

# **PROJECT REPORT**

(Project Term January- May 2024)

## **JOBHUNTER**

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## DECLARATION

We hereby declare that the project work entitled **JOBHUNTER** is an authentic record of our own work carried out as requirements of Capstone Project for the award of B. Tech degree in from **COMPUTER SCIENCES AND ENGINEERING** Lovely Professional University, Phagwara, under the guidance of **AKASH PUNDIR**, during January to May 2024. All the information furnished in this project report is based on my own intensive work and is genuine.

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## **CERTIFICATE**

This is to certify that the declaration statement made by the student is correct to the best of my knowledge and belief. He /She have completed this Project under my guidance and supervision. The present work is the result of his/her original investigation, effort, and study. No part of the work has ever been submitted for any other degree at any University. The Project is fit for the submission and partial fulfillment of the conditions for the award of B.Tech degree in **COMPUTER SCIENCES AND ENGINEERING** from Lovely Professional University, Phagwara.

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I am indebted to all those who have contributed directly or indirectly to the completion of this project. Your contributions are deeply appreciated.

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## ABSTRACT

The job hunter website acts as a dynamic bridge between job seekers and employers, offering an array of services tailored to each party's needs. For job seekers, the platform serves as a personalized gateway to explore a diverse range of employment opportunities tailored to their unique skills, qualifications, and preferences. Meanwhile, employers benefit from a streamlined process to broadcast job listings, complete with comprehensive descriptions, prerequisites, and insights into their company culture, aimed at attracting top talent. The website's intuitive interface, coupled with its advanced search functionalities, enriches the experience for both job seekers and employers, facilitating effortless navigation and meaningful interactions. By nurturing this seamless connection, the platform cultivates an environment conducive to efficient recruitment practices and the successful pairing of candidates with their ideal employment opportunities.

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# 1. INTRODUCTION

In today's rapidly evolving job market, the quest for talent and opportunity has become more akin to navigating a bustling metropolis than a tranquil countryside. Job seekers, equipped with their diverse skills and ambitions, embark on a relentless pursuit of that perfect career fit, while employers, fueled by their visions of growth and innovation, eagerly seek the right individuals to drive their organizations forward. In this dynamic ecosystem, the need for a dependable and efficient platform to bridge the gap between these two vital components has never been more pronounced.

Enter our job hunter website, a beacon of hope amidst the labyrinth of recruitment processes and job searches. Designed with precision and purpose, our platform serves as the quintessential conduit, seamlessly connecting job seekers and employers through a myriad of tailored services and innovative features. With a user-friendly interface reminiscent of a well-mapped city grid and advanced functionalities akin to cutting-edge navigation tools, our website endeavors to simplify the complexities of the recruitment landscape, paving the way for fruitful interactions and successful job placements.

For job seekers navigating the urban jungle of employment opportunities, our platform serves as a beacon of light, illuminating pathways to careers aligned with their unique skills, qualifications, and aspirations. Through a comprehensive array of search filters and personalized recommendations, job seekers can embark on a guided journey towards their professional destinies, confident in the knowledge that every step taken brings them closer to their goals.

Meanwhile, for employers seeking to fortify their ranks with top-tier talent, our platform stands as a towering skyscraper amidst a sea of competitors. Here, employers can showcase their job listings with meticulous detail, painting vivid portraits of career opportunities within their organizations. Complete with immersive company profiles, comprehensive job descriptions, and interactive multimedia elements, these listings serve as invitations for talented individuals to join the ranks of visionary companies shaping the future.

But our website is more than just a virtual meeting ground; it is a nexus of possibilities, where talent and opportunity intersect to create sparks of innovation and progress. Through intuitive interfaces, robust search functionalities, and seamless communication channels, we empower both job seekers and employers to navigate the urban sprawl of the job market.

## **2. PROBLEM STATEMENT**

### **2.1 PROBLEM ASSESSMENT AND STUDY PARAMETERS**

The "Profile of the Problem" section of a study outlines the specific issue or challenge that the research aims to address. It provides a detailed overview of the problem, its context, and its significance. In this case, the problem pertains to the inefficiencies and challenges faced by both job seekers and employers in the contemporary job market, highlighting the need for an effective platform to bridge the gap between them.

The "Rationale/Scope of the Study," also known as the "Problem Statement," further delves into why the identified problem is worthy of investigation and what aspects of it will be explored in the study. It outlines the boundaries and objectives of the research.

Here's a draft of what these sections might look like:

#### **2.1.1 PROFILE OF THE PROBLEM:**

In today's rapidly evolving job market, both job seekers and employers encounter numerous obstacles and inefficiencies in their quest to connect and engage effectively. Job seekers often struggle to navigate the multitude of job listings, lacking streamlined access to positions that align with their skills, qualifications, and career aspirations. Conversely, employers face challenges in attracting and identifying suitable candidates amidst a sea of applicants, leading to prolonged recruitment cycles and potential mismatches between job requirements and candidate capabilities.

Considering these challenges, there arises a pressing need for a reliable and efficient platform that can serve as a bridge between job seekers and employers, facilitating seamless interaction, and fostering mutually beneficial connections. Such a platform must offer tailored solutions to address the diverse needs of both parties while leveraging advanced technologies to streamline the recruitment process and enhance the overall user experience.

#### **2.1.2 RATIONALE/SCOPE OF THE STUDY:**

The purpose of this study is to investigate the inefficiencies and challenges inherent in the contemporary job market and to develop a comprehensive understanding of the factors contributing to the disconnect between job seekers and employers. By examining the current



landscape of recruitment practices, as well as the evolving needs and expectations of both parties, this research seeks to identify key areas for improvement and innovation.

### **Specifically, this study aims to:**

Assess the existing challenges faced by job seekers in finding suitable employment opportunities, including issues related to job search visibility, relevance, and accessibility.

Investigate the impact of traditional recruitment methods and platforms on the overall efficiency and effectiveness of the hiring process, highlighting areas of inefficiency and potential areas for optimization.

Explore the potential benefits and feasibility of implementing a dedicated online platform to facilitate seamless interaction between job seekers and employers, with a focus on enhancing user experience, improving recruitment outcomes, and fostering meaningful connections.

By addressing these objectives, this study aims to provide valuable insights into the dynamics of the modern job market and to propose innovative solutions to bridge the gap between talent and opportunity, ultimately contributing to the advancement of recruitment practices and the overall economic well-being of society.

The existing system encompasses the current methods and technologies utilized in the recruitment and job search process. It comprises various manual and digital tools employed by both job seekers and employers to navigate the job market and facilitate hiring processes.

## **2.2 EXISTING SOFTWARE**

1. **Job Portals:** Platforms like Indeed, LinkedIn, and Glassdoor serve as popular job portals where job seekers can search and apply for positions posted by employers.
2. **Applicant Tracking Systems (ATS):** Many companies utilize ATS software to manage job applications, screen candidates, and streamline the recruitment process.
3. **Recruitment Management Systems (RMS):** These systems assist employers in managing the entire recruitment lifecycle, from job posting to onboarding.
4. **Career Websites:** Numerous company websites host career sections where they advertise job openings and provide information about their organization and culture.
5. **Social Media Platforms:** Social media platforms, particularly LinkedIn, are used by both job seekers and employers for networking, job postings, and candidate sourcing.

### 3. SYSTEM STUDY AND ANALYSIS

#### 3.1 PROPOSED SYSTEM:

The system to be developed aims to address the limitations and inefficiencies inherent in the existing recruitment ecosystem by introducing innovative features and functionalities. Some key enhancements and new features include:

**Interactive User Interface:** Designing an intuitive and user-friendly interface that enhances the overall user experience for both job seekers and employers.

**Mobile Accessibility:** Ensuring accessibility and functionality across various devices, including mobile phones and tablets, to cater to the needs of users on the go.

**AI-Powered Insights:** Utilizing artificial intelligence (AI) to provide actionable insights and analytics to both job seekers and employers, such as market trends, salary data, and candidate assessments.

**Personalized Recommendations:** Offering personalized job recommendations and career guidance to job seekers based on their profiles and preferences.

**Advanced Matching Algorithms:** Implementing sophisticated algorithms to match job seekers with relevant job listings based on their skills, experience, and preferences.

**Integrated Communication Tools:** Incorporating communication tools within the platform to facilitate seamless interaction between job seekers and employers, including messaging, scheduling, and video interviewing capabilities.

Overall, the system to be developed aims to revolutionize the recruitment process by leveraging cutting-edge technologies and innovative features to enhance efficiency, transparency, and user satisfaction for both job seekers and employers.

#### 3.2 JOBHUNTER: YOUR ONE-STOP JOB HUNTING PLATFORM

JobHunter is a comprehensive job seeking website designed to streamline the recruitment process for both job seekers and employers. It empowers individuals to find their dream jobs and connects them with companies seeking top talent.

### 3.2.1 FEATURES FOR JOB SEEKERS:

**Extensive Job Postings:** Search for jobs across various industries, locations, and experience levels.

**Profile Creation:** Build a compelling profile showcasing your skills, experience, and qualifications.

**Easy Application Management:** Apply for jobs with a single click and track application progress effortlessly.

**Targeted Recruitment:** Reach qualified candidates by posting detailed job descriptions.

**Streamlined Hiring:** Efficiently manage applications, schedule interviews, and make hiring decisions.

**Employer Branding:** Build a strong employer brand to attract top talent.

**Reduced Hiring Costs:** Save time and resources by finding the right fit for your open positions.

**Personalized Interface for Applied Jobs:** You can be able to see the applied job profiles in separate section as per your career and goals that you applied.

### 3.2.2 FEATURES FOR EMPLOYEE:

**Job Posting:** Employers can post job listings specifying job title, description, requirements, and any other relevant details. They can also set the salary range and domain role for the job.

**View Applicants:** Employers can view a list of candidates who have applied for their posted jobs. They can see each applicant's resume, cover letter, and any additional documents provided.

**Manage Job Listings:** Employers can view and manage all the job listings they have posted. They can edit or delete job postings as needed and update the status of each listing (e.g., active, closed).

**Review Resumes:** Employers can review the resumes and profiles of applicants to assess their qualifications, experience, and suitability for the job. They can also view any additional information provided by the candidates.

**Schedule Interviews:** Employers can schedule interviews with selected candidates directly through the call. They can send interview invitations, specify interview details (date, time, location), and track interview schedules.

**Communicate with Candidates:** Employers can communicate with candidates throughout the hiring process. They can send messages, requests for additional information, or notifications about the status of their application.

**Manage Hiring Process:** Employers can track the progress of the hiring process for each job listing. They can move candidates through different stages (e.g., screening, interview, offer) and make hiring decisions based on candidate evaluations.

### **3.2.2 JOBHUNTER ADVANTAGES:**

**User-Friendly Interface:** Enjoy a smooth and intuitive experience for both job seekers and employers.

**Mobile-Responsive Design:** Access JobHunter on any device for maximum convenience.

**Security & Privacy:** Rest assured your personal information is protected with the latest security measures.

#### **Beyond the Basics:**

**Career Resources:** Provide helpful resources for resume writing, interview preparation, and career development.

**Company Reviews:** Read employee reviews to gain insights into company culture and work environment.

**Salary Details:** Get an idea of salary ranges for your desired job titles and locations.

**User Role Management:** Based on the user role specified during login he/she will be able to access the assets of their roles in the platform

JobHunter aims to be the ultimate job-hunting platform, fostering connections, simplifying recruitment, and empowering individuals to build fulfilling careers.

## **4. PROBLEM ANALYSIS**

The problem analysis phase involves identifying and understanding the challenges and opportunities related to the development of a new product or solution. It includes assessing the current situation, analyzing potential obstacles, and recognizing the need for change or improvement. In this phase, stakeholders gather information, conduct research, and define the scope of the project.

### **4.1 PRODUCT DEFINITION:**

Product definition outlines the features, functionalities, and goals of the product to be developed. It defines the purpose of the product, its target audience, and the value it aims to deliver. This phase involves clarifying requirements, setting priorities, and defining success criteria. Product definition serves as a roadmap for the development team, ensuring alignment with stakeholder expectations.

### **4.2 FEASIBILITY ANALYSIS:**

Feasibility analysis evaluates the technical, economic, and operational feasibility of the project. It assesses whether the proposed product can be developed within the constraints of time, budget, and resources. Technical feasibility examines whether the required technology and expertise are available to implement the product. Economic feasibility assesses the project's profitability and return on investment. Operational feasibility evaluates whether the organization can effectively use and maintain the product once it is deployed.

### **4.3 PROJECT PLAN:**

The project plan outlines the activities, timeline, and resources required to complete the project successfully. It includes tasks, milestones, dependencies, and resource allocations. The project plan serves as a roadmap for project execution, guiding the team throughout the development lifecycle. It helps in coordinating activities, managing risks, and tracking progress toward project goals.

Each of these components plays a crucial role in initiating and planning a project effectively. By conducting a thorough problem analysis, defining the product clearly, assessing feasibility, and developing a detailed project plan, stakeholders can set the stage for a successful project execution.

## **5. SOFTWARE REQUIREMENT ANALYSIS**

### **5.1 INTRODUCTION:**

Software Requirement Analysis is a critical phase in the software development lifecycle, where the needs and expectations of stakeholders are identified, documented, and analyzed to form the foundation for designing and building the software solution. This process involves gathering, documenting, and validating requirements to ensure that the final product meets the desired objectives and addresses the identified problems or opportunities effectively.

### **5.2 GENERAL DESCRIPTION:**

The general description provides an overview of the software solution to be developed, including its purpose, scope, and target users. It outlines the high-level functionalities and features that the software will offer, as well as any constraints or limitations that need to be considered during development. This section sets the context for the specific requirements by providing stakeholders with a clear understanding of what the software aims to achieve and how it will be used.

### **5.3 SPECIFIC REQUIREMENTS:**

Specific requirements detail the functional and non-functional specifications that the software must meet to fulfill the needs of stakeholders. Functional requirements describe the specific actions and behaviors that the software should perform, such as user interactions, data processing, and system operations. Non-functional requirements specify the qualities or attributes of the software, such as performance, reliability, security, and usability.

Specific requirements are typically organized into categories and documented using various techniques such as use cases, user stories, and system requirements specifications. These requirements serve as the basis for design, development, testing, and validation activities throughout the software development process, ensuring that the final product meets the expectations of stakeholders and satisfies the defined objectives.

By conducting thorough software requirement analysis, stakeholders can gain a clear understanding of the needs and expectations associated with the software solution, enabling them to make informed decisions and guide the development process effectively.

## 6 TECHNOLOGIES

The development of JobHunter, a comprehensive job-hunting platform, required the utilization of various technologies and tools to ensure efficient functionality and user satisfaction.

### 6.1 FRONTEND TECHNOLOGIES:

#### 1.React.js:

- ❖ React.js, a JavaScript library for building user interfaces, was chosen for the frontend development of JobHunter.
- ❖ Its component-based architecture and virtual DOM manipulation provided flexibility and scalability, enabling the creation of dynamic and responsive user interfaces.

#### 2.axios:

- ❖ Axios, a promise-based HTTP client, was utilized for making asynchronous HTTP requests from the frontend to the backend APIs.
- ❖ Its simplicity and flexibility made it easy to perform data fetching and interaction with external APIs, enhancing the platform's data retrieval and communication capabilities.

#### 3.vite:

- ❖ Vite, a modern build tool for frontend development, was employed to build and bundle the JobHunter frontend assets.
- ❖ Its fast and efficient development server, along with advanced features like hot module replacement (HMR) and tree-shaking, improved the development workflow and optimized frontend performance.

### 6.2 BACKEND TECHNOLOGIES:

#### 1.Node.js:

- ❖ Node.js served as the backend framework for JobHunter, providing a runtime environment for executing JavaScript code outside of a web browser.
- ❖ Its event-driven, non-blocking I/O model facilitated the development of scalable and high-performance server-side applications.

#### 2.Express.js:

- ❖ Express.js, a minimalist web application framework for Node.js, was utilized to create the server-side logic and APIs for JobHunter.

- ❖ Its simplicity and robust middleware support streamlined the development process, enabling efficient routing, request handling, and middleware integration.

### **3.MongoDB:**

- ❖ MongoDB, a NoSQL database, was chosen as the database management system for JobHunter.
- ❖ Its flexible document-based data model and scalability capabilities allowed for efficient storage and retrieval of diverse data types, supporting the platform's dynamic content requirements.

## **6.3 ADDITIONAL TOOLS AND LIBRARIES:**

### **1.Cloudinary:**

- ❖ Cloudinary, a cloud-based media management platform, was integrated into JobHunter to handle image and video uploads, storage, and manipulation.
- ❖ Its powerful image and video transformation capabilities, along with reliable cloud storage, enhanced the platform's media management functionality.

### **2.Bcrypt:**

- ❖ Bcrypt, a password-hashing function, was employed to securely hash and store user passwords in the JobHunter database.
- ❖ Its cryptographic hashing algorithm and salting mechanism provided robust protection against password-related security threats, ensuring user data confidentiality.

### **3.Jsonwebtoken:**

- ❖ Jwebtoken, a library for generating and verifying JSON Web Tokens (JWTs), was used to implement token-based authentication and authorization mechanisms in JobHunter.
- ❖ Its robust encryption algorithms and token validation capabilities enhanced the security of user authentication processes.

### **4. cors, cookie-parser, dotenv, express-fileupload, validator:**

- ❖ These middleware and utility packages, including CORS handling, cookie parsing, environment variable loading, file uploading, and data validation, enhanced various aspects of JobHunter's functionality.



## 7. IMPLEMENTATION

### 7.1 IMPLEMENTATION OF THE PROJECT:

Implementation is the phase in the software development lifecycle where the design specifications are translated into actual code. This involves writing, testing, and integrating the software components to create a functional system. The implementation phase follows the system design phase and precedes the testing and deployment phases.

During implementation, developers write code according to the specifications outlined in the design documents. This may involve programming in various languages and frameworks, building user interfaces, implementing business logic, integrating third-party libraries or services, and setting up databases or other data storage systems.

#### 7.1.1 The implementation process typically includes the following steps:

**Coding:** Developers write code to implement the functionalities specified in the design documents. They follow coding standards and best practices to ensure code quality, readability, and maintainability.

**Unit Testing:** Developers write unit tests to verify the correctness of individual components or modules. Unit testing helps identify and fix bugs early in the development process, ensuring that the code behaves as expected.

**Integration:** Once individual components/modules are developed and tested, they are integrated to form the complete system. Integration testing is performed to verify that the integrated components work together as intended and that data flows correctly between them.

**System Testing:** After integration, the entire system is tested to validate its behavior against the requirements. System testing includes functional testing, performance testing, security testing, and other types of testing to ensure that the system meets the specified criteria.

**Debugging and Refactoring:** Developers debug and troubleshoot any issues discovered during testing. They may also refactor the code to improve its structure, efficiency, or maintainability while maintaining the existing functionality.

**Documentation:** Throughout the implementation process, developers document their code, including comments, inline documentation, and user manuals. Documentation helps other developers understand the codebase and use the software effectively.

## **7.2 CONVERSION PLAN:**

A conversion plan outlines the steps and strategies for migrating from an existing system to a new system. It includes assessing the current system, identifying data migration requirements, planning for system downtime or interruptions, training users on the new system, and monitoring the conversion process to ensure a smooth transition.

### **7.2.1 KEY COMPONENTS OF A CONVERSION PLAN MAY INCLUDE:**

**Assessment:** Evaluate the existing system to understand its architecture, functionality, and dependencies. Identify potential risks and challenges associated with the conversion process.

**Data Migration:** Develop a plan for transferring data from the old system to the new system. This may involve data extraction, transformation, and loading (ETL) processes to ensure data integrity and consistency.

**Training and Support:** Provide training to users and stakeholders on how to use the new system effectively. Offer support resources, such as documentation, helpdesk services, and training sessions, to assist users during the transition period.

**Testing and Validation:** Test the new system thoroughly to ensure that it meets the requirements and performs as expected. Validate data integrity and functionality through rigorous testing before full deployment.

**Rollout Strategy:** Plan the rollout of the new system, including scheduling, deployment procedures, and communication with stakeholders. Consider phased deployment or pilot testing to minimize disruption and mitigate risks.

**Contingency Planning:** Anticipate potential issues or challenges that may arise during the conversion process and develop contingency plans to address them. This may include backup and rollback procedures, escalation paths for resolving issues, and communication strategies for stakeholders.

## **7.3 POST-IMPLEMENTATION AND SOFTWARE MAINTENANCE:**

After the implementation phase, the software enters the post-implementation and maintenance phase, where it is deployed to production and undergoes ongoing support and maintenance activities. This phase involves monitoring the performance of the system, addressing user

feedback and issues, and making updates or enhancements as needed to ensure the continued success and usability of the software.

### **7.3.1 KEY ACTIVITIES IN POST-IMPLEMENTATION AND MAINTENANCE:**

**Monitoring and Support:** Monitor the performance, availability, and security of the software in production environments. Provide support to users and address any issues or concerns that arise in a timely manner.

**Bug Fixing:** Respond to bug reports and defects identified during production use. Debug and fix issues as quickly as possible to minimize disruption to users and maintain system reliability.

**Software Updates:** Release software updates, patches, and security fixes to address vulnerabilities, improve performance, and introduce new features or enhancements. Communicate updates to users and provide guidance on installation and usage.

**User Training and Documentation:** Offer ongoing training and support resources to help users make the most of the software. Update documentation, user manuals, and knowledge bases to reflect changes and new features introduced in the software.

**Feedback and Improvement:** Gather feedback from users and stakeholders to identify areas for improvement. Use feedback to prioritize enhancements and updates that will add value to the software and enhance user satisfaction.

**Long-Term Planning:** Develop a long-term roadmap for the software, outlining future enhancements, upgrades, and strategic initiatives. Align software maintenance activities with organizational goals and priorities to ensure continued alignment with business objectives.

**Performance Optimization:** Continuously monitor and optimize the performance of the JobHunter platform to ensure fast response times, efficient resource utilization, and scalability.

**Feature Enhancement:** Regularly evaluate user feedback, market trends, and competitive analysis to identify opportunities for feature enhancements and product improvements.

**Quality Assurance and Testing:** Maintain rigorous quality assurance processes to ensure the reliability, usability, and accuracy of the JobHunter platform. Conduct thorough testing of new features, updates, and software releases to identify and resolve any issues before deployment.

## 8. PROJECT LEGACY

### 8.1 CURRENT STATUS OF THE PROJECT:

The status of the project provides an overview of where the project stands at the present moment. This includes an assessment of progress made towards project goals, completion of deliverables, and adherence to timelines. It also includes an evaluation of any challenges or obstacles that have been encountered during the course of the project.

### 8.2 REMAINING AREAS OF CONCERN:

Identifying remaining areas of concern helps stakeholders understand the ongoing challenges and risks that need to be addressed to ensure the successful completion of the project. This may include unresolved technical issues, outstanding deliverables, budget constraints, resource shortages, or any other factors that may impact project progress or quality. ONDC and Other AI capabilities compatibility issues

### 8.3 TECHNICAL AND MANAGERIAL LESSONS LEARNED:

Reflecting on technical and managerial lessons learned throughout the project provides valuable insights and opportunities for improvement in future endeavors. This includes identifying best practices that contributed to project success, as well as areas where mistakes were made, or improvements could be made.

**Effective Communication:** Ensuring clear and open communication among team members, stakeholders, and project managers can help mitigate misunderstandings, resolve conflicts, and keep everyone aligned towards project goals.

**Agile Methodologies:** Embracing agile methodologies such as Scrum or Kanban can improve project flexibility, adaptability, and responsiveness to changing requirements and priorities.

**Continuous Improvement:** Encouraging a culture of continuous improvement and learning can foster innovation, creativity, and efficiency within the project team.

**Resource Allocation:** Optimizing resource allocation and workload distribution can help maximize productivity and minimize bottlenecks, ensuring that project tasks are completed on time and within budget.

## 9. SYSTEM DESIGN AND SOURCE CODE

System design involves defining the architecture, components, modules, and interfaces of the software system. Source code refers to the human-readable instructions written in a programming language.

### 9.1 SOURCE CODE

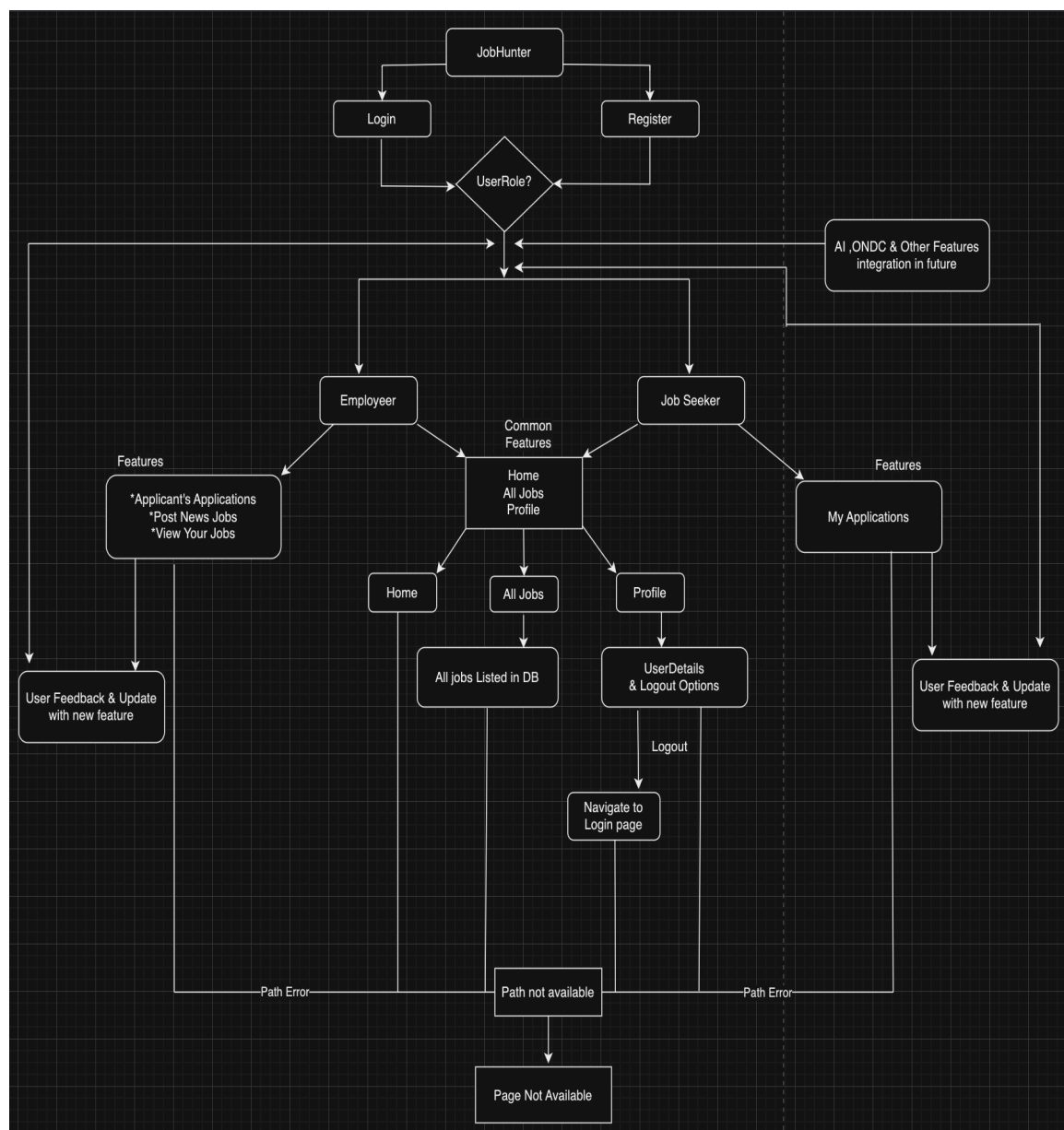


figure 1 System Design of Job Hunter

## 9.2 SOURCE CODE

```
backend > app.js > ...
1 import cookieParser from "cookie-parser";
2 import cors from "cors";
3 import dotenv from "dotenv";
4 import express from "express";
5 import fileUpload from "express-fileupload";
6 import { dbConnection } from "../database/dbconnection.js";
7 import { errorMiddleware } from "../middlewares/error.js";
8 import applicationRouter from "../routes/applicationRouter.js";
9 import jobRouter from "../routes/jobRouter.js";
10 import userRouter from "../routes/userRouter.js";
11
12 const app=express();
13
14 dotenv.config({path: './.env'});
15
16 app.use(cors({
17   origin: [process.env.FRONTEND_URL],
18   methods: ['GET', 'POST', 'DELETE', 'PUT'],
19   credentials: true
20 }));
21
22 app.use(cookieParser());
23 app.use(express.json());
24 app.use(express.urlencoded({extended: true}));
25
26 app.use(fileUpload({
27   useTempFiles: true,
28   tempFileDir: "/tmp/",
29 }));
30
31 app.use('/api/v1/user', userRouter);
32 app.use('/api/v1/application', applicationRouter);
33 app.use('/api/v1/job', jobRouter);
34
35 dbConnection();
36
37 app.use(errorMiddleware);
38
39 export default app;
```

figure 2.1 app.js

```
package.json > {} dependencies
1 {
2   "name": "backend",
3   "version": "1.0.0",
4   "description": "",
5   "main": "index.js",
6   "type": "module",
7   "scripts": {
8     "start": "node server.js",
9     "dev": "nodemon server.js",
10    "build": "npm i"
11  },
12  "keywords": [],
13  "author": "",
14  "license": "ISC",
15  "dependencies": {
16    "bcrypt": "^5.1.1",
17    "cloudinary": "^2.0.3",
18    "cookie-parser": "^1.4.6",
19    "cors": "^2.8.5",
20    "dotenv": "^16.4.5",
21    "express": "^4.19.2",
22    "express-fileupload": "^1.5.0",
23    "jsonwebtoken": "^9.0.2",
24    "mongoose": "^8.2.3",
25    "validator": "^13.11.0"
26  },
27  "devDependencies": {
28    "nodemon": "^3.1.0"
29  }
30 }
```

figure 2.2 package.json

```

1 import { catchAsyncErrors } from '../middlewares/catchAsyncError.js';
2 import ErrorHandler from '../middlewares/error.js';
3 import { User } from '../models/userSchema.js';
4 import { sendToken } from '../utils/jwtToken.js';
5
6
7 export const register = catchAsyncErrors(async (req, res, next) => {
8   const { name, email, phone, role, password } = req.body;
9   if (!name || !email || !phone || !role || !password) {
10     return next(new ErrorHandler("Please fill full registration form!"));
11   }
12   const isEmail = await User.findOne({ email });
13   if (isEmail) {
14     return next(new ErrorHandler("Email already exists"));
15   }
16   const user = await User.create({
17     name,
18     email,
19     phone,
20     role,
21     password,
22   });
23   res.status(200).json({
24     success: true,
25     message: "User registered!",
26     user,
27   });
28   sendToken(
29     user,
30     200,
31     res,
32     "User registered successfully!"
33   );
34 });
35
36 export const login = catchAsyncErrors(async (req, res, next) => {
37   const { email, password, role } = req.body;
38   if (!email || !password || !role) {
39     return next(new ErrorHandler("Please provide email ,password and role.", 400));
40   }
41 });

```

figure 2.3 userController.js

```

21 const App = () => {
22   useEffect(() => {
23     const fetchUser = async () => {
24       try {
25         const response = await axios.get(
26           "http://localhost:4000/api/v1/user/getuser",
27           {
28             withCredentials: true,
29           }
30         );
31       } catch (error) {
32         setAuthorized(false);
33       }
34     };
35     fetchUser();
36   }, [isAuthorized]);
37
38   return (
39     <BrowserRouter>
40       <Navbar />
41       <Routes>
42         <Route path="/" element={<Home />} />
43         <Route path="/login" element={<Login />} />
44         <Route path="/register" element={<Register />} />
45         <Route path="/job/getall" element={<Jobs />} />
46         <Route path="/job/:id" element={<JobDetails />} />
47         <Route path="/application/:id" element={<Application />} />
48         <Route path="/applications/me" element={<MyApplications />} />
49         <Route path="/job/post" element={<PostJob />} />
50         <Route path="/job/me" element={<MyJobs />} />
51         <Route path="/profile" element={<Profile />} />
52         <Route path="*" element={<NotFound />} />
53       </Routes>
54     </BrowserRouter>
55   );
56 }

```

figure 2.4 App.jsx

### 9.3 SYSTEM SNAPSHOTS:

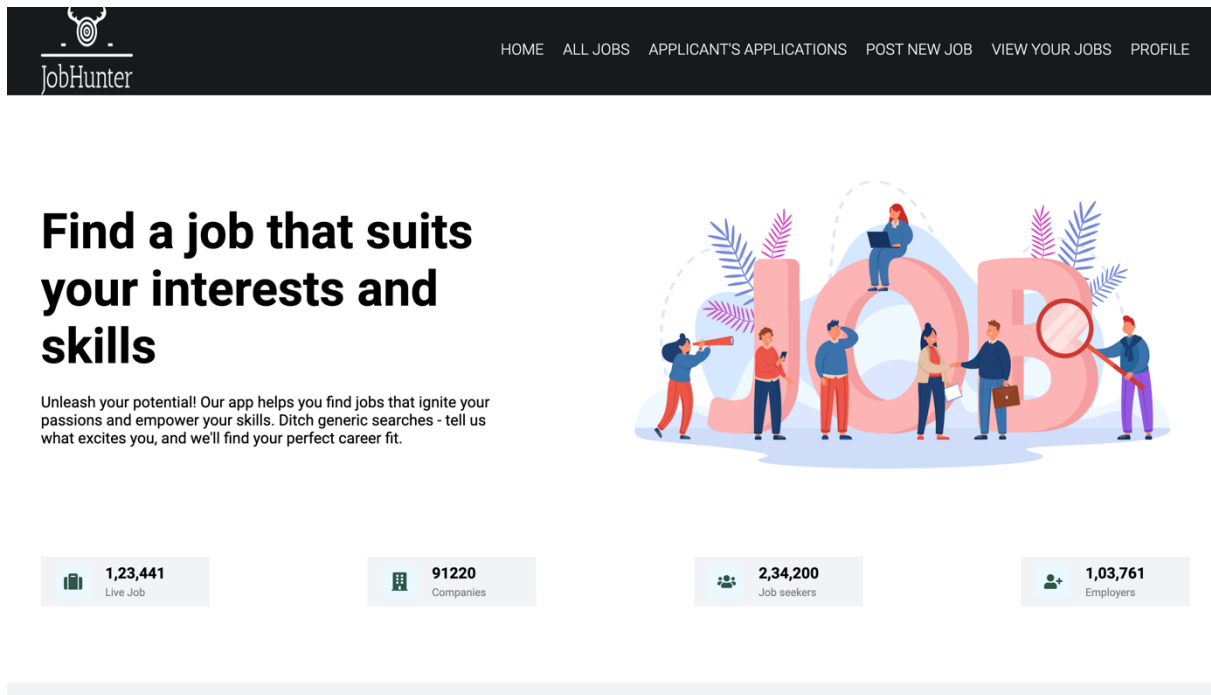


figure 3.1 Home Page

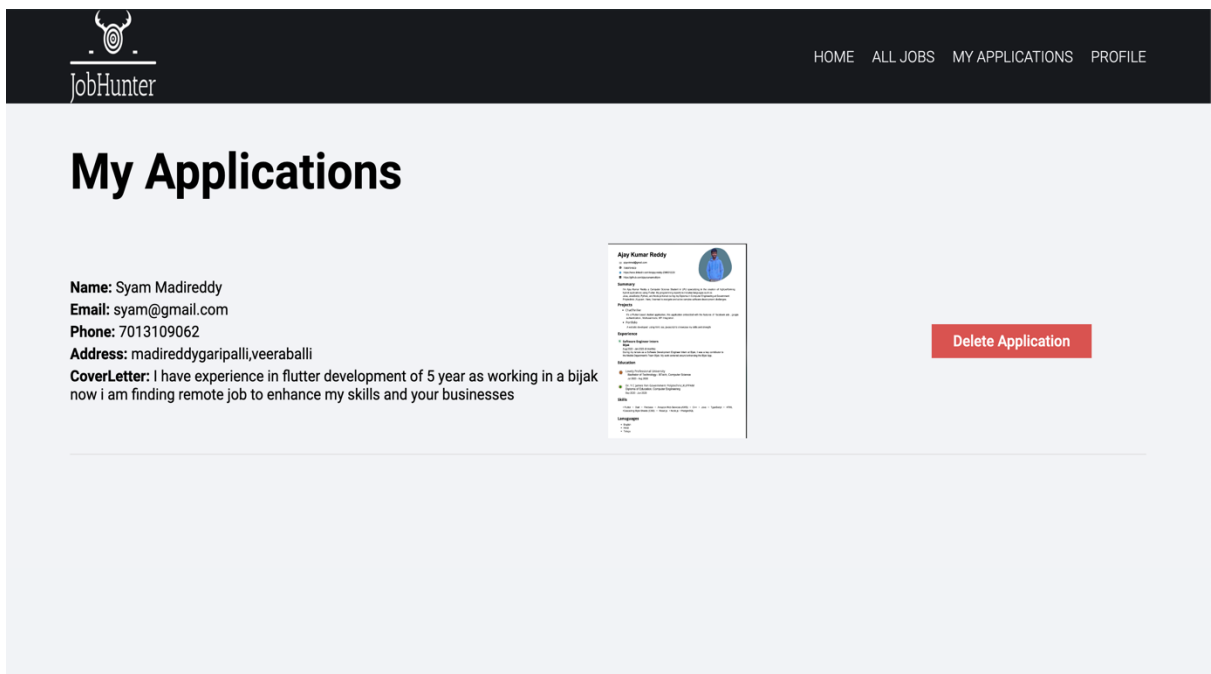


figure 3.2 My Applications Page



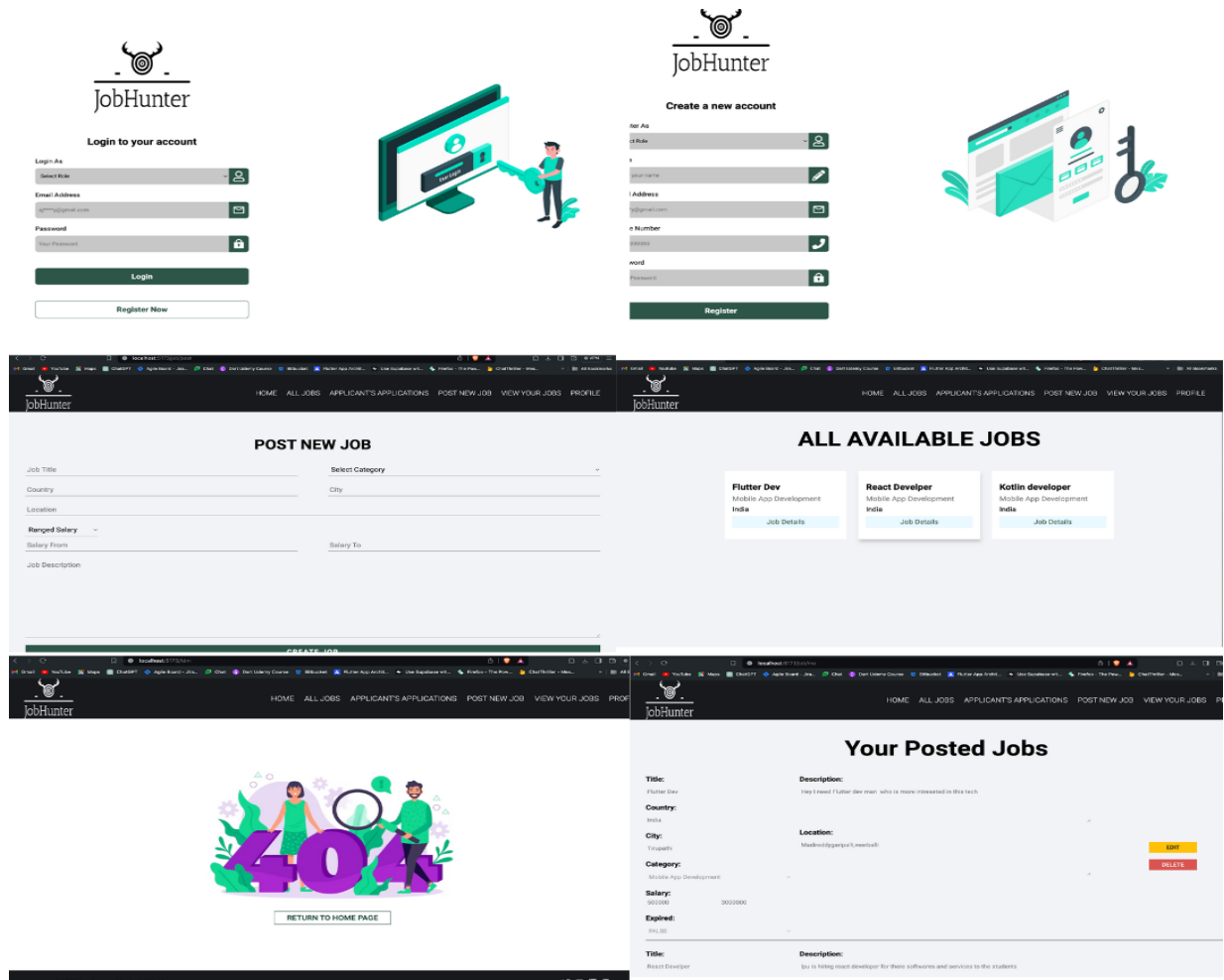


fig 3.3 Other Pages

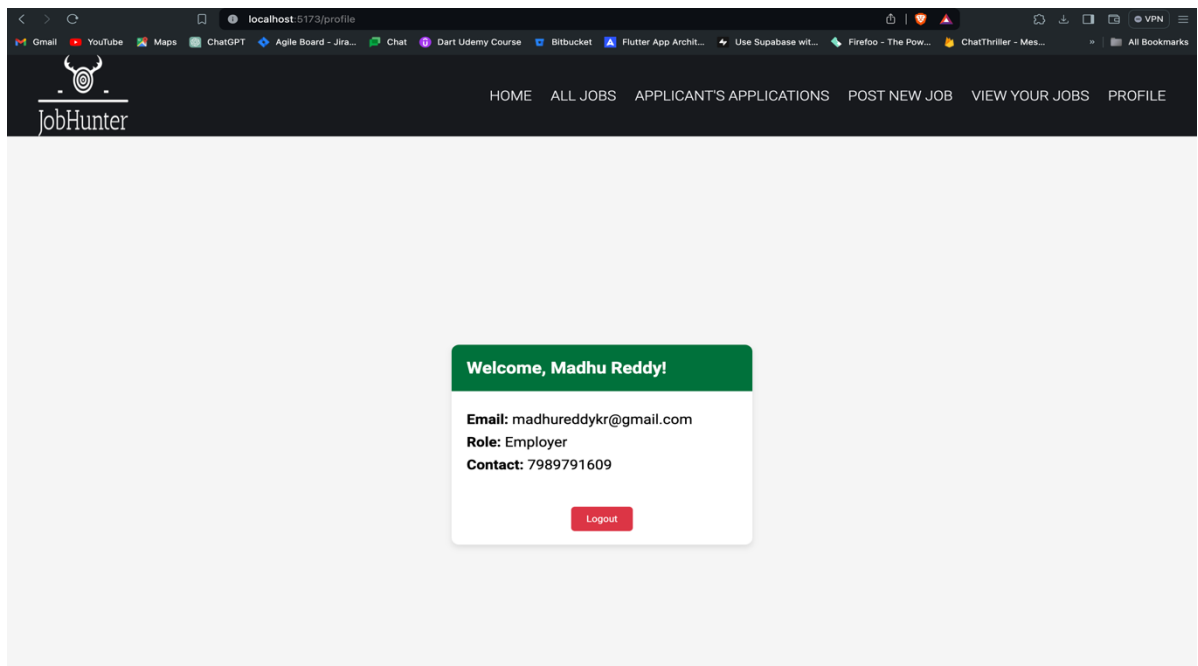


fig 3.4 Profile page

## 10. FUTURE SCOPE

**AI-Driven Job Matching Algorithms:** Integrate advanced artificial intelligence (AI) algorithms into JobHunter's search and matching capabilities to provide more accurate and personalized job recommendations for users. By analyzingthms can analyze user profiles, job descriptions, and historical data to identify relevant opportunities and improve the overall quality of matches.

**Natural Language Processing (NLP) for Resume Parsing:** Implement NLP techniques to parse and analyze resumes uploaded by job seekers. This allows JobHunter to extract key skills, experiences, and qualifications from resumes, enabling better matching with job postings and improving the visibility of relevant candidates for employers.

**Predictive Analytics for Talent Acquisition:** Utilize predictive analytics models to forecast talent trends, skill demand, and job market dynamics. By analyzing historical data and industry trends, JobHunter can provide insights to both job seekers and employers, helping them make informed decisions about career opportunities and recruitment strategies.

**AI-Enabled Candidate Screening:** Develop AI-powered screening tools to assess candidate qualifications, competencies, and cultural fit for specific job roles. These tools can automate the initial screening process, saving time for employers and improving the efficiency of candidate evaluation.

**Personalized Career Path Recommendations:** Leverage AI algorithms to provide personalized career path recommendations and development plans for job seekers. By analyzing user preferences, skills gaps, and career goals, JobHunter can suggest relevant learning opportunities, certifications, and job roles to help individuals progress in their careers.

**AI-Powered Chatbots for User Support:** Implement AI-powered chatbots to provide real-time assistance and support to users navigating the JobHunter platform. Chatbots can answer common questions, guide users through the job search process, and offer personalized recommendations based on user interactions.

**Partnerships and Collaborations:** Forming strategic partnerships and collaborations with industry stakeholders, educational institutions, government agencies, and non-profit organizations to expand JobHunter's network and enhance its value proposition.

# 11. USER MANUAL

## 1. Introduction:

Welcome to the JobHunter Application user manual! This guide will walk you through the features and functionalities of our application, designed to simplify the job search process for both jobseekers and employers. Our application aims to simplify this process by providing a user-friendly interface and powerful features tailored to the needs of both parties involved in the hiring process.

## 2. System Requirements:

To ensure smooth operation, please ensure your system meets the following requirements:

**Operating System:** Windows 7 or later, macOS, Linux

**Web Browser:** Google Chrome, Mozilla Firefox, Safari, Microsoft Edge

**Internet Connection:** Required

## 3. Hardware Requirements:

Your hardware should meet the following specifications:

**Processor:** Intel Core i3 or equivalent

**RAM:** 4GB or higher

**Storage:** 100MB available space

**Display:** 1024x768 resolution or higher

## 4. Installation:

The JobHunter Application is a web-based platform accessible through any compatible web browser. Simply visit the application's URL to access the login page. No additional installation is necessary.

## 5. User Roles and Features:

**For Employers:**

Home: Navigate to the home page.

All Jobs: View all posted jobs and job profiles. Cannot apply.

Applicant's Applications: Review applications from jobseekers who applied to posted jobs.  
Access job seeker resumes.

Post Job: Create and publish job listings with detailed descriptions, salary information, and location.

View My Jobs: Access and manage posted jobs, including editing and deleting.

Profile: View profile information (name, user role, email) and logout.

**For Jobseekers:**

Home: Navigate to the home page.

All Jobs: View all posted jobs by employers and apply for them. Submit resumes and application details.

My Applications: View all applied jobs. Can delete applications if not interested.

Profile: View profile information (name, user role, email) and logout.

**6. How to Use:**

Login/Register:

Enter your email and password to login. If not registered, click on the register option and provide necessary details.

Navigation:

Use the navigation bar to access different features based on your user role.

Posting a Job:

Employers can navigate to "Post Job" to create and publish job listings.

Applying for a Job:

Jobseekers can view available jobs under "All Jobs" and apply by submitting required details and resume.

#### Viewing Applications:

Employers can review applications from jobseekers under "Applicant's Applications" and access resumes.

#### Managing Applications:

Jobseekers can manage their applied jobs under "My Applications" and delete applications if necessary.

#### Profile Management:

Users can view and update their profile information under "Profile."

### **7. Troubleshooting:**

If you encounter any issues or have questions regarding the Jobseeker Application, please refer to our FAQ section on the website. If the problem persists, don't hesitate to contact our support team for assistance.

### **8. Get in Touch:**

For any inquiries or assistance, please reach out to our customer support team:

Email: [support@example.com](mailto:support@example.com)

Phone: +1234567890

Twitter: [https://twitter.com/iam\\_ajayreddy](https://twitter.com/iam_ajayreddy)

Instagram: [https://www.instagram.com/\\_whyajay/?hl=en](https://www.instagram.com/_whyajay/?hl=en)

Thank you for choosing our platform to support your job search or recruitment efforts. We're committed to providing you with a seamless and efficient experience, and we're confident that this user manual will help you achieve your goals effectively. Let's embark on this journey together towards finding the perfect match between talent and opportunity.

## 12. ACKNOWLEDGEMENT

We would like to express our heartfelt gratitude to all individuals and organizations who contributed to the success of this project. Their support, guidance, and collaboration were instrumental in achieving our objectives and delivering a high-quality software solution.

First and foremost, we extend our sincere thanks to **Amit Yadav** for their vision, leadership, and unwavering commitment to this project. Their insights, feedback, and continuous support were invaluable in guiding us throughout the development process and ensuring alignment with organizational goals.

We are deeply grateful to our project team members for their dedication, hard work, and expertise in bringing this project to fruition. Each member's unique skills and contributions played a crucial role in overcoming challenges, meeting deadlines, and delivering exceptional results. We commend their professionalism, collaboration, and resilience in the face of adversity.

We would like to acknowledge the contributions of our stakeholders, including end-users, subject matter experts, and other project stakeholders. Their input, feedback, and active participation were instrumental in shaping the requirements, refining the design, and validating the functionality of the software solution.

We extend our appreciation to **Shepherd School, Code with Harry** for their technical expertise, guidance, and support in areas where additional assistance was required. Their partnership and collaboration were key to overcoming technical challenges and ensuring the successful implementation of the project.

We would also like to thank our families, friends, and loved ones for their understanding, patience, and encouragement throughout the project. Their unwavering support provided us with the motivation and resilience needed to navigate the demands of this endeavor.

Finally, I express our gratitude to the broader community of professionals, colleagues, and mentors who have shared their knowledge, insights, and best practices, enriched our understanding and contributed to our professional growth.

## 13. CONCLUSION

The completion of this project marks a significant milestone in our journey towards achieving our goals and delivering value to our stakeholders. Through meticulous planning, diligent execution, and effective collaboration, we have successfully developed and implemented a software solution that meets the needs and expectations of our users.

Throughout the project lifecycle, we encountered various challenges and obstacles, from technical complexities to resource constraints. However, with perseverance, creativity, and teamwork, we overcame these challenges and adapted to changing circumstances, ensuring the project's success.

As we reflect on the lessons learned from this project, we recognize the importance of effective communication, agile methodologies, and proactive risk management in driving project success. By embracing a culture of continuous improvement and learning, we have gained valuable insights and experiences that will guide us in future endeavors.

Moving forward, we remain committed to maintaining the quality and reliability of the software solution through ongoing support and maintenance activities. We will continue to engage with our stakeholders, gather feedback, and make enhancements to the system to ensure its continued relevance and effectiveness in meeting evolving user needs.

In conclusion, the successful completion of this project is a testament to the dedication, expertise, and collaborative spirit of our team. We are proud of our achievements and look forward to leveraging our experiences to tackle new challenges and opportunities in the future.

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**GitHub URL:** <https://github.com/ajaykumarreddym/JobHunter>