

Design and development of Harare Institute of Technology Alumni System

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Abstract:- This survey paper outlines and discusses the design and development of an alumni system meant to promote the interaction of the alumni itself as well as the linkage of the alumni to the Harare Institute of Technology. The proposed system to be developed is a mobile phoned based interaction that enables the building of relationships amongst the alumni and Harare Institute of Technology. Literature surveyed indicate that in most situations alumni systems are basically databases of the graduates without a connection linking the graduates themselves as well the universities. More so, with the ever evolving information communication technologies, hardware and software included, alumni interaction and linkages are enhanced for the better on real time basis. The development and the design of the alumni system emanating thereof is anchored on a three tier methodological process. Lecturers were consulted as part of the expert opinion survey. Guided interviews were held with graduates who constitute the alumni to harness their knowledge as inspired by both university learning and work experience. Online sources such journals and blogs were studied as a way to benchmark and inspire the design of the Harare Institute of Technology Alumni interface platform. The system was designed using flutter framework. Through this alumni system users are able to register, login and update their respective profiles. Furthermore, the alumni system connects the alumni themselves permitting user to follow each other as they update and post their occupational experiences, share skills and make recommendations whenever necessary. The use of mobile based alumni technology has the potential to promote professional knowledge sharing for the benefit of both the individual members and the university which they came through.

Keywords:- Alumni System, Mobile Application.

I. INTRODUCTION

It is important for a tertiary education institution to have an alumni system linking the institution and former students. The term alumni refer to former students or graduates of an institution who occupy significant professional positions in the various employment sectors in the real world (Jim Chase, 2021). Colleges and universities in the Global South, particularly Africa, are facing challenges in establishing and maintaining robust connections with their alumni. To this extent there exist no connection or where it exists it is weak offering little or no tangible benefit to both the alumni and the tertiary institutions. Universities and colleges need to have a perfect framework for engaging former students beginning in early professional work recruitment up to a stage where they are well established technocrats and experts. The relationship between the institution and the students should not end when the latter graduates. Instead, it should continue to evolve in response to emerging educational and professional trends. Perfectly designed and properly managed alumni systems serve as a powerful promoter of the development of ambassadors who represent institutions in the real world. A method to maintain a connection with graduates is to share customized updates regarding campus events and progress. Institution staff can utilize data gathered throughout the student lifecycle to provide relevant updates on past professors, classmates, clubs, and events, thereby encouraging positive professional growth.

II. LITERATURE REVIEW

According to MihirJayavant [5], the Alumni Tracking System is an online application that enhances the tracking of college graduates by the institution. The project aims to improve the current tracking procedure of college graduates and provide alumni data to college faculties. This system promotes follows up and subsequent creation of databases by colleges. However, it is a somewhat top down approach enabling the college to make follows ups to their former students without equally providing the alumni to give their own feedback. In the alumni tracking system aforementioned by MihirJayavant [5] there is a notable lack of real timelines; this represents a shortfall. Against this background it is of essence that the current alumni system being designed includes a horizontal interactive system promoting two-way flow of information from former student to the college and vice versa. Furthermore, provision for real time interaction between the alumni and the tertiary institution has to be promoted.

In their research, Nikita Mithapelli et al. [6] assert that the rapid growth of mobile internet technology and the widespread use of smartphones have led to increased attention being given to network access techniques and interactive applications through mobile phones. The Android operating system, which is an open-source platform and has gained popularity among smartphone users, was utilized in this project to track alumni through their social media accounts using web APIs. The information gathered was stored in a database or server that could be accessed by the administration or committee head. To locate alumni, GPS (Global Positioning System) was used, and if internet connectivity was not available, Location-Based Services (LBS) were utilized to plot the location on Google Maps. Additionally, a messaging feature (chatting module) was provided between alumni using GCM (Google Cloud Messaging) technology. This is more comprehensive alumni system enabling effective interaction of users coupled with the benefit of real time location of each user. However, the android based system elaborated by Nikita Mithapelli, et. Al [6] heavily emphasize the tracking of individual alumni rather than gross interaction of individual alumni members themselves and their respective institutions. This calls for the design and development of a robust

comprehensive alumni system which enabling the alumni to share experiences, information and skills amongst themselves while making significant contributions to the institution.

According to Gabriel ResendeGonc et al. [7], the objective of collecting alumni information from a web-based social network is to identify the primary employment sectors in the job market. Furthermore, Web Based Social network provide an opportunity for the alumni to share their main research fields hence contributing to further research and development. Users can access the data obtained either through the available forms on the web or via email. The proposed method facilitated academic officials responsible for undergraduate programs to gather information on the desired alumni population in a semiautomated manner from the web. By utilizing a small set of alumni pages as a starting point, the method was able to extract information on nearly twice as many alumni compared to conventional methods. The advantage of this method is that is it real time based meaning that users can concurrently interact with each other as well as their former institution. Yet on the other hand, it encompassed labour market oriented information which is a step towards marketing the graduates to potential employers.

In an overall review, the literature on the various alumni projects as written by MihirJayavant, Nikita Mithapelli et al and Gabriel ResendeGonc et al are relevant in the sense that they involve an interaction of some sort amongst the alumni as well as their linkage to their former college or university. The reviewed projects thus offer an insight and benchmark to the current project. Alumni tracking system is an essential component to the institutions of higher learning because they need to know how their academic input is contributing to the real life sectors including industry, commerce and social development of the society. The current project thus develops an alumni system that helps the Harare Institute of Technology to track its graduates simultaneously enabling the alumni to contribute to the Institution in terms of skills update, curriculum review and information sharing. This facilitates the development of an information society where every member of the alumni and college obtains details of academic trends as well as skill that are currently needed in the employment sector.

III. USE CASE FOR THE PROPOSED HARARE INSTITUTE OF TECHNOLOGY ALUMNI SYSTEM

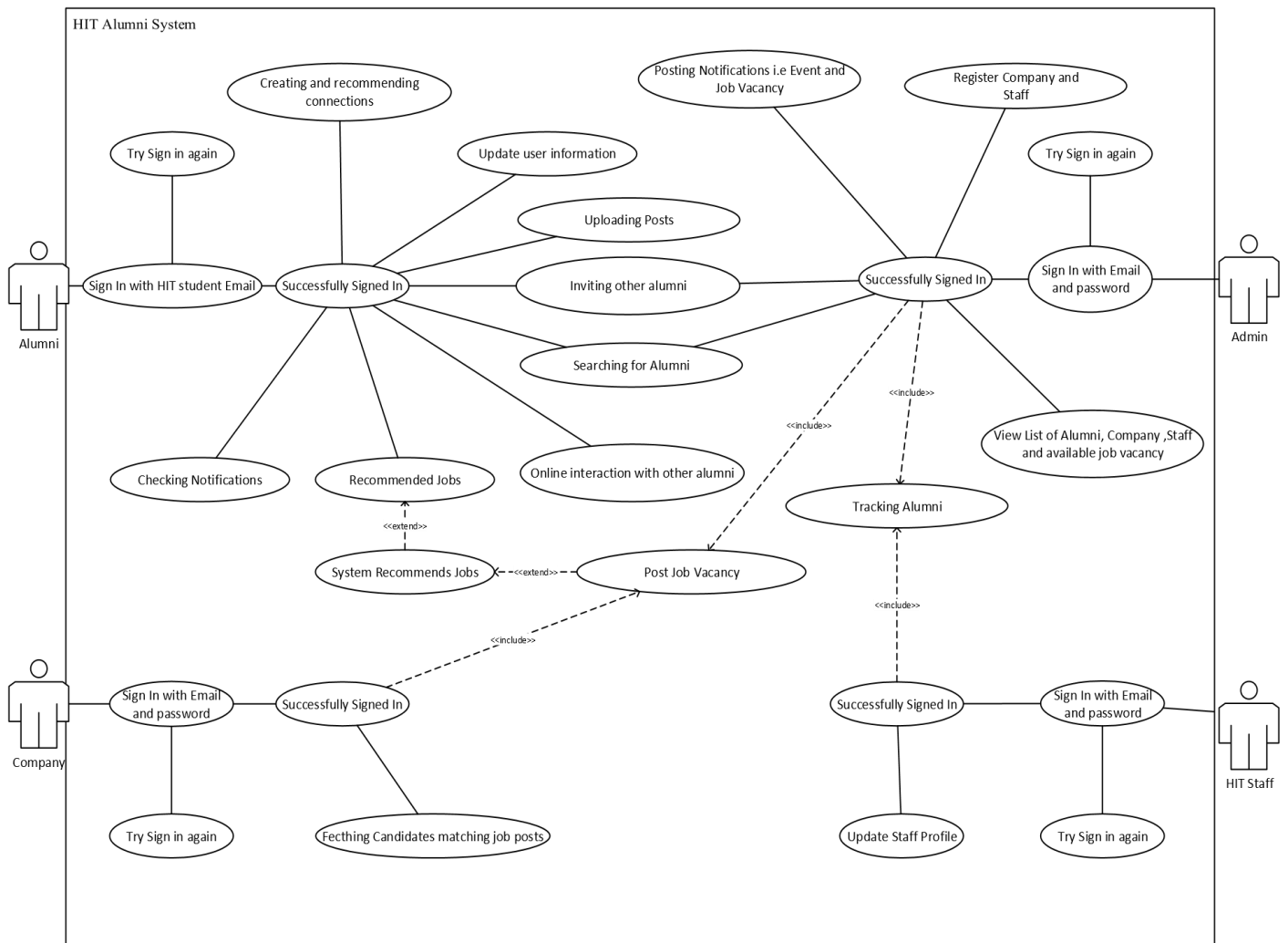


Fig 1 Use Case for the Proposed Harare Institute of Technology Alumni System

IV. METHODOLOGY

The design and development of the current project was done using three methods. Research was done through online research of journals and documentation of existing alumni systems. These offered details on how an alumni system can be designed and developed to capture and serve a varied range of users. In addition, the documentary review method helped the current developer to improve on the limitations of previous projects. Guided interviews were held with five former students of the Harare Institute of Technology who are currently occupied in various sectors. This method provided the much needed information, ideas and perspective on how to best to design the Harare Institute of Technology alumni system. Harare Institute of Technology lecturers including the supervisors were constantly consulted as the project progressed. This offered guide to the developer through constant reviews and constructive criticism. The supervisor highlighted the scope of the system and encouraged the author

to first implement the relationship between the alumni and the institute.

V. DISCUSSION

The designed Harare Institute of Technology Alumni system holds the data of former students that graduated from the university. Features of the system include a platform for creating a user profile, an event and job publication forum for the institution, provision for invitation as well as following and unfollowing of individual users. Through a user profile platform former graduates can be able to create their user accounts which can be viewed by anyone on the platform including fellow graduates, scholars, academics, captains of industry and the Harare Institute of Technology at large. Furthermore, users can edit and update their profiles in line with their current skills, employment and education status. User profiles are an important feature because it facilitates easy of following and interaction amongst professionals and

their institution on real time basis. Area of specialty are clearly indicated and thus help prospective employers to easily identify a suitable candidate for their slated vacancy.

The Harare Institute of technology can utilize the event and notification feature to notify the alumni, corporate world and the institution of upcoming events. These events may include, hackathon competitions, technovation seminars and debates as well calls for support on innovative products at the institution from the corporate world, donors and the government. This feature can be used to inspire innovation through hackathon competition as different technocrats meet and devise best ways to solve an identified real life problem. On the other hand, technovation seminars and debates can be pre-arranged and notified well in time on the alumni platform to prospective delegates. This gives them the chance to prepare through wide reading, preliminary experiments and testing before the final date of presentation. To this extent the designed Harare Institute of Technology alumni system is a promoter of improved information and idea sharing. Prospective employers are able to link with the institution as they scout for best and suitable skills and candidates to fill vacancies that may arise within their organizational departments. This is the essence of a robust interactive system for it connects the employee seeker, the training institution and the candidate itself. The basic function connecting the candidate, institution and the potential employer is that referrals where the institution can recommend the employer on a potential employment candidate.

Similar to the event publication function is the invitation feature enabling users to invite each other to the platform. The alumni system imitates the widely used invitation formats of social media platforms such WhatsApp, LinkedIn and Facebook among others. It thus implies that fellow graduates and professional can encourage each other to join the alumni system hence creating a distinct group of technocrats who graduated from Harare Institute of Technology. With increased and improved interaction among the three players in the alumni system (alumni, the institute and the corporate world), the system has the potential to establish itself as a proficient, integrated and effective platform furthering efficient academic, technological, industry related skills as well as information sharing purposes.

VI. FUTURE WORKS

The system can be improved by incorporating an online chat that will be used by alumni, companies, staff, and administrators to talk directly with each other rather than reverting to other social media platforms. Furthermore, the Harare Institute of Technology alumni system can be integrated with Payment gateway for the benefit of the institution to access funds from the alumni. Payment gateway offers an opportunity for the institute to seek funding from the alumni and corporate world meant to finance innovative

projects at the institution. To enhance the HIT alumni system's capability to assess the suitability of a candidate for a posted job vacancy, a skills validation module can be integrated to test the alumni's skills and capabilities.

VII. CONCLUSION

The designed Harare Institute of Technology alumni system is a comprehensive interaction platform that is set to canvass a lot information, details and capabilities for the benefit institution, alumni and the corporate world. It was designed by making reference to already existing alumni systems of other institutions in the world. These provided the guide, benchmark and partial imitation culminating in the development of this new system. Reference was made to three systems inclined towards alumni tracking by the training institution as noted in the section on literature review. In its methodical way, the design of the current alumni system took hints from online research, guided interviews and consultation with lecturers while individual ingenuity made it complete. On the functional front, the Harare Institute of Technology alumni system contains a profile creation, notification and invitation platforms meant to bring an array of professionals together while linking with both the institution and the corporate world. In future, the Harare Institute of Technology alumni system can be extended to include an online conversation system enabling the virtual simultaneous interaction of users in different locations. Once other functions are established, a payment gateway can be implemented to provide the institution with increased sources of funds.

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