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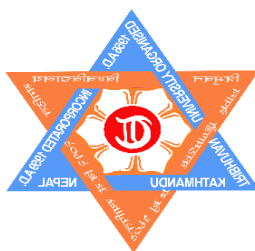
A PROJECT REPORT

On

JOB PORTAL SYSTEM

In partial fulfillment of the requirements for the degree of Bachelor of Computer Applications

Submitted to:

Department of Computer Application

Swastik College

Chardobato, Bhaktapur

Submitted by:

Bagish Gautam(113102070)

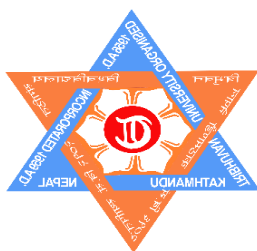Bisham Shrestha(113102073)

November, 2024

Tribhuvan University

Faculty of Humanities and Social Sciences

Swastik College

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SUPERVISOR'S RECOMMENDATION

I hereby recommend that this project prepared under my supervision by BAGISH GAUTAM & BISHAM SHRESTHA entitled "**JOB PORTAL SYSTEM**" in partial fulfillment of the requirements for the degree of Bachelor of Computer Application is recommended for the final evaluation.

……………………………

Shristi Khatiwada

Supervisor

Lecturer, BCA Department

Swastik College

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Faculty of Humanities and Social Sciences

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LETTER OF APPROVAL

This is to certify that this project prepared by BAGISH GAUTAM & BISHAM SHRESTHA entitled "**JOB PORTAL SYSTEM**" in partial fulfillment of the requirements for the degree of Bachelor in Computer Application has been evaluated. In our opinion, it is satisfactory in the scope and quality as a project for the required degree.

………………………………	………………………………
Shristi Khatiwada	Ms. Sristi Khatiwada
Supervisor	Coordinator
Lecturer, Swastik College	BCA Department, Swastik College
………………………………	………………………………
Internal Examiner	External Examiner

ACKNOWLEDGEMENT

We would like to extend our heartfelt gratitude to our supervisor and coordinator, Ms. Shristi Khatiwada, for her invaluable guidance and support throughout the development of our Job Portal System project. Her expertise, dedication, valuable encouragement, and the friendly environment she provided played a vital role in shaping the successful completion of this project.

Finally, we would like to express our sincere thanks to all our friends, seniors, and others who helped us directly or indirectly during this project work.

With Regards:

Bagish Gautam

Bisham Shrestha

ABSTRACT

The Job Portal System is a web-based application designed to bridge the gap between job seekers and employers, offering a streamlined and efficient recruitment platform. It enables users to create profiles, search for job opportunities, and apply for positions, while employers can post job listings, manage applications, and track candidates. Developed using HTML, CSS, and JavaScript for the front end, and MySQL and PHP for the backend, the system addresses key requirements such as user registration, job posting, application tracking, and job search functionalities. Its primary goal is to enhance the job search process, improve posting efficiency, and ensure secure, user-friendly interactions. Testing revealed the system's effectiveness in facilitating seamless connections and efficient job management, making it a valuable tool for job seekers and employers alike.

Keywords: *Job Portal System, Web-based Application, Job Search, Employer Dashboard, Recruitment, Efficiency, Security*

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LIST OF ABBREVIATIONS

BCA	Bachelors of Computer Applications
CASE	Computer Aided Software Engineering
CSS	Cascading Stylesheets
DFD	Data Flow Diagram
ERD	Entity Relation Diagram
HTML	Hypertext Markup Language
ICT	Information Technology
INFO	Information
IDE	Integrated Development Environment
JS	JavaScript
MYSQL	My Structured Query Language
PHP	Hypertext Preprocessor
SDLC	Software Development Life Cycle
UI	User Interface

CHAPTER 1: INTRODUCTION

1.1 Introduction

The Job Portal System is a comprehensive web-based application designed to streamline the recruitment process by managing job listings, user profiles, and application workflows. Traditionally, recruitment involved manual processes with paper-based records and physical interviews, which often led to inefficiencies, data redundancy, and the risk of losing critical information. This system addresses these challenges by providing a secure, efficient, and accessible digital platform for job seekers and employers, enhancing the overall experience and productivity in the recruitment cycle.

Developed using HTML, CSS, JavaScript, MySQL, and PHP, the system leverages widely adopted and robust technologies to ensure reliability and ease of development. These technologies were chosen for their versatility and familiarity, enabling efficient implementation within a development timeline of approximately three and a half months.

Key features of the Job Portal System include user registration, profile management, and application tracking for job seekers, allowing them to search for opportunities and monitor their application statuses effortlessly. Employers benefit from features such as job posting, application review, and candidate management, all integrated into a user-friendly interface. The system also includes advanced functionalities for managing and organizing data, reducing manual effort and the potential for errors. With efficient navigation, intuitive design, and enhanced security measures, the Job Portal System offers a superior alternative to traditional recruitment methods, ensuring seamless interactions and effective data management for both job seekers and employers.

1.2 Problem Statement

The conventional approach to job recruitment often relies on outdated methods such as manual resume reviews, physical interviews, and record-keeping, which come with several risks and inefficiencies. Manual recruitment processes are prone to issues like data loss, redundancy, and delays, which can lead to a slow and cumbersome hiring process.

To overcome these challenges, the digitalization of job recruitment through a **Job Portal System** offers significant advantages. It eliminates data redundancy, expedites the job application and hiring process, provides easy data retrieval, and enhances security with authorized access controls for both job seekers and employers. By transitioning from traditional methods to a digital platform, the **Job Portal System** introduces a more efficient, reliable, and user-friendly approach to job recruitment, improving both the candidate experience and employer management.

1.3 Objectives

The main objective of the system is:

i.   To develop an online-based web application for job portal system using PHP and MySQL.

1.4 Scope and Limitation

1.4.1 Scope of the project:

The **Job Portal System** project aims to create an efficient and user-friendly platform for job seekers and employers. It provides job seekers with easy access to a variety of job listings, while employers can manage job posts and track applicants seamlessly. Security is prioritized with a robust authentication system, ensuring only authorized users can access sensitive data. Job seekers can conveniently apply for jobs, track their application statuses, and manage their profiles, including updating personal information. The system also includes a password recovery mechanism for user convenience, ensuring a smooth and secure experience for both job seekers and employers.

1.4.2 Limitation of the project:

Some of the limitations of the **Job Portal System** are:

i. **Limited to Small-Scale Recruitment**: This system is more effective for small to medium-sized recruitment operations and may lack the complex features required for large-scale organizations with extensive recruitment needs.

ii. **Basic Security Features**: The system primarily focuses on ease of use and accessibility, and while it has standard security measures, it may lack the advanced security protocols needed for highly sensitive data or larger-scale applications.

1.5 Report Organization

The report organization is divided into five different chapters. The five chapters of the report are:

1.5.1 Introduction

This chapter includes the introduction of the system the problem statement, objectives, the scope and the limitations of the 'Job Portal System'.

1.5.2 Background Study and Literature Review

This chapter includes the description of fundamental theories, general concepts and terminologies related to the project. It also consists the review of the similar literature and works carried out by different authors, publishers in past.

1.5.3 System Analysis and Design

This chapter summarizes the functional and the non-functional requirements of the project. Different diagrams like use case diagram, DFD, Gantt chart, E-R diagram, schema design etc. are used to give the structure or design for the system.

1.5.4 Implementation and Testing

This chapter describes the different technologies or tools used for the entire development process of the Front-end as well as the Back-end development of the application. It also defines the different implementation details of the modules and the testing cases such as unit testing and system Testing.

1.5.5 Conclusion and Recommendations

This chapter provides a brief summary of the Job Portal System project, encapsulating its main objectives, key features, and overall significance of the system. It also mentions about the future recommendations and improvements for the system that can be done in the near future.

CHAPTER 2: BACKGROUND STUDY AND LITERATURE REVIEW

2.1 Background Study

A **Job Portal System** is an online platform designed to help individuals find job opportunities and employers find suitable candidates. It serves as a digital space where job seekers can create profiles, search for available jobs, and apply for positions, while employers can post job openings and review applications. Traditionally, job recruitment processes were carried out manually or through physical resumes, which were time-consuming, inefficient, and prone to errors. The **Job Portal System** automates and streamlines the recruitment process, making it more efficient and accessible for both job seekers and employers.

The **Job Portal System** allows users to manage their profiles, track job applications, and update their information easily. Employers can seamlessly post job listings, manage candidates, and review applications—all in one place. Unlike traditional recruitment methods that rely on paper-based records and interviews, this system digitizes the entire process, offering enhanced features such as real-time job posting, application tracking, and efficient communication between employers and candidates.

The primary goal of the **Job Portal System** is to provide an efficient and convenient platform that connects employers with qualified candidates while reducing the time and effort involved in traditional hiring processes. With user-friendly navigation and features that cater to both job seekers and employers, the system ensures a smooth experience for all users. The system is designed to handle job-related data and make job hunting and recruitment a more efficient and modernized process.

2.2 Literature Review

A thorough investigation of existing job portal systems will provide valuable benchmarks and help us identify unique features that can differentiate our project.

For instance, websites like [1]**LinkedIn** allow users to create professional profiles, apply for jobs, and manage their job applications while providing personalized job recommendations based on skills, experience, and interests. The platform also facilitates networking, enabling job seekers and employers to connect and communicate directly, thus enhancing the recruitment process.

Similarly, [2]**Indeed** offers a comprehensive platform where users can search for job opportunities based on job type, location, salary range, and other filters. It also provides insights into companies, including reviews and ratings from employees, helping users make informed decisions.

[3]**Glassdoor** on the other hand, focuses on transparency by allowing users to explore company reviews, salaries, and interview experiences shared by others. This helps job seekers prepare better and align their expectations with industry standards.

[4]**Monster** enables job seekers to upload resumes for analysis and matching with relevant job opportunities using AI-based algorithms. It also provides tools like career advice, interview tips, and salary comparisons, making the job search process more user-centric.

[5] **Naukri.com** supports advanced search features for job seekers and includes tools for employers to post jobs, shortlist candidates, and even conduct preliminary screenings. The platform emphasizes bridging the gap between employers and job seekers through its end-to-end recruitment solutions.

By analyzing these systems, we can identify key features to incorporate into our job portal, such as personalized job recommendations, automated resume matching, enhanced search filters, and features for direct communication between job seekers and employers. These benchmarks will guide us in developing a system that not only caters to current market demands but also introduces innovative functionalities to stand out in the competitive landscape.

CHAPTER 3: SYSTEM ANALYSIS AND DESIGN

3.1 System Analysis

During system analysis, all the functional and non-functional requirements are analyzed and then designing of the system is carried out according to the requirements.

3.1.1 Requirement Analysis

A. Functional Requirements

The functional requirements of the library system are:

i.   The system should allow users to verify their information and then register them to create a new account.

ii. Only users with valid usernames and passwords should be able to log in to the system.

iii. The system should allow users to log out after they have finished using the system.

iv. The system should allow employers to post new job listings, update existing ones, and delete outdated job postings.

v.   The system should allow employers to add, update, and delete user (job seeker) details.

vi. The system should automatically update the status of job applications once candidates apply or the employer reviews them.

vii. The system should track detailed records of job applications, including job seeker details, application date, and status of the application.

viii. The system should allow job seekers and employers to view all records of job listings, applications, and user profiles.
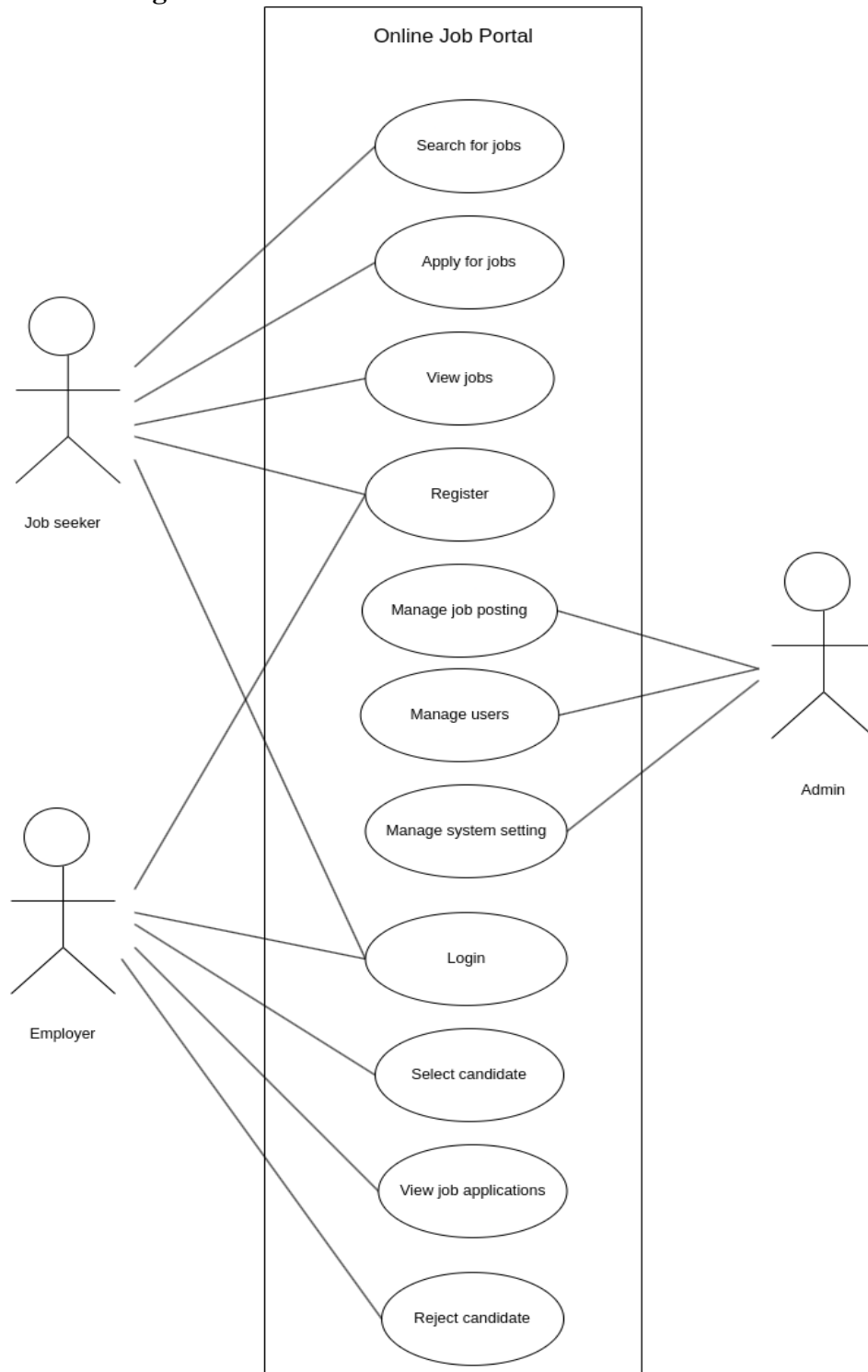
Use Case Diagram:

Figure 3. 1: Use Case Diagram of Job Portal System

B. Non-Functional Requirements

The non-functional requirements of the project are:

i. The application should be efficient, ensuring quick job searches, seamless data transactions, and minimal processing delays for both job seekers and employers.

ii. The system should be user-friendly, with an intuitive interface that allows users to perform tasks efficiently and interactively, ensuring ease of use for all skill levels.

iii. The system should have robust security measures in place to protect against unauthorized access. Only authorized users and administrators should be able to access and modify data.

iv. The software should be portable and platform-independent, capable of running smoothly on different operating systems and devices, ensuring widespread accessibility.

3.1.2 Feasibility Analysis

a) **Technical Feasibility**

The job portal system is technically feasible as all the necessary tools and resources for its development are readily available. We have access to essential software such as HTML, CSS, JavaScript, and PHP, which are well-suited for building the system. The required frameworks are capable of performing the necessary tasks. Using free Integrated Development Environments (IDEs) like VS Code and XAMPP simplifies the development process, providing all the required components in one place. Therefore, the technical foundation for developing and implementing the system is solid, ensuring smooth execution of the project.

b) **Economic Feasibility**

Building this system incurs minimal expenses, as we are handling all the coding in-house and utilizing free tools like VS Code and XAMPP. With these widely available and cost-free development environments, there is no significant financial burden. This approach ensures that the project remains economically viable and feasible, without the need for additional investments in costly software or resources.

c) **Operational Feasibility**

The system effectively demonstrates its operational feasibility through its user-friendly design, ensuring that users can easily navigate and utilize its features. The operations are smooth and well-organized, with minimal maintenance requirements, which enhances the overall efficiency in managing the tasks and processes of the library system.

d) **Schedule Feasibility**

The project was planned to be succeeded within 2.5 months to overcome the delays. And the timeline that we set met the project expectations. So, the application is feasible in case of time constraints.
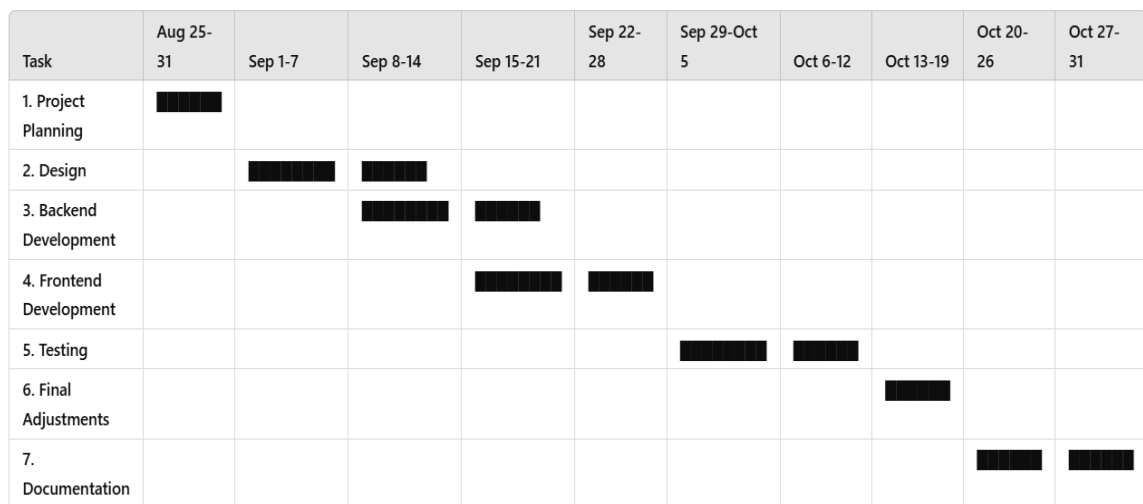
Task	Aug 25-31	Sep 1-7	Sep 8-14	Sep 15-21	Sep 22-28	Sep 29-Oct 5	Oct 6-12	Oct 13-19	Oct 20-26	Oct 27-31
1. Project Planning	■■■■									
2. Design		■■■■■	■■■■							
3. Backend Development			■■■■■	■■■■						
4. Frontend Development				■■■■■	■■■■					
5. Testing						■■■■	■■■■			
6. Final Adjustments								■■■		
7. Documentation									■■■	■■■■

Figure 3. 2: Gantt Chart

3.1.3 Data Modeling: E-R Diagram

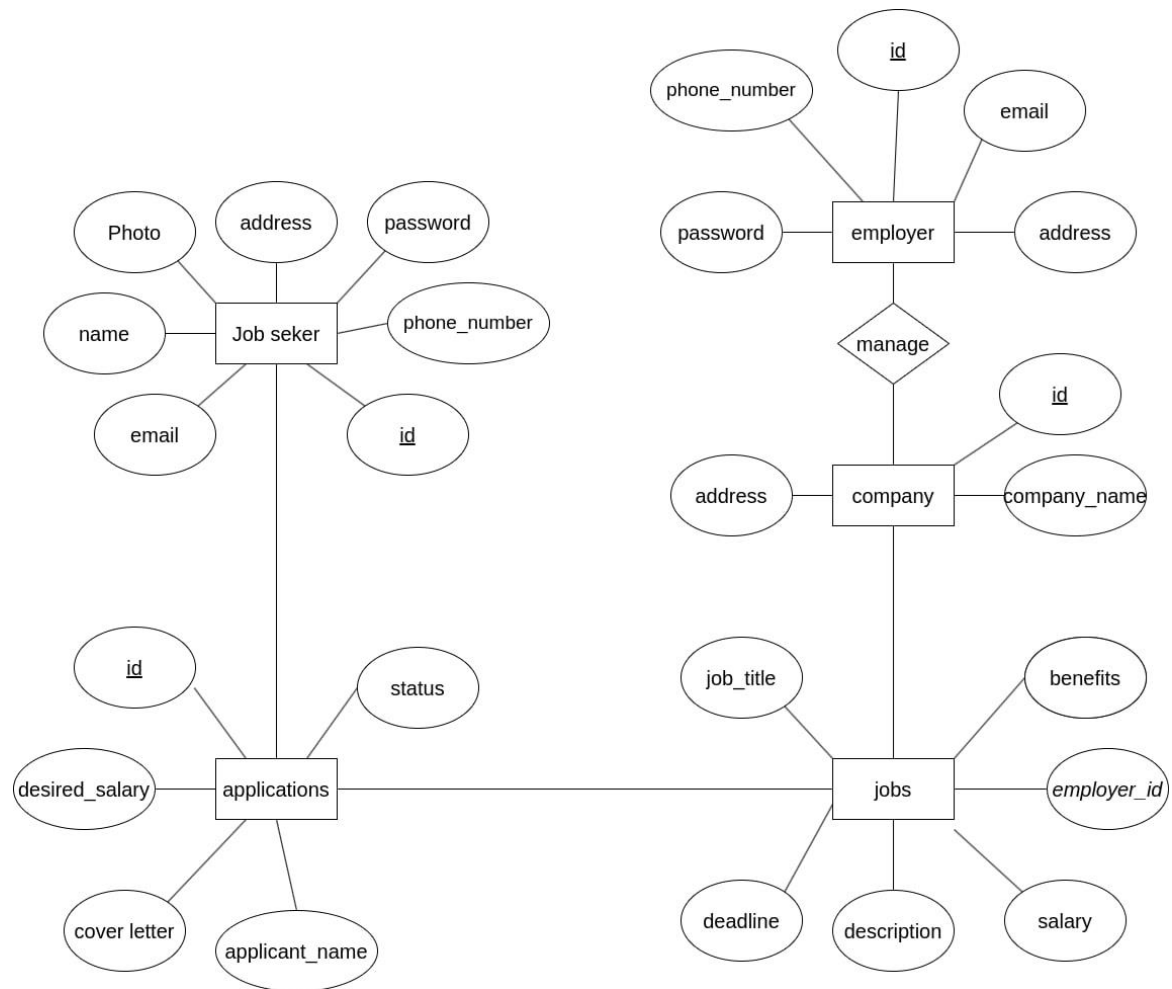The ER diagram of the system is given below:-

Figure 3. 3: E-R Diagram

3.1.4 Process Modeling (DFD)

The DFD of the system is given below:
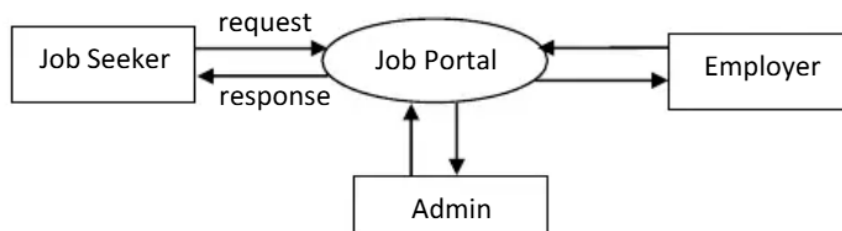
Level 0

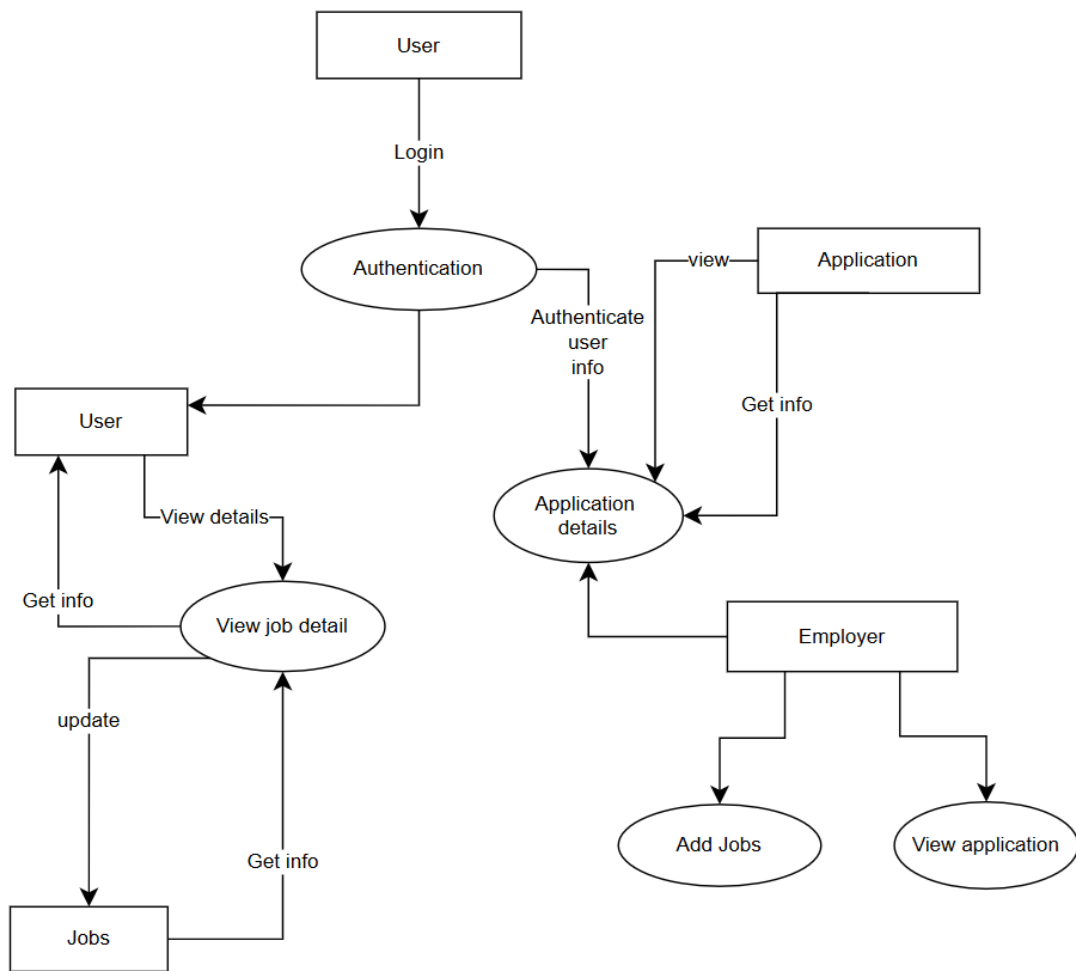Figure 3. 4: Level 0 DFD

Figure 3. 5: Level 1 DFD

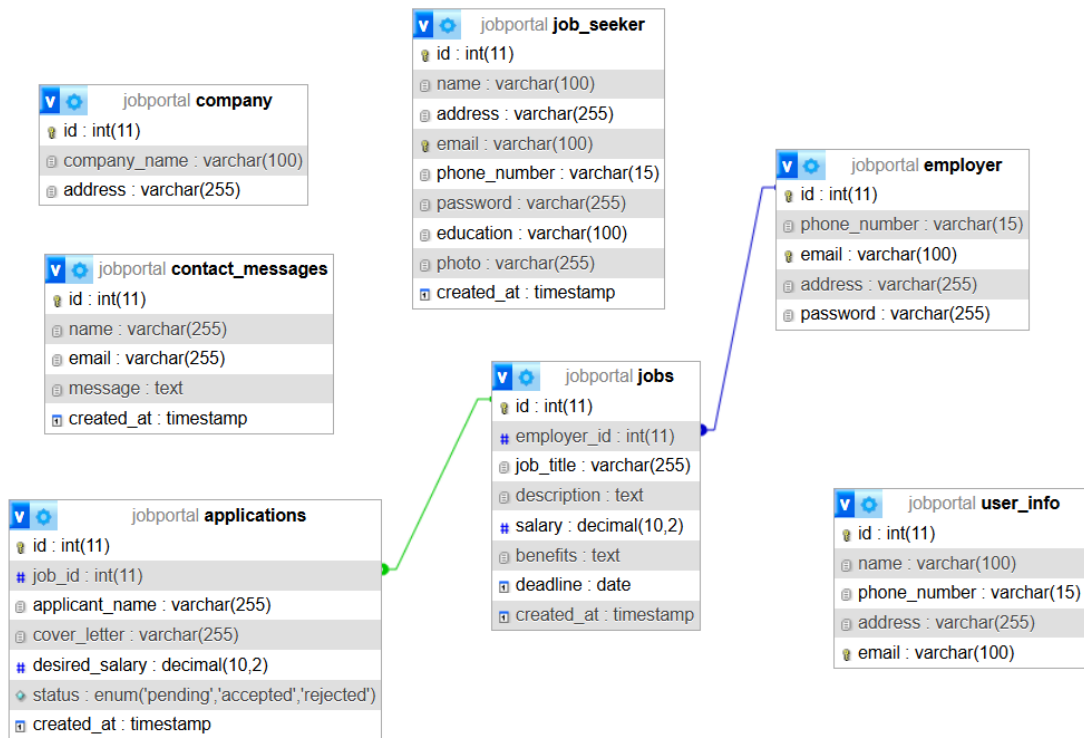## 3.2 System Design

3.2.1 Database Design Schema

Figure 3.6: Database Schema Diagram

3.2.2 Interface Design (UI Interface)

Figure 3. 6: Home page UI

Figure 3. 7: Register page U

CHAPTER 4: IMPLEMENTATION AND TESTING

4.1 Implementation

4.1.1 Tools Used (CASE Tools, Programming Languages, Database Platforms)

I. FRONT END TOOLS

The front-end part of application is designed using HTML, CSS and JavaScript.

i. **HTML**

Html, which stands for Hypertext Markup Language, is a foundational language used in web development for creating web pages and websites. In our project, we used html to create and structure sections, headings, links, paragraphs using various tags and elements. HTML ensures structured content, compatibility, accessibility, search engine optimization, integration, scalability, and community support in web development. As, HTML is fast, easy and gives good interface, we chose it as a front-end tool.

ii. **JavaScript**

JavaScript is a programming language used in web development to make the website responsive and interactive by adding different functionalities of it. Mainly, JavaScript was used for client-side validation, animations and to add the dynamic behavior to the web page.

iii. **Bootstrap:**

It is one of the most popular HTML, CSS and JavaScript Framework for developing built responsive websites. The primary purpose of adding it to a web project is to apply Bootstrap's choices of color, size, font and layout to that project. Once added to a project, Bootstrap provides basic style definitions for all HTML elements. In addition, developers can take advantage of CSS classes defined in Bootstrap to further customize the appearance of their contents.

II. BACK-END TOOLS

The back-end part of the application is modeled using PHP.

i. **PHP**

Php is used in web development to create dynamic web page and to add connectivity to database. It is also used for server-side validation. In this project, PHP as backend language to connect to database and to help in performing the CRUD operations.

III. DATABASE TOOLS

i. **MYSQL**

We used MySQL for storing all the information about the job portal system. Also, the crude operations in this project are performed with the aid of it. XAMPP, a software distribution which provides the Apache web server, MySQL and database all in one package was used. XAMPP was used to develop a local server for data storage and providing base for database.

IV. DESIGN TOOLS

i. **Draw.io:**

This tool was used to create diagramming tool like DFD, ER diagram for system analysis and design.

4.1.2 Implementation Details of Modules (Description of procedures/functions)

Different modules of the job portal system are:

a. **Registration Module:**

The registration module includes separate registration forms for job seekers and employers.

- **Job Seekers Registration**: Fields include full name, email, password, skills, and experience. Validation ensures required fields are filled correctly.

- **Employer Registration**: Fields include company name, email, password, company description, and contact information. Validation rules ensure completeness.

- Upon successful registration, each user is assigned a unique ID, and credentials are stored in the database. An email confirmation can be sent for verification.

b. **Login Module:**

The login module enables job seekers and employers to access the system.

- **Input Fields**: Username/email and password fields.

- **Functionality**: After inputting valid credentials, users can access their respective dashboards.

- **Authentication**: The module checks the credentials against the database and only allows access for valid users. Failed login attempts result in error messages.

c. **Manage User Module:**

The admin uses the manage user module to maintain user data for both job seekers and employers.

- **Functionality**: The admin can add, delete, or modify user data like user ID, name, email, role (job seeker or employer), and account status.
- **Access Control**: This module is restricted to admin users, ensuring sensitive user data is protected.
- **Database Update**: Changes made by the admin are directly reflected in the database.

d. **Manage Profile Module:**

The manage profile module allows both job seekers and employers to manage their profile details.

- **Job Seekers Profile**: Allows updating personal information, adding/updating resumes, and managing skills and job preferences.
- **Employers Profile**: Employers can update company information, including company profile, job posting history, and contact information.
- **Functionality**: The module validates inputs and saves updates to the database for future use.

e. **Job Posting and Application Module**

This module enables employers to post job listings and manage applications from job seekers.

- **Job Posting**: Employers can add job titles, descriptions, requirements, and salary details. Validation ensures required fields are populated.
- **Application Tracking**: Job seekers can apply to posted jobs. Employers can view and manage applications, update application status, and filter applicants.
- **Availability Check:** Each job posting has a status field indicating whether it is open or closed for applications.
- **Database Management:** Both job posts and applications are stored and managed within the database, allowing easy access and updates.

f. View Report Module:

The report module provides insights into job portal activities and user interactions.

- **For Admins**: Access to generate reports showing job listings, applications received, active users, and popular job categories.
- **For Employers**: Ability to view reports on application statistics for their job postings.
- **Display and Export**: Reports are displayed in tabular or graphical formats, with options to export to PDF or Excel.
- **Data Range Filtering**: Admins can filter reports by date range, job category, and user activity level, providing insights into usage patterns.

4.2 Testing

4.2.1 Test cases for Unit Testing

Table 4.1.2: Test Cases for User Registration and Login Functionality

Test Case ID	Test Name	Test Case Details	Expected Result	Test Result	Status
TC001	Register Job Seeker	Enter valid job seeker details and submit registration form	Job seeker registered successfully	Pass	✓
TC002	Register Employer	Enter valid employer details and submit registration form	Employer registered successfully	Pass	✓
TC003	Job Seeker Login	Enter valid job seeker credentials and log in	Login successful, redirected to dashboard	Pass	✓
TC004	Employer Login	Enter valid employer credentials and log in	Login successful, redirected to dashboard	Pass	✓
TC005	Invalid Job Seeker Login	Enter invalid job seeker credentials and try to log in	Error message displayed, login unsuccessful	Pass	✓

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Test Case ID	Test Name	Test Case Details	Expected Result	Test Result	Status
TC006	Invalid Employer Login	Enter invalid employer credentials and try to log in	Error message displayed, login unsuccessful	Pass	✓

Table 4. 1: Job Posting Functionality

Test Case ID	Test Name	Test Case Details	Expected Result	Test Result	Status
TC007	Post New Job	Employer enters all required job details and submits form	Job posted successfully, appears in job listing	Pass	✓
TC008	Edit Job Post	Employer edits an existing job post and submits changes	Job details updated successfully	Pass	✓
TC009	Delete Job Post	Employer deletes an existing job post	Job post removed from job listings	Pass	✓

Table 4. 2: Job Search Functionality

Test Case ID	Test Name	Test Case Details	Expected Result	Test Result	Status
TC010	Search Jobs by Title	Job seeker enters a job title in search bar	Relevant job listings appear in results	Pass	✓
TC011	Search Jobs by Location	Job seeker enters a location in search bar	Relevant job listings appear in results	Pass	✓
TC012	No Matching Job Results	Job seeker searches for a non-existent job title	Message displayed: "No jobs found"	Pass	✓

CHAPTER 5: CONCLUSION AND RECOMMENDATION

5.1 Lesson Learnt/Outcome

In the development and implementation of the Job Portal System project, several important lessons were learned, and valuable outcomes were achieved. One of the biggest challenges faced during the development process was designing the user interface and creating different design diagrams, such as ER diagrams, DFDs, and database schemas. We conducted extensive research, referring to online resources, past reports, and samples for guidance. We learned that when creating design diagrams, such as DFDs and ER diagrams, it is crucial to follow established techniques and rules. For DFDs, we needed to clearly show the flow of data using the appropriate symbols. In ER diagrams, we focused on understanding relationships and keys, ensuring consistency for a clear and accurate representation of the database.

A significant lesson learned during the development of this project was the importance of time management. The project had a deadline of approximately 3.5 months, which taught us the value of careful planning, efficient resource allocation, and sticking to a clear schedule to ensure everything was completed on time.

Additionally, we learned the importance of open communication and collaboration within the team to ensure that all elements of the job portal system, such as the interface and functionality, were aligned with the project's objectives. Regular discussions and clear communication helped resolve design challenges quickly and ensured that everyone was on the same page, avoiding delays and improving the overall cohesion of the project.

5.2 Conclusion

In conclusion, the Job Portal System has been meticulously designed and developed to address the challenges faced by traditional job recruitment methods. By embracing digital solutions, this system not only significantly reduces the manual workload for administrators but also enhances the overall efficiency of job application and hiring processes. The implementation of a robust database, user-friendly interfaces, and effective functionalities for job seekers and employers has successfully achieved the goals of improving job accessibility, streamlining recruitment workflows, and ensuring a seamless experience for both users and administrators.

Through extensive testing, the system has demonstrated its effectiveness in terms of extendibility, portability, and maintainability. It has proven to be particularly well-suited for small to medium-sized job portals, offering a scalable foundation that can be easily adapted and expanded for larger applications in future iterations. This project has laid the groundwork for future improvements and adaptations, ensuring that the job portal system can continue to meet the needs of users and keep pace with the evolving digital landscape.

5.3 Future Recommendations

To improve the Job Portal System, we recommend adding advanced search and filtering options, such as searching by job title, location, industry, or salary range, to help users find job opportunities more efficiently. The user interface can be enhanced with intuitive navigation for a smoother user experience. Additionally, implementing a feature for saving jobs and receiving job alerts via email or notifications would increase convenience, especially for active job seekers. These improvements will make the system more user-friendly, efficient, and effective in future versions.

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