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Student-Faculty Portal using ML and Cloud Services

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Abstract: In March 2020, many institutions and companies abruptly closed their premises in response to the spread of COVID-19, preventing them from hosting any in-person activities which promoted the sense of working in groups and collaborating with peers. As a result, many students missed out on ways in which they can connect with those around them. Restrictions on in-person interactions between students, staff, and faculty are likely to persist in the future as well resulting in the lack of sense of collaborative working. Student Faculty Portal concentrates on effective connection building between people in colleges and universities by providing them a platform to collaborate based on their skills, interests, knowledge, and expertise.
Keywords: skill profile, recommendation, collaboration, portal, interests, expertise

I. INTRODUCTION

Professional institutions have a large number of students and teachers who can be of potential help to each other for better productivity of the college and the members as well. Due to the loss of appropriate connection between people willing to work together, the said aim does not fulfil. Student Faculty Portal provides a skill set based search & recommendation system that helps in identifying common bonds within peers for collaboration between them in the future. It also allows a community forum to improve knowledge and promote technical conversations in an open QnA discussion. It gives a platform to all its users to build their skill profile by maintaining records of their certifications, results, areas of interest, fields of expertise, etc. Student Faculty Portal aims to target a market share of five thousand people with direct competitors as LinkedIn, WhatsApp, and Quora to deliver an even more precise and real-time community building app. It targets to challenge community & notice forums in ERP systems, student data management systems in institutions, and other various platforms connecting people over common interests and knowledge.

II. LITERATURE SURVEY

In "Building an Effective Recommender System Using Machine Learning Based Framework", The basic aim of providing recommendations is to increase the time the user spends on the site and also to increase the number of videos that user can watch. In order to generate personalized recommendations, recommender system of you tube combines the users personal behaviour on the site with the related videos association rules. However, the user will never be recommended for different items. Business cannot be expanded as the user does not try a different type of product. If the user matrix or item matrix is changed the cosine similarity matrix needs to be calculated again. Other researches propose a campus mobile application for colleges and Universities across the globe. It is designed in such a way that any institution can customize it to fit the needs of their communities. A method of measurement was proposed to promote knowledge transfer and increase knowledge amount in virtual community. First, from two dimensions of learning capacity and knowledge capacity, the knowledge energy sets of individual and community were formally described separately. However drawbacks from such systems are like Creating this huge community with a limited amount of time is cumbersome and also sharing knowledge among different link minded people can also take a lot of time and out of measuring students' awareness, motivation and engagement in Mfunzi App, it also focused on highlighting the reasons for the failure and the suggests the possible measures to be taken to improve the projects' competence.

III. METHODOLOGY AND ARCHITECTURE

The proposed system is under Intelligent System Design and Development Domain which requires a detail study of Machine learning algorithms along with cloud database storage technologies. The system Student Faculty Portal will store data related to users' skills, interests, expertise, and achievements and help them by providing a platform to collaborate on the basis of the collected data. The system will build skills profile for each user and allow them to explore other people's profile to know them better through recommendation system and search engine which will work on Machine Learning algorithm. It will provide open discussion platforms to promote technical discussions and hence build connectivity. Users will be able to upload their achieved certifications and results in a cloud database for other users to view their skill profile in real time.

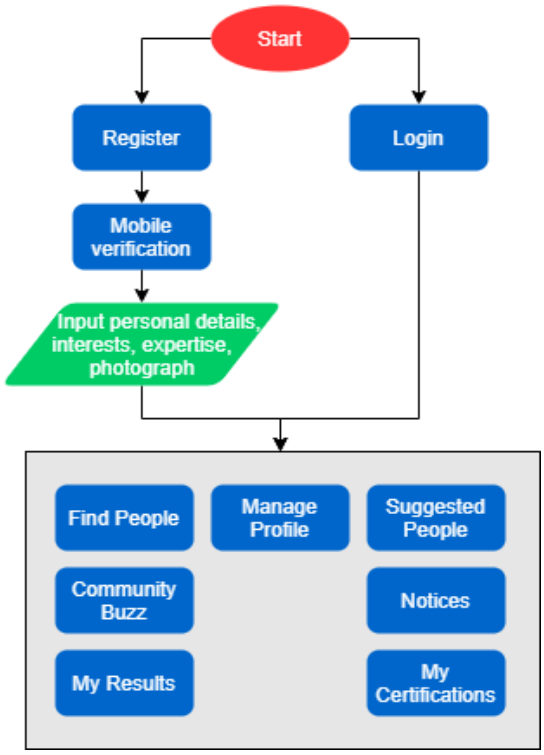

Fig. 1: System Flowchart

The system flowchart of the proposed system shown in the figure summarizes the basic idea and the modules of the proposed system.

IV. IMPLEMENTATION

Languages used for implementation of the system are Python and Dart. Having access to various python libraries allows us to perform complex tasks without the need to rewrite many code lines. Flutter's cross-platform UI toolkit allows code reuse across operating systems such as iOS and Android, while also allowing applications to interface directly with underlying platform services. A third-party visual application builder for the Flutter framework, FlutterFlow, is used integrated with Firestore database for automatic scaling, high performance, and ease of application development.

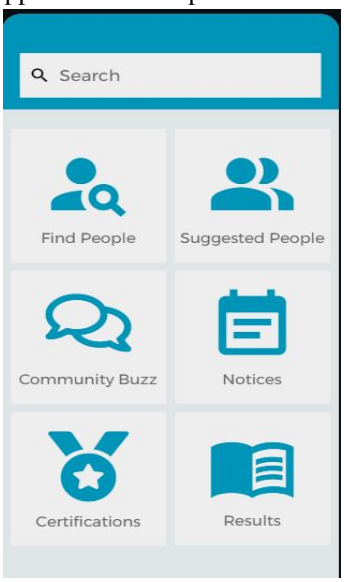

Fig. 2: UI design of home page

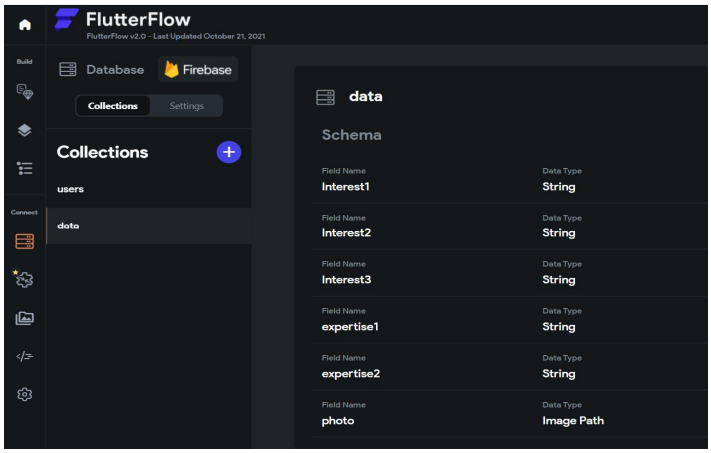

Fig. 3: Database Structure for user's skills profile

V. RESULT AND DISCUSSION

Student Faculty Portal will have many competitive advantages over other available systems as it aims to deal with big companies as well in future for easy recruitment based on skills, it easily allows people to sign up to be a part of the community to work on skills in a collaborative manner, and it offers services to promote working in a group and community building for timid people.

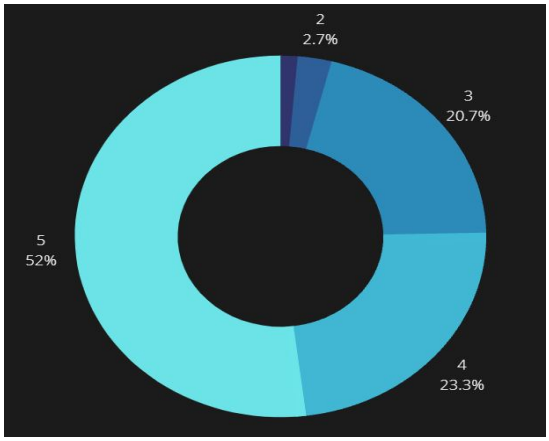

Fig. 4: Survey Results

Figure 3 displays positive acceptance of the system in an institution as a survey conducted asked about the likeliness of recommendation of the product to others.

VI. CONCLUSION AND FUTURE SCOPE

The proposed project can be useful from the perspective of the students as well as the teachers. For students it can be used by them to check whether their skill profile is competent enough with other students or to find other people in college with same technical interests. On the other hand, faculties can use this system to update notices and participate in technical discussions at university level and also check students' skills profile during placement process. In addition to this, industries can also use this system to recruit new people on the basis of their skills, areas of interest and fields of expertise. This can be useful for improved collaborative working and also for having an edge over competitors.

There is always a scope for enhancements in any developed system, especially when our nature of the project is iterative which allows us to rethink on the method of development to adopt changes in the project. Below mentioned are some of the changes possible in the future to increase the adaptability, and efficiency of the system:

1) Try to bring the domain as close as possible to the real world.
2) Quality of database can be improved.
3) Execution speed improvement.
4) Exporting the project to industry level.

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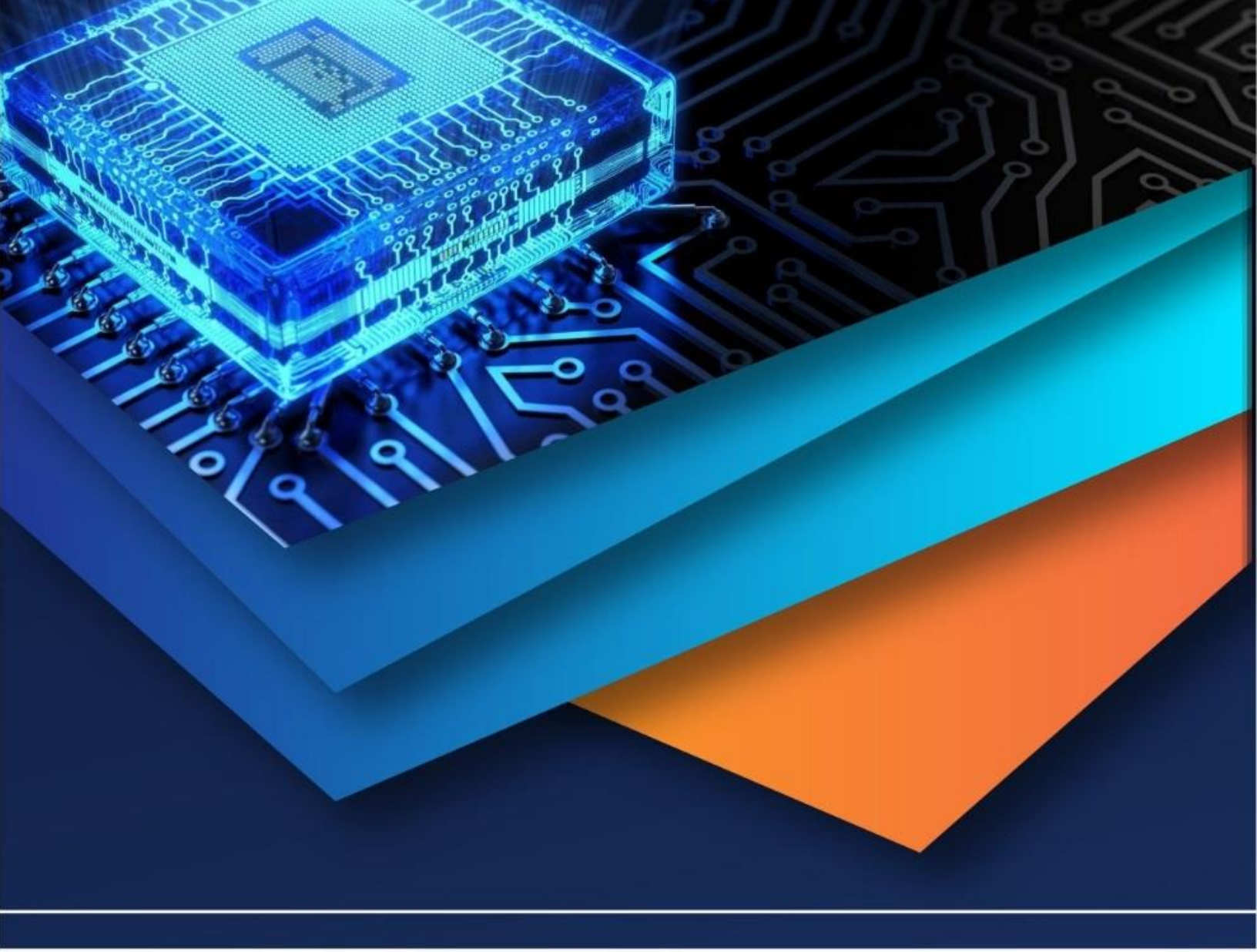

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