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Centralized Alumni Management System and Career Prediction based on Academic Performance

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Abstract– *This paper presents the design and implementation of a centralized alumni management system integrated with an advanced career prediction model, utilizing students' academic performance and historical career data. Existing alumni management systems often lack effective data analysis and fail to connect alumni with students in meaningful ways, limiting career development and mentorship opportunities. The proposed system consolidates alumni data into a central database, enabling efficient tracking of career trajectories, achievements, and contact information, thus improving data accessibility and alumni engagement*

At its core, the system features a career prediction model that analyzes academic data and alumni career outcomes to predict potential career paths for students. By providing tailored career recommendations based on students' academic strengths, the system not only aids career exploration but also fosters stronger alumni-student connections through networking and mentorship opportunities. The system's effectiveness is validated with real-world data, demonstrating improvements in data accessibility, engagement, and career prediction accuracy. Ultimately, the system supports both academic and professional growth, providing a valuable tool for institutions to enhance career services and strengthen alumni-student relationships.

Keywords- *Alumni Management System, Database Management, Career Guidance, Student Performance, Mentorship and Networking*

I. INTRODUCTION

The Alumni Management System and Career Prediction is an Android-based application developed to foster stronger connections between alumni and students, while also offering personalized career guidance based on students' academic performance and skills. Many educational institutions face challenges in maintaining structured alumni networks, leading to missed opportunities for networking, mentorship, and career development. The lack of a centralized platform to facilitate alumni engagement often results in students missing out on valuable guidance and real-world insights that could aid their professional growth.

This system addresses these issues by providing a comprehensive platform where alumni can easily register, update their profiles, connect with fellow

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alumni, and participate in events. By maintaining an up-to-date database of alumni achievements and career trajectories, the system enables students to gain insights into potential career paths based on real-world examples. For students, the app analyzes their academic performance, interests, and skills through rule-based logic to assess marksheets and identify individual strengths. It then offers tailored career suggestions, potential job opportunities, and recommendations for further education, helping students make informed decisions about their futures. The user-friendly interface, combined with secure authentication measures, ensures that both alumni and students can engage with the platform safely and efficiently. Ultimately, the app strengthens alumni relations while providing data-driven, actionable career guidance to students, thereby bridging the gap between academic achievements and career success

II. LITERATURE REVIEW

1. Alumni Management Systems

Alumni management systems (AMS) have become increasingly important tools for fostering long-term connections between alumni, students, and academic institutions. These systems facilitate efficient networking, event organization, and streamlined data storage, which collectively contribute to the growth of a strong alumni network. Research has emphasized the role of AMS in enabling real-time interaction among alumni, providing opportunities for professional networking, and creating a platform for knowledge exchange (Verma & Kumar, 2022). Through such systems, universities can maintain close ties with graduates, organize reunions, or facilitate career guidance programs. Furthermore, the inclusion of mentorship programs within AMS further strengthens the relationship between alumni and current students, creating pathways for career development and academic support (Smith et al., 2021). By allowing alumni to share experiences, job opportunities, and industry insights, AMS plays a crucial role in preparing students for the workforce.

2. Career Prediction Models

Career prediction models utilize extensive data derived from a student's academic history and other factors to provide tailored career suggestions. These systems often analyze subject-specific academic performance, extracurricular activities, and skill assessments to make informed predictions about suitable career paths for individuals (Lee et al., 2022). With the rise of digital platforms such as Coursera, which offer career guidance based on detailed skill assessments, students can receive personalized advice and recommendations aligned with their strengths and interests (Ahmed & Bose, 2023). By incorporating machine learning algorithms and historical data, these models help bridge the gap between academic learning and industry requirements, ensuring that students are better prepared for the job market. Additionally, by integrating real-time industry trends and job market dynamics, career prediction models can refine recommendations and offer students more up-to-date guidance.

3. Academic Performance in Career Guidance

Academic performance has long been recognized as a strong indicator of a student's potential for success in a given career. Research has shown that a student's subject-wise academic achievements can often correlate with career success, particularly when examining areas such as STEM (Science, Technology, Engineering, and Mathematics). For instance, strong performance in programming-related courses is often associated with success in software development roles (Williams & Brown, 2021). Furthermore, tracking a student's academic performance over several semesters allows career guidance systems to make more precise and tailored recommendations, accounting for trends in their learning and growth over time (Rodriguez & Chen, 2020). Modern career prediction systems also incorporate additional dimensions, such as problem-solving abilities, creativity, and critical thinking skills, to refine predictions. By broadening the scope beyond traditional academic performance, these systems can offer more holistic career advice, helping students pursue careers where they can thrive both intellectually and creatively (Singh et al., 2022).

III. METHODOLOGY

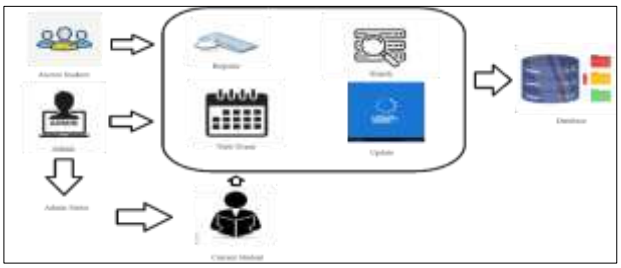

Fig. 1- Block Diagram

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The diagram illustrates the flow of data and actions within the Centralized Alumni Management System and Career Prediction platform.

Think of it as a journey:

* Users (like students or alumni) start by registering or logging in. This is the "Admin" action on the left.

* They can then perform various tasks: These are represented by the icons in the center.

* Register: Creating a new profile.

* Organize Events: Planning and managing alumni gatherings.

* Search: Looking for specific alumni or resources.

* Update: Modifying their profile information.

* All this information is stored in a central "Database" on the right. This acts as the memory of the system.

* The system then uses this data to provide career predictions and suggestions, represented by the "Career Guidance" icon.

In essence, the diagram shows how user actions are processed and stored, leading to helpful career insights. This centralized system helps manage alumni relationships and provide valuable support for students and graduates.

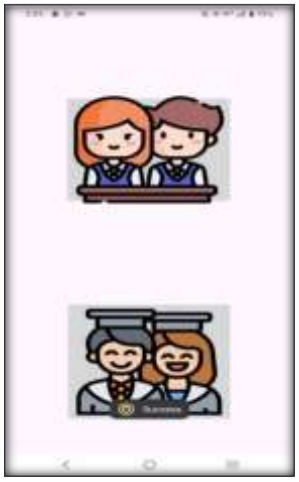
IV. RESULT & DISCUSSION

The Centralized Alumni Management System (CAMS) and Career Prediction features enhance alumni engagement and career guidance by offering a structured platform for networking and mentorship. The system ensures efficient data management, reducing redundancy and improving alumni tracking. Career predictions, based on academic performance, provide personalized suggestions to help students make informed career choices.

The centralized database streamlines alumni interactions, feedback collection, and mentorship assignments, benefiting both students and administrators. Secure data handling and scalable alumni connections ensure privacy and long-term use. AI-driven career recommendations guide students in making decisions about their future paths.

After successful registration, a confirmation popup appears, and users are redirected to the Login Page. Upon logging in, users are directed to a page with two image buttons: one for Student Activities, represented by an icon of students at a desk, and another for Alumni Activities, shown with graduates in gowns. Selecting an option directs the user to the respective section for easy navigation.

Following are some snapshots of the application "Centralized Alumni Management System and Career Prediction based on Academic Performance"



Registration

Registration Successful Alumni & Students Section Career Prediction

Events

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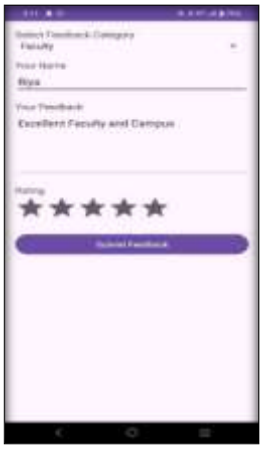

- **Register:** This feature allows students to sign up for various activities, events, or programs available within the application. Whether it's academic, events, or career-related, students can easily register for opportunities that align with their interests and goals, streamlining their involvement and participation.

- **Upload Marks:** Through this function, students can upload their academic performance data, which may be used for tracking progress over time or enabling features like career prediction. This allows the system to offer more personalized career suggestions and academic guidance based on individual performance, ensuring a tailored experience for each user.

- **Feedback:** This feature provides a platform for students to submit their thoughts and experiences about different aspects of the institution, including faculty, events, and academic programs. The feedback collected helps administrators improve services, adjust programs, and enhance the overall student experience, making it a vital communication tool.

- **Events:** This section keeps students informed about upcoming events, such as workshops, seminars, and student-related activities. It serves as a calendar for all activities that students can participate in, offering them a chance to stay up to date with the institution's events and engage in opportunities that support their academic and professional development.

- **AI (Possibly AI Integration):** This button provides access to AI-driven features like career prediction or academic analysis. The AI tools analyse student data, including academic performance, and offer personalized insights or recommendations for career paths, further education, or skill development. This helps students make data-driven decisions about their futures, offering guidance based on smart algorithms.

Bottom Buttons on App:

1. **Join Meet:** This button enables students to easily join online meetings, lectures, or discussions through integrated platforms like Google Meet. It ensures seamless participation in virtual learning environments, making it convenient for students to stay connected and engaged with their courses, faculty, or peer discussions.

2. **Contact Us:** The "Contact Us" feature provides students with a direct way to reach out to administrators, faculty, or support teams for assistance. Whether students need help with system navigation, have inquiries about events or activities, or require academic support, this button ensures they can quickly communicate with the relevant personnel to get the help they need.

VI. CONCLUSION

The Centralized Alumni Management System (CAMS) and Career Prediction feature offer a highly efficient platform for enhancing alumni engagement, mentorship, and career guidance. By integrating a centralized database, the system streamlines data management and

strengthens connections between students, alumni, and administrators. The AI-driven career prediction tools provide personalized advice based on academic performance, guiding students toward informed career decisions and opportunities.

This system eliminates manual alumni tracking and ensures secure handling of sensitive data. It fosters smoother communication and collaboration across different stakeholders, helping to build a supportive academic and professional network. Students benefit from a more personalized career path, while alumni stay connected and engaged with the institution and its current students.

Looking ahead, future enhancements could include advanced AI models for even more accurate career forecasting, as well as interactive networking features to further enhance alumni-student connections. Overall, the system offers a scalable and effective solution for universities to improve alumni relations, guide students in their career journeys, and foster long-term professional success.

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REFERENCES

[1] *Dept. of Computer Science and Engineering, Siddaganga Institute of Technology Tumakuru, Karnataka, India.*
[2] *2021 3rd International Conference on Electronics Representation and Algorithm (ICERA)*
[3] *Dept. of CSE, Techno International Batanagar, Kolkata, India 5 Member IEEE, Dept. of CSE, Techno International Batanagar, Kolkata, India.*
[4] *Real-time alumni interaction and professional networking (Verma & Kumar, 2022).*
[5] *Event management and mentorship programs further strengthen alumni-student connections (Smith et al., 2021).*
[6] *Subject-specific academic performance directly influences career recommendations (Lee et al., 2022).*
[7] *Digital platforms like Coursera also offer career guidance based on skill assessments (Ahmed & Bose, 2023).*
[8] *Higher scores in programming subjects correlate with software development roles (Williams & Brown, 2021).*
[9] *Long-term tracking of semester-wise performance refines career recommendations (Rodriguez & Chen, 2020).*
[10] *Problem-solving and creativity skills enhances career prediction models (Singh et al., 2022).*