Prashant Sapkota

2212314

Job Recruitment System with CV Grading

BSc (Hons) Computer Science and Software Engineering

Reflective Report

University of Bedfordshire

Supervisor: Krishna Aryal

Course Coordinator: Ajay Kumar Sharma

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Table of Contents

Chapter 1: Introduction

The process of developing "Job Recruitment System with CV Grading" was both challenging as well as rewarding. The project has helped to gain the valuable learning experiences. This project needs some requirements like strong problem-solving skills, deep understanding of some technical concepts, and mainly effective time management skills. Every phase from the earliest planning stage till the execution's culmination has continuous learning, problem-solving, and improvement in order to attain a successful outcome.

Many challenges occurred throughout this process like some technical errors. The system was refined from time to time based on feedback by the supervisor and course coordinator. The job recommendation features were implemented in this phase. Debugging complex issues and optimizing this feature requires patience and problem-solving skills. While tackling these challenges a deeper understanding of software development was gained, and also critical thinking was improved.

For the success of project, managing deadlines, staying active, making improvement time to time had played a key role. The system was carefully designed to provide HR professionals with job management features and to ensure that candidates can access relevant job recommendations based on their skills.

Overall, this report reflects on time management, problem-solving, and overcoming challenges throughout the development process. The practical experience of working on real projects during this journey provided valuable learning opportunities which will support future software development career.

Chapter 2: Self-Management

These sections give insight about how well the project was planned, managed, and improved over time. Topics like self-motivation, proactiveness, time management, and learning from feedback are included in this chapter.

2.1. Time Management

Managing time was one of the most important parts in this timeframe. For the completion of Job Recruitment System with CV Grading at the targeted time, the work was divided into different stages and proper planning were done.

Week	Tasks Completed
Week 1	Designed Home Page, Feature Page, FAQ Page, About US, Blog, Contact US, and backend for Contact Us.
Week 2	Authentication (Login & Signup) for HR and Candidate with form validation
Week 3	Created HR Dashboard, added feedback system, edit profile features
Week 4	Built Job Posting features, manage job (Edit and Delete), and authorization
Week 5	Implemented the Recommendation Engine to match job with candidate based on their skills
Week 6	Apply Job Features for Candidates, add feedback System for Candidates, Edit Profile for Candidates, View Job Detail Page
Week 7	View List of Applied Candidate, complete reflective report, Google Authentication

Table 1: Project Timeline

Almost all the key milestones were achieved as planned, but for that some adjustments were needed. For example: Authentication took longer than it was planned due to debugging issues, that my job posting feature were developed in parallel to stay on schedule. Some additional research was performed for recommendation engine features to improve its accuracy.

2.2. Self -Motivation & Proactiveness

For making the Job Recruitment System more efficient and user-friendly, initiative to go beyond the basic requirements were taken. Research was conducted in order to improve the different parts of the system, like secure authentication, job recommendations, and user experience design. Initially, the development of job recommendation system feature was slow, but database queries were optimized to improve the performance of this feature. Research was also conducted on UI/UX best practices to improve usability. Form designs, dashboards, job listing page etc. were refined to make the navigation easier for both HR and Candidates which ensured a clean and user-friendly interface. Initially, basic login validation was implemented which had some vulnerabilities. In order to solve this problem, input validation and google authentication techniques were applied.

2.3. Readiness to Improve Based on Feedback

Feedback which was received from the supervisor played a crucial role in improving the Job Recruitment System with CV Grading. Several improvements were made based on the suggestions provided by the supervisor. Initially HR could only delete and repost if they need to edit the job posting but based on the supervisor's feedback an edit job post feature was added in Week 4 which allows HR users to modify job details without having to create a new post. When users used to enter the incorrect login details, the error messages were not clear. After implementing the suggested changes, detailed validation messages were displayed to guider users to make the login proves smoother.

2.4. Reflective Learning & Personal Growth

This project has helped in developing both technical skills and personal growth. Different important skills are gained during the development phase like problem solving, time management, database optimization, and user experience design. The key lesson learned was that early testing helps avoid last-minute issues. Working on multiple tasks in parallel will help to keep the progress steady. Supervisor feedback was very useful as their suggestions can greatly improve the system. This experience has taught the value of teamwork, flexibility, and continuous learning.

Chapter 3: Community & Quality of Report

In order to present a high-quality communication and presentation, the report needs to be well structured, clear, and detailed while staying relevant to the Job Recruitment System with CV Grading. In this section, the main focus will be on how information will be presented in a way that is easy to understand and is visually appealing.

3.1. Presentation & Structure

It is necessary to write a well-organized report following a clear structure. The reader should be able to follow and understand the report easily. The report should be divided into logical sections. Every section should cover important aspects of the projects. The section includes introduction, literature review, system design and architecture, challenges and solutions, testing and evaluation, future enhancements and conclusions. In order to improve the readability, the report should be made using heading, subheadings, bullet points, tables and figures. Some important things like screenshot of system interfaces, flow diagrams, and charts should be included which helps to visually represent technical aspects of the projects.

3.2. Flow and Clarity

The report must be written in simple and precise language in order to ensure that all its reader can understand the content easily. The report must be written in such a way that there are no long and complex sentences. Every idea should be explained clearly in a structured way. Every section should be connected smoothly to next by ensuring a logical flow of ideas. Transition between the sections must be carefully maintained so that the reader can follow the progression of the project without any confusion. Using the simple and direct explanation will help in ensuring that all the technical details are presented clearly.

3.3. Depth and Detail

In order to demonstrate a strong knowledge of the work completed, it is essential to provide detailed explanations of the work. The purpose, operation, and impact of the individual features should be explained in each category. Instead of simply mentioning what has been achieved, the report should discuss how it will be improved, why it will remain a preferred choice, and how it will benefit the user.

For example, when discussing the recommendation system, instead of just stating:

"A recommendation system will be added to help candidates find relevant jobs."

A more detailed explanation should be given:

The recommendation structure will remain in place using a skill-based ranking algorithm. First of all, it will use basic keyword matching, and despite subsequent analysis, it will continue to be improved to a schedule of occupations based on the campaigner's second abilities, increasing accuracy and productivity.

The real examples, screenshots, and a comparison between the past and the present will help provide more depth to the chat, as well as to the report.

3.4. Relevance of Discussion

Every section of the report will only be focusing on the relevant information related to the Job Recruitment System with CV Grading. All the unnecessary details that do not add value to the topic will be avoided. Let's take example of authentication, the report will explain how the login and signup will be implemented, security measures that will be used, and challenges that may arise rather than discussing general details about authentication which are not connected to the project. In order to ensure relevance, each of the sections will answer important questions such as:

i)   Does this information explain something critical about the project?
ii)   Will it show progress, challenges, or improvements?
iii)   Does it demonstrate technical knowledge and problem-solving skills?

When the discussion is kept relevant and structured, the report will be remained focused on the project's goals and also present the strong reflection on the development process.

Chapter 4: Reflection

Reflecting on the progress of the Job Recruitment System with CV Grading is very crucial in order to understand how perfectly the project aligns with the original plan and milestones. In this section, the current status, completed milestones, challenges faced, adjustments made, and key learning from the project will be discussed.

4.1. Project Progress & Milestones Achieved

With clear milestones for each stage, the project was structured into phases. So far, many major features have been successfully developed. In the week 1, some pages were designed which does not need login functionality like home page, feature page, FAQ page, about us page, blog page and contact us page etc. In Week 2, the main focus was on authentication, where the login and signup for both HR and Candidates were implemented along with form validation. Week 3 was all about making the HR dashboard, edit profile, posting feedback, and managing settings, By Week 4, features like job posting and managing job was completed where HR were allowed to post, update, delete, and manage jobs. The crucial and one of the main features i.e. Job recommendation engine was developed in Week 5, which enables job listing to be prioritized based on candidate skills. In Week 6, features like Apply Job for candidates, view job details, edit profile for candidates and add feedback were implemented. Similarly, in Week 7 google authentication was done and page where HR are able to view the candidate who applied for a certain post was designed.

Almost every milestones were achieved as planned, but some adjustment was required. The authentication required a long time to develop than it as expected because of debugging issues. So, the job posting features was developed side-by-side to remain on schedule. The recommendations engine development was slow in processing, that's why some database query optimizations were implemented. Despite of these delays, the project still remains on track, and the remaining milestones are scheduled for the upcoming weeks.

4.2. Challenges Faced & Adjustments Made

Many challenges occurred during the development phase where modifications were required to the initial timeline. The main issue that occurred was about form validation and security in authentication. At initial stage, almost all validation were basic, and user could even enter incorrect or incomplete information. After that from the review received from supervisor some additional validation rules were added to ensure proper user input and prevent security risks. Another challenge that occurred was optimizing job recommendation engine. The first version of this feature was only about matching jobs based on keywords, which seems not be accurate. So, research was done to improve the logic, a skill-based ranking system was introduced to match the job posting with candidate skills.

Some technical delays occurred which required changes in the schedule. For example, authentication debugging took extra time, that's why job posting features were developed alongside to avoid delays. The recommendation engines also need extra research in order to ensure better job matching. These adjustments helped in keeping the project on track by maintaining quality

4.3. How the Current Status Align with the Plan

When comparing the current progress with the original plan, almost every tasks have been completed on the targeted time. Some of the main features like. Authentication, HR Dashboard, Job Posting and Managing, Job Recommendations, have been successfully developed and are also working as expected. Although some delays occurred, they were managed well by working on other features at same time and making the needed improvements along the way. Some remaining features, like job application, CV grading, interview scheduling, testing, and documentation are scheduled to be completed in the upcoming weeks, keeping the progress on track.

4.4. Key Learnings & Future Improvements

The developed project delivered crucial information about technical development together with project management techniques. Primitive testing in early project stages serves to avoid project delays because it reveals bugs before critical last-minute scheduling issues emerge. Implementing parallel development becomes a useful approach to cope with delayed tasks because it enables simultaneous work on different features to ensure continuous project advancement.

The system has experienced substantial improvements because of the feedback process. Supervisor feedback led to the introduction of the edit job post feature in order to enhance HR's job management processes. The system could benefit from future development that would combine artificial intelligence-based job matching in the recommendation system and additional security measures to safeguard user data.

4.5. Conclusion

It can be concluded that the Job Recruitment System with CV Grading has progressed well till now as most of the features that were planned are successfully completed. Although many challenges like authentication debugging and recommendation system optimization occurred but solutions were implemented to ensure that the project is on schedule. Techniques like working on multiple tasks at the same time and making adjustments based on supervisor advice helped in maintaining the steady progress.

 Now, only a few remaining features like CV Grading, interview scheduling, and final testing are left to be completed. Then, the next step will focus on resolving the bugs, refining the system and preparing for final documentation and presentation. Overall, this project has helped in improving technical skills, time management, and problem-solving abilities, that will help in future software development projects.

Chapter 5: Detailed Thesis Content

In this chapter, a detailed breakdown of Job Recruitment System with CV Grading and its component are explained. This chapter explains the key section of the thesis like the purpose of system, process of development, technical implementation, challenges faced, and future improvements. The main of this chapter is to present a clean and structured explanation of project in order to ensure a complete understanding of its functions and impact.

5.1. Introduction

In this part, overview of Job Recruitment System with CV Grading is discussed and the main objective behind its development is explained. Things like problem in traditional hiring processes are discussed in this chapter. The solution of problems like time-consuming job searches, inefficient resume screening, and lack of proper job recommendation are discussed in this chapter. This chapter also explains about the scope of the project, includes key functionalities and limitations.

Key Points Covered:

- Purpose and overview of the project
- Problem in traditional recruitment systems
- Solution to the problem
- Scope and Limitation of the project
- Organization of the thesis

5.2. Literature Review

In this section, existing recruitment platforms and their technologies are reviewed. This section explores about the use of machine learning and automation to improve efficiency and also compares manual hiring with automated hiring. Authentication methods, job recommendation techniques and CV screening tools are also discussed in this section.

Key Points Covered:

- Detailed review of existing job portals and recruitment methods.
- Importance of automation in hiring and comparison of different job recommendations techniques
- Research gaps

5.3. System Desing and Architecture

This section explains the process of designing the system. It also includes structure, component and database setup of the system. Diagram like ERD, USE Case, Class, Activity are included in this section to provide a visual representation of system working mechanisms.

Key Points Covered:

- System Architecture Diagram
- ER Diagram, USE Case Diagram, Class Diagram, Activity Diagram, Data Flow Diagram
- Technology Stack Used

5.4. System Implementation

This section explains how the system was developed as it covers the main features and functionalities. Each of the features are explained with code, screenshots and technical descriptions.

Supporting Figures:

- Screenshots of the UI and system workflows
- Snippets of code showing important functions

5.5. Testing and Evaluation

This sections focuses on explaining the process of testing the system. This chapter includes different testing techniques that are used to ensure the system reliability and accuracy. Result that are obtained from testing will be analysed and presented in a table in order to show how effectively the system meets its objectives.

Types of Testing Conducted:

- Unit Testing
- Security Testing
- Integration Testing
- User Acceptance Testing (UAT)

5.6. Challenges Faced and Solutions Implemented

During the development phase, many technical and functional challenges were encountered. This section includes the key challenges that were encountered during the development process and the way of solving them. All the challenges are discussed in very detailed, with explanations of how different solutions were applied.

5.7. Future Enhancement

Although the system is fully functional but there are still some room for improvement. This sections displays the future upgrade that could be made in the future in order to make the system more advanced and user-friendly. Some possible future improvements are MFA, Mobile App Development, Chatbot Integration etc. These enhancements will surely help in improving accuracy, security, and overall efficiency of the system and make the recruitment process smoother.

5.8. Conclusion

This is the final section of the thesis report. In this section, the overall development, key findings, and impact of the system are summarized in short. This section explains the how Job Recruitment System with CV Grading improves the hiring process, reduce the manual work, enhance candidates job matching efficiency. In short, this section discusses how the project has met its objectives and also discuss about the potential for future research and development in recruitment automation.