project management and collaboration, allowing team members to easily track and update project progress, communicate with supervisors and partners, and add notes and comments to the project. The features of our application can help improve communication, collaboration, and efficiency during the graduation project process, ensuring that students have a more streamlined and effective experience.

6 Conclusions and Recommendations

In this section we are going to show the conclusion summary and Future work in our project.

6.1 Summary

Let's Graduate is a app that streamlines the graduation process for students and supervisors. It offers features like project registration, partner search, supervisor nomination, and a chat feature. The app also has a dedicated project page for easy coordination and task monitoring. Administrators can manage the request process and access general information. Let's Graduate is a comprehensive and user-friendly tool that simplifies the graduation process and ensures a seamless experience for all parties involved. It is an ideal platform for anyone looking to streamline the graduation process and achieve their academic goals with ease.

6.2 Future Work

The potential ideas that can be incorporated into the project are vast and limitless

- Zajel integration: Integrate Let's Graduate with Moodle for seamless communication and direct task assignment, grading, and feedback within Let's Graduate.
- Match students with project ideas based on their skills, strengths, and interests to increase motivation and success.
- Expanding the project's scope to include other faculties and universities to increase impact and reach.