

Alumni Management System

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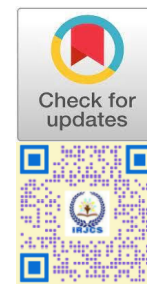
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Abstract: The Alumni Management System is a Django-based web application developed to manage and connect alumni College. It serves as a centralized platform for maintaining alumni data, managing events, posting jobs, and facilitating communication between alumni and administrators. The system ensures secure access, dynamic profile management, and improved networking opportunities. It bridges the gap between the institution and its alumni community through a unified digital interface.

Index Terms: Alumni management system, Django, Web-based portal, Alumni database networking, Event management, Job posting, Secure login, Communication System.

1. INTRODUCTION

To meet the continually increasing need for a centralised, safe and efficient solution to connect educational institutions with their former students, the Alumni Management System was established. Many colleges still rely on an outdated method of recording their former students, through the use of manual records, social media groups and/or application/tools that do not possess data integrity, a scalable data model or built-in structures for communicating with their former students. The Alumni Management System is able to overcome all of these issues with its integrated web-based solution, which is built with Django, HTML / CSS/JavaScript, and SQLite. The Alumni Management System (AMS) is a secure, centralized interface where alumni can log in to manage several aspects of their lives as alumni registration, approval, management of personal and professional data, job postings, events, announcement requests, email notifications, etc via automation for much of the routine daily activities that typically occur within an Alumni Office as well as providing educational institutions with an accurate electronic record of each alumnus/ae's (alumni) personalized profile to further enable the institution to actively engage with its alumni, promote and expand its network of former students, and more effectively implement and improve their workflows. Overall, AMS strengthens the relationship between educational institutions and their alumni by providing a secure, dependable, and efficient means for both to communicate and collaborate. Method for communicating and collaborating with one another.

2. LITERATURE SURVEY

Recent studies in Alumni Management Systems illustrate the necessity of the role that Digital Platforms are to take in the evolution of the Long-term Engagement between the Institutional Sector and the Alumni. It was observed that the initial approach to the process of managing records and the different approaches in the process of communications were factors in the creation of an environment in which data redundancy and data inaccessibility were the cause of inefficient processes in dealing with the Alumni. Social Media Groups or/and Software were also used by other Institutions in their approach to the process of dealing with the Alumni; these approaches were found to lack Institutional Control and Data Management, as well as Authentications. With the development of many different Frameworks in the last couple of years in the development world, such as Django, PHP, and ASP.NET, the Institutions began to design and develop web-based Systems that Host All the Alumni's Information in Only One Place, allowing for the creation of Profiles of the Alumni, enabling the Alumnito Organize Events with other people and to Communicate with each other. Most of the Literature available was concentrated in the way in which the Relational Database could assist the Institutions in their efforts to maintain an Accurate and Scalable dataset of the Alumni, and all claimed that the usage of the "Dashboard and Analytical

Tools” would assist the Institutions in acquiring “Infographics about the way in which the Alumni were Participating in and were Forming Connections with the Institution.” Other Researchers also began to understand the necessity of using “Email Notifications” in the process of dealing with the Alumni, “Access Control,” and “Automated Verification Workflow” to “Improve the Reliability and the User Experience”

3. SYSTEM DESIGN AND METHODOLOGY

The alumni management system has been designed using modularized structured design paradigms to achieve scalability, dependability and ease of maintenance. The design is based on a 3-tier architecture consisting of the presentation layer (front end), the application layer (back end) and the data layer (database). The presentation layer has been developed with responsive, user-friendly, HTML/CSS/JavaScript to allow smooth interaction by alumni and administrators alike. The presentation layer facilitates the creation of login pages, updating profiles, creating dashboards, and many other facilities within the alumni management system via user actions. The application layer is developed using the Django Frame work, including Application logic Authentication Management, communication/routing and role-access control. With the ORM (Object Relational Mapping),it provides a means of communication to and from a database with very little over head, allowing for light weight, secure transactions between the application layer and database layer. To support scaling and sustaining growth while ensuring dependability and maintainability for Alumni Managers, the system’s design architecture is a modular structured paradigm. The Alumni Management Application has been developed using a three-tier architecture model. The three tiers are: Presentation Layer (user interface), application layer (business rules) and an integrated database layer (data warehouse).The Presentation Layer is built with Responsive HTML/CSS/Java Script to allow for seamless user interaction for both alumni and administrators. The interface layer gives a registration form so the alumni can register and login to get all notifications and know about the institution through the application. The application layer features consists of authentication, communication and routing done by the Django frame work. It provides a relational mapping to have a interaction with the data base effectively by offering greater speed and at the same time maintaining the process on system resources. The backend layer of the alumni management system is based on SQLite data base engine which will provide the system to manage highly structured information related to alumni profiles, events, jobs management maintained by the admins. SQLite make the alumni management system easy to maintain and flexible to meet the academic institutions.

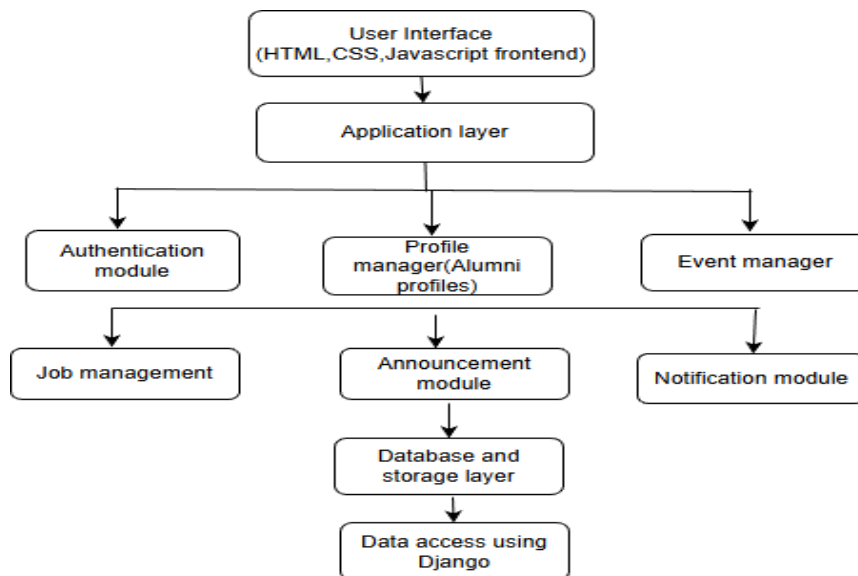


Fig1: Block Diagram Alumni management system

IMPLEMENTATION

Multiple functional modules been designed to provide the best possible experience with the Alumni Management System And to allow continued ease of use and scalability.

Registration and Authentication Module

The Registrations and Authentication Module allows Alumni and Administrators to gain secure access to the Alumni Management System. Alumni register for the Alumni Management System by completing a registration page. The registration page is designed using Django's Authentication Framework to handle the hashing of passwords, the storage and retrieval of session information and sending of verification emails to users whose accounts have been successfully activated.

User Management / Administrator Verification Module

All alumnus who register will be sent to the Administrator, who will verify the information supplied by them and approve or deny activation for Alumni User Accounts. Additionally, the Administrator has authority to edit user details to maintain accurate user data and safeguard against unauthorized entries. Alumni Profile Management Module Once verified, the Alumni will be tasked with creating a profile for both their personal and professional lives, which fits within the confines established by the Alumni Profile Management Module.

This profile will contain all relevant details (i.e., education, employment history, current contact information, etc.) about each Alumni. The Alumni Profile Management Module has been built on top of Django ORM and relies on SQLite as the database for storing all of the Alumni Profile data. The Alumni Profile Management Module has incorporated functionality to aid with the organization, maintenance, and retrieval of Alumni Profile data by institutions that utilize it.

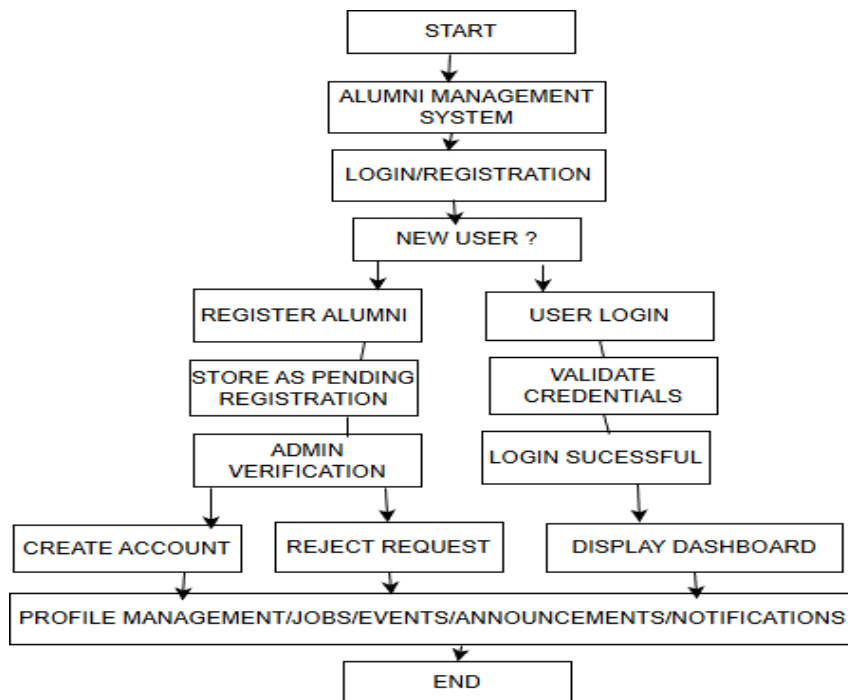


Fig 2: Flowchart of Alumni management system

Job Articles and Employment-Module: The Job Articles and Employment module provides alumni and administrators with the ability to post job articles, internships and other employment opportunities. Posts are stored in the database and are opened to all authenticated members of the alumni community, thereby allowing them to connect and support each other through various forms of professional networking.

Institutional Events-Module: Institutional events such as reunions, seminars, and workshops are created and published through this module. This module has the capability of recording all details, schedules and descriptions of the events; therefore allowing alumni to participate in and learn about all upcoming activities, thus increasing their engagement with the institution and one another.

Announcements and Notifications - Module: The Announcements and Notifications module allows administrators to send announcements, notices and updates. These announcements are sent to all alumni through the alumni dashboard. SMTP-Email Notifications are sent out to ensure the timely distribution of communications, allowing the institution to consistently communicate with its alumni.

Database-Module: All information, including Member Information, Job Articles, Events, and Announcements, is stored in a Structured SQLite Database. The DjangoORM is responsible for creating the means of communicating with the SQLite Database, allowing CRUD functionality to be performed securely and efficiently and with the assurance That Raw Queries will never be exposed.

Dashboard-Module: The User Interface is well-designed, Clean and Responsive, developed in HTML, CSS and Java script. Administrators have separate Dashboards based on their role as an Administrator and Alumni respectively. The UI design ensures users have an easy time navigating to and accessing all of the modules and functions available to them.

Security and Access Control Module: The Security Module provides a variety of security mechanisms, including Role-Based Permissions, Cross-Site Request Forgery (CSRF) Protection, Input Validation, and Password Hashing to protect the data stored in the system. In addition to ensuring that any sensitive data is not available to unapproved personnel, this module controls who may access the system and how.

4. RESULTS AND DISCUSSION

The Alumni Management System is a web-based application that provides a collaborative system for managing alumni data, facilitating institutional interaction with this demographic, and enabling the coordination of programs and events. The user testing is organized through the recruitment of admins and alumni to test the functions and consistency such that it verifies all the features of the system has been set up correctly or not. The conclusion is that the alumni management system has provided a proper functionality to all the action provided correctly. The ability of the alumni management system to the automation of technology that shall ensure that both are good. When interacting with the alumni management system users to be able to access all the primary modules function to have a normal user experience. Those who have used the current system have a feature of updating their own profile information, view the job post postings added by alumni and have access to real time information for the events and announcement to alumni.

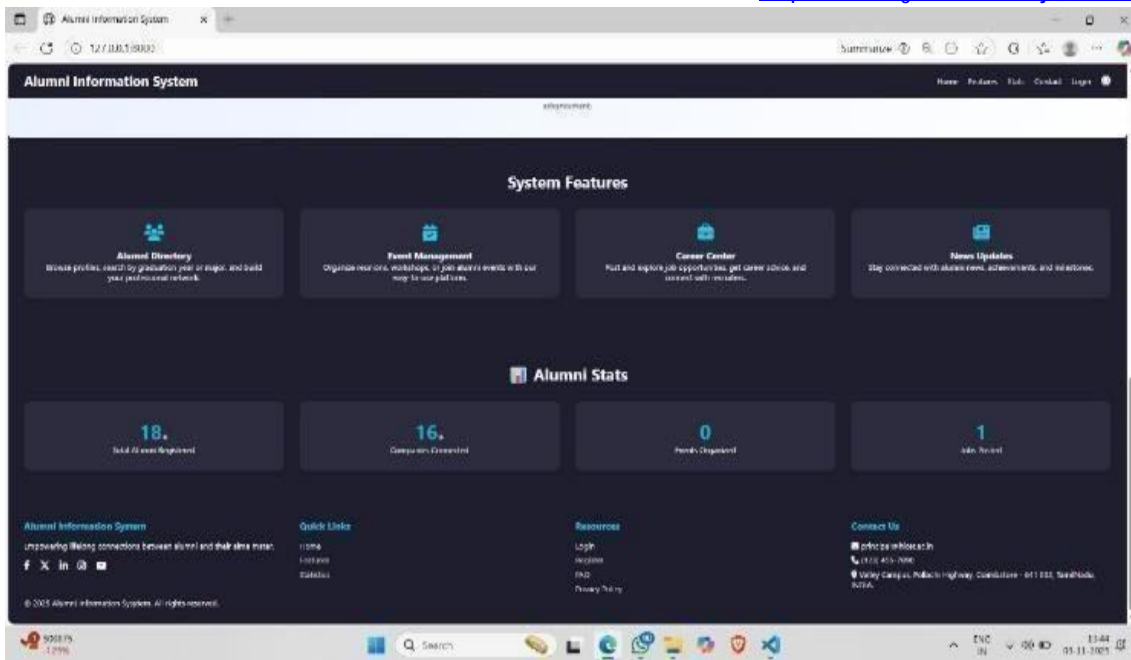


Fig 3: Output of alumni management dashboard

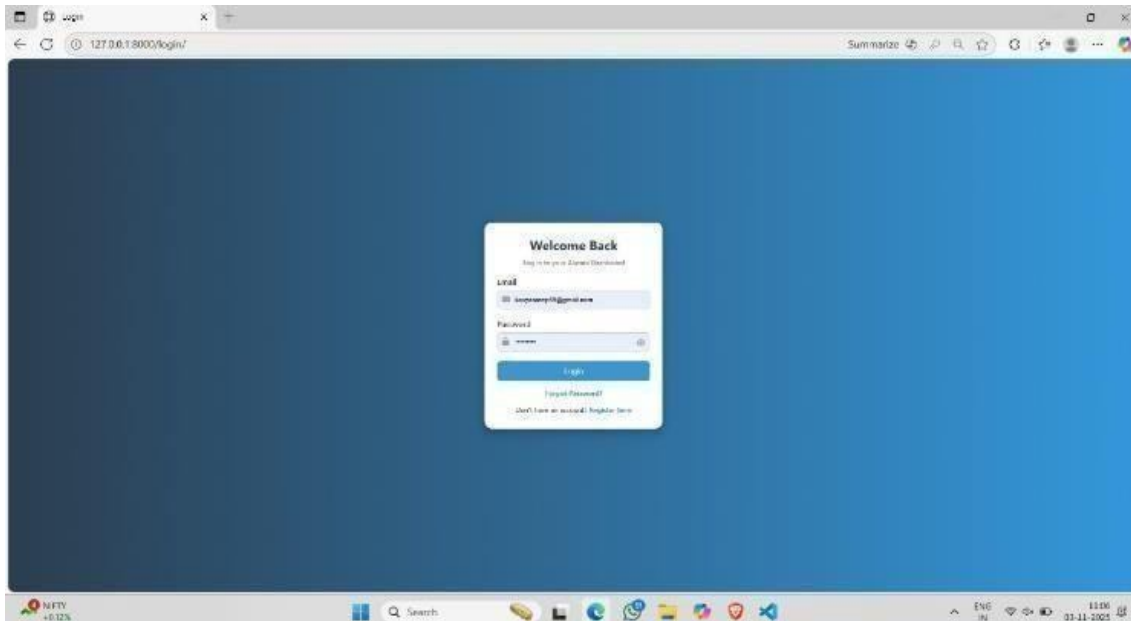


Fig 4: Output of login page

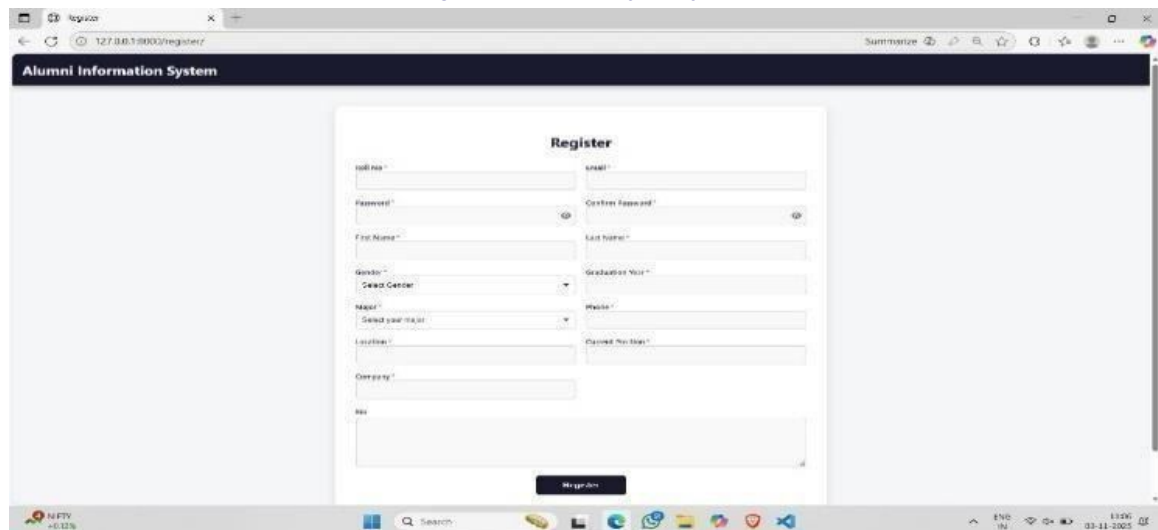


Fig 5: Output of login page

The development of the job posting and event management modules provides alumni with the ability to build and maintain relationships with former classmates, thereby increasing the likelihood of reconnection and interaction with their previous college/university through non-traditional means (e.g. hard-copy mail, social media, etc.). Additionally, the integration of email notifications allows for real-time communication of current information to alumni directly from the alumni management system.

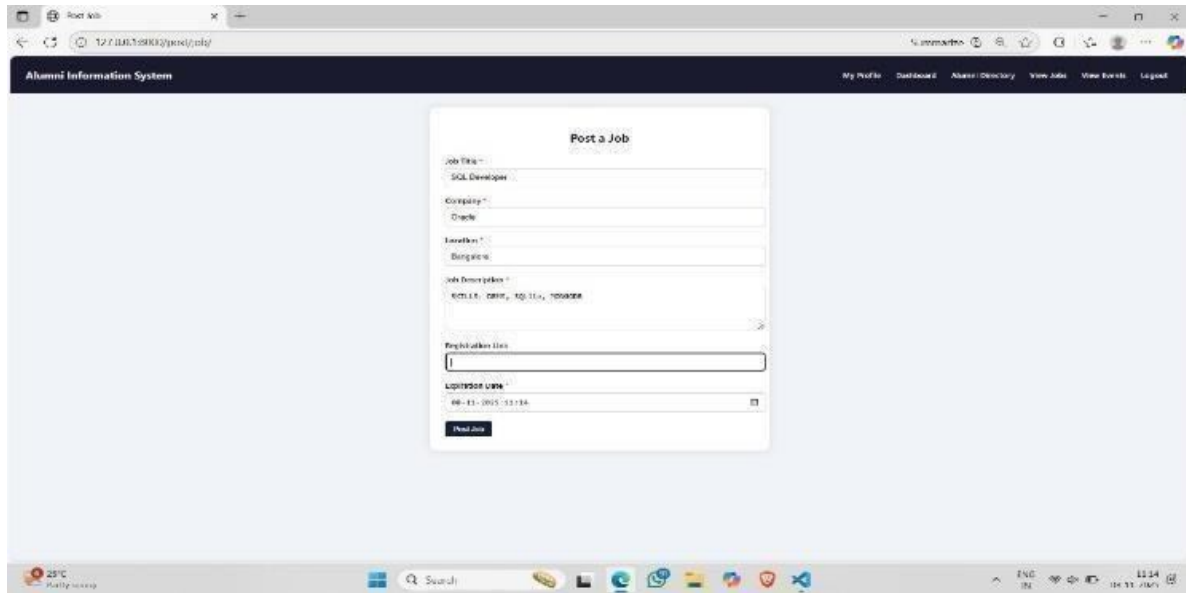


Fig 6: Output of posting job

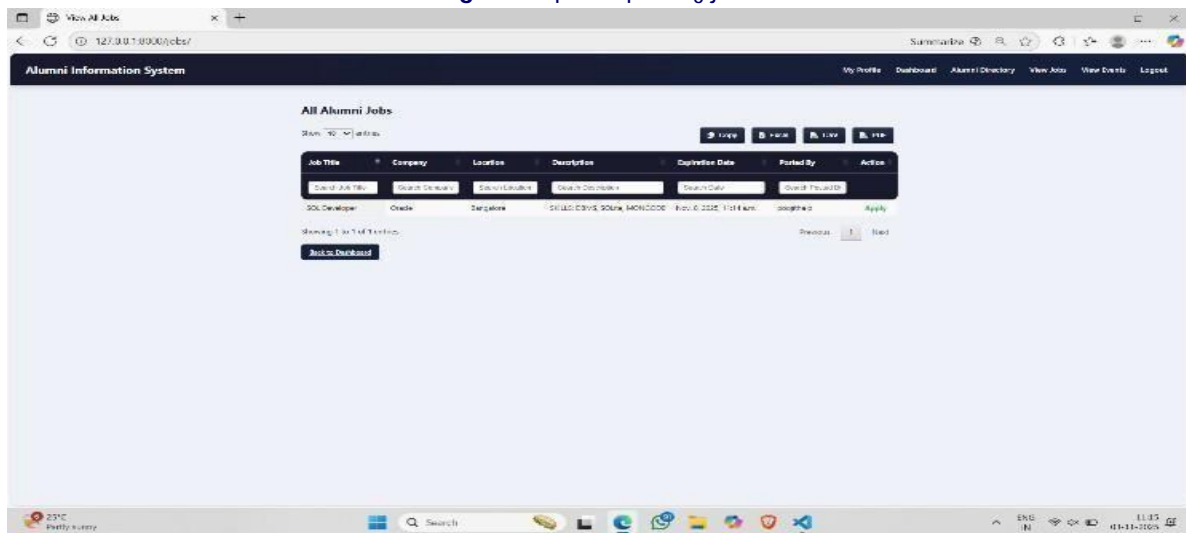


Fig 7: Output of all alumni jobs posted

5. CONCLUSION

The Alumni Management System described in this paper is designed as an effective and centralized tool to manage alumni data, and facilitates communication between educational institutions and their alumni. With features such as secure registration/authentication, verification through admin control, management of profiles, postings of jobs/events, and postings of announcements, this system has been able to automate most of the paperwork and disconnected operations required in a traditional alumni management system. This Django framework provides the reliability required to build a quality, dependable, and sustainable alumni management system because of the strength of the framework used for development. This system has been proven to enhance the efficiency level in the administrative operations, as well as enhance the level of engagement between the institutional body and the alumni, through giving administrators the opportunity to manage their information in a secure, well-arranged way. With the use of role-based Access controls and verifications, all users of this system now get an opportunity to ensure that they create a secure setting in which to identify themselves as well as ensure their privacy. In conclusion, the proposed system offer solutions to many of the challenges that institutions of higher learning experience when dealing with their alumni management system will greatly aid the institutions growth, as well as ensure that the institution sustains a remarkable relationship with their alumni in the long run.

6. FUTURE SCOPE

Although the current design of the alumni management system addresses the fundamental needs of both alumni management and institutional communication, the development of new features to improve upon system capabilities, user experiences, and scalability will create opportunities for greater user participation and a better experience in accessing the system. Adding mobile application(s) for Alumni Management Systems is an important step in helping alumni connect with their institution easily through their mobile devices. Utilizing advanced analytics /reporting toolsets will help the institution to measure alumni engagement and participation trends over time, as well as provide data on career outcomes. Further enhancing the system in future versions with AI- based features, such as providing job recommendations based on user's profiles/interests, event recommendations, and helping users with alumni connections will improve the user experience and create opportunities for institutions to better connect with their alumni. Introducing social media integration and automated profiling updates would increase alumni connections and allow for the ability to continually provide an updated experience to users. Additionally, the existing system features will need to be moved into the cloud with scalable database technologies to ensure that the system continues to perform at its highest level while also supporting a larger number of alumni. Finally, creating additional modules for fundraising and donation programs, as well as through mentorship programs, will provide additional opportunities for alumni to become engaged with their Alma Maters and to increase the level of institutional support received from alumni

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