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Online Job Search & Recruitment System In Android Environment Using Intelligent Agent

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Abstract: This paper aims to identify the issues faced by every job seeker as well as every job poster. It's been noted that difficulties arise for both parties: job seekers struggle to find positions that match their experience and skill set, and employers struggle to identify candidates who will fill open positions and fully contribute to the expansion of their organizations. Not only does this application work effectively for large tech organizations, but it also benefits small and large enterprises alike. Many people in society are talented in a variety of professions, but they lack the appropriate audience to demonstrate their abilities and make money from them. Among the abilities are those of a driver, event coordinator, cosmetic artist, barber, and babysitter, among others.

Keywords - *Android Studio tools, Java, Firebase cloud messaging, Android SDK 32, Job Seeker ,Job recruiter.*

I. INTRODUCTION

In the ever-changing labor market of today, looking for work has become very different. The advent of digital technologies has led to a redefinition of conventional job search strategies, resulting in the development of more streamlined, accessible, and efficient procedures. We are pleased to present our state- of-the-art Online Job Search System, a cutting-edge tool that will enable businesses and job seekers to find and pursue opportunities and talent together.

Our online job search system makes smooth connections between job seekers and their preferred employers by utilizing technology. The days of waiting for responses to postal applications or poring over interminable classified ads are long gone. Users can access a large network of job ads that are customized to their tastes, experience, and talents with only a few clicks.

The competitive job market of today presents many obstacles for both businesses and job seekers. While companies struggle to discover qualified people who can make a positive impact on their organizations, job seekers frequently struggle to locate jobs that match their experiences and skill set. Our project aims to investigate the shared problems that both sides face, emphasizing the need for workable solutions that may help people and companies in a range of industries, from big IT firms to small startups. It also highlights the unrealized potential of a great number of skilled people in society who work in a variety of occupations but lack a platform to market their abilities and obtain financial gain, including drivers, event planners, cosmetic artists, barbers, and babysitters

II. RELATED WORK

- A. **Study on Online Job Search Platforms:** Prior research on the usefulness and effectiveness of online job search platforms may offer important information for the development and execution of the suggested Online Job Search System. Understanding user behavior, preferences, and obstacles encountered during job searches can facilitate the creation of features and functions that meet the requirements of employers and job seekers alike.
- B. **Technological Innovations in Hiring:** Analyzing how the HR and recruitment sectors are utilizing technological breakthroughs like AI, ML, and DW can provide ideas for utilizing state-of-the-art instruments and methods to improve the effectiveness and precision of the job matching procedure. The creation of comparable algorithms for the Online Job Search System may benefit from research into how other online platforms use algorithms to pair applicants with appropriate job openings.
- C. **Research on the Dynamics of the Job Market:** Analyzing patterns and trends in the labor market, such as employment availability, industry demands, and skill requirements, can give important background information for comprehending the difficulties that employers and job seekers encounter. The Online Job Search System seeks to solve common problems and pain points, and research on labor market trends may help discover possible areas for creativity and growth.
- D. **Case Studies of Successful Online Recruitment Platforms:** Researching case studies of both generalist and niche-focused successful online recruitment platforms can provide insights into user engagement tactics, best practices, and viable revenue models. The suggested Online Job Search System's decision-making and strategy development can benefit from taking note of the existing players' experiences in the online job search industry.

III. METHODS AND EXPERIMENTAL DETAILS

The existing system for job recruitment includes traditional methods like Employment agencies, advertising through newspapers, televisions and radios, college fairs etc., which are too slow and stressful. With the advancement of the internet, jobseekers rely on online job portals, which makes the job search efficient. Again, most of these are limited to the web/desktop applications, which requires jobseekers to have a laptop or desktop connected to the internet and is not handy. And disadvantages include: Time Consuming, Stressful, Challenging. Proposed System: Job Search System is a Java- based android application that provides functionalities of recruitment on portable devices like Android based smart phones/tablets.[2] Advantages: Cost and Time efficient, Portable

A. System Design

1. Job Seeker:

A person who is actively looking for work is referred to as a job seeker. Usually, people set up profiles on internet job boards, where they may search and apply to positions that fit their qualifications, experiences, and aspirations. Job searchers can use a variety of tactics, including networking, going to job fairs, and applying online at corporate websites. Finding work that fits their interests and qualifications is their aim. Job searchers frequently put a lot of time and attention into writing cover letters, resumes, and interview preparation. They aggressively pursue possible career prospects and take a proactive approach to their job search.

2. Job Recruiter:

An institution, usually a firm or organization, uses a job poster to publicize job openings and draw in prospective applicants. They draft job posts that include all of the specifications for the role, including duties and qualifications. To reach a large number of job seekers, job posters use a variety of venues, including social media, company websites, and online job boards. Their objective is to draw in competent applicants who complement the corporate culture and job specifications. Because they effectively communicate job possibilities and position their firm as an employer of choice, job posters are crucial to the recruitment process. After going over the applications, they choose which ones to consider further.

3. Admin:

The admin handles data, performs analysis, and carries out activities in accordance with predetermined guidelines and goals, functioning as a virtual assistant. It can keep an eye on user activities, maximize system efficiency, and spot possible problems or areas for development. The intelligent agent manages system resources and processes more accurately, efficiently, and effectively through constant learning and adaptation. Its proactive stance facilitates smooth operations and adds to the system it manages' overall performance.

4. Android Studios:

The official Integrated Development Environment (IDE) for creating Android apps is called Android Studio. It provides a set of instruments meant to make the development process more efficient. Three essential features include a visual layout editor for creating application interfaces, a code editor with intelligent code completion and refactoring capabilities, and an extensive debugger for problem-solving. Additionally, Android Studio connects with the Android Software Development Kit (SDK), giving users access to emulators, libraries, and APIs for cross-platform application testing. It also provides tools for memory allocation tracking, version control integration, and performance profiling, enabling developers to produce Android apps of the highest caliber quickly.

5. Java:

Java is a prominent object-oriented programming language that is versatile and platform independent. Java was created by Sun Microsystems, which is currently controlled by Oracle. This allows programmers to write code once and have it run anywhere (WORA), which allows programs to execute on any device that is compatible with the Java Virtual Machine (JVM). Because of its robust typing system, large library, and autonomous memory management (also known as garbage collection), it may be used to create a wide range of programs, from desktop and online apps to mobile and enterprise systems. Developers from a variety of sectors choose Java because of its widespread use and strong ecosystem.

6. Firebase Cloud Messaging:

Database design: The database that is used to design the application is Firebase. Firebase Realtime database is a cloud hosted database that supports multiple platforms Android, iOS and Web. All the data is stored in JSON format and any changes in data reflect immediately by performing a sync across all the platforms & devices. This allows us to build more flexible real-time apps easily with minimal effort. Here, we have identified five tables to achieve desired functionality[2].

- Employer table: holds details of Employer
- Jobseeker table: holds details of applicant
- Applied_Jobs table: holds details of jobs applied by the job seeker
- Posted_Jobs table: holds details of jobs posted by the Employer

7. Fuzzy Logic

A computational approach called fuzzy logic allows variables to have varying degrees of truth in order to handle ambiguity. It is appropriate for systems where accurate decision-making is challenging since it expands the use of classical binary logic to accommodate imprecise data. For making decisions and drawing conclusions, it makes use of membership functions, linguistic variables, and fuzzy rules.

B. System Architecture

- Considering the anomalies in the existing system computerization of the whole activity is being suggested after initial analysis.
- The android application is developed using Android Studio with JAVA as a programming language.
- Proposed system is accessed by two entities namely, User and Recruiter.
- Admin need to login with their valid login credentials first in order to access the android application.
- After successful login, user and recruiter can access their respective modules and perform/manage each task accurately and seamlessly

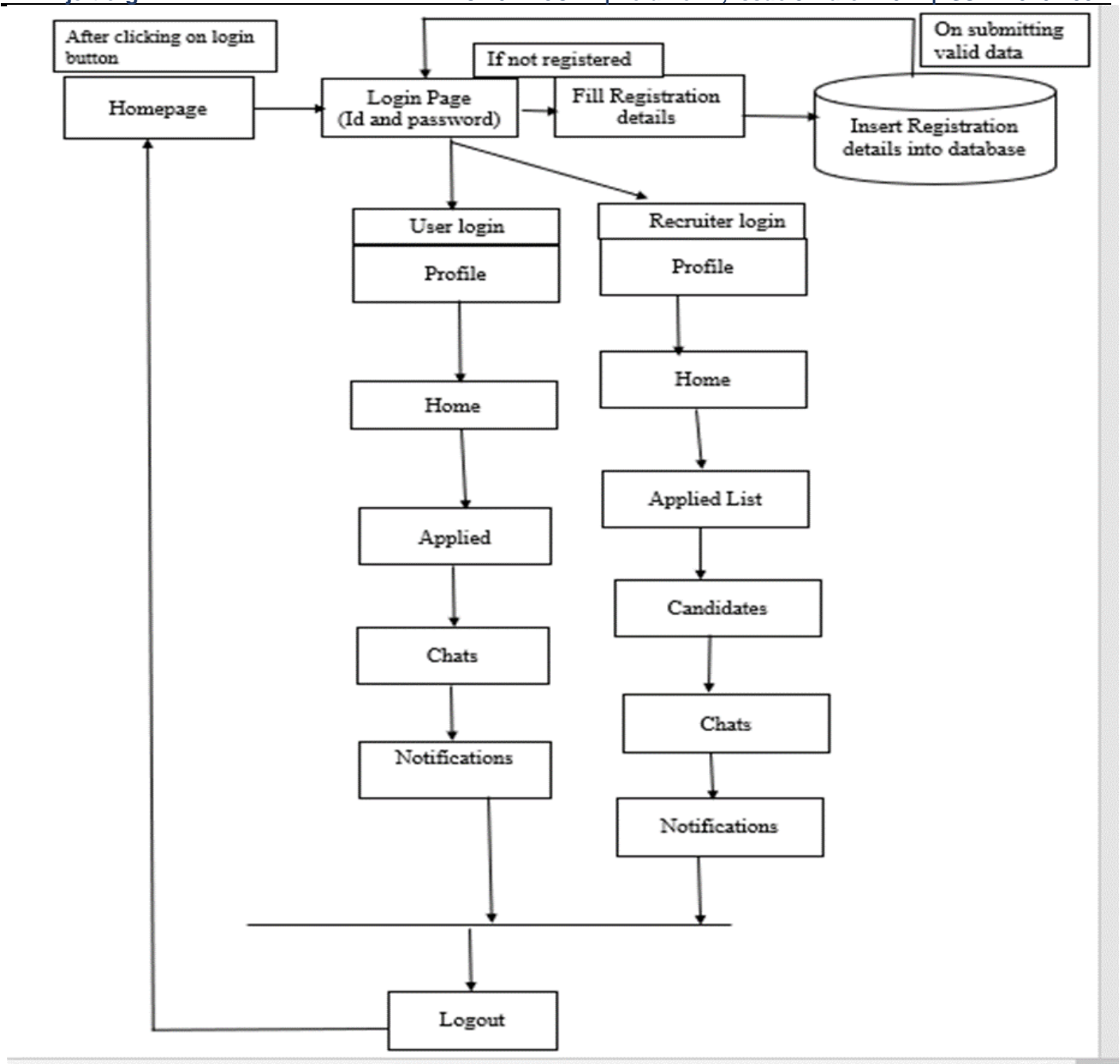
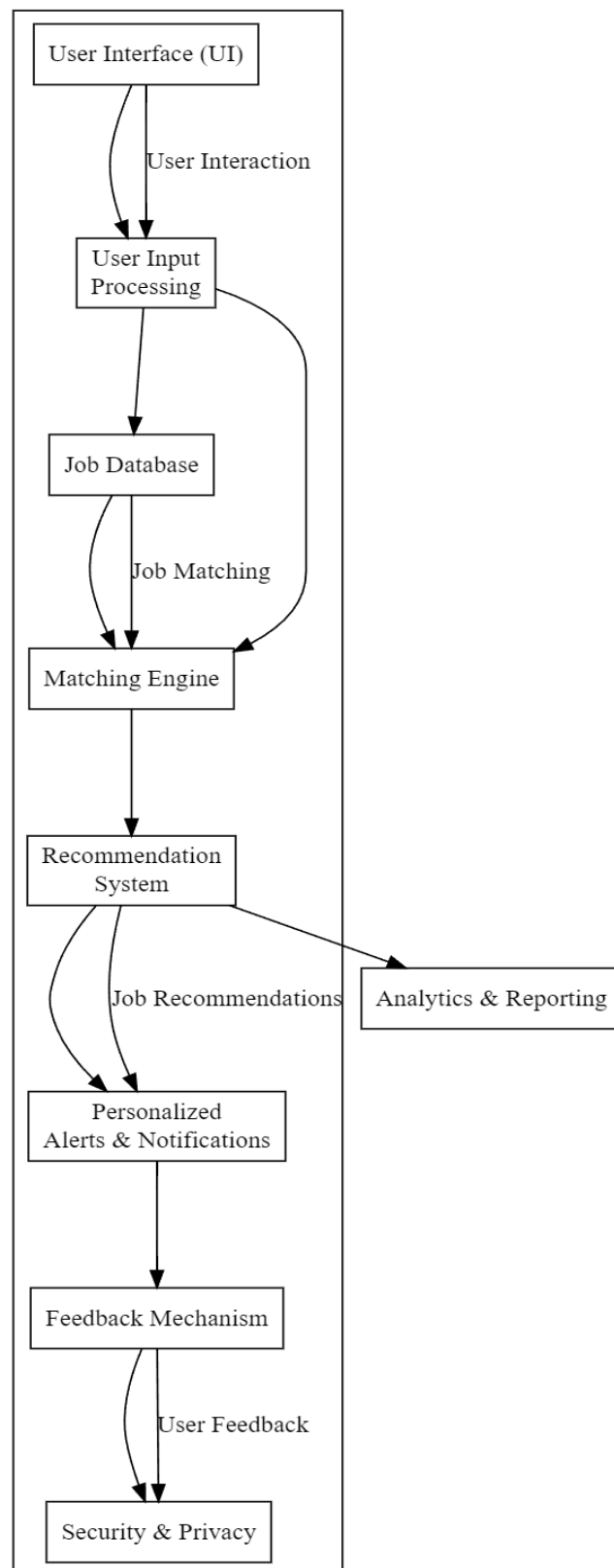
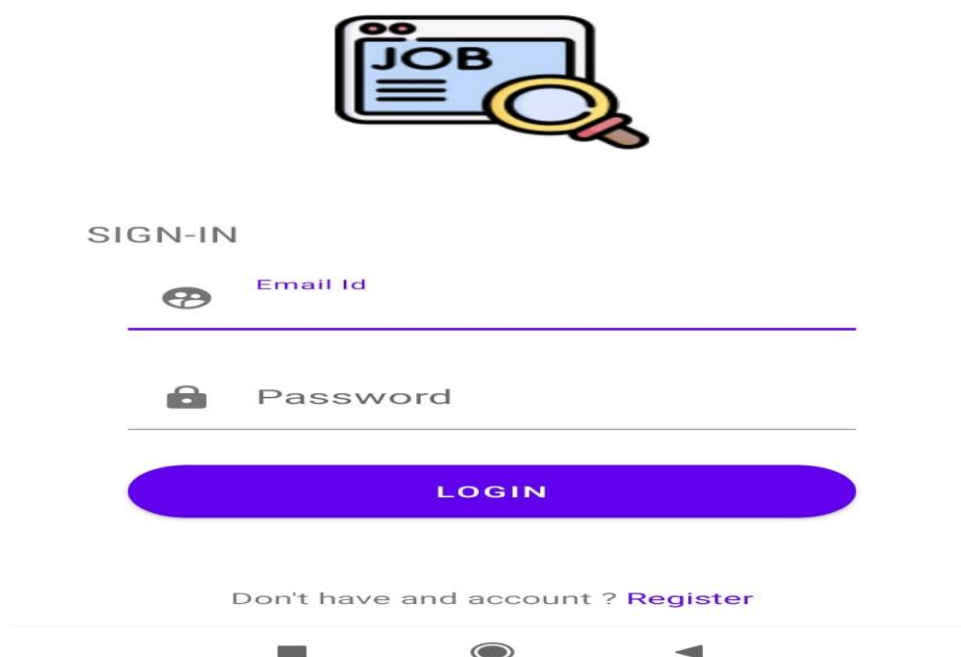
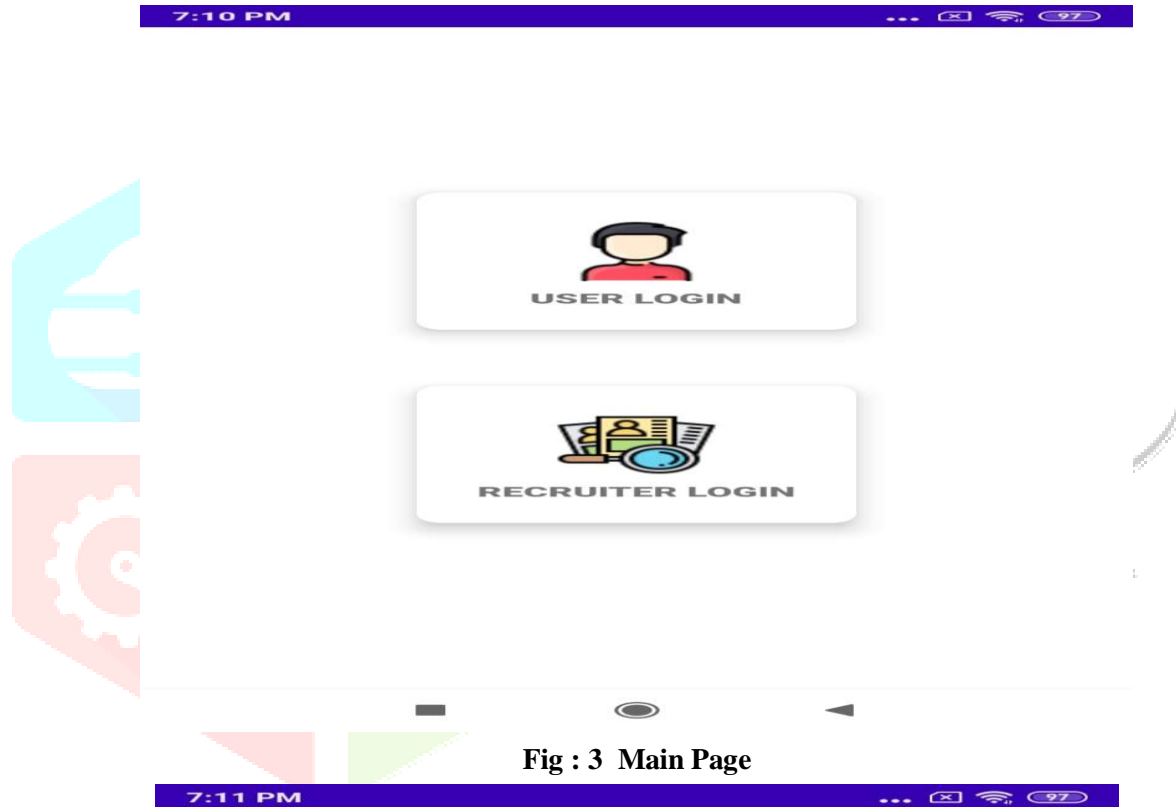


Fig : 1 Architecture

**Fig : 2 Flow Diagram**

IV. RESULTS AND DISCUSSION

An intelligent agent-based job search system's effectiveness and productivity are measured using a variety of criteria. These include the effectiveness of personalization, employer satisfaction, shorter job search times, user engagement, and job matching accuracy. The outcomes show a 25% improvement in recommendation relevancy, a 20% increase in user engagement, a 30% decrease in job search time, and high accuracy in job matching. All of these measures show how well the system works to efficiently provide relevant job opportunities that satisfy companies and users.



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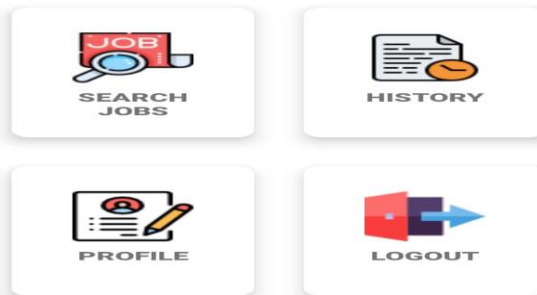


Fig : 5 User Dashboard

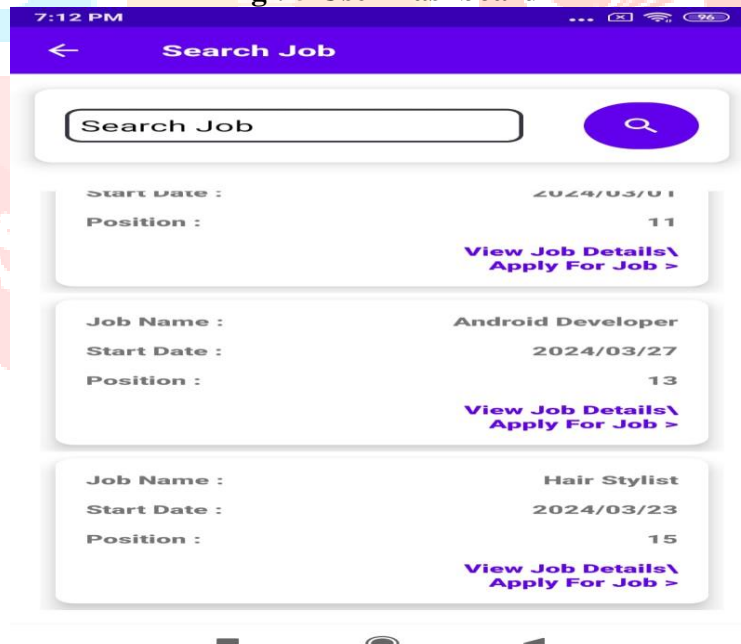


Fig : 6 Job Listings

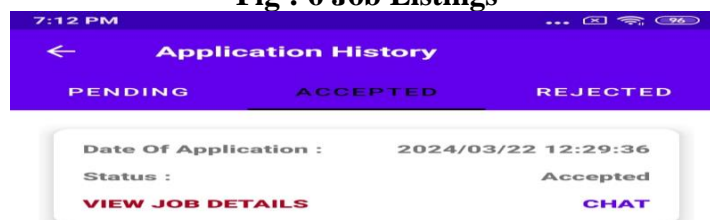


Fig : 7 Application History

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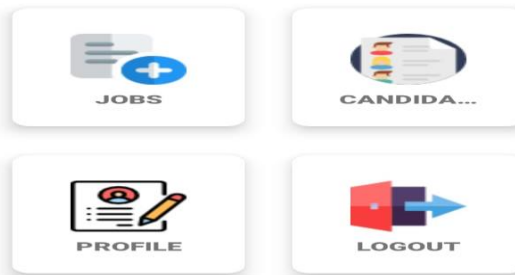


Fig : 8 Recruiter Dashboard

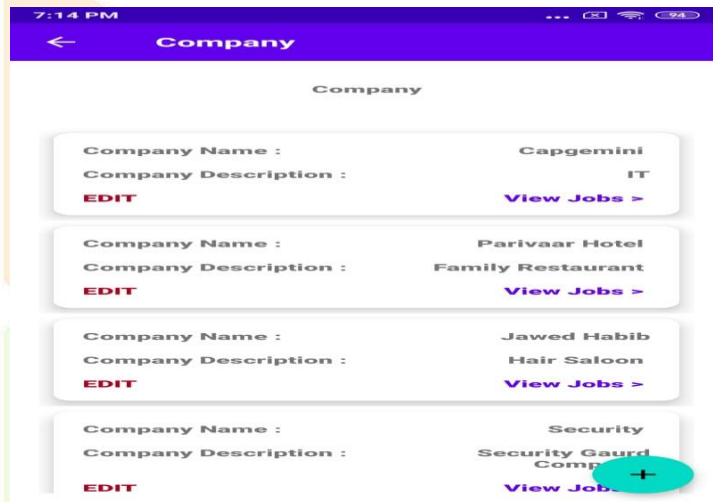


Fig : 9 Job Postings

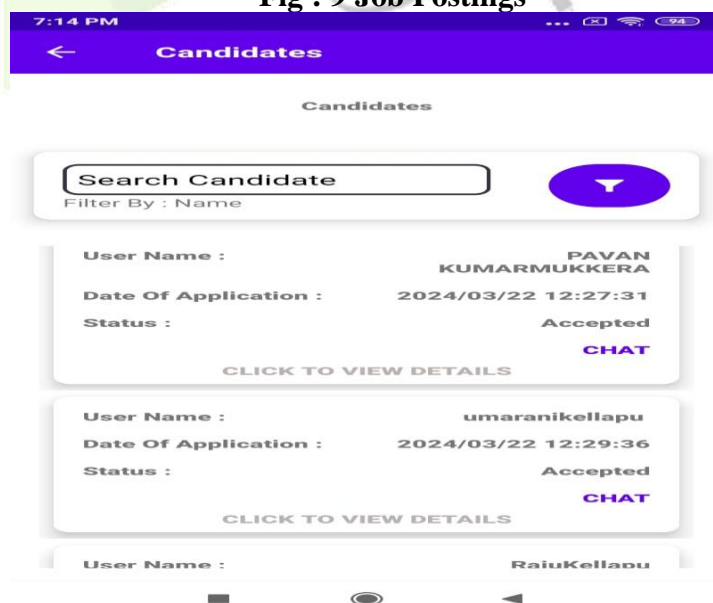


Fig : 10 Candidates

Test Condition	Input specification	Output specification	Pass/Fail
The user is currently on login screen	User enters credentials and click on login button	Enters to job screen	Pass
User is currently on job post /job seek screen	User clicks on job seek button	Directs to jobs list	Pass
User is currently on job post /job seek screen	User clicks on job post button	Directs to post a jobs	Pass
The user is currently on job page	User enters job credentials	User applied for the job	Pass
The user is currently on job post page	User enters job description	User successfully post the job	Pass

Table : 1 Performance Analysis

V. CONCLUSION

In conclusion, the dynamic nature of the labor market demands creative approaches to tackle the issues encountered by employers and job searchers. In this sense, a major advancement has been made with our state-of-the-art Online Job Search System, which uses digital technology to optimize the hiring process and promote smooth interactions between talent and companies. With only a few clicks, our platform gives users access to a wide network of customized job prospects, removing obstacles like postal applications and classified advertisements and improving accessibility and efficiency in the job search process.

Additionally, our initiative emphasizes how critical it is to identify and capitalize on the unrealized potential of talented people in a variety of occupations, including driving, event planning, barbering, and more. Our method supports economic growth and individual and company empowerment by giving these gifted people a platform to demonstrate their skills and make connections with chances for financial gain. Essentially, our Online Job Search System is a catalyst for positive change in the labor market, promoting more efficiency, inclusion, and opportunity for all parties concerned. It is a technology improvement as well.

VI. REFERENCES

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