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Design and Development of City Hire Hyper-Local Job Portal for Connecting Job Seekers and Employers

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Abstract: ***Online job portals have become an essential platform for connecting job seekers and employers in an efficient and organized manner. This paper presents the design and implementation of City Hire – a web-based local job portal developed to simplify the job searching and recruitment process within local communities. The system is designed using a layered architecture consisting of presentation, application, and database layers to ensure efficient data handling and system functionality. The platform provides key modules such as user registration and authentication, job posting and management, job search functionality, and an online job application system.***

Through this portal, job seekers can easily browse available job opportunities, view job details, and apply for suitable positions, while administrators can manage job listings and monitor applications. The system stores and processes job and user data through a centralized database, ensuring organized data management and quick access to information. By digitizing the recruitment workflow, the proposed system reduces the time and effort involved in traditional hiring processes and enhances accessibility to local employment opportunities. The City Hire portal demonstrates an effective and scalable solution for supporting local job markets and improving communication between employers and job seekers.

Keywords: Job Portal, Online Recruitment System, Web-Based Application, Local Employment Platform, Job Search System, Database Management, Digital Hiring Platform.

I. INTRODUCTION

The rapid development of internet technologies has significantly changed the way people search for employment opportunities and how organizations recruit candidates. Traditional job searching methods such as newspaper advertisements, personal references, and manual applications are often time-consuming and inefficient. With the increasing demand for faster and more accessible hiring processes, online job portals have become an important solution for connecting job seekers with employers. The City Hire – Local Job Portal is a web-based system designed to simplify the recruitment process and improve access to local job opportunities. The platform allows job seekers to register, search for available jobs, and apply for suitable positions through a simple and user-friendly interface. At the same time, administrators can post job vacancies, manage job listings, and review candidate applications efficiently. The system is designed using a layered architecture consisting of presentation, application, and database layers to ensure efficient data processing and system management. By providing a centralized platform for job information and applications, the proposed system reduces the time and effort involved in traditional hiring processes. This digital approach helps improve communication between employers and job seekers while supporting local employment opportunities. Therefore, the City Hire system provides a practical and efficient solution for modern recruitment needs.

A. Background And motivation

The increasing use of the internet and digital platforms has created new opportunities for improving recruitment and job searching processes. Online job portals have become a popular solution for connecting employers with potential candidates quickly and efficiently. These systems allow job seekers to explore job opportunities from different organizations and apply for positions without the need for physical visits [1].

However, many local job markets still rely on traditional recruitment methods, which often result in limited access to job information and slower hiring processes.

Small businesses and local employers may also face challenges in reaching suitable candidates. Therefore, there is a strong need for a centralized digital platform that can bridge the gap between employers and job seekers at the local level [2].

The motivation behind developing the City Hire system is to create a user-friendly and efficient platform that simplifies job searching and recruitment activities. The system aims to improve accessibility to job information and provide a convenient solution for managing job postings and applications in local communities [3].

B. Problem Identification

Despite the availability of several online job portals, many existing systems present certain limitations that reduce their effectiveness in supporting local job markets. Traditional recruitment methods often involve manual processes that are slow and inefficient. Job seekers may struggle to find accurate and updated job information, while employers may find it difficult to reach suitable candidates.

Additionally, some existing job platforms are complex and not specifically designed to support localized job opportunities. The absence of a simple and centralized system for managing job listings and applications can lead to delays in recruitment and reduced accessibility for users.These challenges highlight the need for a simple, efficient, and web-based job portal that allows job seekers to easily search and apply for jobs while enabling administrators to manage job postings and applications through a structured and organized system.

C. Research Objectives

The main objective of this research is to design and develop a web-based job portal platform that connects job seekers with employers and simplifies the recruitment process through a centralized digital system. The specific objectives include:

1) To develop a full-stack web application that enables job seekers to search and apply for job opportunities through an online platform.
2) To provide an efficient job posting system that allows administrators or employers to add, update, and manage job vacancies.
3) To simplify the recruitment process by providing a centralized platform for managingjob listings and candidate applications.
4) To implement secure user authentication for both job seekers and administrators to ensure safe access to the system.
5) To main in a structured database system for storing user details, job postings, and application information efficiently.
6) To develop an administrative interface that allows administrators to monitor users, manage job postings, and review applications.
7) To evaluate the functionality and usability of the developed job portal through system testing and demonstration.

D. Project Scope

The proposed system focuses on the development of a web-based job portal platform that supports the essential functionalities of job searching and recruitment management. The system allows users to register, log in, search for available jobs, and apply for suitable job opportunities through an online interface. An administrative module is also included to manage job postings, user information, and application records efficiently.The technical scope of the system includes frontend development using web technologies, backend processing for handling user requests and system logic, and database management for storing user details, job listings, and application data. The system follows a layered architecture consisting of presentation, application, and database layers to ensure efficient system performance and data management.

E. Organization of the Paper

The remainder of this paper is organized as follows. Section II presents the literature review related to online job portals and digital recruitment systems. Section III describes the system architecture and design methodology used for developing the platform. Section IV explains the implementation and functional modules of the system. Section V discusses the results and system performance. Finally, Section VI concludes the paper and suggests possible future enhancements.

II. LITERATURE REVIEW

A. Online Job Portal Systems

Several researchers have studied the role of online job portals in improving the efficiency of recruitment and job searching processes. According to Sharma and Gupta [1], web-based job portals provide a centralized platform where job seekers and employers can interact efficiently.

These systems enable users to search for job opportunities, submit applications, and receive updates about vacancies through a digital interface. Compared to traditional recruitment methods such as newspaper advertisements and manual applications, online job portals significantly reduce the time and effort required to find suitable employment opportunities.

Modern job portals also allow employers to publish job openings and manage candidate applications in an organized manner. However, many existing platforms focus mainly on large-scale job markets and often overlook the specific needs of local job seekers and small businesses. This limitation creates the need for a simplified and accessible system that focuses on local employment opportunities and efficient recruitment management.

B. System Architecture in Web-Based Recruitment Platforms

System architecture plays a crucial role in the design and performance of modern web-based applications. Brown et al. [2] examined different architectural models used in recruitment systems, including layered architectures and service-oriented designs. Their research highlights that layered architecture improves system organization by separating the presentation layer, application logic layer, and database layer.

This separation allows developers to maintain and scale the system more effectively. Many recruitment platforms adopt this structure because it simplifies system maintenance and improves performance. The proposed City Hire – Local Job Portal follows a similar layered architecture, ensuring efficient communication between the user interface, application logic, and database management system..

C. User Interface Design in Job Portal Applications

User interface design plays a significant role in determining the usability of online job portals. Chen and Roberts [3] investigated the impact of user-friendly interface design on job search platforms and found that clear navigation, structured job listings, and simplified application processes significantly improve user engagement.

A well-designed interface allows job seekers to easily search for jobs, view job descriptions, and apply for positions without unnecessary complexity. In addition, intuitive dashboard interfaces for administrators help manage job postings and candidate applications efficiently. Based on these findings, the proposed system emphasizes a simple and user-friendly interface that enables both job seekers and administrators to interact with the system easily.

D. Database Management in Online Recruitment Systems

Efficient database management is essential for storing and processing large amounts of job and user data. Williams and Carter [4] discussed the role of relational database systems in recruitment platforms and emphasized the importance of structured data storage for managing job listings, user profiles, and application records.

Database management systems such as MySQL provide reliable storage and fast data retrieval, enabling job portals to handle multiple users and job postings simultaneously. By maintaining a centralized database, recruitment systems can ensure data consistency, efficient record management, and secure storage of user information.

E. Security and Access Control in Web Applications

Security is a critical component of any web-based system that manages sensitive user information. Garcia and Thompson [5] explored the implementation of authentication and role-based access control in web applications. Their research highlights that separating user privileges enhances system security and improves administrative control.

Role-based access models allow administrators to manage system data while regular users interact with application services through restricted access levels. In the proposed City Hire system, authentication mechanisms are implemented to ensure secure login access for both administrators and job seekers, thereby protecting user information and maintaining system integrity.

F. Integrated Recruitment Platforms

Recent studies highlight the importance of integrated digital platforms that bring together various recruitment activities within a single system. Adams and Lee [6] noted that integrated recruitment platforms reduce complexity by allowing users to access job listings, submit applications, and track recruitment processes within one interface.

Such platforms improve the overall user experience by reducing the need to access multiple websites or systems. The proposed City Hire – Local Job Portal follows this approach by providing a centralized environment where job seekers can search for jobs and employers can manage job postings and applications efficiently.

G. Comparative Analysis of Existing Job Searching Platforms

TABLE I: COMPARISON OF EXISTING JOB SEARCH METHODS AND THE PROPOSED CITY HIRE JOB PORTAL

Feature	Fragmented Systems	Integrated Travel Booking Platform
Job Search process	Job seekers rely on newspapers, personal contacts, or visiting companies directly.	Users can search for jobs online through a centralized web platform.
Access to Job Information	Job information is limited and not updated frequently.	Real-time job listings with updated information are available.
Application Process	Candidates submit applications manually or through email.	Users can apply for jobs directly through the portal.
Data Management	Job and applicant data are stored manually or in separate systems.	Centralized database stores job postings and user applications.
Employer Reach	Employers can only reach limited candidates locally.	Employers can reach multiple candidates through the online platform.
User Experience	Time-consuming and less organized job search process.	Simple and user-friendly interface for searching and applying for jobs.
Recruitment Efficiency	Recruitment process takes longer due to manual coordination.	Faster recruitment through digital job posting and application management.

III. SYSTEM ARCHITECTURE AND DESIGN

A. High-Level System Architecture

The proposed City Hire – Local Job Portal follows a three-tier web architecture to ensure modularity, maintainability, and scalability of the system. The architecture is divided into three main layers: Presentation Layer, Application Layer, and Database Layer.

The Presentation Layer represents the user interface of the system and is developed using standard web technologies such as HTML, CSS, and JavaScript. This layer allows users to interact with the platform by providing functionalities such as user registration, login, job searching, viewing job details, and submitting job applications. It ensures that the system remains user-friendly and accessible through web browsers.

The Application Layer handles the core business logic of the system. This layer processes user requests, validates user inputs, manages job postings, and controls the job application workflow. It acts as the communication bridge between the user interface and the database. The application layer ensures that system operations such as user authentication, job posting management, and application processing are executed efficiently.

The Database Layer is responsible for storing and managing system data using a relational database management system such as MySQL. This layer stores structured data including user accounts, job postings, application records, and administrative information. The database ensures secure storage, quick data retrieval, and consistent management of recruitment data within the system.

The layered architecture improves system organization by separating the user interface, application logic, and data management components, which makes the platform easier to maintain and scale.

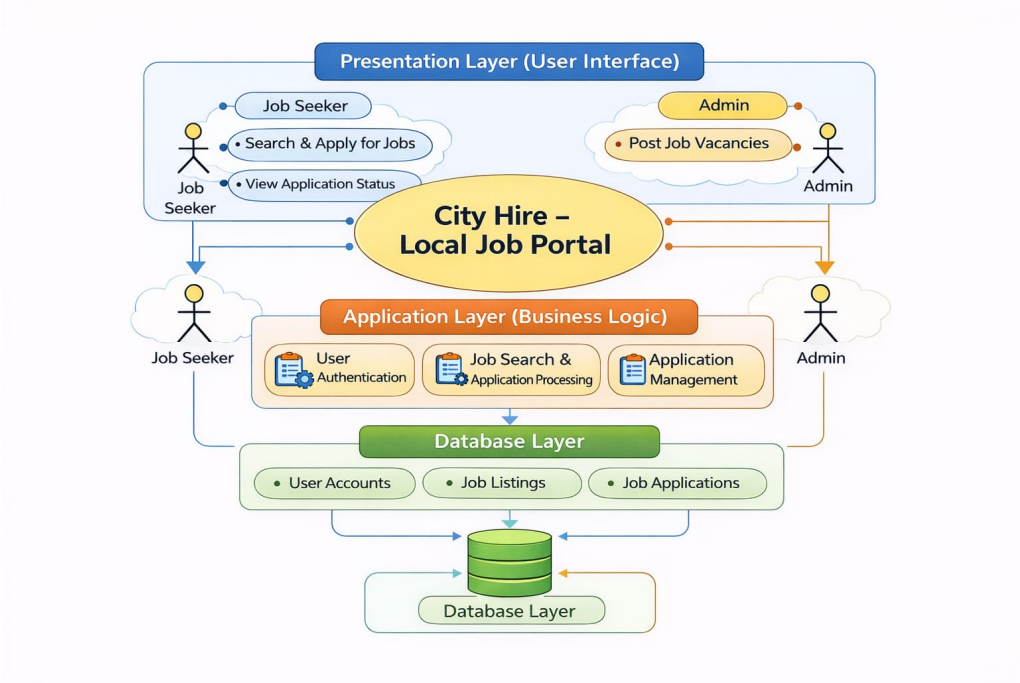

Fig. 1: System Architecture of City Hire – Local Job Portal

B. Functional Modules

The City Hire Job Portal is organized into several functional modules that support the overall recruitment workflow. Each module performs specific tasks that collectively contribute to the efficient operation of the job portal.

1) User Management Module

The User Management Module handles user registration, authentication, and profile management. Job seekers can create an account by providing basic information and securely log in to access the platform. The module ensures that user credentials are stored securely and allows users to update their profile information when necessary.

This module also implements role-based access control, which differentiates between job seekers and administrators, ensuring that administrative functions are accessible only to authorized users.

2) Job Management Module

The Job Management Module allows administrators to manage job postings within the system. Through this module, administrators can add new job vacancies, update job descriptions, specify job requirements, and remove outdated job listings.

The module ensures that job information stored in the database remains updated and organized, allowing job seekers to access accurate and relevant job opportunities.

3) Job Search Module

The Job Search Module enables job seekers to browse and search for available jobs based on various criteria such as job category,location, or required skills. The system retrieves job information from the database and displays relevant results to users.

This module plays an important role in improving the user experience by allowing job seekers to quickly identify suitable job opportunities.

4) Job Application Module

The Job Application Module allows registered users to apply for job positions directly through the portal. When a user selects a job posting, the system collects application details and stores them in the database.

This module maintains records of job applications and allows administrators to review and manage candidate applications efficiently.

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5) Admin Dashboard Module

The Admin Dashboard Module provides administrators with a centralized control interface to manage system operations. Through the dashboard, administrators can manage job postings, monitor user activities, review job applications, and maintain system data. This module simplifies administrative tasks and ensures that the platform operates efficiently.

C. Technology Stack

TABLE II: TECHNOLOGY STACK USED IN CITY HIRE – LOCAL JOB PORTAL.

Layer	Technology	Purpose
Frontend	HTML, CSS, JavaScript	User interface development
Backend	Server-side scripting (e.g., PHP / Java / Node depending on your project) Business logic and system processing	Business logic and system processing
Programming Language	Java Script/Backend Language	Application development
Database	MySQL	Data storage and management
Web Server	Apache	Hosts the wed application and manages server-side execution
Communication	HTTP Requests / APIs	Interaction between frontend and backend

D. Database Design

The database design of the City Hire system follows a relational data model to ensure structured and efficient data storage. The database includes several key entities such as Users, Jobs, Applications, and Admin.

Each entity is connected through relationships that maintain data consistency and integrity. For example, a user can apply for multiple job postings, while each job posting can receive applications from multiple users.

The database schema is designed to reduce redundancy and improve data management efficiency. By maintaining a centralized database system, the platform ensures reliable storage of job and user information while enabling quick retrieval of data during system operations.

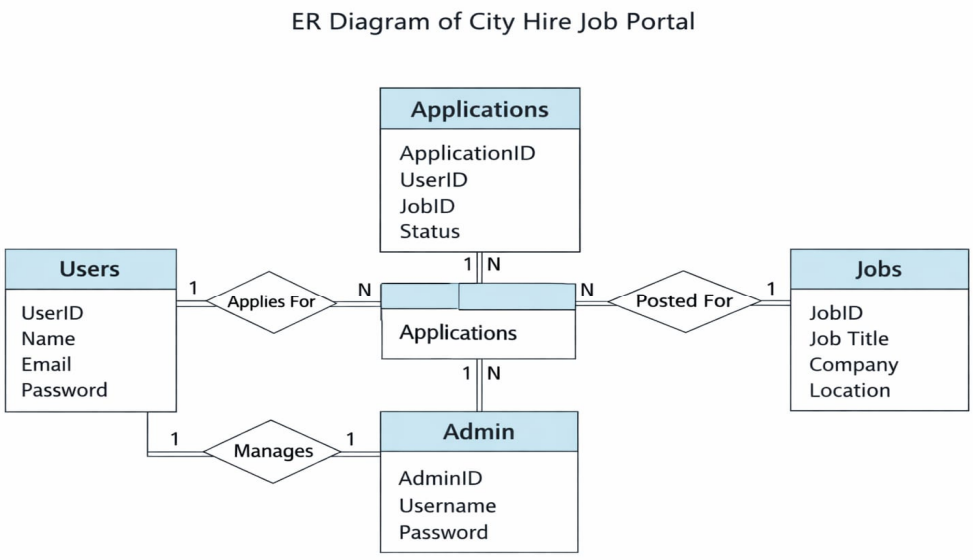

Fig. 2: Database ER Diagram

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IV. EVALUATION AND RESULTS

The developed City Hire – Local Job Portal was evaluated through functional testing and usability observation to ensure that the system performs effectively in real-world scenarios. The evaluation process focused on validating the core functionalities of the platform, including user registration, job searching, job application submission, and administrative management.

The testing process confirmed that the frontend interface communicates successfully with the backend server through RESTful APIs and that all job-related data is correctly stored and retrieved from the MySQL database. Screenshots of major system modules were used to verify the proper operation of the system and demonstrate its functionality.

A. User Home Page

The user homepage acts as the primary entry point of the City Hire job portal. It provides users with a clear and organized interface where they can explore available job opportunities and access different features of the platform.

The homepage displays job listings, search options, and navigation menus that allow users to easily browse available jobs. The design emphasizes simplicity and usability, enabling job seekers to quickly access relevant job information and begin the application process.

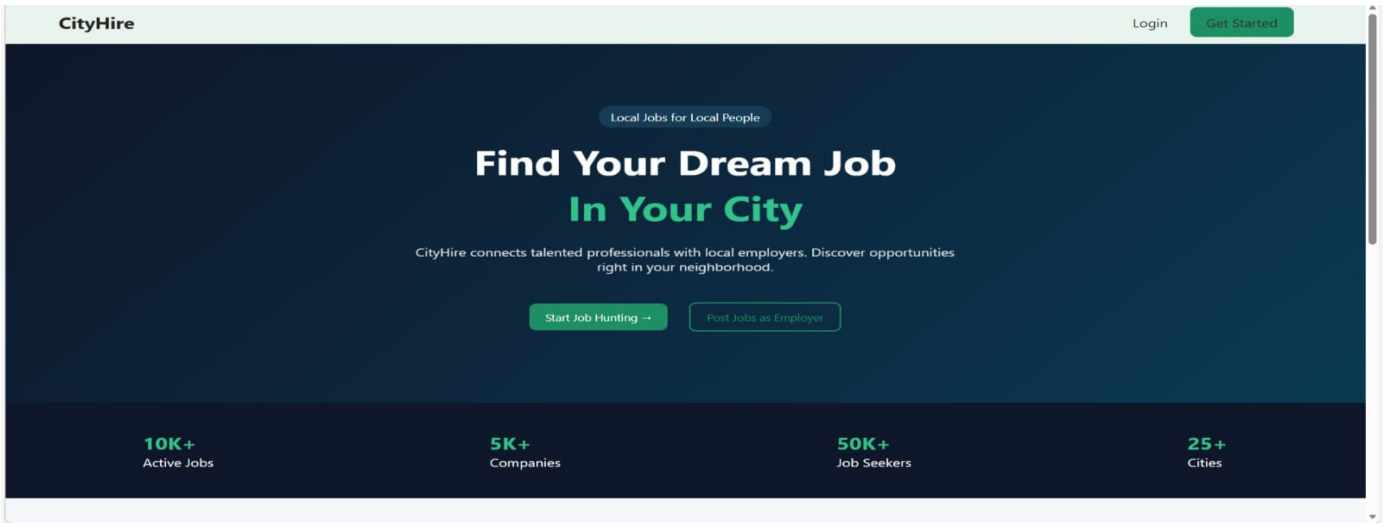

Fig. 3: User Homepage Interface

B. Job Search Interface

The job search module enables users to search for available job opportunities based on specific criteria such as job title, category, or location. The system retrieves relevant job listings from the database and displays them in a structured format.

Users can view detailed information about each job posting, including company name, job description, required qualifications, and location. This feature helps users identify suitable employment opportunities efficiently.

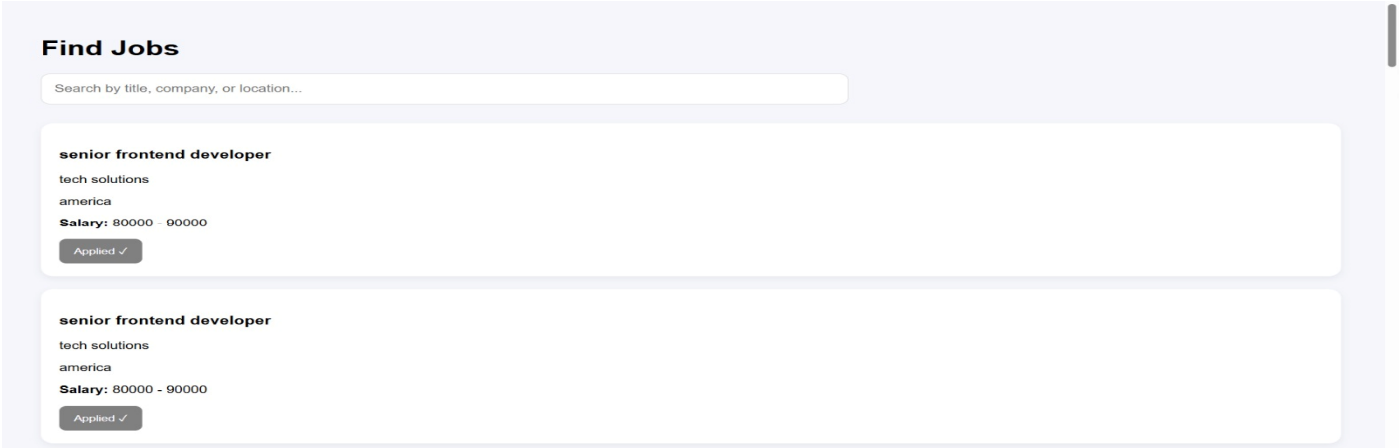

Fig. 4: Job Search Interface

C. Job Application Interface

The job application module allows users to apply for selected job positions directly through the platform. After reviewing the job details, users can submit their application by providing necessary information such as resume details and contact information.

Once the application is submitted, the system stores the application data in the database and updates the application status. This process ensures that both job seekers and administrators can track the progress of job applications.

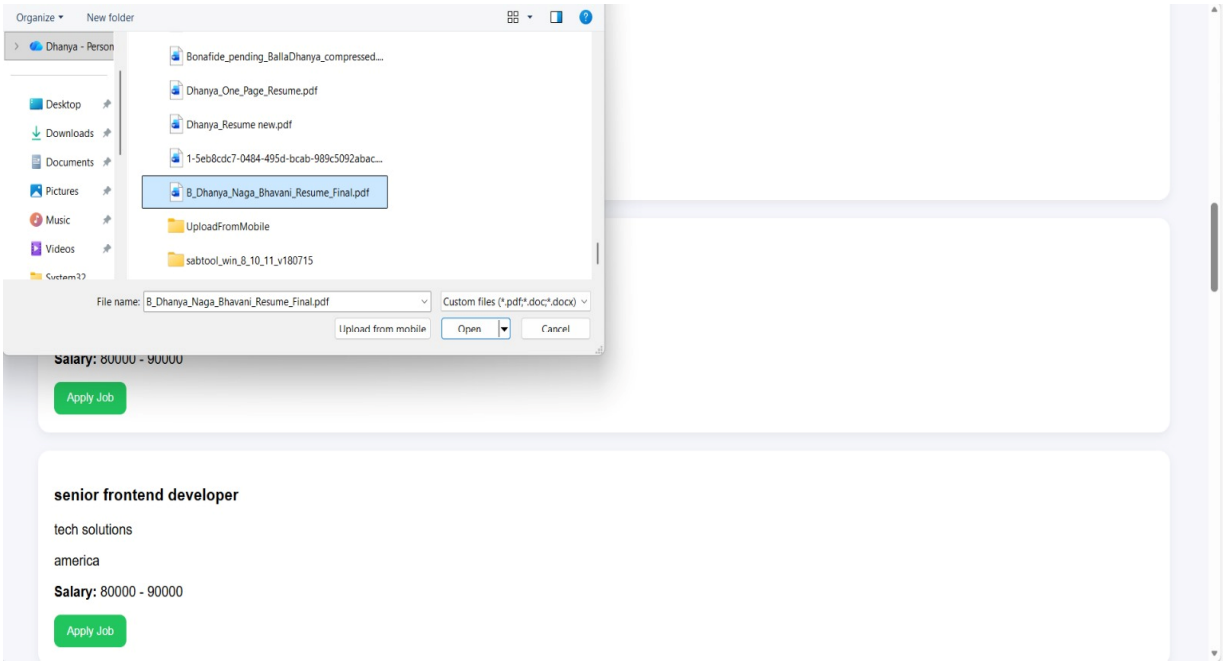

Fig. 5: Job Application interface

D. Admin Dashboard

The admin dashboard provides system administrators with full control over the job portal. Through this interface, administrators can manage job postings, user accounts, and job applications.Administrators can add, update, or remove job listings and monitor application records. This module helps maintain the accuracy and reliability of the job portal while ensuring that job listings remain updated.

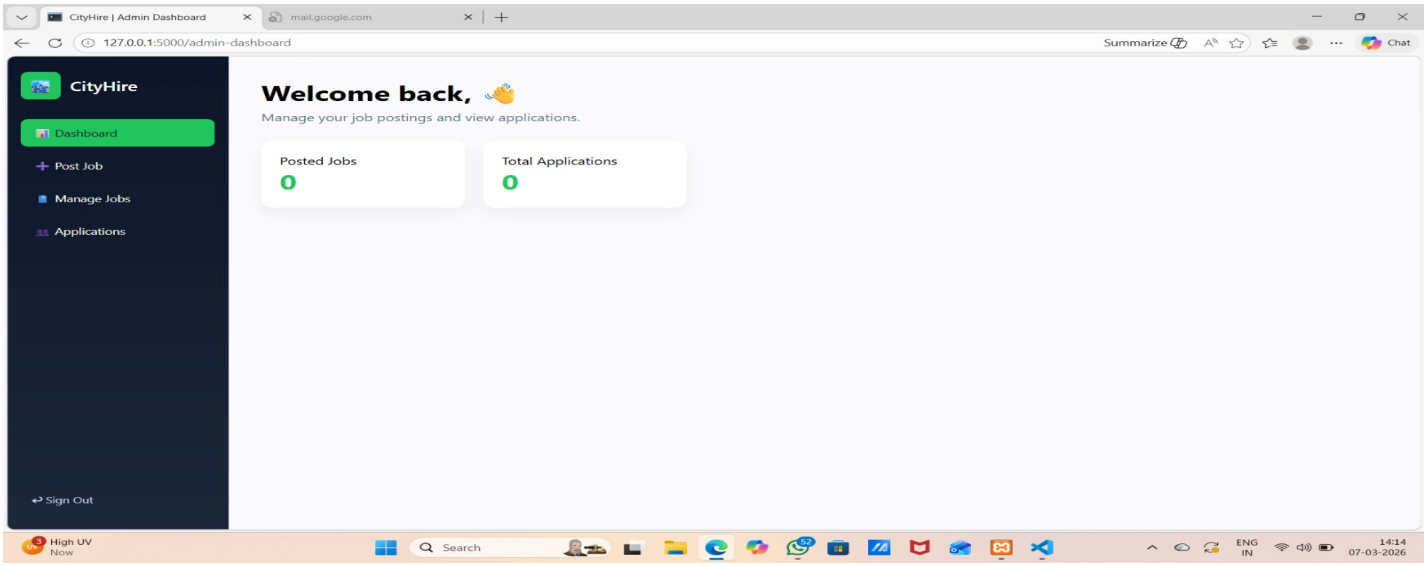

Fig. 6: Admin Dashboard

E. Functional Testing

Functional testing was conducted to verify that each module of the system performs as expected. The testing process included validating user authentication, job searching functionality, application submission, and administrative management features.

TABLE III: FUNCTIONAL TESTING RESULTS OF THE CITY HIRE JOB PORTAL

Test Scenario	Module Tested	Result
User Registration	User Module	Passed
User Login	Authentication Module	Passed
Job Search	Job Module	Passed
Job Application	Application Module	Passed
Profile management	User Profile Module	Passed
Job Posting	Admin Module	Passed
Application Management	Admin Dashboard	Passed
Database Operations	MySQL Database	Passed

F. Usability Observation

The usability of the system was evaluated by observing how users interact with the platform during the job search and application process. The results showed that users were able to navigate the portal easily and complete job applications without significant difficulty.

The intuitive interface, organized job listings, and simplified application process contributed to an improved user experience. Users were able to quickly locate job opportunities and submit applications efficiently.

Overall, the developed City Hire – Local Job Portal successfully demonstrates the implementation of an integrated web-based platform that simplifies the job searching and recruitment process for both job seekers and administrators.

V. DISCUSSION AND LIMITATIONS

A. Challenges in Developing an Online Job Portal

Although the proposed City Hire – Local Job Portal successfully demonstrates a web-based platform that connects job seekers with employment opportunities, several challenges arise during the development and implementation of such systems. Job portals require accurate management of job listings, user profiles, and application records. Ensuring that all information remains updated and reliable is essential for maintaining the effectiveness of the platform.

One of the key challenges is maintaining the quality and relevance of job postings. Employers must provide accurate job descriptions and requirements, while the system must ensure that outdated or inactive job listings are removed or updated regularly. Proper data management mechanisms are therefore necessary to maintain the integrity of the platform.

B. System Architecture Considerations

The current implementation of the City Hire Job Portal follows a centralized web application architecture, where the frontend interface, backend application logic, and database system operate together to deliver platform services.

This architecture is suitable for small to medium-scale applications and allows easier development, maintenance, and deployment. However, as the number of users and job listings increases, the system may require architectural improvements to handle higher workloads.

Large-scale job portals typically adopt scalable architectures such as microservices or cloud-based deployments, which allow different system components such as user management, job posting, and application processing to operate independently.

While such architectures improve scalability and performance, they also introduce additional complexity in system design and management.

C. Infrastructure and Network Dependence

As a web-based platform, the City Hire Job Portal relies heavily on stable internet connectivity for both users and administrators. Job seekers require reliable network access to browse job listings, submit applications, and manage their profiles.
In environments with limited internet connectivity, users may experience delays when loading pages or submitting job applications. Additionally, server performance and hosting infrastructure play an important role in maintaining system availability.
Future system improvements may include performance optimization, efficient database queries, and enhanced server configurations to ensure smoother user interactions and faster response times.

D. User Trust and System Reliability

As a web-based platform, the City Hire Job Portal relies heavily on stable internet connectivity for both users and administrators. Job seekers require reliable network access to browse job listings, submit applications, and manage their profiles. In environments with limited internet connectivity, users may experience delays when loading pages or submitting job applications. Additionally, server performance and hosting infrastructure play an important role in maintaining system availability.Future system improvements may include performance optimization, efficient database queries, and enhanced server configurations to ensure smoother user interactions and faster response times.

E. Challenges and Potential Improvements

TABLE IV: CHALLENGES AND POTENTIAL IMPROVEMENTS FOR THE CITY HIRE JOB PORTAL

Challenge Area	Description	Possible Improvement
Scalability	System performance may decrease as the number of users and job postings increases	Adoption of scalable cloud infrastructure and load balancing
Network Connectivity	Users with slow internet connections may experience delays	Optimization of frontend performance and efficient page loading
Data Accuracy	Job listings must remain updated and relevant	Implementation of automated job expiration and update mechanisms
Security	Protection of user accounts and application data	Implementation of stronger authentication and encryption techniques
User Accessibility	Some users may face difficulties navigating the platform	Improved user interface design and simplified navigation

VI. CONCLUSION AND FUTURE WORK

A. Conclusion

The development of the City Hire – Local Job Portal demonstrates the effectiveness of a web-based platform designed to connect job seekers with local employment opportunities in a centralized digital environment. The system simplifies the traditional job searching process by providing a single platform where users can explore job listings, submit applications, and manage their profiles efficiently.

The platform was implemented using a modern web development approach that integrates frontend technologies for user interaction with backend services responsible for application logic and data management. The use of a structured database ensures that job postings, user profiles, and application records are stored and retrieved efficiently.

Through the implementation of this system, job seekers are able to quickly discover employment opportunities based on their preferences, while administrators can manage job listings and user activities through a dedicated administrative dashboard. This centralized approach improves the efficiency of the recruitment process and reduces the dependency on traditional job searching methods.

Functional testing and system evaluation confirmed that the core features of the platform—including user registration, job search functionality, application submission, and administrative management—operate correctly and provide a smooth user experience. The structured workflow of the application enables users to navigate the system easily and complete job applications without unnecessary complexity.

Overall, the City Hire Job Portal demonstrates the practical potential of web-based recruitment systems in improving accessibility to local employment opportunities. By providing a reliable and organized digital platform, the system contributes to simplifying communication between employers and job seekers while promoting a more efficient hiring process.

B. Future Work

Although the proposed system successfully fulfills its primary objectives, several enhancements can be explored in future developments to improve functionality, scalability, and user experience.One potential improvement is the development of a mobile application version of the platform to allow users to search and apply for jobs more conveniently through smartphones. Mobile accessibility would significantly increase user engagement and platform reach.Another important enhancement involves integrating advanced job recommendation algorithms that analyze user profiles, skills, and job preferences to suggest relevant employment opportunities automatically.The platform can also be expanded to support employer accounts, allowing companies to directly post job vacancies and manage applications through a dedicated employer interface.Future improvements may also focus on implementing stronger security mechanisms, such as multi-factor authentication and encrypted data storage, to ensure better protection of user information and system integrity.In addition, the system could incorporate analytics and reporting features to help administrators analyze job trends, application statistics, and user behavior patterns. These insights can assist in improving recruitment strategies and platform performance. Another possible extension is the integration of notification systems, such as email or mobile notifications, to inform users about new job postings, application updates, and interview invitations.Further optimization of the system architecture could also improve scalability, allowing the platform to support a larger number of users and job listings without performance degradation.By incorporating these improvements, the City Hire – Local Job Portal can evolve into a more comprehensive recruitment platform that supports both job seekers and employers more effectively while adapting to the growing demands of modern digital employment services.

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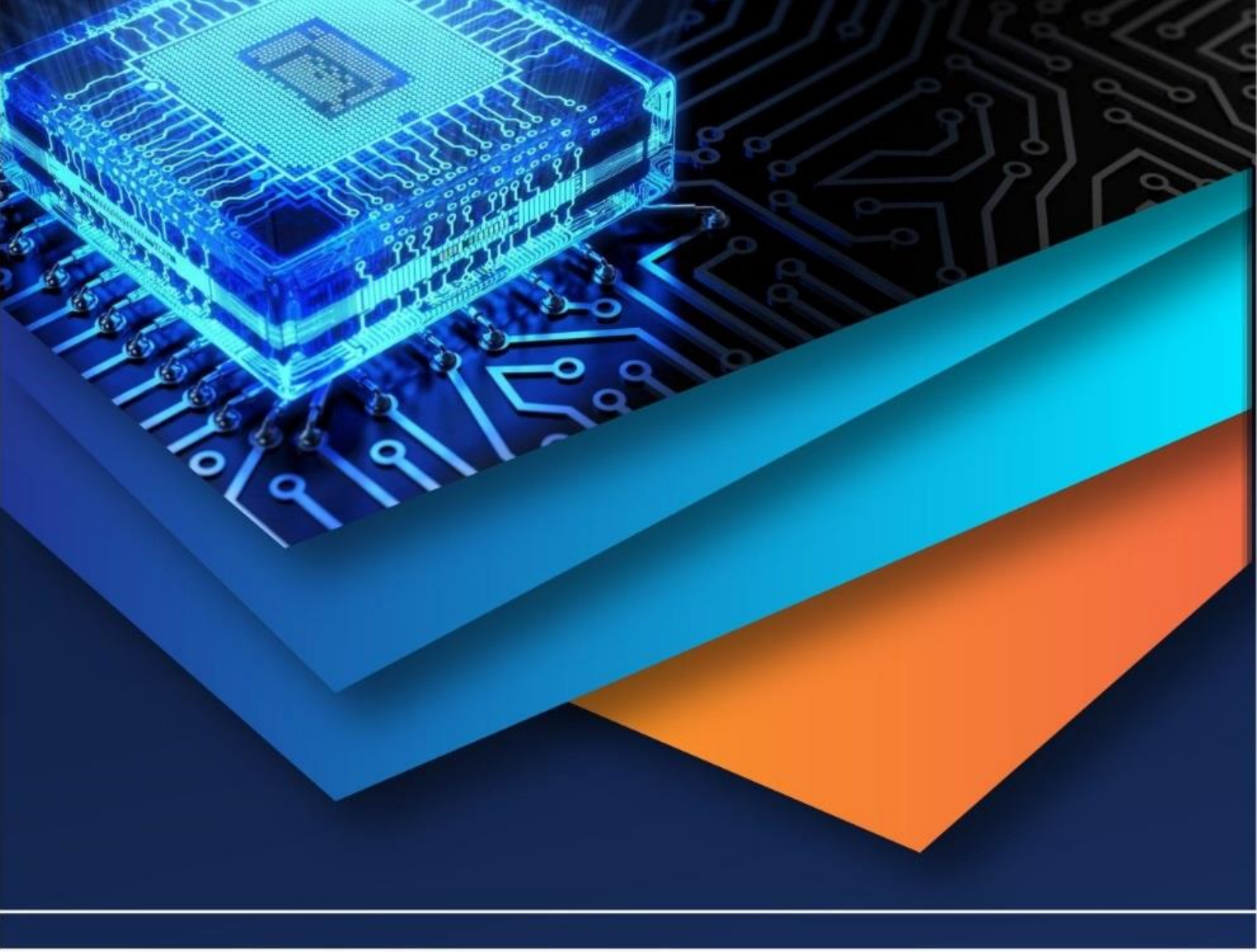

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