Implementation of a User-Centric Job Application Platform using JAVA

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Abstract - This paper outlines the development of HireBridge, a desktop-based application designed to simplify the process of job searching and interview coordination. Built using JavaFX for the user interface and Firebase for backend operations, the application offers a smooth, real-time experience for both job seekers and recruiters. The platform allows users to view job listings, submit applications via a dedicated form, and upload their resumes directly from their system. Unlike many web-dependent job portals, HireBridge operates as a standalone application, offering a focused and distraction-free environment. The system prioritizes ease of use, modern UI design, and efficient data handling. This paper discusses the technical foundation, workflow, and practical relevance of HireBridge in today's job market.

Keywords **— JavaFX, Firebase, Job Portal, Interview Scheduler, Desktop App, Resume Up-load, UI Design**

1. INTRODUCTION

Finding the right job or candidate has always been a challenging task in the recruitment process. While online platforms have made it more accessible, they often come with limitations such as web dependency, slow response times, or overwhelming user interfaces. To address these challenges, we developed HireBridge a desktop-based job application and interview scheduling system built using JavaFX and Firebase. The motivation behind this project was to create a streamlined platform where job seekers can explore available opportunities and apply with ease, while recruiters can manage job efficiently. By choosing JavaFX, we ensured a responsive and visually appealing user interface. For backend integration, Firebase provides a real-time database and file storage, enabling dynamic interaction between users and job data. The application consists of a main landing page that displays available job cards, each with a "Select" button. Clicking on this navigates the user to an application form where they can enter personal details and upload their resume using a file chooser. The design emphasizes clean visuals with background images and intuitive navigation to enhance user experience. traditional job portals, HireBridge focuses on being a reliable desktop solution. It is especially useful in scenarios where internet access is limited or web-based tools are restricted. Future improvements may include intelligent resume screening, matching candidates based on their skills, and integrating scheduling APIs for interview booking. This project demonstrates how a combination of modern UI technologies and cloud-based services can be used to build efficient, practical solutions in the field of recruitment.

2. LITERATURE REVIEW

The digital transformation of recruitment and user control has centered on the development of diverse applications aimed toward enhancing the performance and effectiveness of hiring tactics. Numerous research and applications have targeted the integration of statistics, user authentication, and profile management to meet the evolving demands of agencies. HireBridge is placed inside this context because it leverages JavaFX and Firebase to provide a streamlined, interactive answer for person and administrator functions in recruitment.

Sr. No.	Publisher	Year	Author	Methodology	objective	Limitation
1	International Journal of New Innovations in Engineering and Technology	2024	Arunthathi S , Logeshwari T , Anuratha V	The system uses a **structural system analysis design** to develop an online job portal	The "Online Job Portal System" aims to automate manual processes using user-friendly computer software.	Limited scalability of the system, potential performance issues in handling large user loads.
2	International Journal of Scientific Research in Computer Science, Engineering and Information Technology	2022	Saurabh Shukla, Saif Ali Khan, Harsh Kumar Singh, Manmohan Sharma	We will conduct a survey to gather data on the experiences and preferences .	Optimize platform algorithms for better job matching. Study the impact of personalized recommendations on j ob seekers	Diverse user needs may limit generalization. Difficulty in accessing proprietary algorithm details. Constantly evolving job market and platform trends.
3	IJARIIE-ISSN	2023	Alok Kumar Tiwari, Nirbhay Kumar Tripathi	We will conduct a survey to gather data on the experiences and preferences of job seekers and employers using online job portals.	The project objective is to find jobs online on one platform.	The survey may not capture the experiences of all job seekers and employers, and the results may be influenced by sampling bias. Additionally, the study may not account for rapid changes in the online job portal landscape.
4	International Journal of Engineering and Management Research	2022		proposed Job search site implement as a web application consists of 3 main components: the front	Optimize platform algorithms for better job matching.Study the impact of personalized recommendations on j ob seekers	Diverse user needs may limit generalization .Difficulty in accessing proprietary algorithm details. Constantly evolving job market
5	Applied Information Technology And Computer Science	2023	Muhammad Uzair Mohd Faizu, Norhanim Selamat, Marniza Jamalan.	Explore existing job hiring systems relevant to healthcare , IT services. Assess how these systems streamline recruitment processes	The system development model as the methodology for this project is using the Throwaway Prototyping model. The planning phase is about planning the structure for the project	Rapid technological advancements may make some studies outdated . Variations in organizational hiring practices may affect the applicability of the findings.
6	IOSR Journal of Engineering	2019	Kanchan Tambe, Ankita Nagrale , Runali Gajbhiye.	The main objective for developing this project is to provide a online job search portal for employees and freshers about opportunities in different companies.	This paper is to provide a online job portal for employees and fresher's about opportunities in different companies.	It is a step in the employee lifecycle and represents the last phase of a successful recruiting process.
7	International Journal of Transdisciplinary Research and Development (SIJTRD)	2021	SWAPNA N, Seethalakshmi.	A job portal is a website which helps in the recruitment process by bringing together both the employer and the job seeking candidates	The paper attempts to study the perception of Job seekers towards Online job portals. The objective of the study is to identify the utility of job portals to the job seekers.	The majority of job portals allow job seekers to sign up for a free account, which allows them to search job openings posted by employers and post their resumes for employers to review.

8	INTERNATIONAL JOURNAL FOR RESEARCH PUBLICATION & SEMINAR	2023	Sahili Kore, Sanjana Murarkar, Sayali Hiwase	Recruitment is a process to discover the sources of manpower to meet the requirement of the staffing schedule .	Applicants can also register online, read the organization's criteria, and apply for jobs that fit their qualifications	Direct applications from candidates would be accepted through the app
9	Tribhuvan University	2020	Kamal Acharya	Due to the collaborative nature of the application the user can really be an important part of it rather than just using it blindly.	The classic Functionality of this Application focuses on data storage. However, the means to retrieve and analyze data, to extract, transform and load data, and to manage the data dictionary.	To check for details prospective jobseekers through not easy search provided in the portal.
10	A Survey of U.S. Job Seekers	2022	Mingzhi Cai, Aarti Israni, Tawanna R. Dillahunt	Online employment resources are now as important as offline per sonal and professional networks, which have been pivotal in finding employment.	The Internet is an advantageous resource for those seeking employment. It can be accessed with little cost, allows multiple job applications to be sent, and can help job seekers highlight their experience and skills .	Job search behaviors are the actions required to find a job and job seekers employ multiple job search strategies that correlate to job search outcomes.

3. METHODOLOGY

The HireBridge application was developed as a desktop-based solution using JavaFX for the user interface and Firebase as the backend service. The goal was to design a system that offers a smooth and intuitive job application process with real-time data handling and resume uploads.

A. System Design Approach The system follows a modular architecture, ensuring that each component, such as the landing page, application form, and backend interaction, is built and maintained independently. This modularity improves the overall scalability and readability of the application. The Landing Page is the main screen that displays all job cards. Each card contains details such as job title, company name, and a ”Select” button. On clicking ”Select,” the user is directed to the Application Form Page, where they can fill in their personal details such as name, email, and phone number. There is also a file chooser to allow users to upload their resume directly from their system. Once the user submits the form, all details along with the uploaded file are sent to the Firebase Realtime Database and Firebase Storage, respectively.

B. Tools and Technologies Used JavaFX: Used to build a modern and responsive graphical user interface (GUI). Features like layout controls, image backgrounds, and navigation transitions were utilized to improve user experience. Firebase Realtime Database: Enables dynamic storage and retrieval of user information.

All form inputs are stored in structured JSON format.

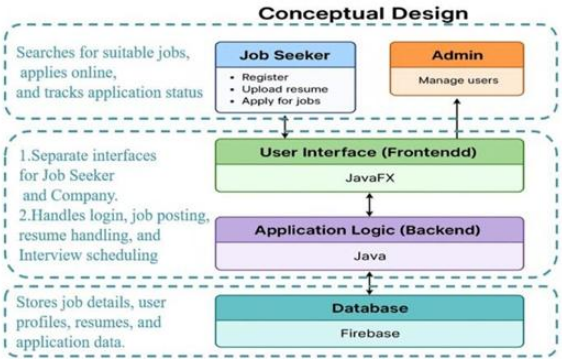
Firebase Storage: Used for uploading and storing resume files securely. Files are associated with a unique job application entry for easy tracking.

Scene Navigation: JavaFX scene management was used to switch between the landing page and application form smoothly without reloading the entire application.

C. Workflow Start-Up: On launching the application, users are welcomed with a visually designed landing page that lists available jobs. Job Selection: Users select a job card by clicking the corresponding button, triggering a transition to the application form. Form Filling and Resume Upload: Users enter their credentials and upload their resume file via a file chooser dialog. Data Submission: Upon clicking “Submit,” the entered data is sent to Firebase Realtime Database, while the resume file is uploaded to Firebase Storage. Success Confirmation: A confirmation message is shown, and users are optionally redirected back to the landing page.

D. Advantages of the Approach This methodology allows the application to: Operate as a lightweight desktop solution. Provide a clean and distraction-free interface. Support real-time database interaction without the need for complex server configurations. Ensure secure and structured storage of user data and uploaded documents. By combining JavaFX's design capabilities with Firebase's cloud features, HireBridge achieves both functional depth and a smooth user experience. The system design promotes ease of access for both users and developers, and it sets the groundwork for further enhancements like resume filtering, job matching, and interview scheduling.

5 System Design



4. RESULTS AND DISCUSSION

The HireBridge application was successfully implemented as a functional desktop-based job application system using JavaFX and Firebase. The primary objective of simplifying the application process and providing a smooth user experience was effectively achieved.

A. Output Overview Upon execution, the application launches with a visually appealing landing page displaying job listings in the form of job cards. Each card includes essential job information along with a "Select" button. When clicked, it transitions the user to a job application form page where the user can enter their personal details and upload their resume. Form Input Fields: The form collects the user's name, email, phone number, and resume. Resume Upload: Users can browse and select a resume file from their local system using a file chooser. Database Connection: Once submitted, user data is uploaded to Firebase Realtime Database and the resume file is stored in Firebase Storage.

B. Real-Time Data Storage in Firebase The application integrates seamlessly with Firebase, enabling: Instant record creation for each job application. Unique file storage for each resume with corresponding user metadata. Scalability for multiple users without performance lag.The success of this integration was validated through multiple test cases with different inputs and file formats. All data was stored correctly, and resume links were accessible via Firebase's dashboard.

C. User Interface and Experience Feedback from peer reviewers highlighted that: The navigation between scenes was smooth and free from glitches. The UI layout was simple, intuitive, and easy to understand. Background images and card- based layouts enhanced the visual appeal.

D. Discussion The results demonstrate that a desktop-based solution like HireBridge can provide a fast and focused alternative to traditional web portals. The absence of pop-ups, ads, and unnecessary redirections made the process more efficient. The integration of Firebase backend services simplified database management without the need for complex server-side scripting. However, the current version of the application is limited to a basic submission process. There is scope for improvement in areas such as: Employer Dashboard for reviewing applications. Login/Authentication modules for both applicants and recruiters. Automated filtering of applications based on keyword or skill match. Interview scheduling or communication features using cloud messaging. Despite these limitations, the core functionality—collecting job applications with file uploads—performed accurately and reliably, meeting the project goals.

5. CONCLUSION

The HireBridge application provides an efficient and user- friendly platform for job seekers to view listings, submit applications, and upload resumes through a desktop interface built with JavaFX and integrated with Firebase for real-time data handling. The system successfully simplifies the job application process by

offering a clean UI, smooth navigation, and secure data storage. Its modular design ensures scalability and lays a strong foundation for future enhancements such as recruiter dashboards, login authentication, resume filtering, and interview scheduling. Overall, HireBridge presents a practical solution that can evolve into a comprehensive desktop-based recruitment system tailored to modern hiring needs.

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