
BAU
Alumni

BAU Alumni

Presented by

Name	ID
Zaid Emad Mohammad Eid	32101001023
Mohammad Osama Mohammad Al-Marai	32101001068
Suleiman Salama Suleiman Al-Araj	32101001047
Hamza Ali Saleh Al-Talafha	32101001056

Supervised By: Dr. Dheeb Al-Bashish

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Computer Science Department, Prince Abdullah bin Ghazi Faculty of Information and Communication Technology.

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Abstract

The Alumni System at Al-Balqa Applied University is a vital tool for strengthening the relationship between the university and its graduates, contributing to the growth of both the institution and the personal and professional development of its alumni. Through this system, the university can track and update alumni's personal and professional information, organize career-related events and services, and facilitate connections among graduates and university staff. This enhances alumni networks and provides continuous opportunities for career advancement and professional development.

Graduates benefit from the system by expanding their networks and interacting with peers on projects or for career guidance, fostering both personal and professional growth. The system also enhances the academic environment through knowledge exchange and forms strategic partnerships with local and international organizations, contributing to the community's economy and strengthening the university's position in both academic and professional spheres.

Acknowledgment

We would like to begin by extending our highest gratitude and appreciation to the Dean of the College of Prince Abdullah bin Ghazi, Dr. Osama Al-Dargham, for his continuous support and valuable guidance. We also express our sincere thanks to the Deputy Dean, Dr. Dheeb Al-Bashish, who honored us by supervising our project and provided us with systematic guidance and unwavering support throughout all stages of the work.

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Declaration

I hereby declare that the work I am submitting for assessment in the Bachelor of Science in Computer Science program is entirely my own. I have made every effort to ensure the originality of this work, and to the best of my knowledge, it does not infringe upon any copyright laws. Any material or ideas derived from the work of others have been appropriately cited and acknowledged within the content of my submission.

Signed:

- Zaid Eid (32101001023)
- Mohammed Al-Marei (32101001068)
- Suleiman Al-Araj (32101001047)
- Hamzeh Talafha (32101001056)

Date:

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LIST OF ABBREVIATIONS

Abbreviation	Definition of Abbreviation
SDLC	System Development Life Cycle
BAU Alumni System	Al-Balqa Applied University Alumni System
OOA Methodology	Object Oriented Analysis Methodology
S.W.O.T	Strength, Weaknesses, Opportunity and Threats
UML	Unified Modeling Language
ERD	Entity and Relationship Diagram
UI	User Interface
DB	Database
SDK	Software Development Kit

CHAPTER 1

INTRODUCTION

1. INTRODUCTION

1.1. Introduction

The BAU Alumni project is designed to strengthen the connection between graduates of Al-Balqa Applied University (BAU) and their alma mater. It aims to establish a digital platform that fosters engagement, collaboration, and continuous support among alumni, enabling them to contribute to their professional growth and the university's advancement.

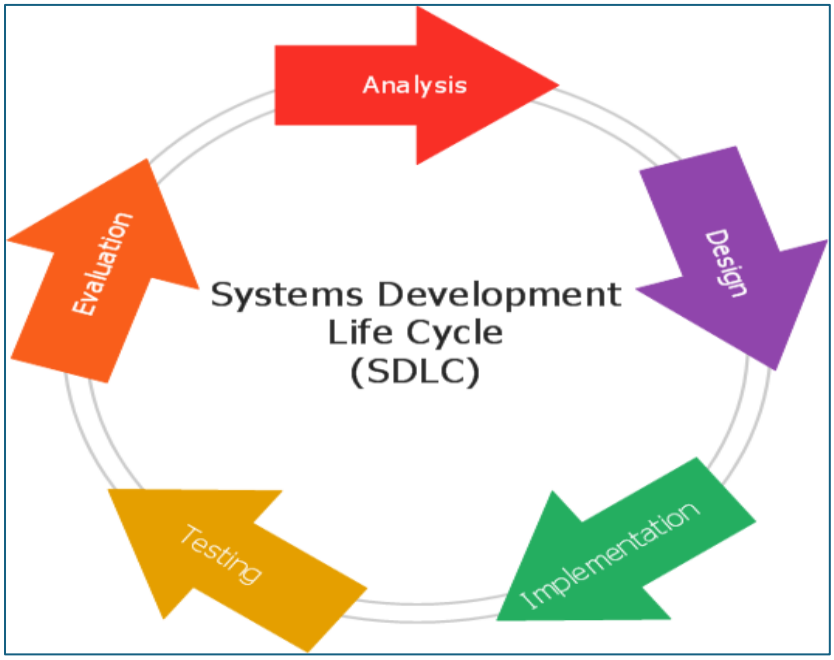

Figure 1: System Development Life Cycle (SDLC)

1.2. Project Motivation

The primary motivation behind this project stems from the need to build a supportive and interconnected alumni network. Alumni associations are essential for universities to maintain lifelong relationships with their graduates, and this project seeks to bridge the gap between BAU and its alumni by providing tools for communication, career development, and event coordination.

1.3. Current System Description

Currently, BAU relies on manual or scattered processes for maintaining alumni records and communicating with graduates. There is no centralized system in place, which makes it difficult to track alumni progress, organize events, or facilitate networking opportunities. This lack of structure limits the university's ability to leverage its alumni base effectively.

1.4. Problems Definition

The existing challenges faced by the university include:

- A lack of an organized database to manage alumni records.
- Inefficient communication channels between BAU and its alumni.
- Limited opportunities for alumni to network or participate in university-led initiatives.
- An absence of tools to track alumni career progress or achievements.
  These problems hinder the university's ability to maintain meaningful and productive relationships with its graduates.

1.5. Project Aim and Objectives

The primary aim of the BAU Alumni project is to establish a digital platform to connect alumni with the university and each other. The objectives of this project include:

- Developing a centralized alumni database.
- Providing tools for alumni to network and collaborate.
- Facilitating communication between BAU and its graduates.
- Promoting alumni involvement in university events and initiatives.
- Creating opportunities for professional and personal development through the alumni network.

1.6. Project Scope

The scope of the project includes designing and implementing a user-friendly alumni management system for BAU. This system will include features such as:

- Registration and profile management for alumni.
- Event creation and participation tracking.
- Communication tools, such as messaging and announcements.
- Career development resources, including job boards and mentorship programs.
- Analytics and reporting tools to monitor alumni engagement and feedback.

The system will initially focus on BAU alumni but can be expanded in the future to include partnerships with other organizations or institutions.

1.7. Expected Output

The BAU Alumni project is expected to deliver a centralized and efficient alumni management system with the following outputs:

1. **Centralized Alumni Database**:
   A well-structured and easily accessible database containing comprehensive information about all BAU alumni.
2. **Enhanced Communication**:
   Tools such as messaging, notifications, and announcements to facilitate seamless communication between BAU and its alumni.
3. **Event Management**:
   Features that allow the university to create, manage, and track alumni participation in events such as reunions, workshops, and seminars.

4. **Networking Opportunities**:
   A platform that fosters collaboration and networking among alumni for professional growth and mutual support.

5. **Career Development Tools**:
   Access to job boards, mentorship programs, and resources to help alumni advance in their careers.

6. **Alumni Engagement Reports**:
   Analytics and reporting tools to provide insights into alumni involvement, event attendance, and overall engagement with the university.

❖ **By achieving these outputs, the project aims to enhance the relationship between BAU and its alumni, creating long-term value for both parties.**

CHAPTER 2

PLANNING PHASE

2. PLANNING PHASE

2.1. Introduction to Planning Phase

The System Development Life Cycle (SDLC) is a fundamental and structured approach used to guide the development of efficient and reliable systems, particularly in web and mobile applications. It consists of several critical phases, including Planning, Analysis, Design, Implementation, Testing, and Maintenance, each contributing to the system's overall functionality and success.

The **Planning Phase** marks the initiation of the project, where project feasibility is assessed, objectives are defined, and the project's scope and requirements are determined. Key activities in the planning phase include:

- Defining the system's mission and objectives.
- Establishing the system's scope and boundaries.
- Identifying functional and non-functional requirements.
- Conducting feasibility studies to ensure technical, operational, and economic viability.
- Outlining an initial implementation plan.

For the **BAU Alumni System**, the planning phase serves as a foundation for designing a robust platform to bridge communication between Al-Balqa Applied University and its graduates.

2.2. Business Profile: BAU Alumni System

Mission Statement:

To establish an interactive platform that fosters ongoing communication and collaboration between Al-Balqa Applied University and its graduates, enhancing mutual support and engagement.

Vision:

To be a leading alumni platform that nurtures lifelong connections, supports career growth, and promotes a vibrant community of Al-Balqa graduates.

Core Values:

1. **Inclusivity:** Building a platform accessible to all graduates.
2. **Engagement:** Encouraging active participation through communication and events.
3. **Innovation:** Leveraging advanced technology for seamless interactions.

Services:

The BAU Alumni System offers diverse features, including:

- Alumni profiles and data management.
- Targeted announcements and event notifications.
- Feedback collection and analytics.
- Communication tools for graduates and administration.

Organizational Structure:

- **System Admin Team:** Manages the system, user data, and content moderation.
- **Support Team:** Assists users with technical issues or inquiries.
- **Development Team:** Handles system updates, bug fixes, and feature enhancements.

2.3. Scope of the System

The BAU Alumni System aims to provide:

- A comprehensive portal for graduates to manage their profiles and update personal, academic, and professional data.
- A communication hub for announcements, events, and feedback.

- Analytics for administrators to generate reports and insights into alumni activities.
- Features to enable alumni engagement, such as surveys, discussions, and suggestions.

2.4. System Requirements

Requirements form the foundation of any system's development process, acting as a bridge between stakeholders' needs and the final deliverable. They provide a clear and detailed description of the system's capabilities and characteristics, ensuring alignment with user expectations and organizational goals. Requirements can be broadly classified into two main categories:

- **Functional Requirements:** What the system should do.
- **Non-Functional Requirements:** How the system should perform.

2.5. Functional Requirements

The functional requirements specify the internal operations of the system, ensuring it meets the intended functionalities, including:

1. **User Authentication:**
    - Admin login using username and password.
    - Graduate login using university ID and national number.
2. **Password Recovery:**
    - Allow graduates to reset passwords using a verification code sent to their registered phone numbers via the **Infobip** service.
3. **Admin Functionalities:**
    - Manage graduate data, create announcements, and view reports.
    - Principal admin can add new admins and graduates.

4. **Graduate Functionalities:**
    - Update personal, academic, and professional information.
    - Respond to surveys and engage with announcements.
5. **Announcements:**
    - Create, modify, and delete announcements with real-time updates for graduates.

2.6. Non-Functional Requirements

Non-functional requirements ensure the system's performance, usability, and security:

1. **Performance:**
    - Ensure fast response times for user interactions.
    - Efficient handling of high concurrent users.
2. **Reliability:**
    - High availability with minimal downtime.
    - Error handling to maintain system stability.
3. **Scalability:**
    - Support for increasing users and data volumes.
    - Capability to handle simultaneous logins and activities.
4. **Usability:**
    - Intuitive user interface with a responsive design.
    - Accessibility compliance for diverse user needs.
5. **Security:**
    - Robust authentication and data encryption.
    - Regular audits for security compliance.

2.7. Technical Limitations

The system's development may encounter certain constraints:

- Limited resources for large-scale testing and deployment.
- Integration challenges with legacy systems.
- Potential delays in real-time communication features due to server performance.

2.8. Economic Constraints for BAU Alumni

Economic constraints for the **BAU Alumni** system are associated with the essential operations required to ensure system performance and user satisfaction. These include:

1. **System Maintenance**
   - Routine updates and checks to guarantee the platform operates seamlessly for both admins and alumni.
2. **System Development**
   - Investment in adding new features, enhancing current functionalities, and ensuring compatibility with evolving technologies.
3. **Security Enhancements**
   - Implementation of advanced security measures, such as encrypted communication and secure password recovery mechanisms, to protect user data.
4. **Support System**
   - Provision of a support framework to assist users in resolving issues, ensuring a positive experience for alumni and admins.
5. **Deployment and Integration**
   - Installing and integrating the system with the university's infrastructure, including linking it with existing alumni databases

2.9. Time Schedule

Table 1: Time schedule for the project

Activity ID	Activity	Duration	Start	Predecessors
A	Select Work Team	2 days		None
B	Select The Project idea	5 days		A
C	Write a proposal of the project	7 days		B
D	Feasibility study	2 days		B
E	Write the functional requirement and non-functional requirement	8 days		C
F	Architectural design define the subsystem, block diagram	6 days		E
G	start phase analysis the system	2 days		F
H	write a data dictionary	5 days		G
I	start design phase use ER	8 days		H
J	implement the system using flutter & firebase	41 days		I
K	write a final document of the project	2 days		J
L	present the project with Complement Documentation	1 day		K

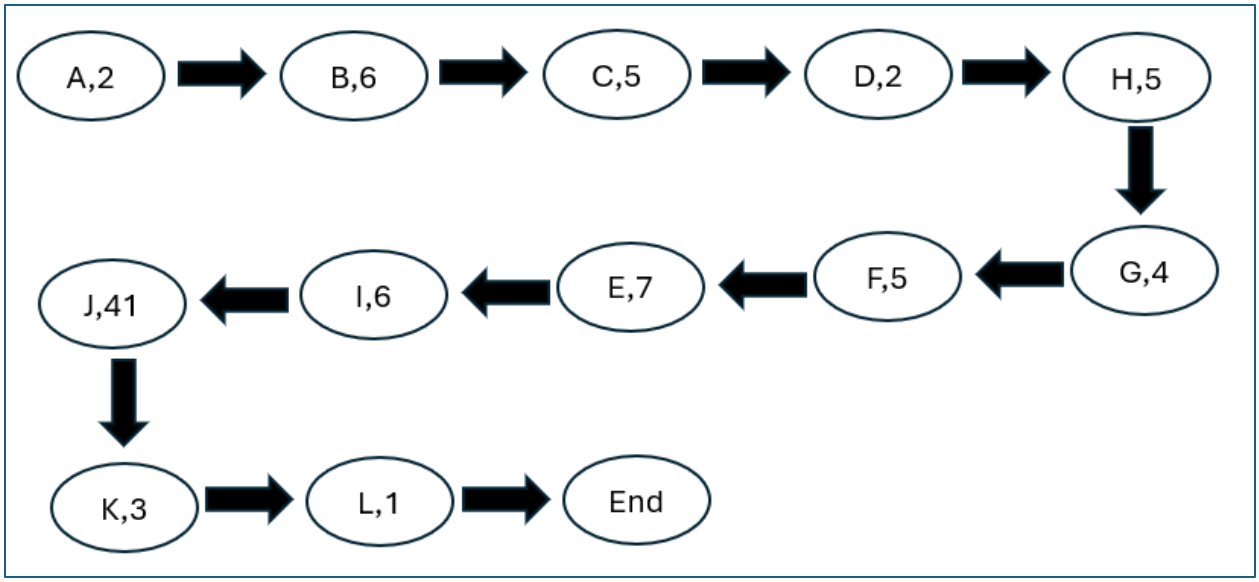

Figure 2: Pert diagram for the project

As seen in figure 2:

- **Number of Activities**: 12
- **Events**: A to L
- **Critical Path**: A → B → C → D → E → F → G → H → I → J → K → L (87 days)
- **Critical Activities**: All activities are critical due to sequential dependencies.

2.10. Feasibility Study

A feasibility study evaluates the viability of the **BAU Alumni** project to ensure it fulfills user needs while aligning with the university's objectives. Key considerations include:

1. **Current System Evaluation**
    - Assessment of existing alumni management practices.
    - Identification of inefficiencies and limitations.
2. **Technological Advancements**
    - Review of modern tools and frameworks to create a scalable, user-friendly platform.
3. **User Feedback**
    - Collection of insights from alumni and admin stakeholders to address concerns and tailor functionalities to their expectations.

2.11. Economic Feasibility Study

The economic feasibility study focuses on ensuring the project provides significant value relative to its costs. Key elements include:

- Budget allocation for development, maintenance, and security features.
- Cost-benefit analysis to confirm the platform’s financial viability.
- Prioritization of features to balance user needs and resource limitations.

2.12. Technical Feasibility

The technical feasibility study evaluates the ability to implement the **BAU Alumni** platform effectively, considering:

- **System Accuracy:** Ensuring reliable operations, such as user authentication and real-time data updates.

- **Reliability:** Building a robust platform to minimize downtime and ensure a smooth user experience.
- **Security:** Implementing measures such as secure password recovery and data encryption.
- **Scalability:** Designing the system to support increasing numbers of alumni and admins over time.

2.13. Operational Feasibility

Operational feasibility examines the system's integration into current workflows and its long-term sustainability. Key factors include:

- Ease of use for both admins and alumni.
- Effective training programs to familiarize admins with system operations.
- Ongoing technical support for issue resolution.

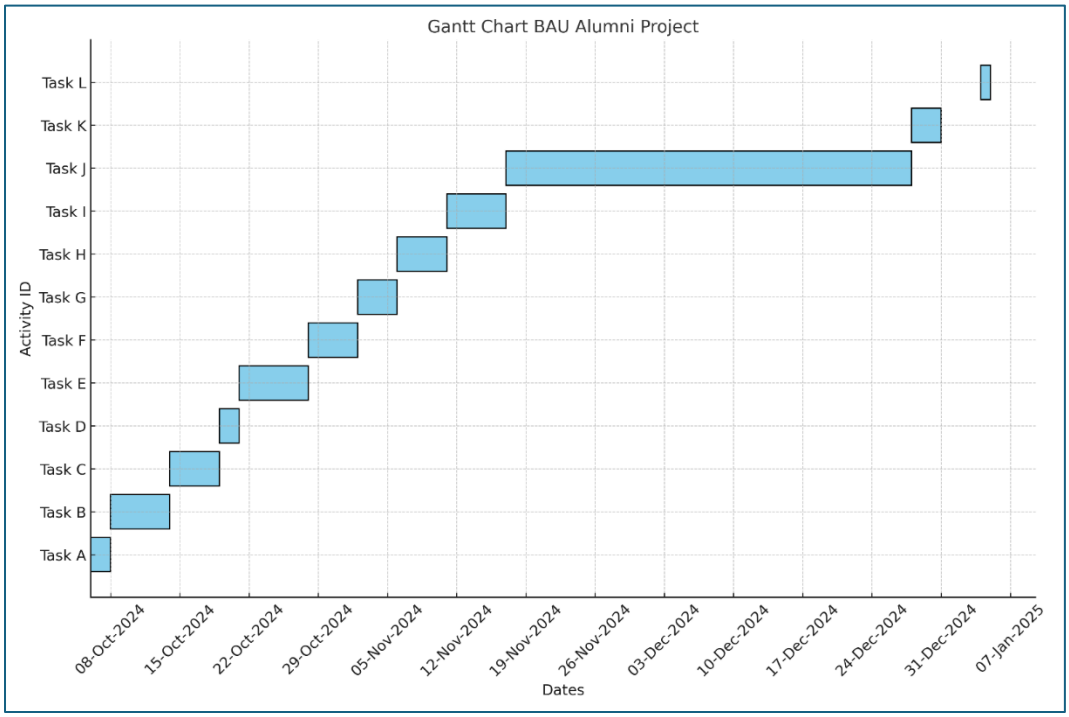

Figure 3: Gantt chart BAU Alumni Project

2.14. S.W.O.T. Analysis

Strengths:

- User-friendly interface for alumni and admins.
- Comprehensive features for alumni management and engagement.
- Advanced security mechanisms.

Weaknesses:

- Initial setup and training costs.
- Potential resistance to adopting the new system.

Opportunities:

- Improved alumni engagement and feedback collection.
- Enhanced collaboration between alumni and the university.

Threats:

- Data breaches or unauthorized access risks.
- Challenges in ensuring regular usage by alumni.

CHAPTER 3

ANALYSIS PHASE

3. ANALYSIS PHASE

3.1. Introduction to the Analysis Phase

The Analysis Phase is a foundational step in the development of the BAU Alumni Communication System, focusing on understanding the objectives and aligning them with stakeholder needs. This phase involves collaboration between university administrators, alumni representatives, and IT specialists to identify and document critical system requirements. The main activities in this phase include:

1. **Requirements Gathering and Modeling:**
    - Fact-finding activities to understand current systems and processes.
    - Identification of essential features, such as user authentication, alumni data management, advertisement handling, and feedback mechanisms.
2. **Data and Process Modeling:**
    - Graphically representing system workflows and data using structured or object-oriented methodologies to define interactions between system components.
3. **Development Strategy Evaluation:**
    - Analyzing the most effective approach for system development, whether through custom development or integration of existing solutions.

3.2. Analysis Techniques

1. **Structured Analysis Methodology:**
    - Utilizes **data flow diagrams (DFDs)** to illustrate key processes like user authentication, data retrieval, and interaction with alumni.
2. **Object-Oriented Methodology (OOM):**

- Focuses on representing entities such as alumni, administrators, advertisements, and surveys as objects with defined attributes and behaviors.

3.3. Team-Oriented Methods

1. **Joint Application Development (JAD):**
    - Involves active participation of university staff and alumni in the design process to ensure the system meets real-world needs.
2. **Rapid Application Development (RAD):**
    - Uses an iterative approach to quickly develop and refine system modules, such as login functionalities and alumni dashboards.

3.4. Key Skills Needed

1. **Analytical Skills:**
    - Identifying system requirements and addressing challenges such as secure authentication and robust data handling.
2. **Interpersonal Skills:**
    - Effective communication with stakeholders to ensure alignment of objectives and expectations.

3.5. Analysis Methodology

For this project, the **object-oriented methodology** was chosen due to its suitability for managing complex systems and modular development. This approach breaks down the system into individual components (e.g., alumni records, admin roles, advertisement modules).

Using **Unified Modeling Language (UML)**, the system requirements are modeled with:

- **Use Case Diagrams:** Representing user interactions, such as alumni login or ad creation.
- **Class Diagrams:** Defining entities like alumni profiles, administrators, and advertisements.

- **Sequence Diagrams:** Visualizing workflows like password reset or advertisement updates.

3.6. Conceptual Data Modeling

Conceptual data modeling plays a vital role in structuring the system's database. This phase involves creating an **Entity Relationship Diagram (ERD)** to define the relationships between entities like:

- Alumni profiles, including fields such as name, specialization, graduation year, and contact details.
- Administrator roles, categorized as primary and secondary admins with distinct permissions.
- Advertisements, linking to associated media and target audiences.

The initial ERD will be refined in the design phase to accommodate evolving requirements.

By systematically analyzing the requirements and using structured methodologies, this phase ensures a robust foundation for the **BAU Alumni Communication System**.

3.7. Comparative Analysis of Similar Systems

In this section, we analyze similar systems used by other universities to identify successful features and potential areas for improvement. This benchmarking process provides valuable insights into how the BAU Alumni Communication System can be optimized for maximum efficiency and user satisfaction.

1. **Mutah University Alumni System**
   A. **Description:**
      Mutah University's alumni platform allows graduates to log in using their university ID, update personal details, view university announcements, and participate in surveys. The system aims to maintain a strong connection between the university and its alumni.

B. Key Features:

- Surveys to gather feedback from alumni about their engagement with the university.
- Email notifications for important announcements and events.
- Ability to interact with announcements through comments and reactions.

C. Weaknesses:

- The system does not include job opportunities or postgraduate program information, limiting its utility for career development.
- A basic user interface that may hinder user experience and engagement.

2. Lewis University Alumni System

A. Description:

Lewis University provides an advanced alumni system designed to strengthen the bond between alumni and the university. It offers services like alumni networking, event participation, career development resources, and donation facilitation.

B. Key Features:

- A sophisticated alumni networking feature that allows graduates to connect based on interests, industries, or geographic location.
- Access to career support services, including job boards, career fairs, and resume-building workshops.
- An integrated donation platform that encourages alumni to contribute to university development projects.
- Mobile-friendly design for improved accessibility.

C. **Weaknesses:**

- Limited customization for individual alumni needs, as the system primarily focuses on generalized services.
- Less emphasis on collecting regular feedback or conducting surveys to assess alumni satisfaction.

➢ **How This Comparison Benefits the BAU Alumni Communication System?**

1. **Incorporating Successful Features:**
   - From Mutah University: Add an interactive announcement section with commenting and reaction capabilities.
   - From Lewis University: Integrate advanced networking tools and a mobile-friendly design to enhance accessibility and engagement.
2. **Avoiding Common Weaknesses:**
   - Address Mutah's lack of career development tools by including job listings and postgraduate resources.
   - Enhance user engagement by introducing regular feedback surveys, which are missing in Lewis University's system.
3. **Establishing a Competitive Advantage:**
   By combining the personalized alumni services seen in Lewis University's platform with the interactive and feedback-driven approach of Mutah University, the BAU system can become a well-rounded, user-focused solution that exceeds alumni expectations.

❖ **This analysis helps demonstrate the unique value proposition of the BAU system while ensuring lessons from existing systems are effectively leveraged.**

CHAPTER 4

DESIGN PHASE

4. DESIGN PHASE

4.1. UML and Description

The Unified Modeling Language (UML) is the standard communication method for visual modeling. UML bridges the business domain and the technical domain, allowing all team members to collaborate with a unified vocabulary. This minimizes miscommunication and enhances efficiency.

Visual modeling captures the system's requirements from the user's perspective, streamlining the design and development process. It defines the system's architecture independent of the programming language, ensuring flexibility for system design. Logical architectures can later be mapped to various software languages. Additionally, visual modeling allows for system component reuse, enabling easy incorporation of changes into existing software.

4.2. Modeling with Enterprise Architect

Enterprise Architect is a powerful visual modeling software that supports creating, analyzing, and manipulating system components. Key features include:

- **Use Case Diagrams:** Provide an overview of the system's functional requirements.
- **Collaboration Diagrams:** Depict object interactions and their relationships.
- **State Chart Diagrams:** Analyze the dynamic behavior of classes, showing the lifecycle of a class, transitions between states, and actions triggered by events.
- **Activity Diagrams:** Model workflows or class operations.

Enterprise Architect also supports the creation of:

- **Class Diagrams:** Representing logical architecture by detailing classes and relationships.
- **Component Diagrams:** Capturing software module organization.

- **Deployment Diagrams:** Mapping software to runtime nodes, showcasing runtime configurations.

4.3. Concepts in UML

- **Use Cases:** Represent the functional requirements of the system.
- **Class Diagrams:** Display the static structure of data and its operations.
- **State Diagrams:** Model dynamic behavior of objects responding to events.
- **Sequence Diagrams:** Illustrate dynamic interactions between objects.

4.4. Class Diagram

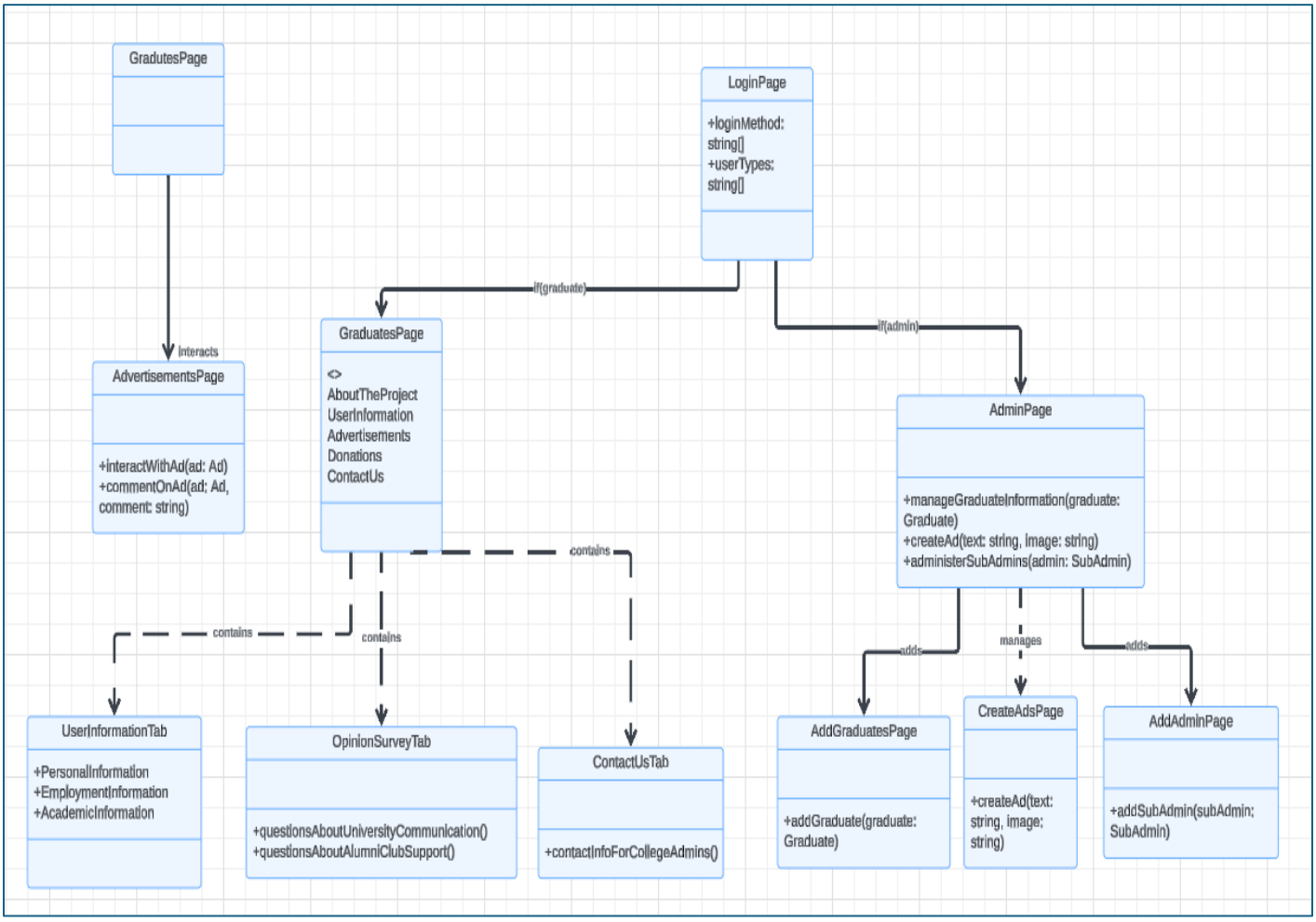

Figure 4: Conceptual data model ERD

4.5. Use Case Diagram

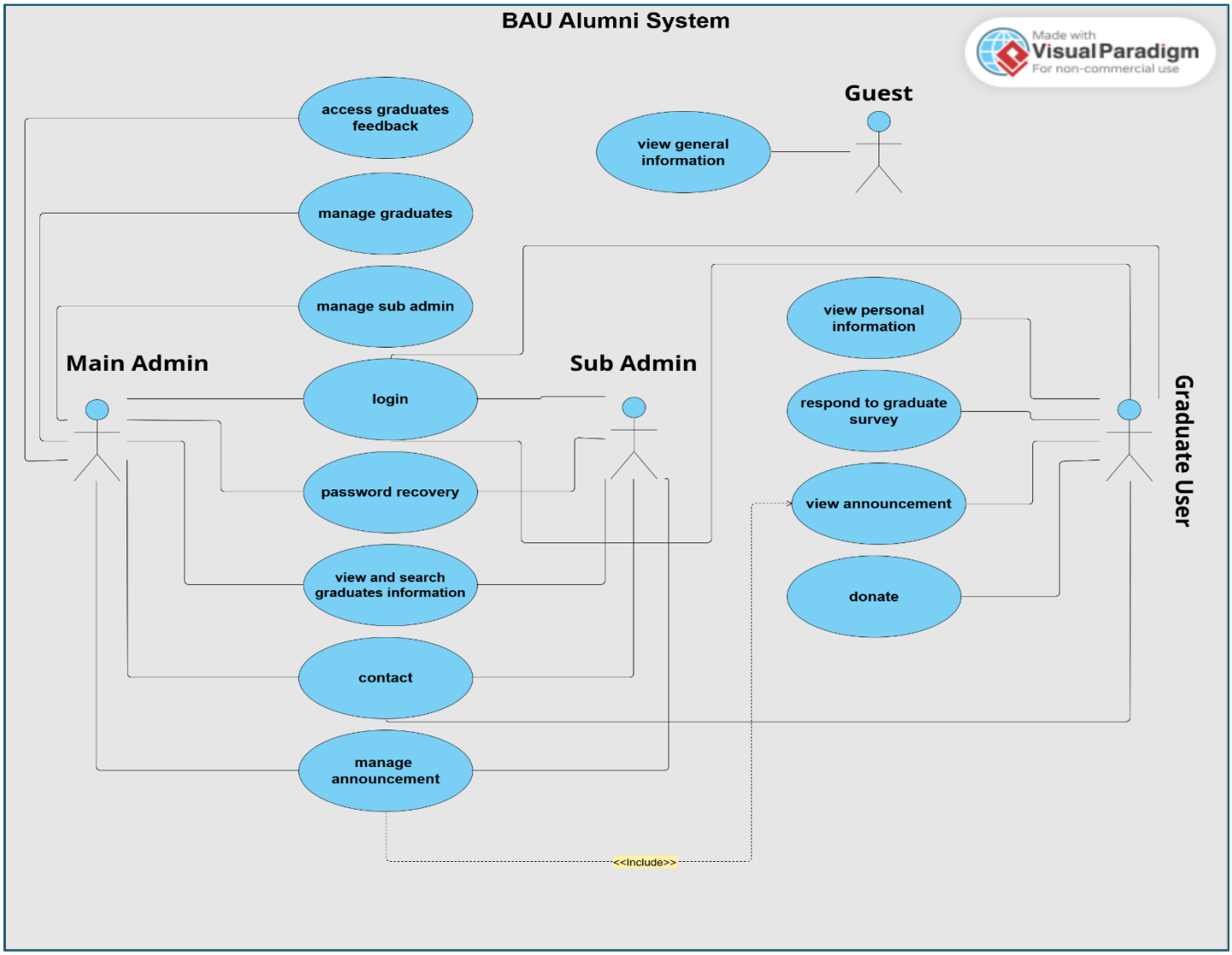

Figure 5: use case diagram for BAU Alumni System

4.6. Functionality Diagram

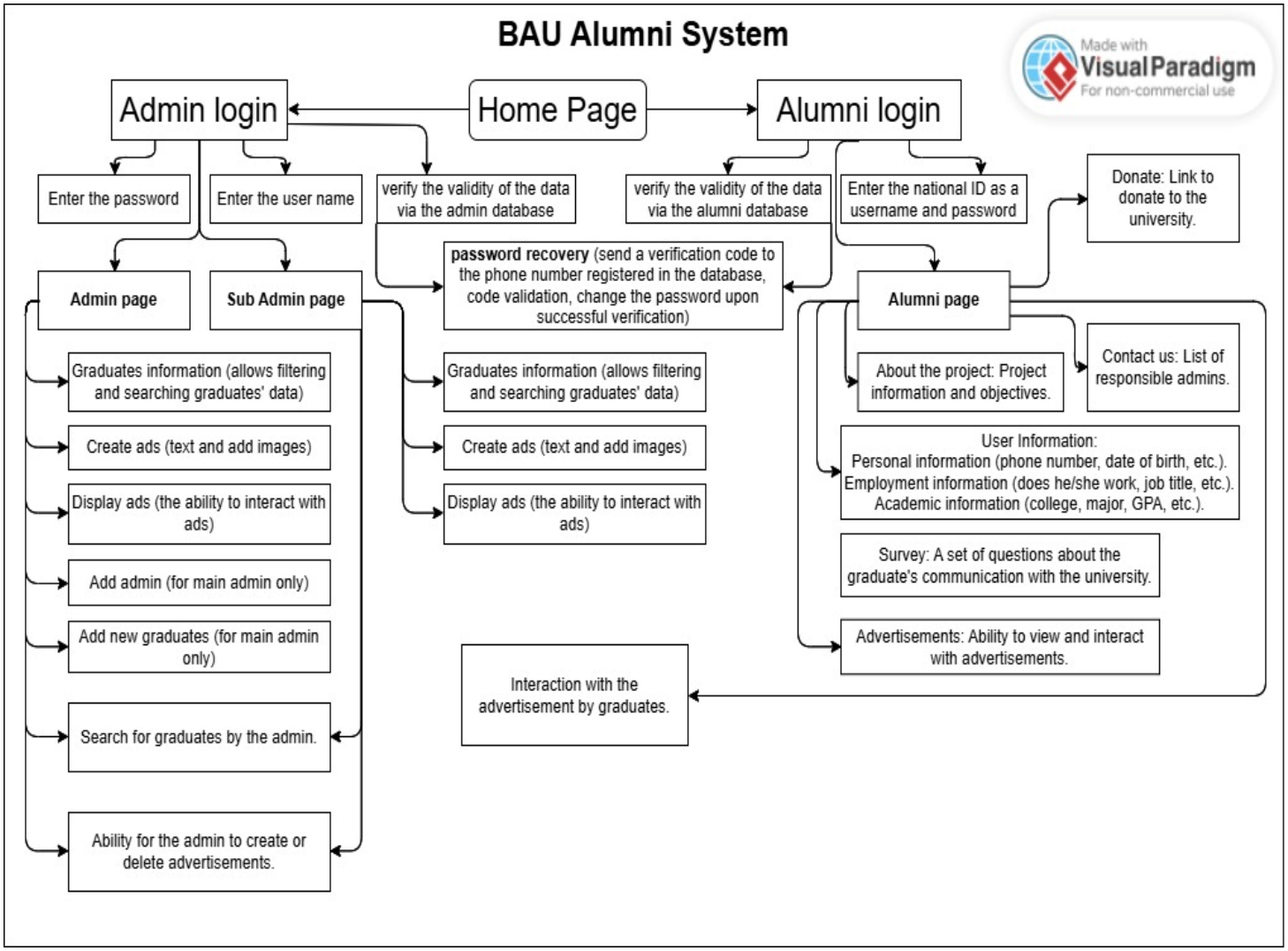

Figure 6: Functionality Diagram for BAU Alumni System

4.7. Admin Login:

Table 2: Describing Table of Admin Login

Field	Description
Admin Username	A unique identifier for the admin (assigned username).
Password	A secure password for authenticating the admin.
Login Method	Options for login (Username/Password).
Authentication	The system verifies the entered credentials and grants access.
Admin Role	Specifies the role of the admin: Main Admin or Sub-Admin.
Redirect	After successful login, the admin is redirected to their respective dashboard.
Access Controls	Main Admins can manage graduates, ads, and sub-admins, while sub-admins have limited permissions.
Security Features	Includes CAPTCHA, account lockout after failed attempts, and optional 2FA.
Session Timeout	Automatically logs out the admin after inactivity to enhance security.
Logout	Allows the admin to securely log out of the system.

4.8. Alumni Login

Table 3:Describing Table of User Login

Field	Description
User Type	Identifies the type of user: Graduate, Main Admin, or Sub-Admin.
Username	A unique identifier for the user (university ID).
Password	A secure password for authenticating the user.
Login Method	Options for login (Username/Password).
Authentication	The system validates the entered credentials and grants access.
Redirect	Graduates are redirected to the Graduate Page, while admins are redirected to the Admin Dashboard.
Access Controls	Graduates can interact with ads, surveys, and tabs, while admins have additional management features.
Security Features	Includes CAPTCHA, account lockout after multiple failed attempts, and optional 2FA.
Session Timeout	Automatically logs out the user after a period of inactivity to enhance security.
Logout	Allows the user to securely log out of the system.

CHAPTER 5

USER MANUAL

5. USER MANUAL

5.1. Introduction

This manual provides a comprehensive guide to using the BAU Alumni system, designed to facilitate communication between Al-Balqa Applied University (BAU) and its graduates. The system offers two main user roles: Admin and Graduate. Each role has distinct features and capabilities:

- Admins manage graduate information, create announcements, and interact with graduates through the system.
- Graduates can update their personal, academic, and professional information, interact with announcements, and stay connected with the university.

5.2. Software Requirements

The BAU Alumni system requires the following software and configurations:

- **Operating System:** Windows 10 or later, macOS 10.15 or later, or Ubuntu 20.04 or later
- **Web Browser:** Google Chrome, Mozilla Firefox, or Microsoft Edge (latest versions)
- **Database:** MySQL 8.0 or later
- **Backend:** Python with Flask and Jinja templates
- **Frontend:** JavaScript and React.js (latest version)
- **Password Recovery:** Infobip SMS gateway for OTP-based password resets
- **Security:** SSL/TLS certificate for secure communication

❖ **This setup ensures efficiency, security, and seamless user experience.**

5.3. Figures of the project

Figure 7: Project homepage showcasing admin-published announcements

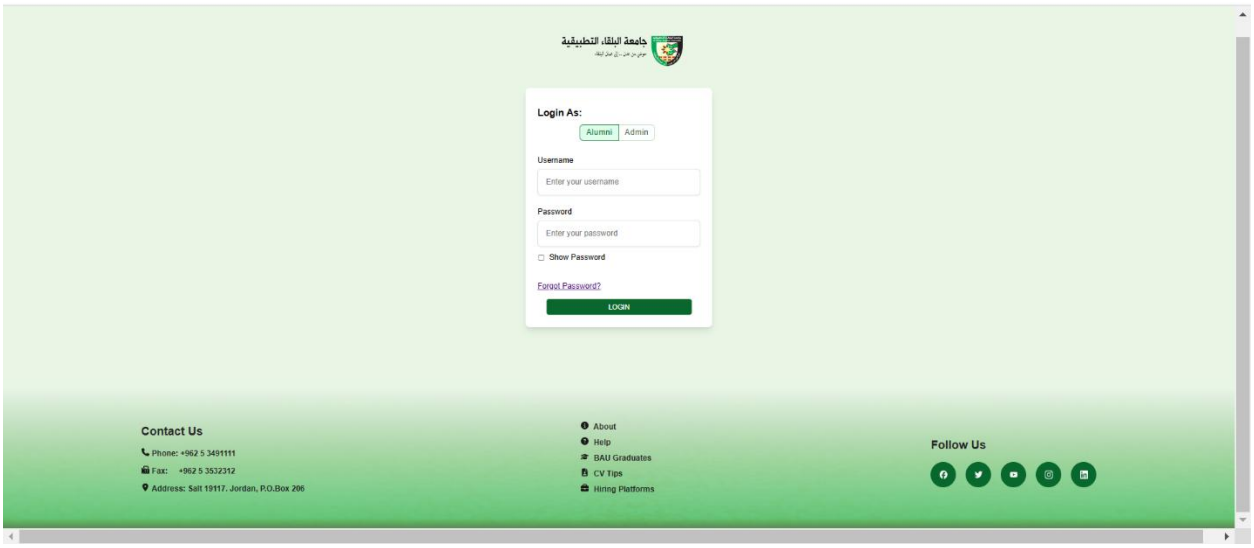

Figure 8: Login Page

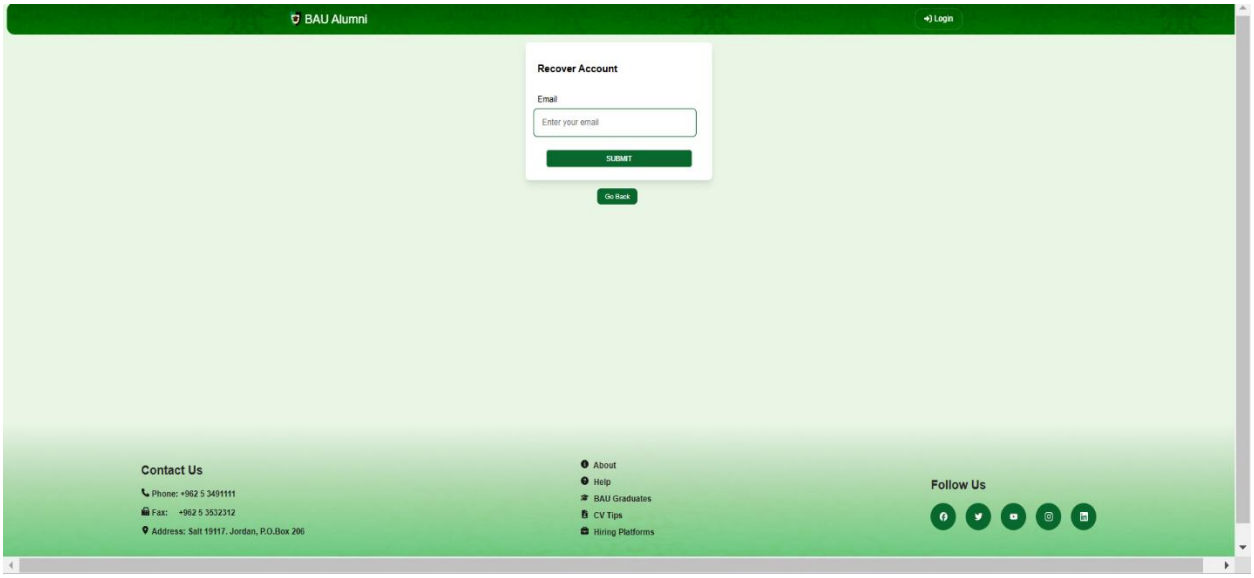

Figure 9: Recover Account

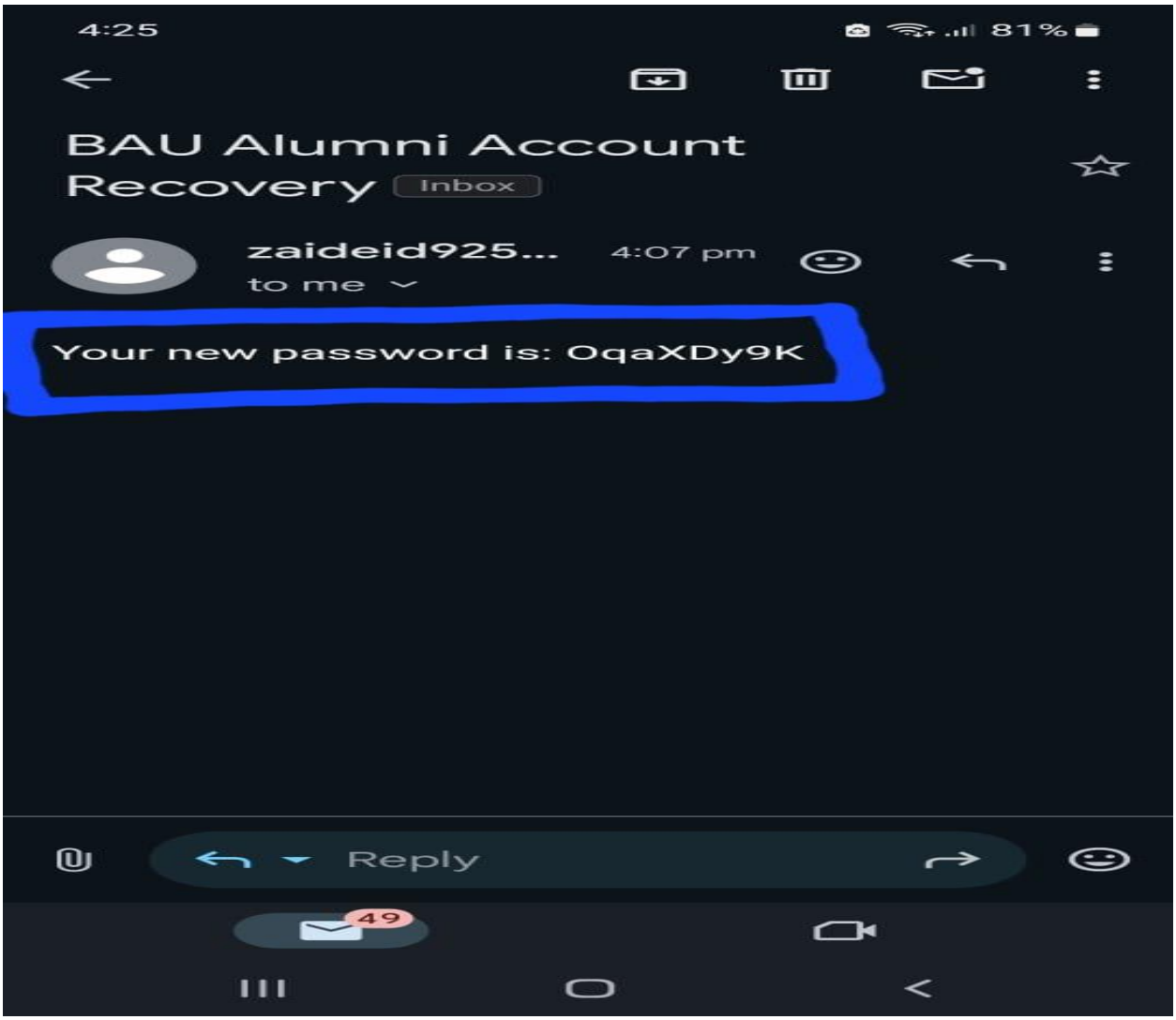

Figure 10: New password has been sent to the email

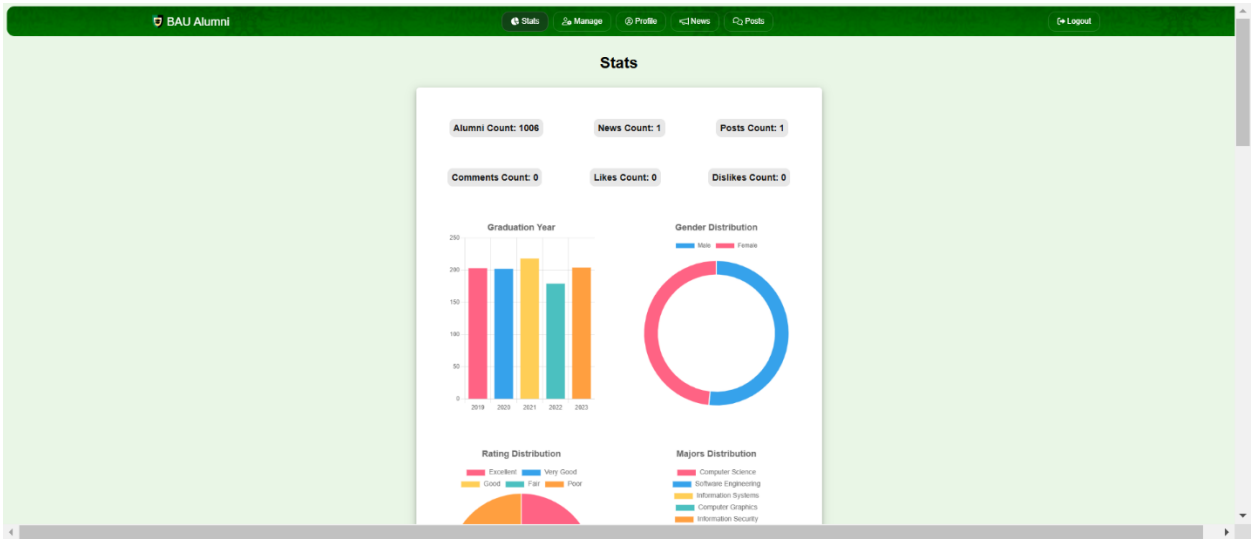

Figure 11: Stats page for admin

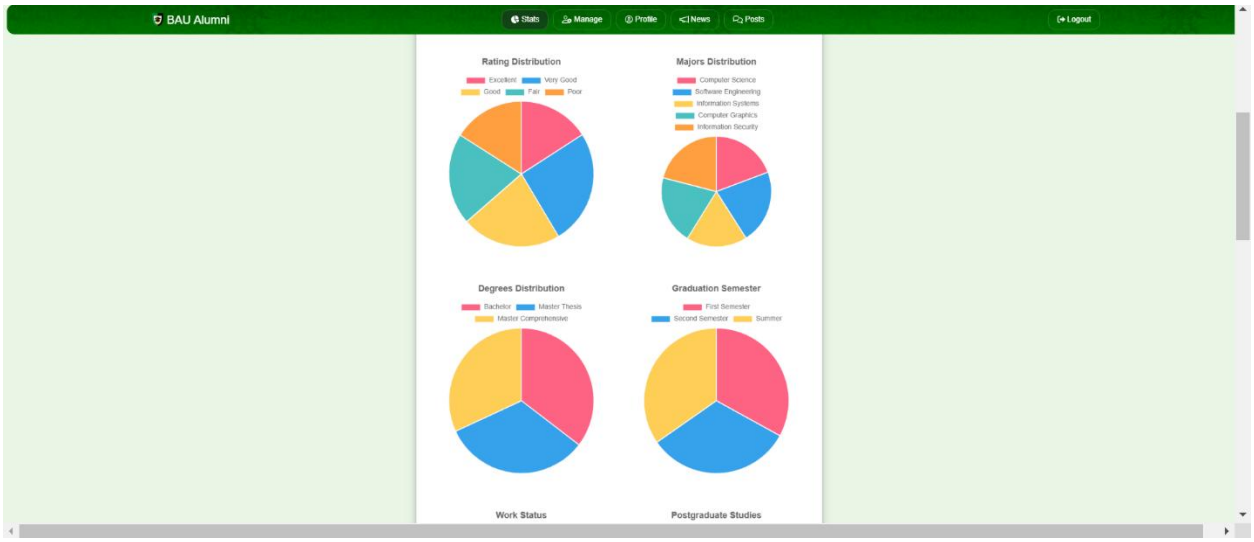

Figure 12: Stats page for admin

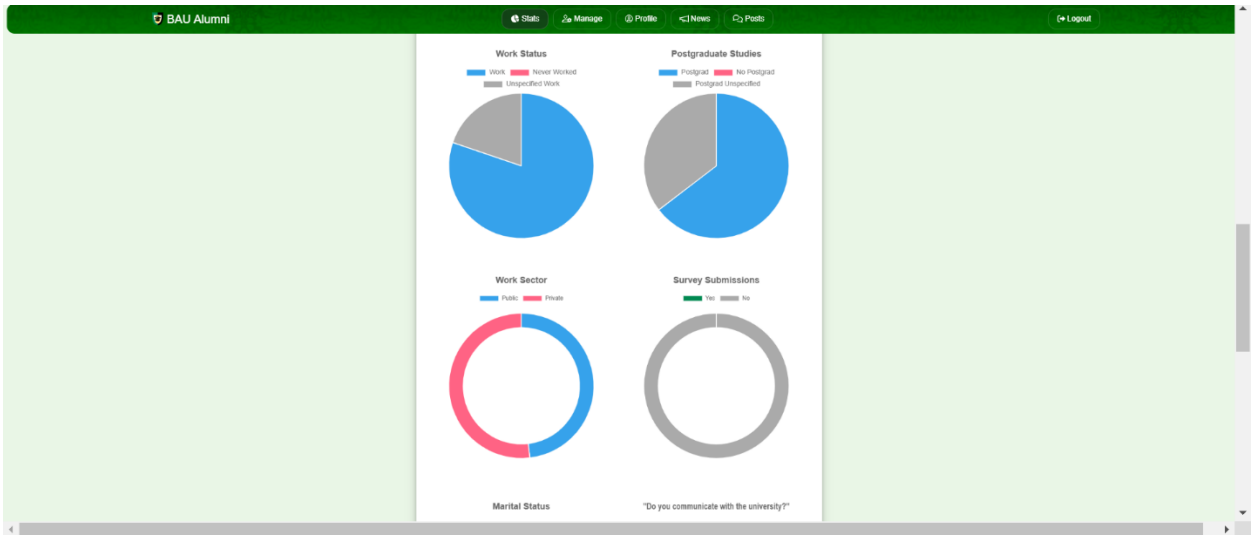

Figure 13: Stats page for admin

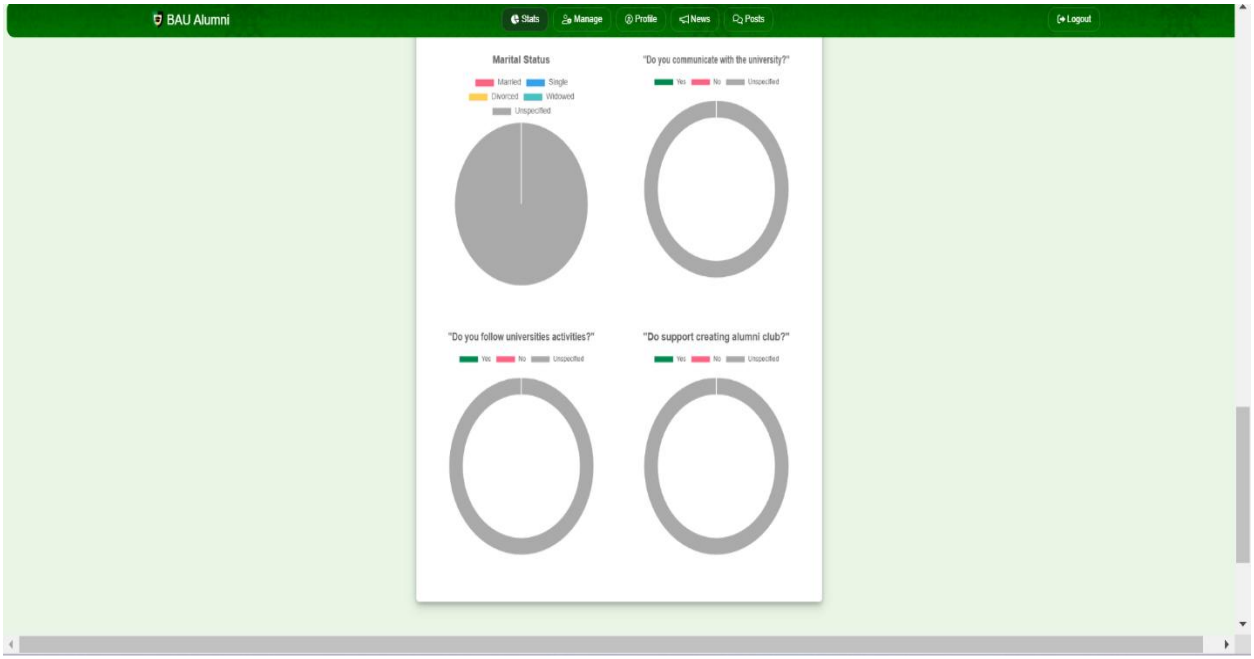

Figure 14: Stats page for admin

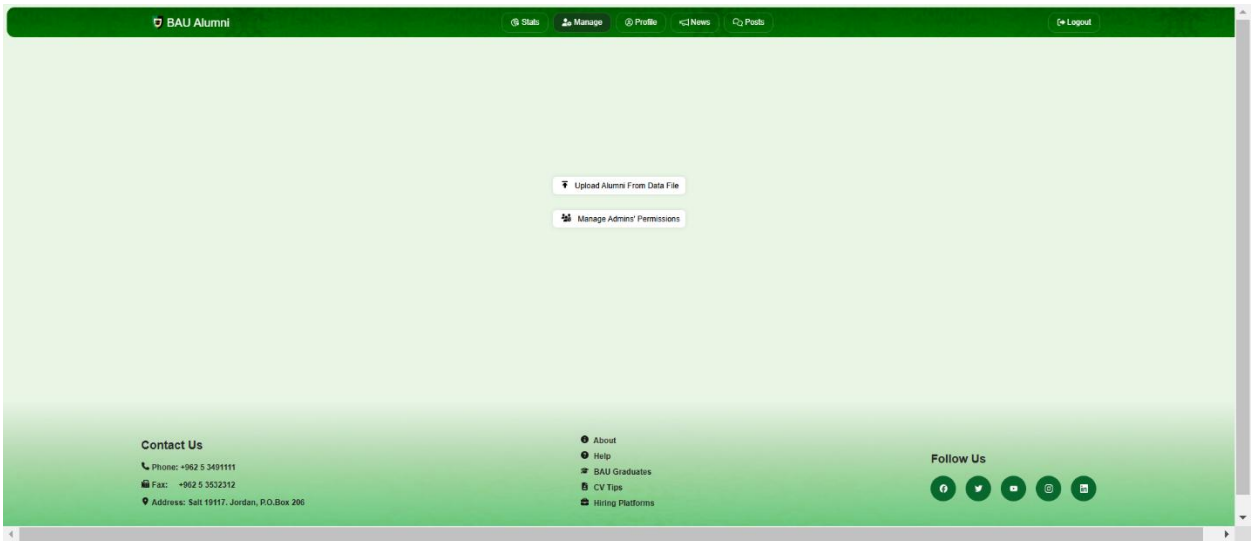

Figure 15: Manage page for admin

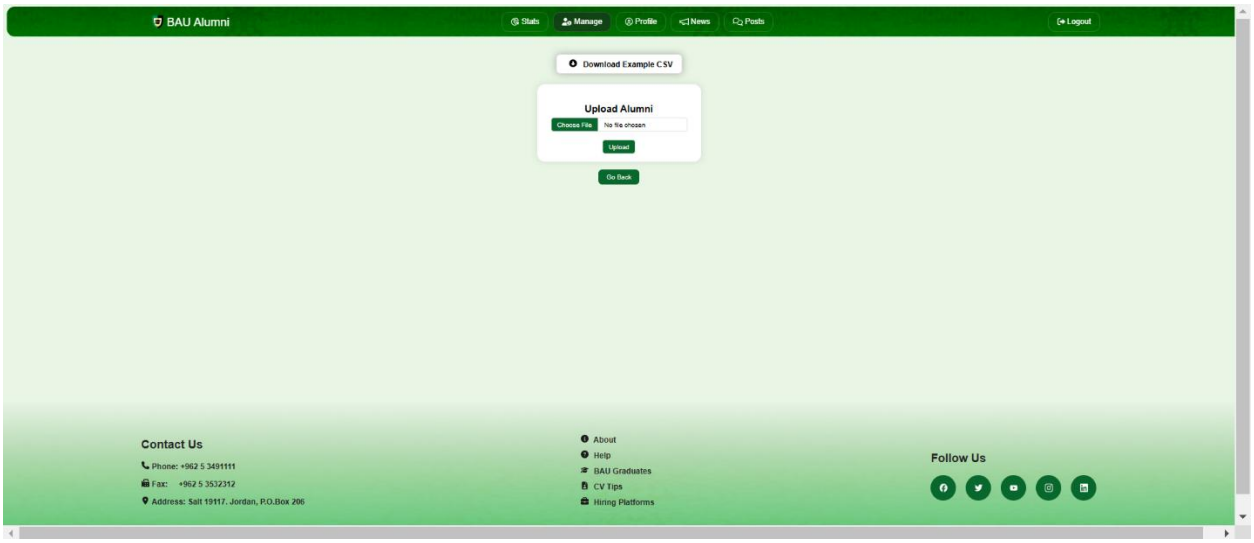

Figure 16: Upload alumni data

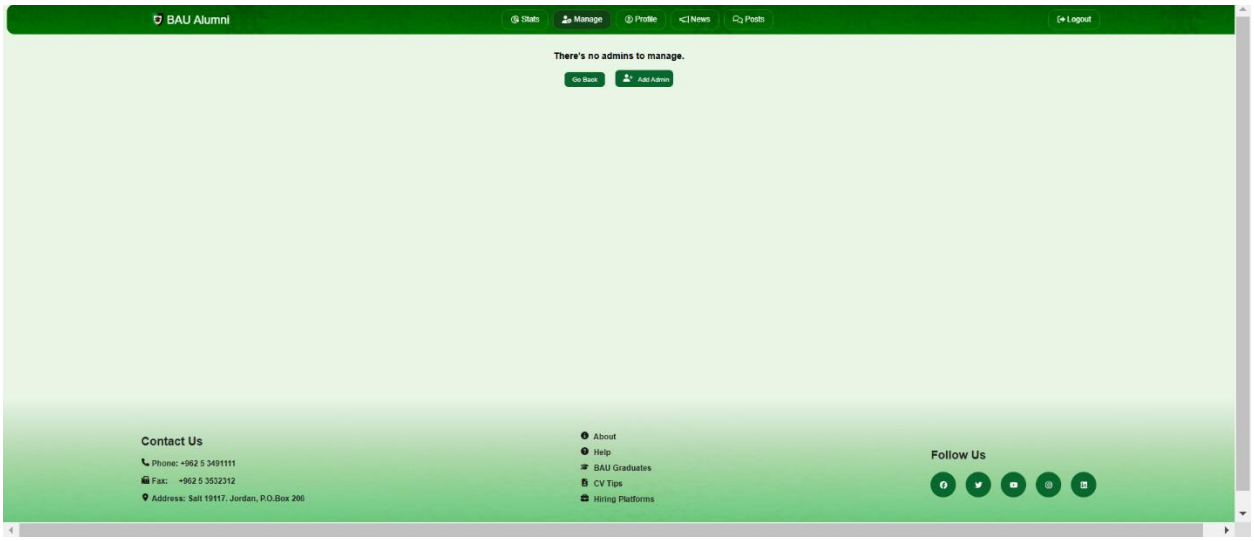

Figure 18: Page where a table will display all admins and the permissions granted to them

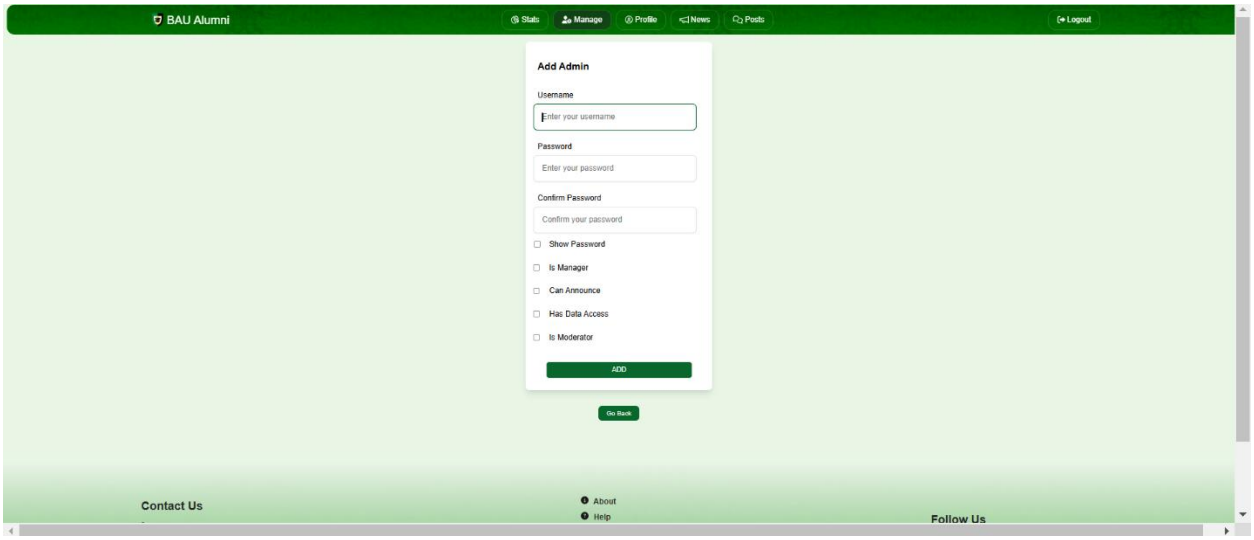

Figure 19: Add a new admin

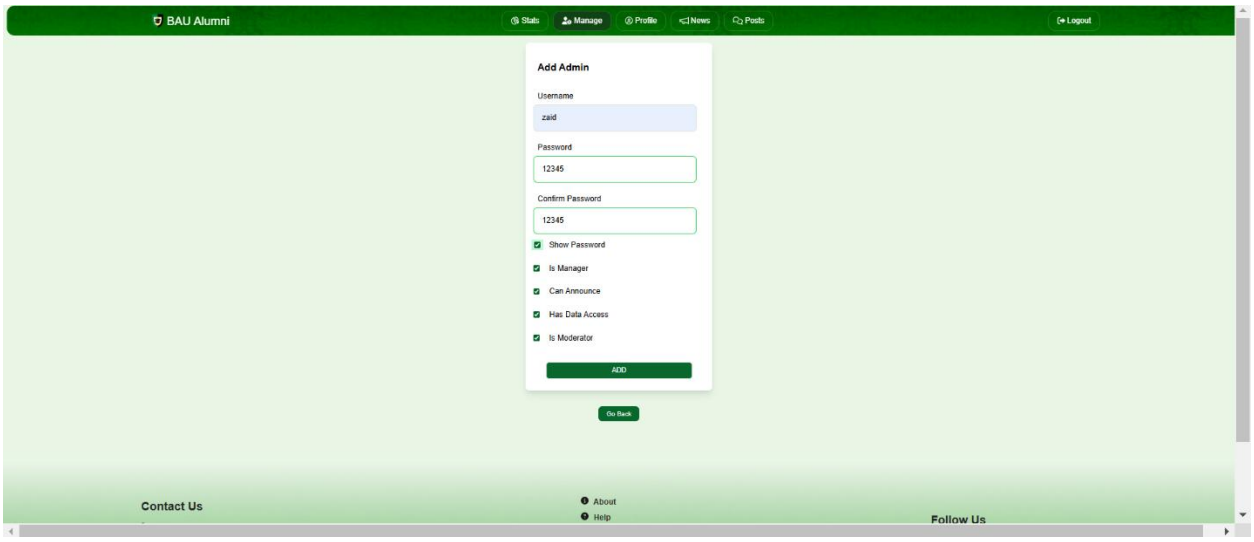

Figure 110: Add a new admin and grant them permissions

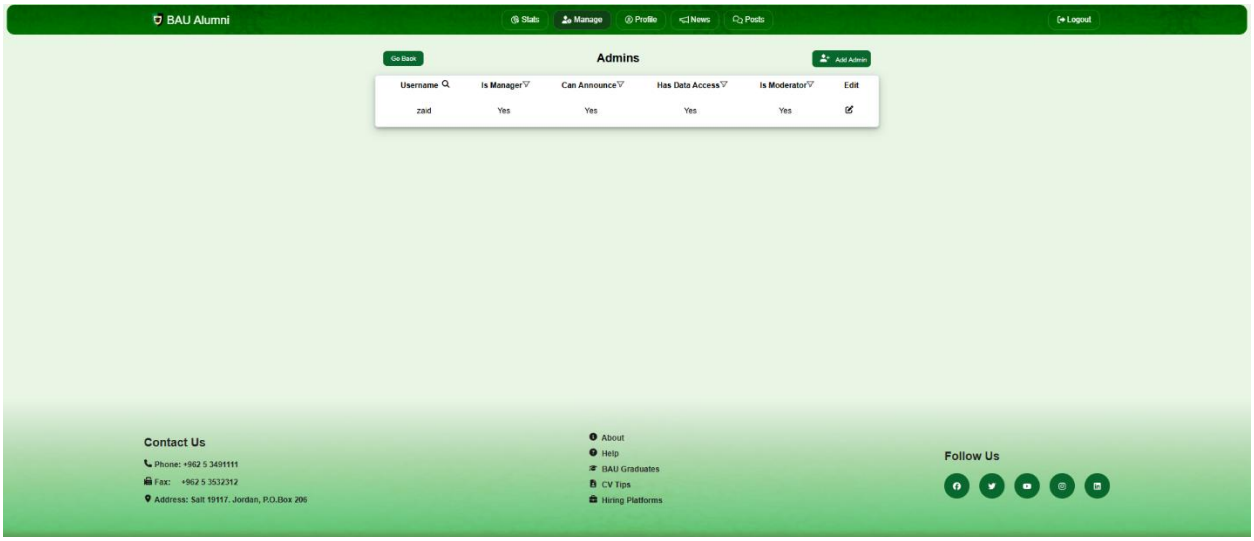

Figure 20: Table for all admin's

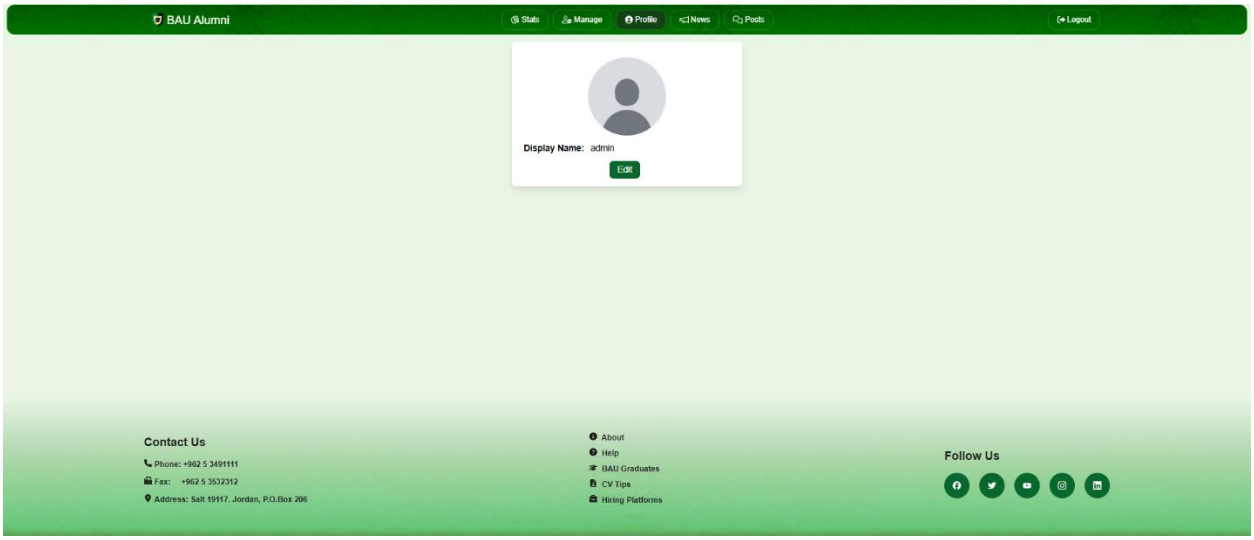

Figure 21: Profile page for admin

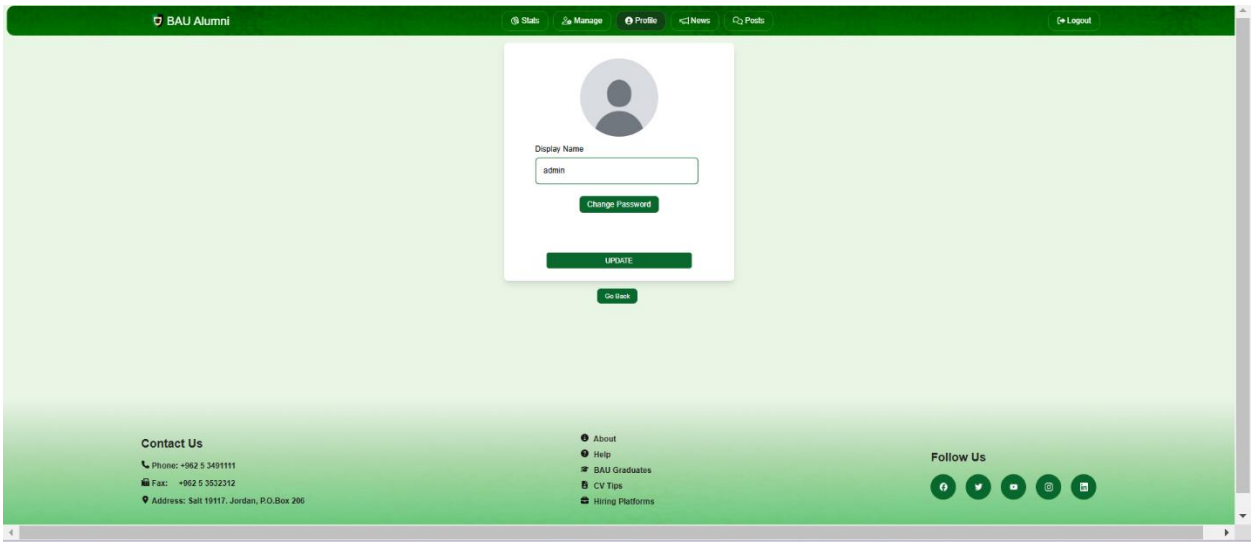

Figure 22: Edit profile for admin

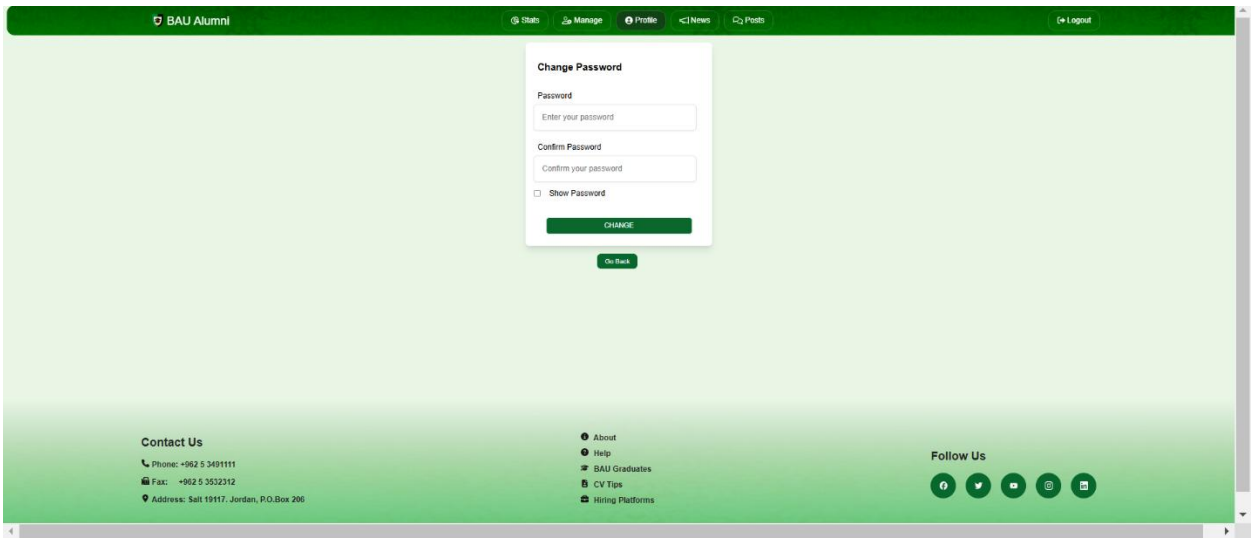

Figure 23: Change password for admin

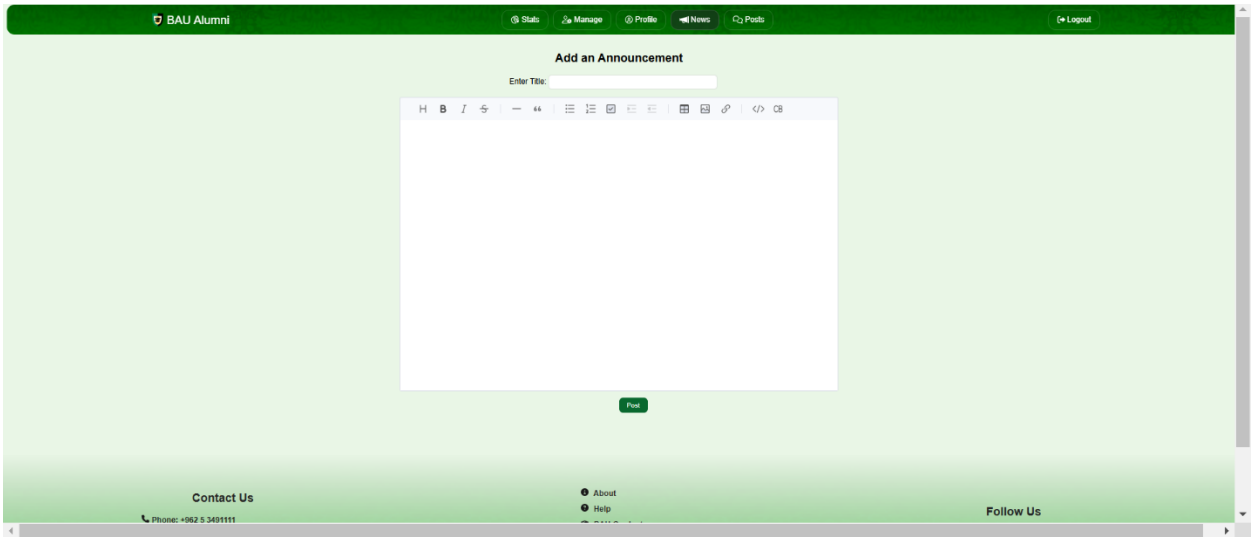

Figure 24: Page to create news by admin

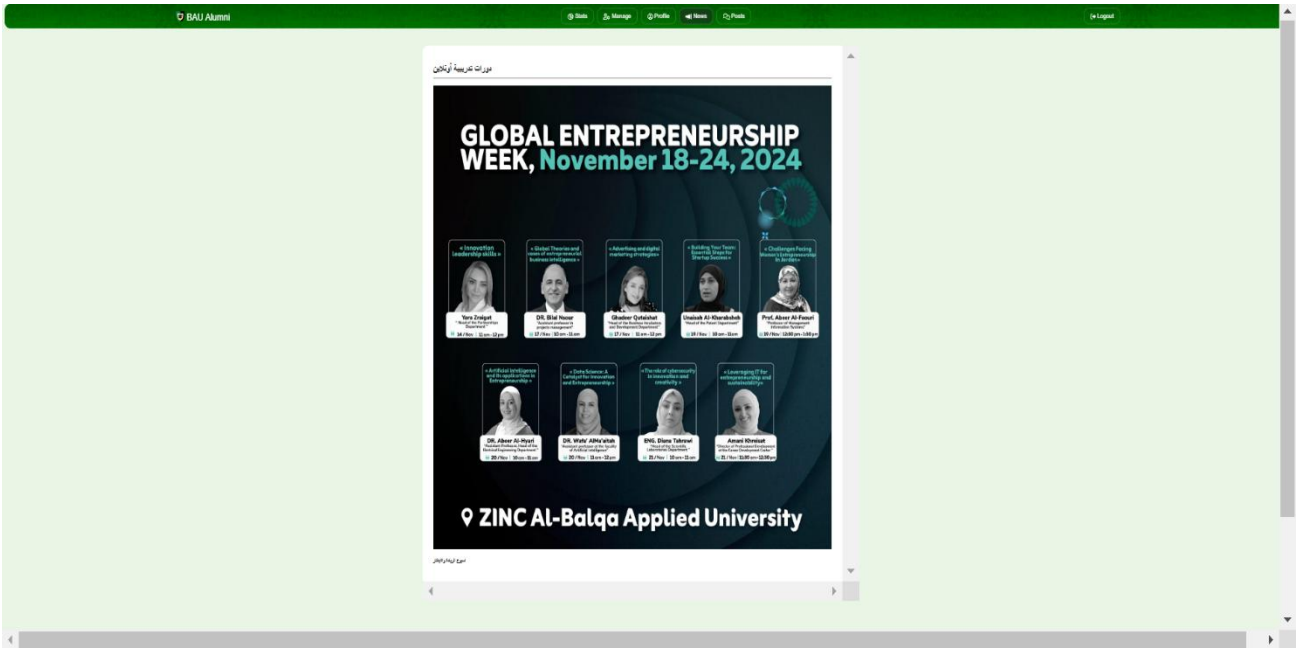

Figure 25: Post page for admin

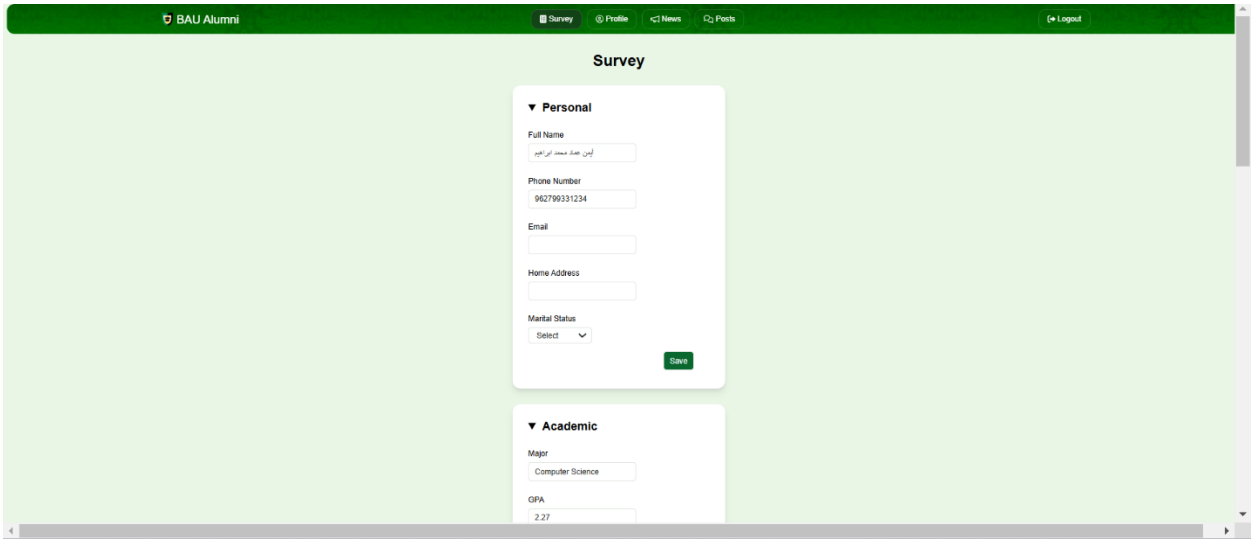

Figure 26: Survey page for alumni

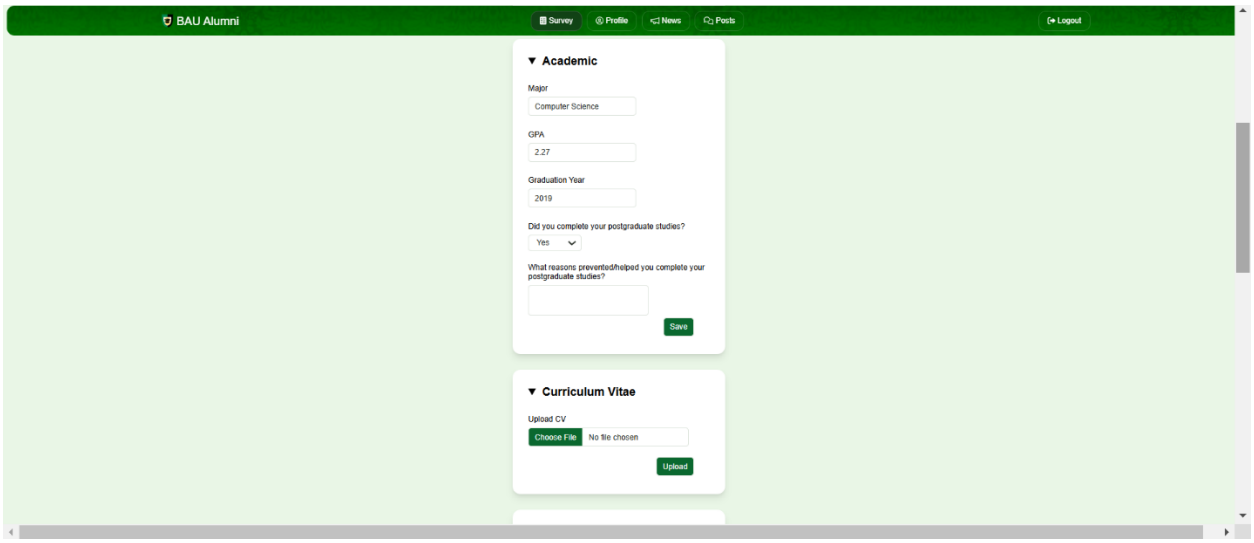

Figure 27: Survey page for alumni

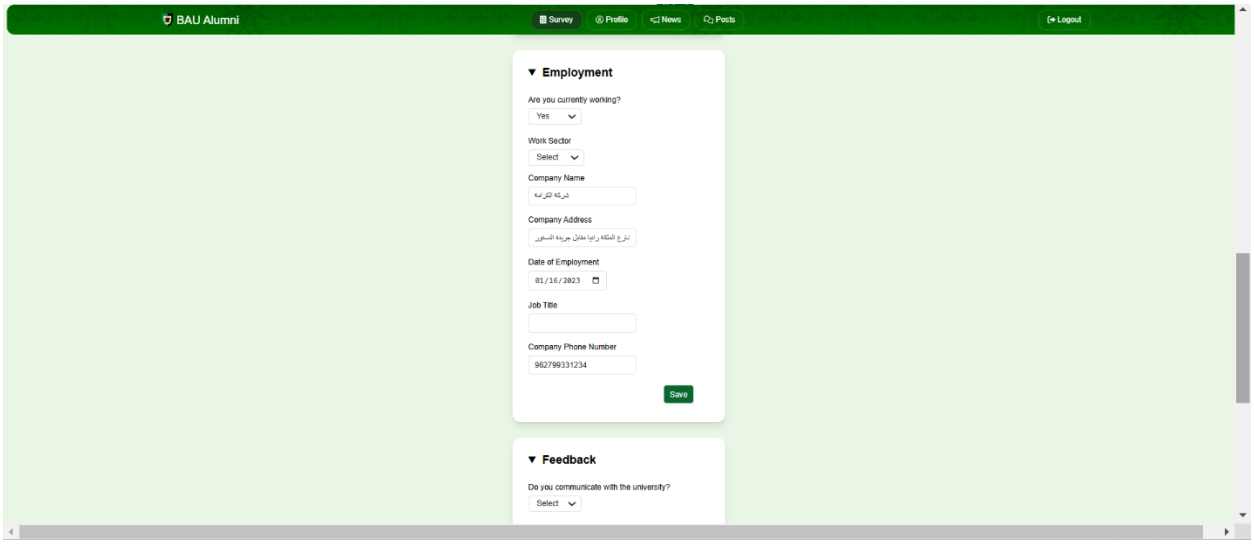

Figure 28: Survey page for alumni

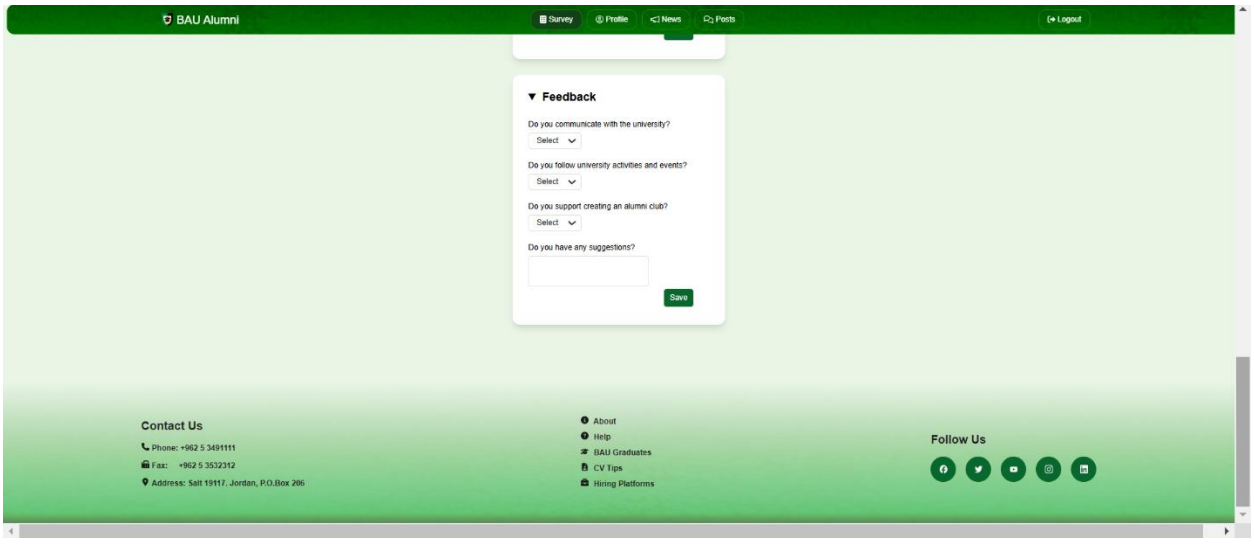

Figure 29: Survey page for alumni

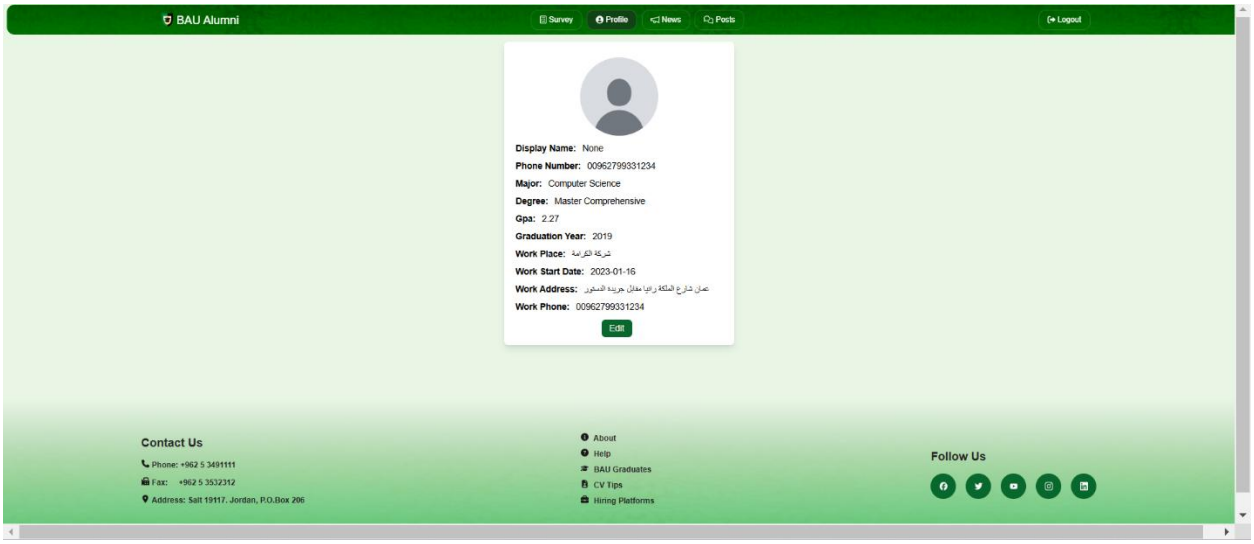

Figure 30: profile page for alumni

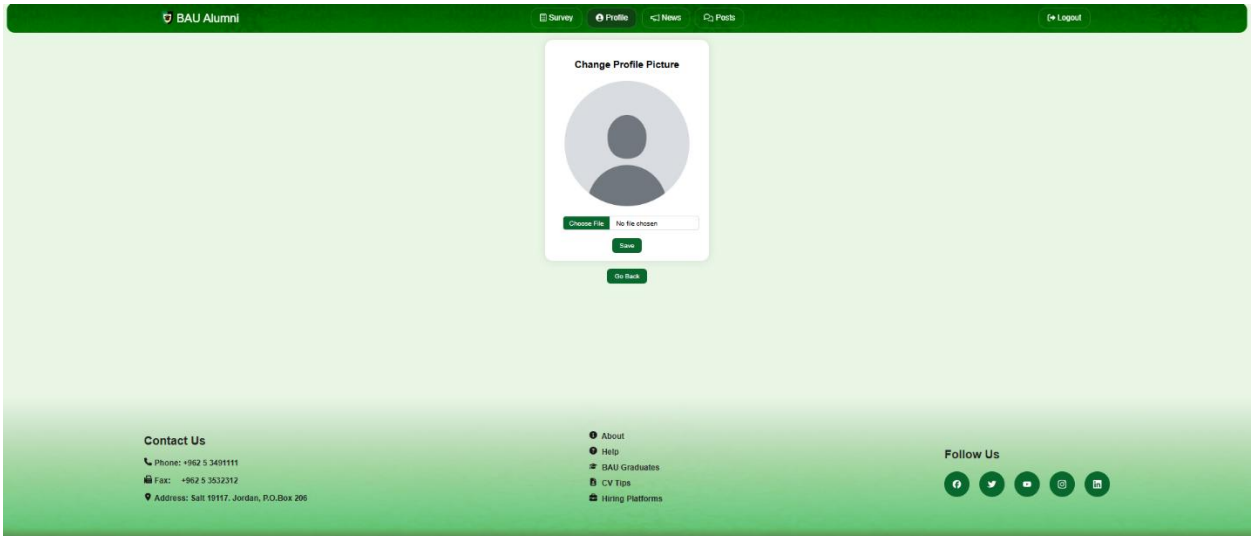

Figure 31: Change profile picture for alumni

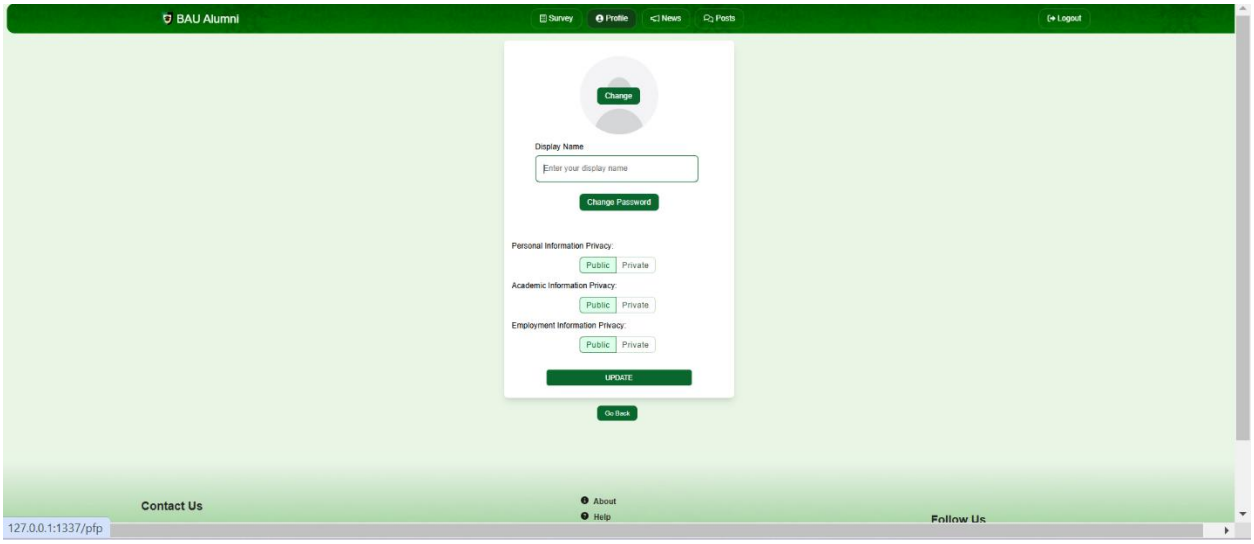

Figure 32: Make edits to the information if I want it to be public or not

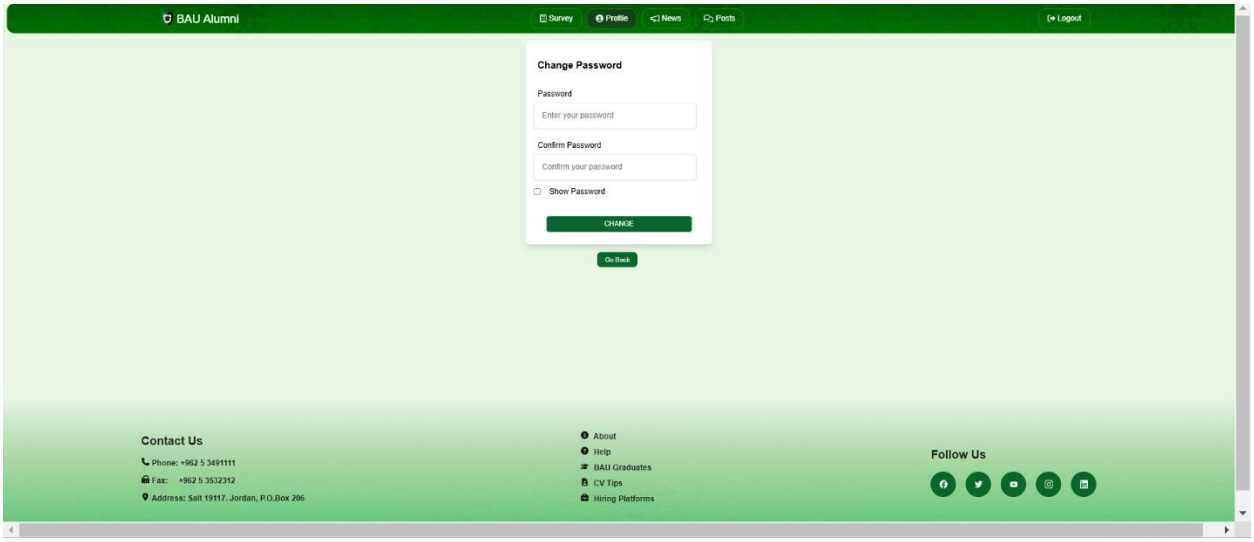

Figure 33: Change password for alumni

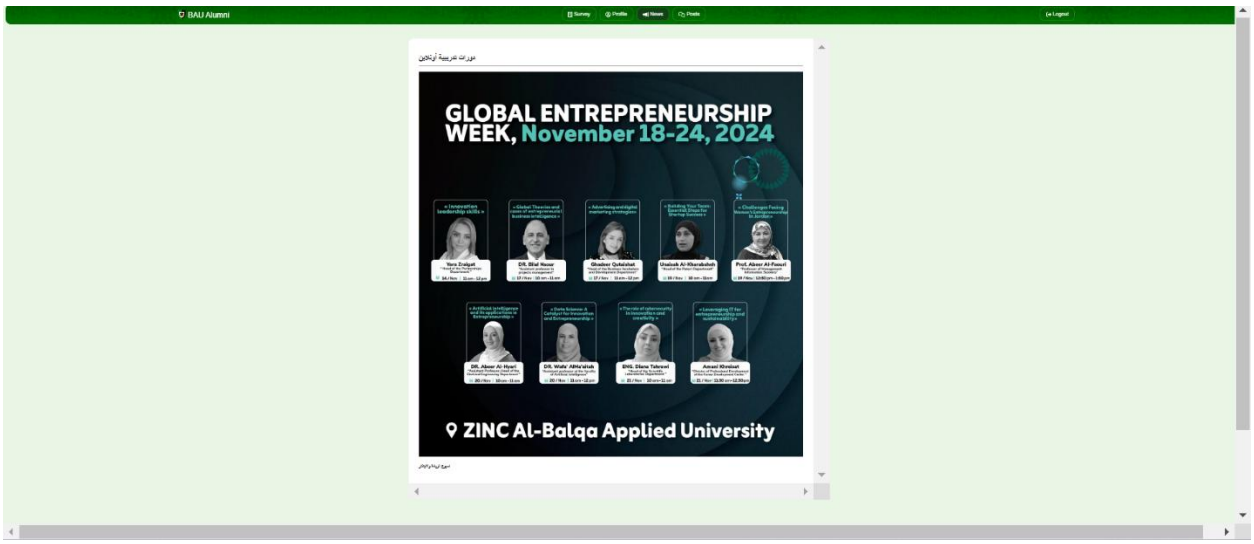

Figure 34: News page for alumni

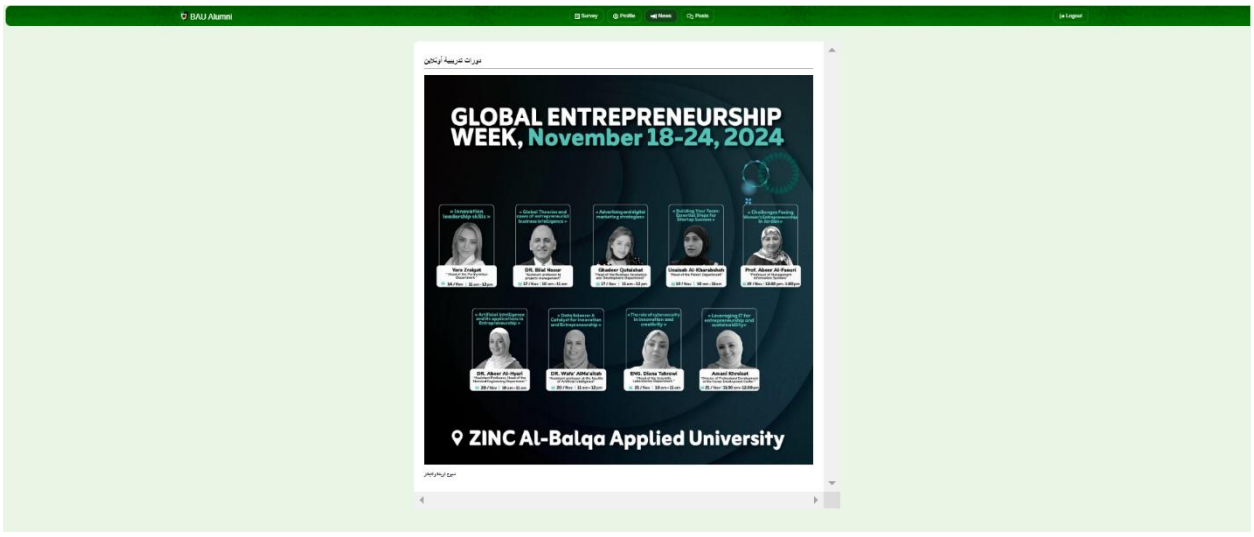

Figure 35: Post page for alumni

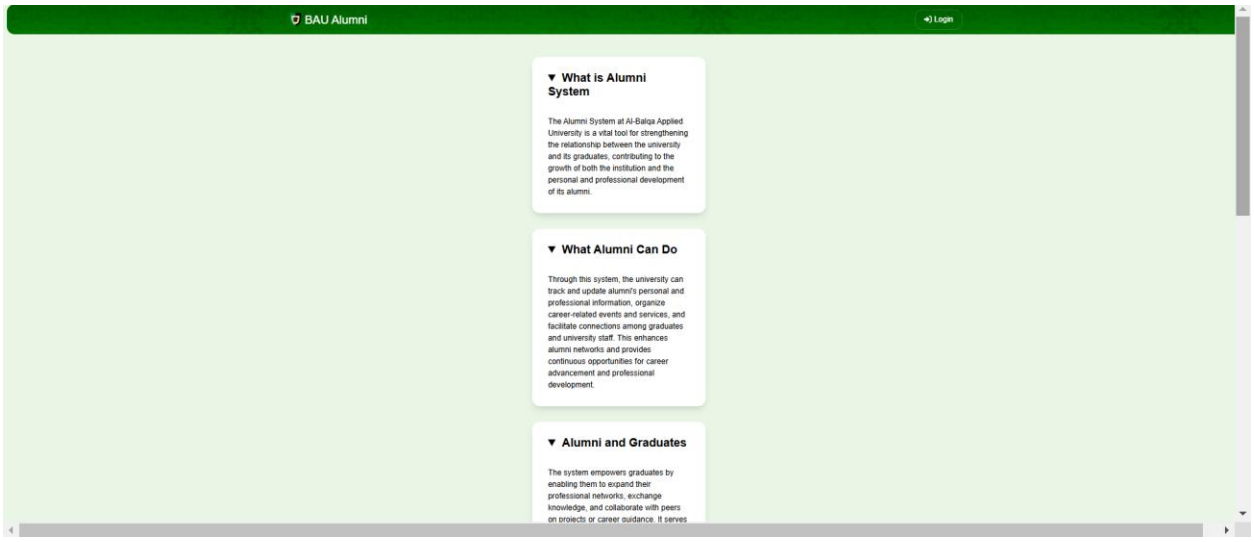

Figure 36: The "About" page is for explaining the system

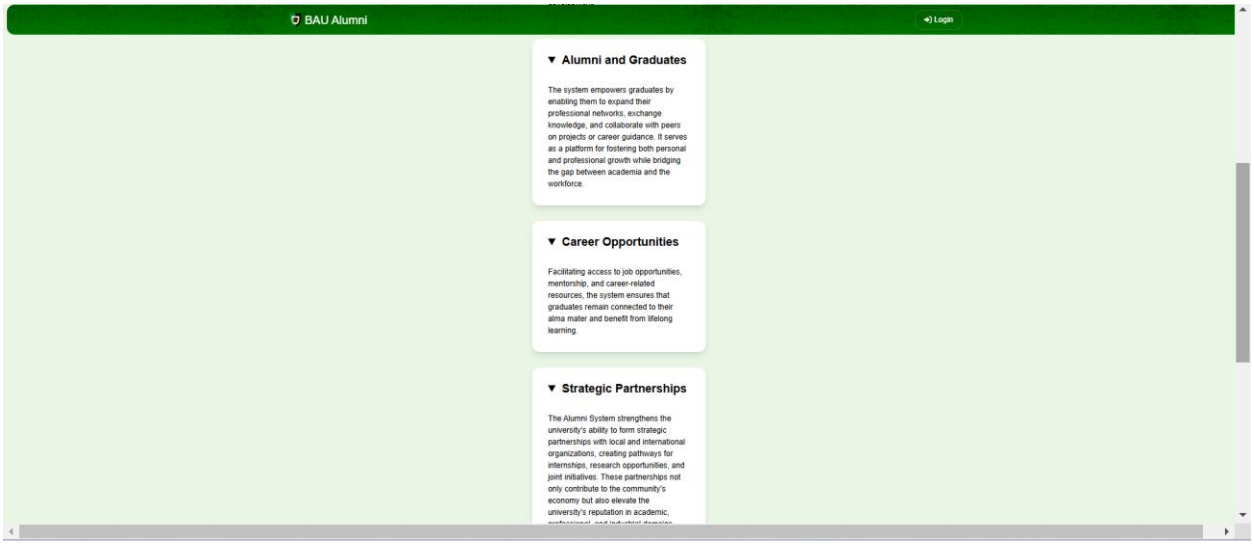

Figure 37: The "About" page is for explaining the system

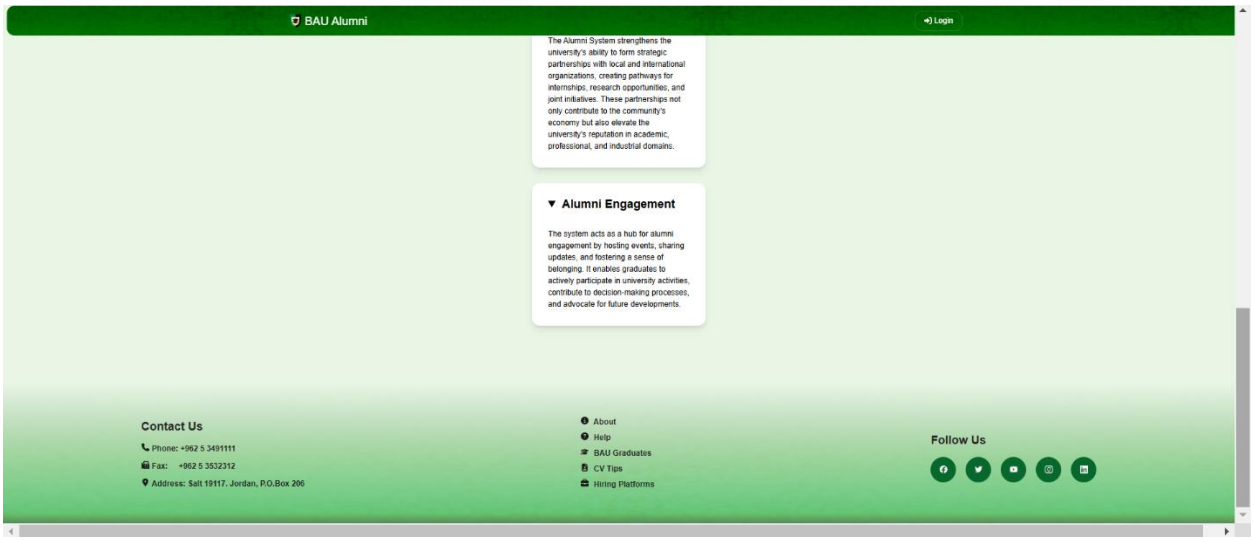

Figure 38: The "About" page is for explaining the system

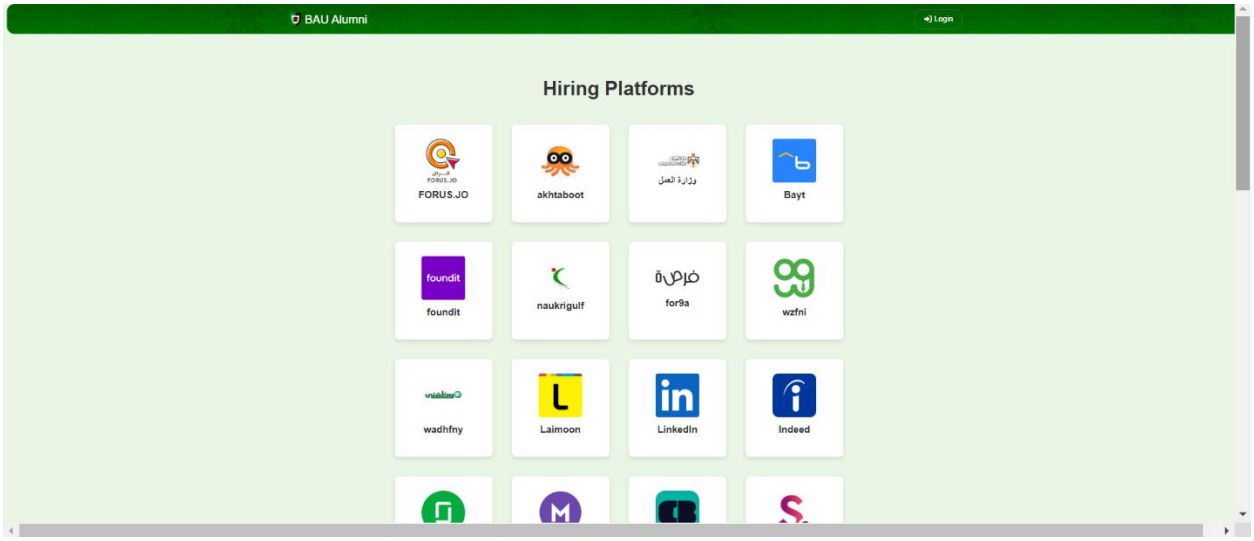

Figure 39: Find your next opportunity or the perfect candidate – all in one place

CHAPTER 6

CONCLUSION

6. Conclusion

6.1. Analysis Methodology

The BAU Alumni Communication System bridges the gap between Al-Balqa Applied University and its graduates, offering a streamlined and user-friendly platform for engagement. The system provides dual login methods: one for administrators and another for alumni. Administrators can log in using a username and password validated against a dedicated admin database, while alumni log in using their university number and national ID. Alumni who forget their passwords can reset them through a verification code sent to their registered phone number, ensuring both security and ease of access.

The admin interface is divided into primary and secondary administrators, where both share common features like graduate information management, announcement creation, and announcement visualization. Primary admins have additional privileges, such as adding new admins and registering new graduates. The alumni-facing interface includes several sections, such as project information, user details, announcements, donations, and a "Contact Us" section for direct communication with the university.

6.2. Achievements and Contributions

The development of the BAU Alumni Communication System marked a significant achievement in enhancing university-graduate interactions. Throughout the project, we honed our skills in database design and secure authentication processes, ensuring robust data protection and seamless login experiences.

For administrators, we introduced advanced features such as filtering graduate data by parameters like major, graduation year, and employment status, offering insights into trends and alumni demographics. Furthermore, we implemented dynamic announcement management, enabling admins to create, modify, and delete announcements that automatically sync with alumni views.

Alumni gained a personalized platform to update their profiles, engage with university activities, and participate in discussions through announcement interactions. Features such as donation tracking and direct communication channels emphasized community-building and alumni involvement.

This project stands as a testament to the integration of functional requirements and user-friendly design, fostering a meaningful connection between the university and its graduates.

6.3. Implications and Significance

The BAU Alumni Communication System project contributes significantly to academia, the professional field, and the alumni community. In the realm of computer science, the project underscores the importance of user-centric design and secure database management. By employing modular architecture, we demonstrated how scalable systems can meet diverse user needs efficiently.

Beyond academia, the system addresses a practical need for improved university-alumni communication. Its features, such as graduate tracking and engagement tools, empower the university to maintain long-term relationships with its alumni, fostering professional networks and enhancing institutional reputation. For alumni, the platform promotes connectivity, collaboration, and ongoing engagement with the university, positively impacting both personal and professional growth.

6.4. Limitations

Despite its successes, the BAU Alumni Communication System faced several challenges during development.

One notable limitation was the occasional delay in password reset emails caused by issues in integrating the SMS gateway for verification codes. This highlighted the need for more robust third-party integrations.

Another limitation was the system's reliance on primary administrators for graduate data registration. This dependency created potential bottlenecks, limiting scalability and efficiency. Addressing this issue requires empowering secondary administrators or alumni to update their profiles autonomously, enhancing flexibility.

Additionally, some reporting features lacked real-time analytics capabilities, which could have provided deeper insights into graduate statistics, such as employment rates or higher education pursuits. Expanding the reporting functionality with advanced visualization tools would significantly enhance usability and decision-making.

6.5. Future Works

Future developments for the BAU Alumni Communication System will focus on enhancing scalability, autonomy, and user engagement. Key objectives include:

- Implementing a self-service interface for alumni to manage and update their profiles without admin intervention.
- Introducing advanced analytics and dynamic charts to provide actionable insights into alumni data, enabling more informed decision-making.
- Refining the password reset process to ensure faster and more reliable communication with alumni.
- Expanding admin privileges to secondary administrators for specific tasks, thereby reducing dependency on primary admins and improving system efficiency.
- Incorporating new features, such as event invitations, alumni networking tools, and career development resources, to further engage alumni and promote community-building.

6.6. Lessons Learned

Developing the BAU Alumni Communication System provided invaluable lessons in software development and team collaboration. Clear planning and requirement gathering were pivotal in aligning functionalities with user needs. The reliance on primary admins for certain tasks highlighted the importance of designing decentralized systems to improve scalability. Addressing integration challenges, such as those with the SMS gateway, underscored the need for thorough testing and robust error-handling mechanisms. Collaboration and communication within the development team proved crucial, ensuring timely resolution of issues and alignment of goals. These lessons will guide future projects, emphasizing modular design, proactive testing, and user-centric solutions.

6.7. Recommendations and Actionable Insights

To build upon the success of the BAU Alumni Communication System, the following recommendations are proposed:

- **Empower User Autonomy:** Develop a user-friendly self-service portal for alumni to update profiles and engage with university activities independently.
- **Enhance Scalability:** Adopt modular system design to simplify feature updates and accommodate future requirements seamlessly.
- **Invest in Advanced Analytics:** Integrate real-time reporting tools to analyze alumni data more effectively, providing valuable insights for decision-makers.
- **Strengthen Third-Party Integrations:** Improve the reliability of external services, such as the SMS gateway, for critical features like password recovery.
- **Foster Alumni Engagement:** Introduce networking tools, mentorship programs, and alumni-exclusive events to strengthen the bond between alumni and the university.
- **Promote Training and Documentation:** Provide comprehensive guides for administrators to manage the system efficiently, reducing dependency on specialized developers.

6.8. Final Thoughts

Reflecting on the journey of developing the BAU Alumni Communication System highlights the transformative impact of technology on fostering meaningful connections. This project would not have been possible without the support and dedication of the team, mentors, and stakeholders. It demonstrated the importance of innovation, collaboration, and perseverance in addressing real-world challenges.

While the completion of this project signifies a milestone, it also marks the beginning of new opportunities to further enhance alumni-university engagement. The insights and experiences gained from this endeavor will undoubtedly inform future projects, driving excellence and continuous learning in the ever-evolving field of software development.

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