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Interactive Achievements' Inventory with AI-based Staff Assistantand Résumé Builder

Aieshah Nasir, Abhishek Rawat, Aarohi Rathore
Department of Computer Science and Engineering, Acropolis Institute of Technology and Research, Indore, Madhya Pradesh, India
{aieshahnasir20729, abhishekrawat20210, aarohirathore20290}@acropolis.in

Abstract: Data collection from students regarding certifications, achievements in sports / extra - curricular activities, internships etc. is a tedious task for the professors during the short-span of internal submission and evaluation. With the use of a web application, students can upload their documents whenever possible irrespective of their current semester and the concerned staff can easily access it as per requirement.

Keywords: artificial intelligence, Amazon web services, AWS S3, automation, inventory management, data analytics, data collection

I. INTRODUCTION

Professors across colleges need to collect certificates and other data at the end of every semester to keep students' details and achievements updated in the college records and for internal evaluation. This is a time-consuming and tedious task. Students are bound to misplace their certificates or fail to submit them on the scheduled time.

Traditionally this process is done with the word-of-mouth accompanied by submission of hard copies. However, in recent years, this task has been facilitated by the usage of technology like Google Forms, Monday WorkForms, Google Classroom, Microsoft Forms etc where students can upload their documents. Although these solutions are appealing to the general public, access to them is unrestricted & insecure. Thus, we intend to develop a secure web application for data collection of students to ensure on-demand availability of their achievements to the concerned staff.

The major objectives of this project are enlisted below.

- To design & develop a web-based software solution for data collection from students
- To build an engaging and interactive website for securely storing personal information & achievements andperform data analytics for visualization
- To present collected data, sorted as per the categories specified, to the concerned staff
- To ensure on-demand availability of & ease-of-accessibility to students' academic and extra - curricular achievements
- To provide an inventory for students to store their certificates digitally
- To provide the professors with analytics of students' data in the form of interactive graphs and plots
- To help students build a resume using the data uploaded by them

The web application to be designed is intended to be used by the students and faculty of a college. The students are categorised on the basis of departments, branches and year of study. The faculty and the students will be registered on the website and can access the database as per the approval of the administrator once their identity is confirmed. The students can create, update and delete their personal records whereas the staff can view and read these records

without modifying them. On successful completion and application, this project can be expanded across other colleges also.

II. COMPARATIVE STUDY OF SIMILAR SYSTEMS

There exist no specifically designed platforms, available on a global scale, which fulfill all the objectives of our project. However, several systems are ad-hocly used for collecting certificates and achievements from the students and displaying them to the staff in a categorical manner. Some of these similar platforms are listed below.

Name	Platform Type	Features	Limitations	URL
Google Classroom	Mobile & web application	- Interactive - Integrated with several websites & apps	- Internet necessary - Can't classify students as per their merit - Can be used only by Google account holders	https://classroom.google.com/
monday WorkForms	Project management software	- user-friendly - web-based SaaS tool	- no communication with the user. - hosted on-premises	https://monday.com/
Cuvette	web application	- easy for new users - generates resume on demand	- Internet necessary - used mainly by students for job & internship search	https://cuvette.tech/
Google Forms	web application	- easy to generate surveys - easy to use	- internet necessary - Integrating data collected from different surveys is time consuming	https://docs.google.com/forms/u/0/?tgif=d

III. INTERACTIVE ACHIEVEMENTS' INVENTORY

a) Methodology

The project intends to support multiple users belonging to various categories like students, teachers and the administrator. Each shall have their own registration and log in pages. Once registered and logged in, the users can perform the following operations.

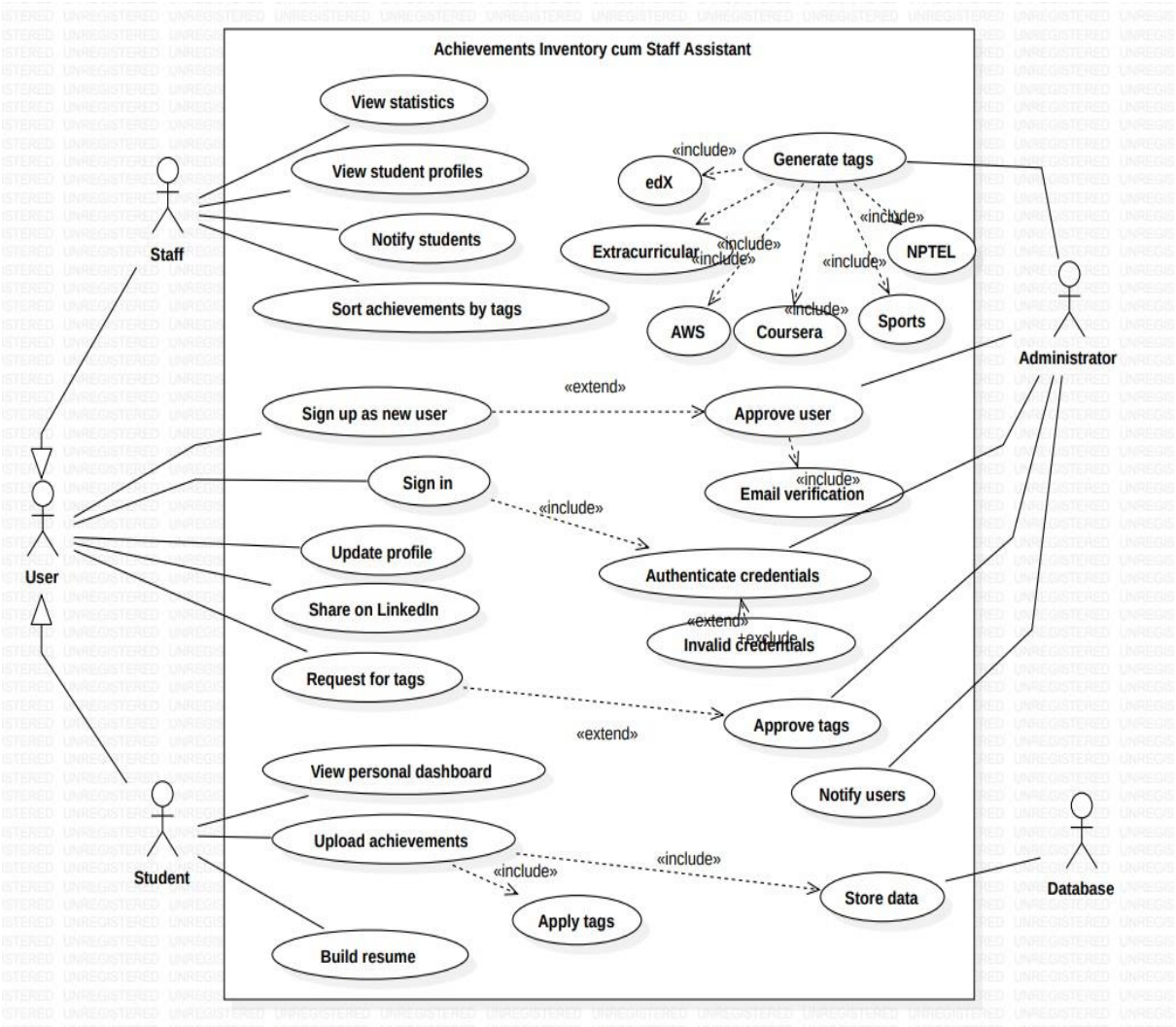
- Students will be able to upload their achievements and certifications along with their personal information onto our database. Large files like images and pdfs will be automatically pushed onto and stored in the specified AWS S3 buckets. This is rather helpful in scaling in and out as per the amount of storage capacity required. The Postgres database will also be used for actively storing the essential records.
- Flask, a micro-framework in Python, is used to build the backend. Students can send HTTPS requests to store their information and build their resume. On such a request, the student's data will be fetched from the

AWS S3 via references from the postgres database. The student can choose which achievements are to be added in his resume.

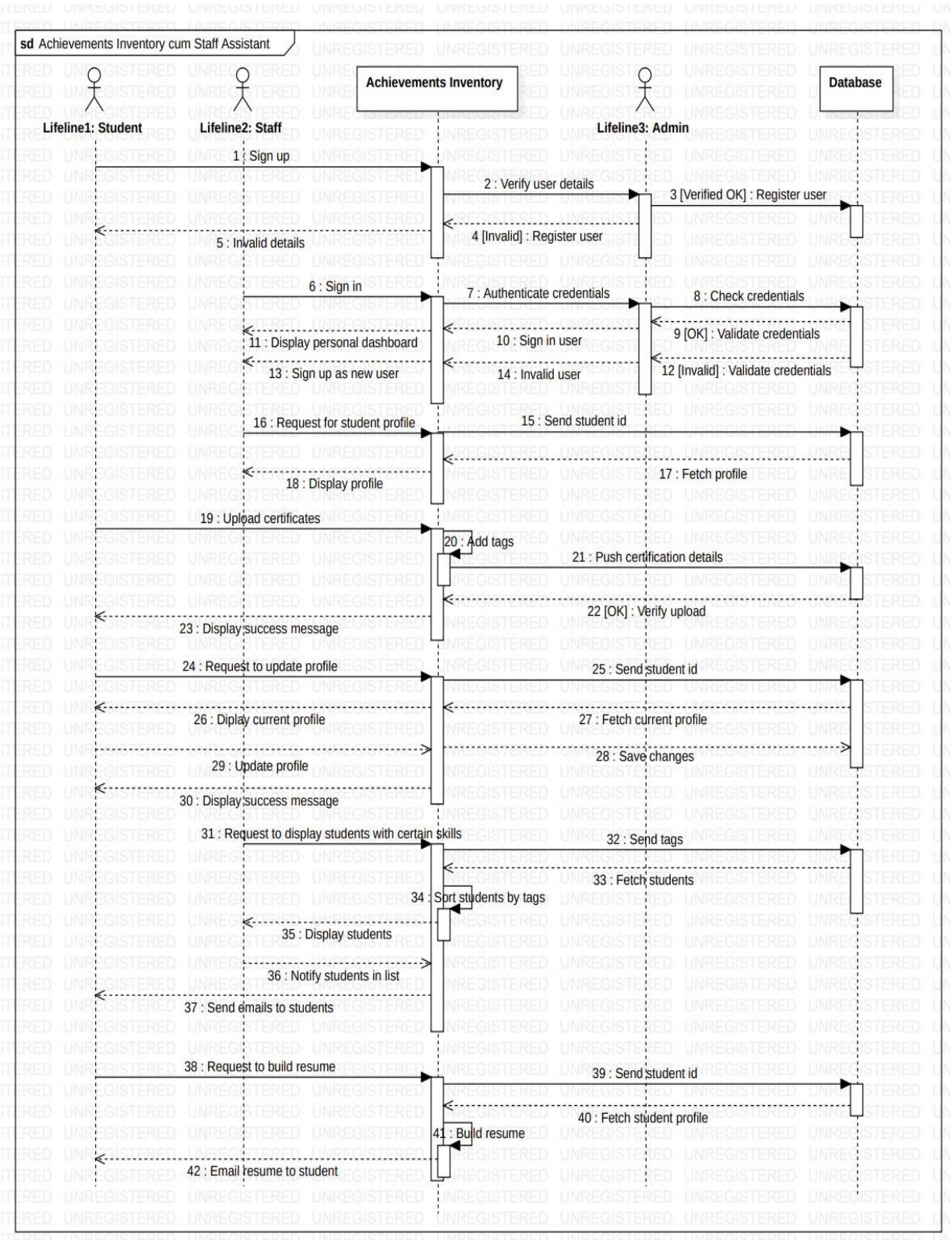
- Once done, this data is passed to the AI and the automation system which build the resume using the predefined templates and mail/whatsapp the output resume to the student as per the need.
- LinkedIn posts are also automated for both the staff and the students using predefined templates. This is achieved through the use of Apache Airflow. All uploaded achievements can be posted on LinkedIn using the 'Share on LinkedIn' button.
- When a teacher wants to find out the percentage of students who have completed a particular course, it will be displayed on his dashboard in the form of graphs and pie charts. Categorizing students based on their skills, tags and interests will be done using Artificial Intelligence.

b) Planning

The following is an use case diagram representing the system being designed and deployed.



The following is a sequence diagram depicting the behaviour of the Interactive Achievements' Inventory in the run-time environment.



c) Dependencies

Several tools are employed in the development of the project in order to store the user data and perform the necessary operations on them. Most of them are commonly used nowadays and have a huge community support. Some of them are:

- Python & its libraries (backend)
- PostgreSQL (database)
- HTML (frontend)
- CSS (frontend and UI/UX design)
- React.js (frontend with dependency on NodeJS)
- Flask (backend)
- AWS S3 (data storage)
- Apache Airflow (automation)
- Javascript (frontend)

IV. CONCLUSION

All the registered students of the specified institute will be able to store their important data and information in a secure place. This system will ensure easy retrieval of data on demand. Students will not have to spend a lot of time building a resume from scratch and can just fill up their information, useful skills and achievements and get their resume emailed or on WhatsApp at any instance.

Teachers can now easily identify the number of students who have done a particular task. They will be categorized on the basis of their skills, tags on their uploaded certificates and their interests. This can heavily improve the on-campus placement process. As per the information provided, teachers can easily classify students in a particular company according to their interests and then they can just allow those students for placement in a particular company.

Not only students but any working person can also use this application as it is useful for every section of society either student, teacher or any working professional. Because of these features, it can be used by people of any age and that is the reason that its targeted audience is very large and also it is required by any person regularly so its demand will also be higher for a long time. As we use AWS, we don't have to worry about space and databases so we can store a very large amount of data without any server failure. Because of its unique features it will be used by colleges/universities as well and they might just make it compulsory to use this application because of its new and innovative features. This website is helpful for searching or getting a job. In this era of catfight for Employment this is a life-saving service for the students.

V. REFERENCES

[1] Shah, Rishil. Patel, Vishal. Lal, Hriday. "RESUME BUILDER WITH CLASSIFIER" International Research Journal of Modernization in Engineering Technology and Science (https://www.irjmets.com/), e-ISSN: 2582-5208 , Volume:04/Issue:05/May-2022, Available at: https://www.irjmets.com/uploadedfiles/paper//issue_5_may_2022/22272/final/fin_irjmets1651835517.pdf

[2] Sun H-L, Sun T, Sha F-Y, Gu X-Y, Hou X-R, Zhu F-Y and Fang P-T (2022) The Influence of Teacher–Student Interaction on the Effects of Online Learning: Based on a Serial Mediating Model. Front. Psychol. 13:779217. doi: 10.3389/fpsyg.2022.779217

[3] Wang L (2022) Student Intrinsic Motivation for Online Creative Idea Generation: Mediating Effects of Student Online Learning Engagement and Moderating Effects of Teacher Emotional Support. Front. Psychol. 13:954216. doi: 10.3389/fpsyg.2022.954216

[4] Sen, Kristen. "Importance of teacher-student interaction" Reference: [https://www.primescholarslibrary.org/articles/importance-of-teacherstudent-interaction-72269.html].

[5] "RESUME BUILDER APPLICATION", International Journal of Emerging Technologies and Innovative Research (www.jetir.org | UGC and issn Approved), ISSN:2349-5162, Vol.8, Issue 3, page no. pp18-20, March-2021, Available at : http://www.jetir.org/papers/JETIREN06004.pdf

[6] Aladi, Harsha B. "Automatic Resume Generator", International Journal of Science and Research (IJSR) (www.ijsr.net | UGC and issn Approved), ISSN (Online): 2319-7064, 3rd National Conference on "Recent Innovations in Science and Engineering", May 6, 2017 PES Institute of Technology - Bangalore South Campus, Electronic City, Hosur Road, Bangalore - 560 100, Available at : https://www.ijsr.net/conf/RISE2017/IJSR15.pdf

[7] Zhan, Zehui & Wu, Qianyi & Lin, Zhihua & Cai, Jiayi. (2021). Smart classroom environments affect teacher-student interaction: Evidence from a behavioural sequence analysis. Australasian Journal of Educational Technology. 37. 96-109. 10.14742/ajet.6523.

[8] Seo, K., Tang, J., Roll, I. et al. The impact of artificial intelligence on learner–instructor interaction in online learning. Int J Educ Technol High Educ 18, 54 (2021). https://doi.org/10.1186/s41239-021-00292-9