Alumni Portal and Discussion Forum with Recommendation system using Cosine Similarity Algorithm

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Abstract - This project aims to create a forum and alumni site for academic institutions so that graduates can network with one another and with their educational institution. The portal offers a forum for graduates to share ideas, information, and experiences as well as a place for networking, professional advancement, and mentoring. A community that encourages and promotes continued involvement with institutions and one another is created thanks to discussion platforms that facilitate communication between alumni and with organizations. All past students, regardless of the location or background, can easily use portals and forums, which promote a feeling of community and pride in the school. Students can connect with alumni on an individual basis thanks to a student referral system. Each student will propose five alumni with comparable skills. The project's ultimate objective is to improve member-alma mater relationships and act as a useful resource for both groups of people.

Keywords: Alumni, cosine similarity, alumni recommendation, university, graduate. network

I. INTRODUCTION

A vital resource for the development and prestige of today's universities is their alumni and present students. Alumni data must be updated and maintained using a dynamic database. The university directorate's server database keeps track of alumni information, and departments can conduct online searches for alumni. It's crucial for institutions to have a user-friendly platform that is simple to use, makes updating profiles simple, and protects student data.

Current students and alumni are valuable resources for the expansion and recognition of educational institutions. The discussion board is a platform that will aid in the growth of the university students' academic careers. The discussion forum will bring together students and alumni who can offer advice to the many pupils who need it and who have various questions about the outside world.

Depending on how closely their skills and abilities match that of the alumni, the portal also enables students to contact with alumni. Through our system for connecting students with alumni, students can enhance their performance and expand their horizons in the corporate world.

University campuses provide websites with a range of benefits and conveniences for their students and alumni. Alumni can use the Alumni Website, a web-based application, to access educational programs and services once they begin working as workers. By joining college alumni websites, graduates can gain access to a range of perks and privileges. Additionally, alumni websites offer information on academic pursuits, notify group members of noteworthy occasions, and update visitors on activities and initiatives supported by universities and other organizations. Joining an alumni website gives easy access to information on graduates and facilitates the dissemination of that information among the community.

To offer its alumni perks and services, many universities build alumni websites. After graduating, alumni can access the college's tools and privileges by going to her alumni website. Graduate students can access a range of services and perks by accessing the alumni website. For illustration, a website run by a university alumnus' girlfriend can be utilised to notify members about future big events that the institution hasn't scheduled or to let them know about events the university is organizing.

An alumni webpage also provides information on significant occasions that are related to the university or the person's field of study. The ability to easily search out information about a former student and get in touch with any other alumni residents is another advantage of

belonging to an alumni website, which is regarded to be the main reason why many colleges have one. The college alumni website is now very important to the university.

II. BACKGROUND

This method as a software may manage student and college information for the Student Alumni Portal. With said proper user credentials, the platform, an online software, can be utilized by all these clients within and outside the organization, enhancing service quality. Even as students can quickly obtain articles, like contact info for another college graduate using the programme, they may easily get in touch with anyone who's a subscriber of the alumni website. The platform will offer additional advantages in terms of helping former graduates stay in touch. Former students who require help can simply contact the alumni officer. A selection of news articles about higher education will also be available to former students.

The project's goal is to: As a graduate, you can connect with a variety of professional prospects and other university grads through an alumni network. Alumni become great role references for new students and are typically in a posture to provide students with useful assistance as they launch their careers. An institution might continue to gain from alumni's knowledge and expertise by involving them to encourage, support, and further the development of intimate relationships among alumni.

III. PROPOSED SYSTEM

This programme may be used as an undergraduate alumni portal application to manage applicant and campus data. As it is a web-based application, the platform offers effective login and access for both internal and external clients, enabling you to deliver first-rate customer support. Alumni may easily find information via the web based app, such as other grads' contact information. It means you may easily get in touch with her via her alumni webpage. More than just connecting grads is possible with the app's capabilities. Alumni can simply contact alumni reps for assistance. In addition, former students can access college news and job portals.

The system provides a login page for the alumni that needs to be registered and filled in with detailed information. The alumni can post several events going on in their company and they can connect to the students,

this way the students are able to get knowledge about the external environment. There is also an admin page handled by the admin to give all the rights to the registered alumni and to check if he/she is legitimate as shown in the flowchart fig1.

The discussion forum will provide the students to connect with the alumni and discuss various required topics. The forum and its topics can be developed by the students as well, and any alumni can participate in the discussion.

Advantages of proposed system :

1. A database makes it very simple to retain historical data.
2. A place to post jobs, events and activities going on in different companies .
3. This application is protected.
4. The platform establishes a single point of connection for all and is affiliated with the institution, facilitating engagement, idea exchanging, and other sharing of information.
5. This application has a key feature of recommending alumni to students based on skill set.
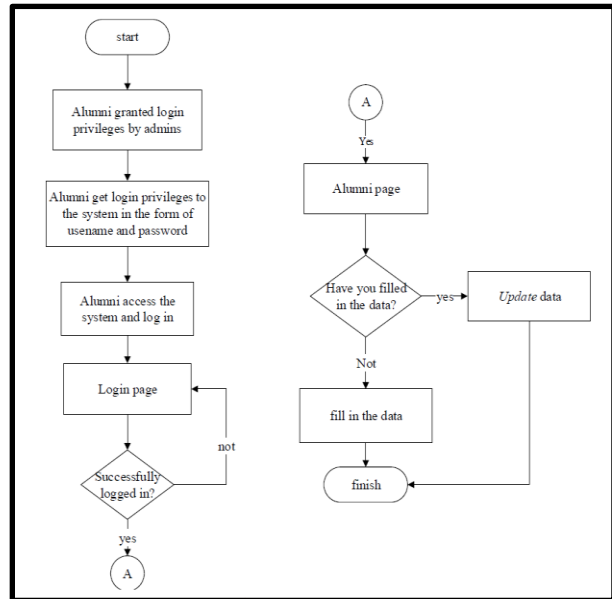

Fig 1 : Alumni Portal Flowchart

IV. METHODOLOGY

A methodical strategy that takes into account the demands of the alumni, the features of the portal, and the development resources available is necessary when designing an alumni portal and discussion forum. The

Alumni module will consist of a Login Page where the alumni will get access to the system and log in once permission is granted by the admin. If not provided with proper information with login id again Login Page will be shown. Once entered the alumni can update or enter one's own details.The general module will be the starting web page of our project which gives much information about the college, project associates along with general menus. The admin is the one who looks after all the changes and developments that take place. The alumni module is used by the alumni. This alumni module displayed in the webpage when the alumni logged in from the homepage of the general module.
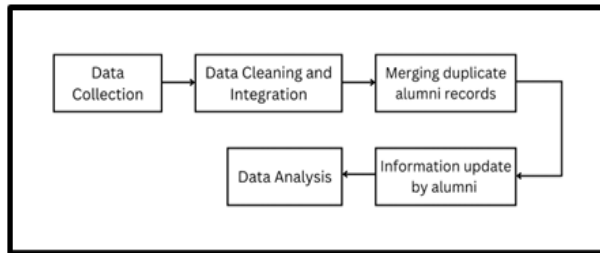

Fig 2 : Data cleaning system

Recommendation System Module Working Description:

1. Start by loading the alumni and student skill datasets, which should contain information about the skills possessed by each group.
2. Next, compute the cosine similarity between each alumni and each student based on their skill profiles. This will give a measure of how similar each student's skill set is to each alumni's.
3. For each student, identify the top k alumni whose skill profiles are most similar to the student's. These alumni will be used to make recommendations to the student.
4. Store the recommendations for each student in a JSON file, where the keys are the student IDs and the values are lists of recommended alumni IDs.
5. Read the JSON file and extract the recommendations for each student.
6. Store the recommendations in a database, where each row represents a recommendation and contains the student ID, alumni ID, and a measure of similarity (such as cosine similarity).
7. You can now use this database to generate personalized recommendations for new students based on their skill profiles, by computing cosine similarity with alumni and retrieving the top k most similar alumni.
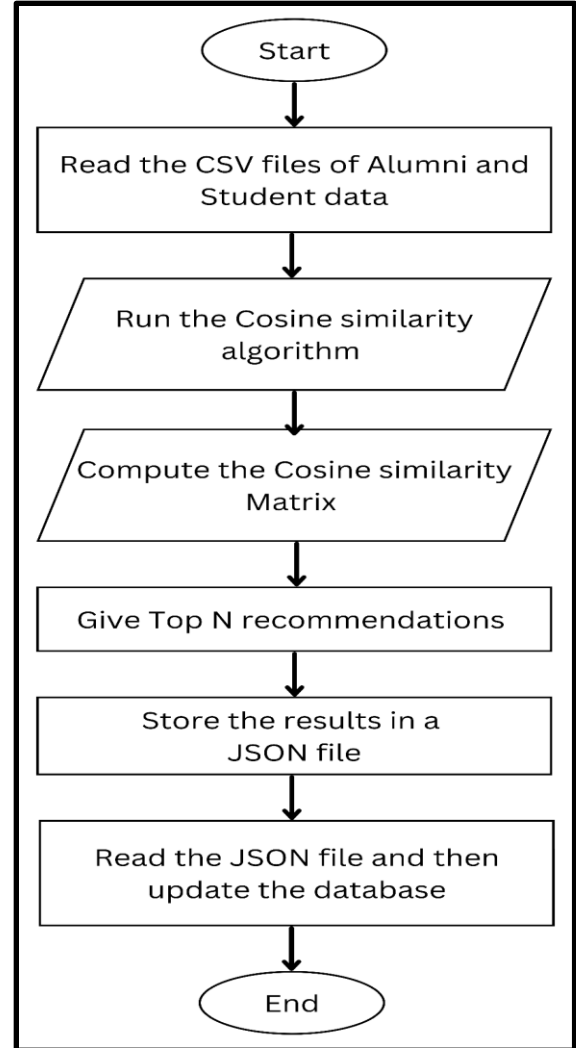

Fig 3 : Alumni Recommendation System Flowchart

V. IMPLEMENTATION

The system implementation has the following parts of the alumni portal and discussion forum:

1. User Registration and Login:

The first step would be to allow users to register and log in to the alumni portal using their email or social media accounts. Users can create their profile by providing their personal information, academic details, work experience, and other relevant information.

2. Discussion Forum:

The discussion forum would allow alumni to connect with each other and discuss various topics related to their profession, personal life, and experiences. Users can post questions, share their views, and provide feedback to other users' posts.

3. Recommendation System:

The recommendation system would help users discover other alumni who have similar skills and interests. The system would use cosine similarity to calculate the similarity score between user profiles based on their skills, work experience, and other factors.

4. Skill Endorsement:

Users can endorse the skills of other alumni to help them showcase their expertise and credibility. The endorsement would be displayed on the user's profile, giving them more visibility to potential employers or business partners.

5. Job Board:

The job board would list job openings relevant to the alumni community. Users can filter the jobs based on their preferences, such as location, job type, and industry. Employers can also post job openings on the portal, providing them with a platform to connect with potential candidates.

6. Event Calendar:

The event calendar would list upcoming alumni events, such as reunions, networking events, and seminars. Users can RSVP to the events, indicating their interest and attendance.

7. Alumni Directory:

The alumni directory would allow users to search for other alumni based on various criteria, such as graduation year, location, industry, and skills. Users can also send direct messages to other alumni through the directory.

8. Personalized News Feed:

The personalized news feed would display updates relevant to the user's interests and preferences, such as news articles, blog posts, and job openings. The system would use machine learning algorithms to analyze the user's activity on the portal and suggest relevant content.

VI. RESULT

The Alumni portal is a very powerful tool that may create a revolution in the Alumni Relations field of every Institution. Many Institutions have not yet been involved in the Alumni Relations department as some institutions are not aware of the benefits they can get from it. So the project successfully bridges the gap between the alumni and the Students. The below diagram is the heatmap which shows the correlation between alumni and students based on their skills.
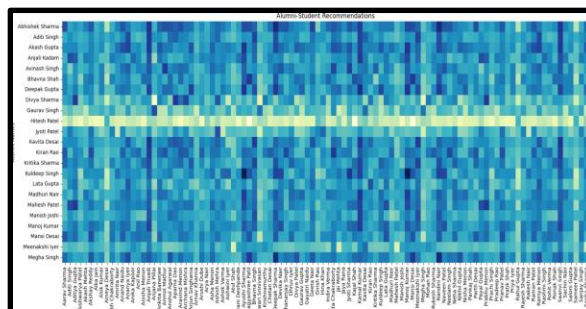

Fig 4: Heatmap of Similarity between alumni and student skillset

VII. CONCLUSION

In conclusion, a discussion forum and an alumni site can be useful resources for promoting community, involvement, and communication among alumni and other stakeholders. An alumni portal can increase alumni engagement and donations by giving them a platform to communicate with one another, remain informed of news and activities, and engage with the organization. Similar to this, a discussion forum can encourage fruitful dialogues among members, establish a sense of community, and provide doors for networking. In general, these platforms can aid in enhancing community or organization brand recognition and relationship strength. Organizations can harness the strength of alumni networks and build a lively and active community of stakeholders by putting in place an alumni portal and discussion forum.

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