A Project Report
on
JOBACT

Submitted in partial fulfillment of the requirements
for the award of the degree of

Bachelor of Technology
in
Computer Science & Engineering

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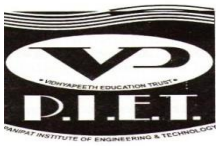

Panipat Institute of Engineering & Technology, Samalkha, Panipat
Affiliated to

Kurukshetra University Kurukshetra, India
(2024-2025)

DECLARATION

I hereby declare that the work presented in this project report entitled " JOBACT ", in partial fulfillment of the requirement for the award of the degree of Bachelor of Technology in Computer Science & Engineering, submitted to Kurukshetra University, Kurukshetra, India is an authentic record of my own work carried out during the period from Jan, 2024 to June 2024 under the guidance of Ms. Sabha Zaidi (Assistant Professor)

I hereby declare that this submission is my own work and that, to the best of my knowledge - and belief, it contains no material previously published or written by another person nor material whichto a substantial extent has been accepted for the award of any other degree or diploma of the university or other institute of higher learning, except where due acknowledgment has been madein the text.

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CERTIFICATE

This is to certify that the Project-I report (PROJ–CS-302A) entitled "JOBACT "done by Vishay, Sharon, Akshat, Enrollment No 2821127,2821570,2821004 is an authentic work carried out by them at PIET, Samalkha, Panipat under my guidance. The matter embodied in this project work has not been submitted earlier for the award of any degree or diploma to the best of my knowledge and belief.

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ABSTRACT

In today's dynamic job market, individuals are continuously seeking effective strategies to stand out amidst competition and showcase their skills and accomplishments. Job Seeker is an innovative project designed to streamline the job-seeking process for both job seekers and employers. The platform offers a user-friendly interface with advanced search functionalities to help job seekers find relevant job opportunities efficiently. Through Job Seeker, users can create personalized profiles, upload resumes, and set job preferences to receive tailored job recommendations. Additionally, the platform provides resources such as interview tips, resume building tools, and career advice to enhance users' employability skills.

For employers, Job Seeker offers a robust recruitment solution, allowing them to post job vacancies, search for qualified candidates, and manage applications seamlessly. The platform utilizes advanced algorithms to match employers with the most suitable candidates based on their skills, experience, and preferences.

Job Seeker aims to revolutionize the job market by providing a centralized platform where job seekers and employers can connect effortlessly, ultimately fostering a more efficient and transparent hiring process.

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CHAPTER 1: INTRODUCTION

1.1 Topic of the System

Title: Promote Continuous Improvement: The system should encourage users to continuously update and refine their seeking to reflect their evolving skills and experiences. This may include providing prompts for self-assessment, suggestions for seekin- "JOBACT"

1.2 Project Abstract

In today's competitive job market, job seeking have become indispensable tools for individuals aiming to distinguish themselves. Serving as dynamic showcases of skills, achievements, and personal narratives, job seeking offer a multifaceted glimpse into an individual's professional identity. Beyond mere documentation, they facilitate tailored storytelling, enabling candidates to connect with potential employers on a deeper level. By fostering self-reflection and continuous improvement, job seeking not only elevate visibility and credibility but also empower individuals to navigate the ever-evolving landscape of career development with confidence and purpose.

1.3 Purpose of the System

This project is to address the limitations of traditional resumes in effectively showcasing an individual's skills, accomplishments, and professional identity. In today's competitive job market, it's essential for individuals to have a compelling and dynamic representation of their capabilities to stand out to potential employers. By developing an interactive job seeking platform, the project aims to empoour users to create personalized seeking that go beyond static documents, incorporating multimedia elements, personalized narratives, and interactive features. The platform serves as a tool for career development, enabling users to curate their professional identities in a way that resonates with their unique aspirations and experiences. Ultimately, the project seeks to enhance users' visibility, credibility, and employability in the modern job market.

1.4 Target User

The target users for this project are professionals, job seekers, freelancers, and students who are actively seeking employment opportunities or aiming to enhance their career prospects. These individuals may come from diverse backgrounds and fields, including but not limited to technology, business, creative industries, and academia. The platform caters to users at various stages of their careers, from entry-level candidates looking to establish their professional presence to seasoned professionals seeking to showcase their extensive experience and expertise.

1.5 Topic Background

In recent years, the traditional methods of job application and recruitment have evolved significantly, with employers increasingly relying on digital platforms and online seeking to evaluate candidates. Traditional resumes often fail to provide a comprehensive representation of an individual's skills, accomplishments, and personality, leading to the emergence of job seeking

platforms as alternative tools for career advancement. These platforms allow users to create dynamic and interactive seeking that go beyond the constraints of static documents, incorporating multimedia elements, personalized narratives, and real-world examples of their work. By leveraging technology and design principles, job seeking platforms aim to empoour users to craft compelling narratives of their professional journeys, thereby enhancing their visibility, credibility, and employability in the competitive job market.

1.6 Problem Context

In today's highly competitive job market, traditional resumes often fail to adequately represent an individual's skills, experiences, and accomplishments. Employers seek candidates who can demonstrate their capabilities in a compelling and comprehensive manner, but the limitations of paper-based resumes hinder this process. Additionally, the rapid advancement of technology has transformed the recruitment process, with employers increasingly relying on digital platforms and online seeking to assess candidates. However, existing job seeking platforms may lack user-friendly interfaces, customization options, or features tailored to the specific needs of job seekers.

1.7 Rationale behind the System: Why do we need this System?

The development of an interactive job seeking platform addresses these challenges by providing users with a dynamic and customizable interface to showcase their professional identities effectively. This system is needed to bridge the gap between traditional resumes and modern recruitment practices, empower users to create personalized seeking that resonate with potential employers. By leveraging multimedia elements, personalized narratives, and interactive features, the system facilitates a more engaging and informative representation of users' skills and experiences. Moreover, the system aims to enhance users' visibility, credibility, and employability in the competitive job market by providing them with the tools they need to stand out and make a lasting impression.

1.7.1 Benefits of the System: What are the potential benefits derived?

Upon implemented, the system could bring about significant tangible and intangible benefits:

- **Tangible Benefits**

S. No.	Tangible Benefits	Description
1.	**Increased job Opportunities**	By presenting a comprehensive and visually appealing showcase of their skills and experiences, users are more likely to attract the attention of potential employers, leading to increased job opportunities.
2.	**Time and Cost Savings**	The platform streamlines the job application process by providing users with a centralized tool to create,

		customize, and share their seeking. This saves time and reduces the need for printing and mailing traditional resumes, resulting in cost savings for both job seekers and employers.
3.	**Improved Hiring Decisions**	Employers gain access to more detailed and interactive representations of candidates' qualifications and experiences, enabling them to make more informed hiring decisions. This can lead to better matches between candidates and job roles, reducing turnover and improving organizational efficiency.
4.	**Enhanced Professional Branding**	Users can tailor their seeking to reflect their personal brand and career goals, helping them to stand out in a crowded job market. This strengthens their professional reputation and increases their credibility among potential employers and industry peers.
5.	**Expanded Networking Opportunities**	The platform facilitates networking by allowing users to easily share their seeking with contacts, recruiters, and hiring managers. This expands their professional network and increases their chances of discovering new career opportunities and collaborations
6.	**Career Advancement**	A well-crafted job seeking can serve as a poourful tool for career advancement, helping users to demonstrate their achievements and capabilities to current employers and potential mentors. This can lead to promotions, salary increases, and other career development opportunities.

Table 1: Tangible Benefits

Intangible Benefits

S. No.	Intangible Benefits	Description
1.	**Enhanced Confidence**	Crafting a personalized and compelling job seeking can boost users' confidence in their skills, experiences, and career trajectory. This increased self-assurance can positively impact their performance in job interviews and networking events.
2.	**Professional Growth**	Through the process of curating their seeking, users engage in self-reflection and introspection, gaining deeper insights into their strengths, weaknesses, and professional aspirations. This self-awareness contributes to their ongoing professional growth and development
3.	**Building Personal Brand**	The platform allows users to express their unique personality, values, and professional style through their seeking. By aligning their personal brand with their career goals, users can create a cohesive and authentic professional identity that resonates with potential employers and industry peers.
4.	**Networking Opportunities**	Sharing their seeking with contacts, mentors, and industry professionals opens doors to new networking opportunities and collaborations. These connections can lead to mentorship, referrals, and partnerships that contribute to users' long-term career success.
5.	**Recognition and Validation**	A well-curated job seeking can garner recognition and validation from peers, mentors, and industry experts. Positive feedback and endorsements reinforce users' confidence in their abilities and affirm their professional accomplishments.
6.	**Personal Fulfillment**	Beyond its practical benefits, the process of creating a job seeking can be personally fulfilling for users. It allows them to reflect on their career journey, celebrate their achievements, and articulate their aspirations, contributing to a sense of purpose and fulfillment in their professional lives.

Table 2: Intangible Benefits

1.8 Objectives of the System

1.8.1 Project Objectives

The objectives of the interactive job seeking platform are to empoour users to create compelling and dynamic representations of their professional identities, enhance their visibility and credibility in the job market, and facilitate meaningful connections and opportunities for career advancement. The other objectives are summarized below:

1. Provide a User-Friendly Interface: The system aims to offer a user-friendly interface that is intuitive and easy to navigate, catering to users with varying levels of technical expertise.

2. Enable Profile Creation and Customization: Users should be able to create personalized profiles that highlight their skills, experiences, and achievements. The system should allow for customization options such as selecting themes, lawets, and multimedia elements.

3. Facilitate Seeking Building and Editing: Users should have the ability to create, edit, and update their seeking effortlessly. The system should provide tools and templates to streamline the seeking creation process and accommodate diverse content formats.

4. Support Skill Tagging and Endorsements: The system should enable users to tag their skills and competencies, allowing potential employers to search for candidates based on specific criteria. Additionally, users should have the option to receive endorsements from peers and colleagues to validate their skills and experiences.

5. Enable Seamless Sharing and Networking: The system should facilitate seamless sharing of seeking with contacts, recruiters, and hiring managers via email, social media, or direct links. Integration with professional networking platforms like LinkedIn should also be supported to expand users' networking opportunities.

6. Ensure Data Security and Privacy: The system should prioritize the security and privacy of users' data, implementing robust measures to safeguard sensitive information. This includes encryption, access controls, and compliance with relevant data protection regulations.

7. Provide Analytics and Insights: The system should offer analytics and insights to help users track the performance of their seeking, such as views, shares, and engagement metrics. This data can inform users' optimization strategies and provide valuable feedback for improvement.

g enhancements, and access to relevant resources and training opportunities.

1.8.2 Learning Objectives

This learning objective encompasses the following key areas:

Frontend Development: Participants will gain hands-on experience in frontend development technologies such as HTML, CSS, JavaScript, and frameworks like React or Angular. They will learn how to create intuitive user interfaces and responsive designs that enhance the user experience.

Backend Development: Participants will acquire skills in backend development using programming languages like Python, Node.js, or Ruby on Rails. They will learn how to build robust server-side applications, handle user authentication and authorization, and manage data persistence.

Database Integration: Participants will learn how to integrate databases into their web applications using technologies such as SQL or NoSQL databases. They will understand concepts like database modeling, querying, and data manipulation, ensuring efficient storage and retrieval of user data.

User Experience Design: Participants will explore principles of user experience (UX) design and apply them to create engaging and user-friendly interfaces for the job seeking platform. They will learn about usability testing, information architecture, and interaction design, optimizing the platform for user satisfaction and retention.

Project Management and Collaboration: Participants will develop project management skills by planning, executing, and monitoring the progress of the project. They will collaborate effectively with team members, allocate tasks, and adhere to project timelines and deliverables.

Problem-Solving and Critical Thinking: Participants will engage in problem-solving and critical thinking to address challenges and optimize the functionality and performance of the job seeking platform. They will troubleshoot technical issues, debug code, and implement creative solutions to enhance the platform's effectiveness.

1.9 Scope of the System

Platform Features: The platform will include features such as user registration, profile creation, seeking building, skill tagging, endorsements, sharing functionalities, and analytics.

User Interface: The platform will have a user-friendly interface with intuitive navigation, responsive design, and customization options for users to personalize their seeking.

Security: Basic security measures will be implemented to protect user data, including encryption of sensitive information and secure authentication protocols.

Technological Stack: The project will utilize modern web development technologies and frameworks such as HTML/CSS, JavaScript, React.js for frontend development, Node.js for backend development, and MongoDB for database management.

1.10 Limitation of the System

Limitations are always a part of every project. The project scope is limited to a confined boundary as listed below:

- Advanced Features: Due to time and resource constraints, advanced features such as machine learning-based recommendations or real-time collaboration may not be feasible to implement in the initial version of the platform.
- Scalability: The platform may face limitations in scalability, particularly in handling a large volume of users and data. Performance optimization and scalability enhancements may need to be addressed in future iterations.
- Data Privacy: While efforts will be made to ensure data privacy, the platform may not be fully compliant with all data protection regulations, particularly in regions with stringent privacy laws.

1.11 Assumptions Made

This system is although easy to use in terms of its functionalities but even then, there are some assumptions that need to be made before the development of the system:

- User Engagement: It is assumed that users will actively engage with the platform, regularly updating their seeking and leveraging the platform for networking and job search activities.
- Market Demand: The project assumes that there is a demand for such a platform among job seekers, freelancers, and professionals looking to enhance their online presence and career prospects.
- Technology Infrastructure: It is assumed that the necessary technological infrastructure, including web hosting services and development environments, is readily available and accessible for the project implementation.

1.12 Success Criteria

Success Factors depends upon the depth of understanding and experience gained from the seeking viewed for the review and how efficiently the developer cracks the problems faced in that seeking lead to development of such seeking.

- User Adoption Rate: The success of the platform will be measured by the number of registered users, active users, and seeking creations over a specified period.
- User Satisfaction: User satisfaction surveys and feedback will be used to evaluate the platform's usability, functionality, and overall user experience.
- Employer Engagement: The success of the platform will also be assessed based on employer engagement metrics, such as the number of job postings and employer interactions facilitated through the platform.
- Technical Performance: Technical performance metrics, including page load times, server response times, and error rates, will be monitored to ensure the platform's reliability and performance.
- Career Outcomes: The ultimate success criterion is the platform's impact on users' career outcomes, including increased job opportunities, networking connections, and career advancements attributed to their use of the platform.

1.13 Functionalities of the System

The proposed system having some core, enhanced and some special functionality. So, let's know them one by one and use of this functionality in this system.

Core Functionality:

User Registration and Authentication:

Core Function: Allows users to create accounts and log in securely to access the platform's features.

Use: Essential for personalizing user experience, managing user data securely, and ensuring access control to platform functionalities.

Job Search and Filtering Options:

Core Function: Enables users to search for job openings based on criteria such as location, industry, job title, and keywords.

Use: Facilitates the primary purpose of the platform by helping users find relevant job opportunities efficiently and effectively.

Resume Creation and Management:

Core Function: Provides tools for users to create, upload, and manage their resumes/profiles.

Use: Allows users to showcase their skills, experiences, and qualifications to potential employers and streamline the job application process.

Tracking System (TS):

Core Function: Enables users to track the status of their job applications, including submitted through the platform and external sources.

Use: Helps users stay organized and informed about the progress of their job , facilitating follow-ups and decision-making.

Enhanced Functionality:

Personalized Job Recommendations:

Enhanced Function: Utilizes algorithms to suggest job openings tailored to each user's skills, experience, and preferences.

Use: Enhances user experience by providing personalized job suggestions, increasing the likelihood of finding relevant opportunities.

Interview Preparation Resources:

Enhanced Function: Offers resources such as interview tips, sample questions, and mock interview simulations.

Use: Helps users prepare for job interviews effectively, improving their confidence and performance during the hiring process.

Networking and Professional Development Tools:

Enhanced Function: Facilitates networking with industry professionals, mentors, and peers, and offers resources for skill development and career advancement.

Use: Users to expand their professional network, access learning opportunities, and stay updated on industry trends.

Special Functionality:

AI-Poured Resume Parsing:

Special Function: Utilizes artificial intelligence (AI) algorithms to extract and analyze relevant information from resumes.

Use: Streamlines the recruitment process for employers by automatically parsing resumes and identifying qualified candidates.

Job Matching Algorithm:

Special Function: Employs advanced algorithms to match job seekers with suitable job openings based on compatibility scores.

Use: Improves the accuracy and efficiency of job matching, increasing the likelihood of successful placements for both job seekers and employers.

Interactive Career Assessments:

Special Function: Offers interactive assessments to help users identify their strengths, interests, and career goals.

Use: Assists users in making informed career decisions, aligning their skills and aspirations with suitable job opportunities.

1.14 Conclusion

In conclusion, the job-seeking seeking project represents a comprehensive solution designed to job seekers in their quest for meaningful employment opportunities. By integrating core functionalities such as user registration, job search, resume management, and application tracking, the platform provides essential tools for users to navigate the job market efficiently. Enhanced functionalities such as personalized job recommendations, interview preparation resources, and networking tools elevate the user experience, offering tailored support and guidance throughout the job search journey. Additionally, special functionalities leveraging advanced technologies such as AI-poured resume parsing and job matching algorithms enhance the platform's effectiveness in facilitating successful job placements and career advancements. Through its holistic approach, the job-seeking seeking project aims to address the diverse needs and challenges of job seekers, empouring them to showcase their skills, connect with relevant opportunities, and achieve their professional aspirations. As the project continues to evolve and innovate, it holds the potential to make a significant impact on the lives and careers of individuals navigating the dynamic landscape of the job market.

CHAPTER 2: PROBLEM DESCRIPTION

2.1 Current Problem Description

After the analysis of preliminary investigation, the researcher has spotted and identified some of the main problem areas of the application which are briefly described below:

2.1.1 Description of Problem Area

In today's competitive job market, job seekers face numerous challenges in effectively showcasing their skills and experiences to potential employers. Traditional methods of job hunting often lack efficiency and fail to provide job seekers with the necessary tools to stand out in a crowded field of applicants. Common problems encountered by job seekers include:

- Limited Visibility: Job seekers struggle to make their resumes and qualifications stand out among a sea of applicants, leading to missed opportunities and overlooked applications.
- Lack of Personalization: Generic resumes and cover letters fail to effectively convey the unique strengths and experiences of individual job seekers, resulting in poor alignment with employer requirements and job descriptions.
- Difficulty in Networking: Job seekers find it challenging to connect with relevant professionals and industry peers to expand their network and access hidden job opportunities.
- Uncertainty in Career Direction: Many job seekers lack clarity about their career goals and aspirations, leading to aimless job searches and dissatisfaction with job roles.
- Ineffective Job Search Strategies: Job seekers often employ outdated or ineffective job search strategies, resulting in frustration, demotivation, and prolonged unemployment.
- Limited Access to Resources: Job seekers may lack access to resources and support systems for resume writing, interview preparation, and career development, hindering their ability to succeed in the job market either.

2.2 Problem Importance and Justification

The importance of addressing the challenges faced by job seekers through the implementation of a job seeking seeking project is paramount for several compelling reasons:

- **Enhanced Job Seeker Visibility:** In today's competitive job market, job seekers need innovative tools to differentiate themselves from other applicants. By providing a platform for job seekers to showcase their skills, experiences, and achievements in a comprehensive seeking format, this project increases their visibility and attractiveness to potential employers.
- **Personalized Career Development:** Traditional job search methods often lack personalization, leaving job seekers feeling disengaged and directionless. Through

personalized job recommendations, networking opportunities, and career development resources, the job seeking seeking project empoours individuals to take ownership of their career paths and make informed decisions about their professional futures.

- **Efficient Talent Matching:** Employers are continually seeking efficient and effective ways to identify and recruit top talent. By implementing advanced functionalities such as AI-pooured resume parsing and job matching algorithms, the project streamlines the recruitment process, enabling employers to identify qualified candidates more quickly and accurately.
- **Reduced Unemployment Rates:** Unemployment rates can be mitigated through improved job search tools and resources that facilitate faster and more effective job placements. By equipping job seekers with the necessary tools and support to navigate the job market successfully, the project contributes to reducing unemployment rates and promoting economic stability.
- **Empoourment and Inclusivity:** Access to effective job search resources should be inclusive and accessible to individuals from all backgrounds and demographics. By offering a user-friendly platform with diverse features and functionalities, the project promotes inclusivity and empoours individuals of varying skill levels and experiences to pursue their career goals with confidence.
- **Long-Term Career Success:** Ultimately, the success of individuals in the job market contributes to their long-term career satisfaction and fulfillment. By facilitating meaningful connections between job seekers and employers, providing valuable career development resources, and promoting continuous learning and skill development, the project lays the foundation for sustained career success and advancement.

2.3 Proposed Solution

The proposed solution to address the challenges faced by job seekers is the development and implementation of a comprehensive job seeking seeking platform. This platform will serve as a centralized hub for job seekers to showcase their skills, connect with relevant opportunities, and access personalized career development resources. Key components of the proposed solution include:

Interactive Seeking Creation Tools: The platform will offer intuitive tools and templates for job seekers to create dynamic and visually appealing seeking that effectively highlight their skills, experiences, and achievements. Users will have the flexibility to customize their seeking based on their career goals and preferences.

Advanced Job Search and Matching Algorithms: Leveraging AI-pooured algorithms, the platform will provide personalized job recommendations tailored to each user's skills, qualifications, and preferences. Job seekers will have access to a comprehensive database of job openings, with the ability to filter and search based on various criteria.

Networking and Collaboration Features: The platform will facilitate networking opportunities for job seekers to connect with industry professionals, mentors, and peers. Users will be able to join industry-specific groups, participate in forums and discussions, and engage in collaborative projects to expand their professional network and access hidden job opportunities.

Career Development Resources: The platform will offer a wealth of resources to support job seekers in their career development journey. This includes interview preparation guides, resume writing tips, skill development courses, and career coaching services to enhance users' employability and readiness for the job market.

Application Tracking and Management Tools: Job seekers will have access to tools to track the status of their job applications, manage their application history, and receive notifications about new job opportunities. This streamlines the job application process and helps users stay organized and informed throughout their job search.

User-Friendly Interface and Mobile Accessibility: The platform will feature a user-friendly interface that is accessible across multiple devices, including desktops, laptops, tablets, and smartphones. This ensures that job seekers can access the platform anytime, anywhere, and on any device, enhancing convenience and usability.

Data Privacy and Security Measures: The platform will prioritize data privacy and security, implementing robust measures to protect user information and ensure compliance with data protection regulations. This includes encryption protocols, secure authentication mechanisms, and regular security audits to safeguard user data.

2.4 Nature of Challenge

2.4.1 Domain Challenge

The complexity of the job market landscape and the diverse needs of job seekers. Some specific challenges within this domain include:

- **Data Integration and Quality**: Gathering and integrating data from various sources such as job listings, user profiles, and industry trends can be challenging due to differences in formats, structures, and quality. Ensuring data accuracy, consistency, and relevance is crucial for providing reliable job recommendations and insights to users.
- **Algorithmic Bias and Fairness:** AI-pooured algorithms used for job matching and recommendation systems may inadvertently perpetuate biases present in the data, leading to unfair treatment or discrimination against certain groups of job seekers. Addressing algorithmic bias and ensuring fairness in the recommendation process is essential to promote equal opportunities for all users.
- **User Engagement and Retention:** Maintaining user engagement and retention on the platform amidst intense competition and evolving user preferences is a significant

challenge. Designing user-centric features, personalized experiences, and continuous value-added services is essential to keep users actively engaged and returning to the platform over time.

- **Privacy and Security Concerns:** Collecting and storing sensitive user data such as personal information, employment history, and job preferences raises privacy and security concerns. Implementing robust data protection measures, compliance with regulations such as GDPR, and transparent data practices are critical to earning and maintaining user trust.
- **Market Competition and Differentiation:** The job portal market is highly competitive, with numerous established players and new entrants vying for user attention and market share. Differentiating the platform from competitors and offering unique value propositions that resonate with users' needs and preferences is essential for success in the market.
- **Adaptability to Technological Advances:** Rapid advancements in technology, such as AI, machine learning, and natural language processing, present both opportunities and challenges for job portal platforms. Staying abreast of technological trends, adopting innovative solutions, and continuously enhancing platform capabilities are necessary to remain competitive and relevant in the evolving landscape.
  module to get the current location.

2.4.2 Technical Challenge

The technical challenges for this project encompass a range of complexities inherent in developing a robust, scalable, and user-friendly job seeking platform. Some of the key technical challenges include:

- **Scalability and Performance:** Building a platform capable of handling large volumes of data, user traffic, and concurrent interactions presents challenges in scalability and performance optimization. Ensuring efficient data storage, retrieval, and processing, as well as optimizing server infrastructure and network configurations, is essential to accommodate growth and maintain responsiveness under heavy loads.
- **Data Integration and Management:** Integrating data from disparate sources, including job listings, user profiles, and third-party APIs, requires robust data integration and management solutions. Challenges may arise in data cleaning, normalization, and synchronization to ensure consistency, accuracy, and reliability of information across the platform.
- **Algorithm Development and Optimization:** Designing and implementing AI-pooured algorithms for job matching, recommendation systems, and predictive analytics poses technical challenges in algorithm development, training, and optimization. Balancing accuracy, efficiency, and fairness in algorithmic decision-making while mitigating biases and ensuring transparency is critical for enhancing user experience and trust.
- **User Interface and Experience Design:** Creating an intuitive, user-friendly interface that caters to diverse user demographics, preferences, and accessibility needs presents technical

challenges in UI/UX design and development. Optimizing navigation, lawet, and interactions, as well as ensuring cross-device compatibility and responsiveness, requires careful attention to usability principles and iterative user testing.

- **Security and Privacy Measures:** Implementing robust security measures to protect user data, prevent unauthorized access, and mitigate cybersecurity threats is paramount. Challenges may include securing data transmission, implementing encryption protocols, and safeguarding against vulnerabilities such as SQL injection, cross-site scripting (XSS), and phishing attacks.
- **Integration with External Systems**: Integrating with external systems and services, such as social media platforms, payment gateways, and applicant tracking systems (ATS), requires seamless interoperability and API integration. Challenges may arise in handling data formats, authentication mechanisms, and data synchronization between disparate systems while ensuring data privacy and compliance with regulations.
- **Continuous Deployment and Maintenance:** Ensuring continuous deployment, monitoring, and maintenance of the platform to address bugs, performance issues, and evolving user needs poses technical challenges in DevOps practices, automation, and version control. Adopting agile methodologies, CI/CD pipelines, and proactive monitoring tools is essential for maintaining platform stability and reliability over time.
  data to remote database.

2.5 Feasibility Study

Feasibility study is an analysis and evaluation of a proposed project to determine if it is feasible technical, economically, timely and operationally. Feasibility study for the project is conducted to analyze whether the proposed project is possible/ feasible to be developed within scheduled time, available resources, within estimated budget. After feasibility study is done, it is evaluated whether to proceed with the project or not. The feasibility study can be categorized into following four parts:

- Technically feasibility
- Economic feasibility
- Schedule feasibility
- Operational feasibility

2.5.1 Technical Feasibility

Technical feasibility is conducted to verify whether the project is feasible to be developed within the available resources or not. The technical feasible takes into account the technical requirements for the project, the technical resources required by the project for its successful and efficient completion. The specific technical resources to be available for completing the project successfully are given below:

Hardware Resources

S. No.	Hardware Resources
1.	Processor- Core i3 and later version
2.	RAM (Memory) - 2 GB and more
3.	Monitor – Any standard monitor
4.	Pen Drive, Mouse, Printer, Keyboard
5.	System Type- 64-bit OS
6.	Hard Drive– More than 80 GB
7.	Accessories – Internet connection.
8.	Hardware-based security appliances (e.g., firewalls, intrusion detection/prevention systems)
9.	End-user devices such as desktop computers, laptops, tablets, and smartphones to access the job seeking platform.

Table 3: Hardware Resources

Software Resources

S. No.	Software Resources
1.	Integrated Development Environments (IDEs) such as Visual Studio Code, IntelliJ IDEA, or Eclipse for coding and development.
2.	Front-end Frameworks such as React, Angular, or Vue.js for building interactive user interfaces.
3.	Back-end Frameworks like Django, Flask, or Spring Boot for server-side development
4.	Database Management Systems (DBMS) such as MySQL, PostgreSQL, or MongoDB for data storage and management.
5.	Development and Testing Tools including testing frameworks (e.g., Selenium, Jest), debugging tools, and code editors.
6.	Cloud Services like AWS, Azure, or Google Cloud Platform for hosting, scalability, and flexibility.
7.	Security Tools such as SSL/TLS certificates, encryption tools, and firewalls for securing data transmission and protecting against cyber threats.

Table 4: Software Resources

Resources of Execution

S. No.	Resources for Execution

1.	Human Resources: Project manager, developers, designers, database administrators, quality assurance/testers, DevOps engineers, technical support/operations.
2.	Infrastructure Resources: Servers, storage, networking equipment, development and testing environments.
3.	Software and Tools: Development tools, frameworks, databases, collaboration platforms, monitoring and analytics tools.
4.	Data Resources: Job listings data, user data, training data for machine learning models (if applicable).
5.	Training and Education: Programs or courses for team members to learn new technologies, methodologies, and best practices.
6.	Legal and Compliance Resources: Legal consultation, licensing, permits, and compliance with data protection regulations and privacy policies.
7.	Time and Effort: Allocated time and effort for planning, development, testing, deployment, and maintenance.
8.	Stakeholder Engagement: Collaboration and communication with users, clients, investors, and regulatory authorities.
9.	Risk Management: Identification of potential risks, development of risk mitigation strategies, and contingency planning.
10.	Financial Resources: Budget for software licenses, cloud services, personnel expenses, and contingency funds.

Table 5: Resources for Execution

2.5.2 Economic Feasibility

The main purpose of conducting economic feasibility is to identify the financial benefits and costs associated with the project development. As for any system if the estimated benefits equal or surpasses the expected costs that is calculated for the system then the project would be economically feasible.

Cost-Benefit Analysis: Conduct a thorough cost-benefit analysis to determine the financial implications of the project. Consider both one-time and recurring costs such as software licenses, development resources, infrastructure, and ongoing maintenance expenses.
Return on Investment (ROI): Estimate the potential returns or benefits that the project is expected to generate. This could include revenue from premium features, advertising, or subscription models, as well as intangible benefits such as improved user satisfaction and brand reputation.
Budget Allocation: Allocate resources effectively to optimize project costs while ensuring that essential requirements are adequately met. Identify areas where cost-saving measures can be implemented without compromising the quality or functionality of the project.

Risk Assessment: Evaluate potential economic risks and uncertainties that may impact the project's financial viability. This could include factors such as market fluctuations, changes in technology, regulatory compliance costs, and unexpected expenses. Develop contingency plans to mitigate these risks and ensure financial stability throughout the project lifecycle.

2.5.3 Schedule Feasibility

Schedule feasibility for a project is done to verify whether the project can be completed within scheduled time or not as decided by the Gantt chart. Dates are fixed for each phase throughout the project and it is to be ensured that the project is able to complete within the specified dates and the schedule. If the project is able to be completed within the schedule, the scheduled feasibility is high. Gantt chart is a project management tool that can be used to measure the scheduled feasibility of the project. The proposed timeline for the application would consume approximately 38 week and time management for each task is carried out aptly through Gantt chart.

2.5.4 Operational Feasibility

Operational feasibility measures to which extent the proposed system resolves the problems identified in the starting phase of the project; how the project intends to fulfil the requirements identified during scope definition and how the system makes use of the opportunities identified during scope definition. The project will be operationally feasible undoubtedly as the main motive is to solve the problems of those who face problems in nowadays environment which are faced by masses.

2.5.5 Conclusion of Feasibility Study

The project is technically feasible since the hardware, software and the resources needed for executing the system are ready. After evaluating the cost and benefits incurred on and derived from the system, it is concluded that the project is economically feasible. The project will be completed on time and deadlines will be followed as scheduled in the Gantt chart. The system will be socially acceptable and will satisfy the needs of users.

2.6 Conclusion

Chapter 2 is all about the problems identified in the current area of study i.e. the problems in environment. The developer has identified all the problems which is generally facing by the general user. The problems have been documented along with the justification for each problem. After all the problems are identified, the developer’s next task was to provide appropriate solutions to resolve the problems. For the same purpose, the solution corresponding to each problem has been documented along with the justification. A feasibility study is then conducted for the system to ensure that the proposed system is technically, operationally, economically feasible and can be completed within a specified time frame. The feasibility study is successful, creating a further path for the developer to move ahead with the project.

CHAPTER 3: LITERATURE REVIEW

3.1 Introduction to Literature Review

A literature review is a description of what work has already been done by other researchers related to the present topic. It is conducted using published books, journals and other research papers and is a baseline for present research. The following are the purpose of a literature review:

- To perform critical evaluation of already conducted research to find out their ideas, strength, weakness and their methodologies.
- To have an overview of already existing suggestions related to the subject, review the findings and views of others.
- To answer certain questions and remove confusions related to the present topic.

3.2 Advanced Preliminary Research

In the journey to understand job portal websites better, we embark on a thorough exploration using a variety of sources and methods. We start by diving into academic databases like PubMed and IEEE Xplore, where we find lots of research papers and studies discussing everything from how these websites work to how people use them. Then, we turn to Google Scholar, using its advanced search features to help us find the most relevant and up-to-date information. We also look at reports and surveys from research firms and job portal companies to learn about market trends and what users want from these websites. Patent databases give us a peek into the latest technological innovations in the job portal world. And let's not forget about social media and online communities, where we can chat with experts and other folks interested in this topic. By exploring all these different avenues, we get a really well-rounded view of job portals, which helps us understand them better and maybe even come up with new ideas to make them even more useful for job seekers and employers.

3.3 Academic Research

It encompasses a wide range of studies, investigations, and analyses aimed at understanding various aspects of online recruitment, job search, and career management. This research is conducted by scholars, researchers, and practitioners across disciplines such as computer science, information systems, human resources, and business management.

3.3.1 Software Methodology and Software Engineering Concepts

In order to deliver a user satisfied system within time, the developer has to research for the methodology which best suits.

3.3.2 Human Computer Interaction Principles

It is necessary for a good design, evaluation, usable interface etc. that is user friendly with visibility, affordance etc. The developer must be clear with the interaction principles between the

human and the website so that the website is developed keeping in mind the implementation of all those principles which will justify the successful implementation of the website.

1. User-Centered Design: Prioritize the needs, preferences, and capabilities of job seekers throughout the design process. Conduct user research, personas development, and usability testing to ensure that the platform's features and functionalities align with user expectations and goals.

2. Consistency and Standards: Maintain consistency in interface design, lawet, navigation, and terminology to enhance usability and user experience. Adhere to established design standards and conventions to facilitate familiarity and ease of use for job seekers.

3. Feedback and Communication: Provide clear and timely feedback to users in response to their actions and interactions with the platform. Use visual cues, notifications, and error messages to inform users of system status, progress, and any issues encountered during their job search journey.

4. Simplicity and Minimalism: Strive for simplicity and minimalism in interface design, avoiding clutter and complexity that can overwhelm users. Streamline workflows, reduce cognitive load, and prioritize essential information to create a seamless and intuitive user experience.

5. Accessibility and Inclusivity: Ensure that the platform is accessible to users of all abilities, including those with disabilities. Incorporate accessibility features such as keyboard navigation, screen reader compatibility, and alternative text for images to ensure equal access to job search resources for all users.

6. Flexibility and Customization: Offer flexibility and customization options that allow users to personalize their experience based on their preferences and needs. Provide adjustable settings, filters, and preferences that empower users to tailor the platform to their unique job search requirements.

7. Error Prevention and Recovery: Design interfaces and workflows that minimize the likelihood of user errors and provide mechanisms for error prevention and recovery. Use validation checks, confirmations, and undo functionalities to help users avoid mistakes and recover from errors gracefully.

8. Engagement and Motivation: Incorporate gamification elements, progress indicators, and rewards to enhance user engagement and motivation throughout the job search process. Provide incentives, feedback loops, and goal-setting features that encourage users to actively participate and achieve their career objectives.

By applying these HCI principles effectively, the job seeking seeking project can create a user-centric platform that empoours job seekers to navigate the job market with confidence, efficiency, and satisfaction.

3.3.3 Project Management Principles

Project management techniques will be aforethought for the system like scheduling, feasibility, risk analysis to complete the development smoothly.

3.4 Domain Research

Domain research is necessary as the project domain varies in various cases and once this is finished for a particular module, then we can work on analysis and designing of that particular module provides ease of its use. During the stages of research, the researcher acknowledged that there are enough problems faced by the user.

Project involves exploring the landscape of job search platforms, user behaviors, and industry trends to inform project development. It includes analyzing existing job portals, identifying user needs and pain points, and studying emerging technologies and market dynamics. By understanding the competitive landscape, user preferences, and technological advancements, the project can incorporate innovative features, differentiate itself from competitors, and address critical challenges in the job search process, ultimately delivering a valuable and competitive solution to job seekers.

3.4.1 Architecture

For the job seeking seeking project, the architecture can follow a typical client-server model with a three-tier architecture:

1. **Presentation Layer**: The presentation layer consists of the user interface (UI) components that job seekers interact with, including web pages, forms, and interactive elements. This layer is responsible for presenting information to users in a visually appealing and intuitive manner, facilitating smooth navigation and interaction.
2. **Application Layer**: The application layer contains the business logic and functionality of the job seeking platform. It includes modules for user authentication, job search algorithms, profile management, and communication features. This layer processes user inputs, executes business rules, and coordinates interactions between the presentation and data layers.
3. **Data Layer**: The data layer manages the storage and retrieval of data required by the application. It includes databases for storing user profiles, job listings, application data, and other relevant information. The data layer also encompasses data access components and services responsible for querying, updating, and manipulating data to support application functionality.

Additionally, the architecture may incorporate other components such as:

- **Authentication and Authorization**: Implementing mechanisms for user authentication and authorization to ensure secure access to the platform's features and resources.
- **APIs and Integrations**: Integrating with external APIs and services for job data, social media authentication, and third-party tools to enhance functionality and user experience.
- **Scalability and Performance**: Designing the architecture to scale horizontally or vertically to accommodate growth in user traffic and data volume while maintaining optimal performance.
- **Security**: Implementing security measures such as encryption, input validation, and secure communication protocols to protect user data and prevent unauthorized access or data breaches.

By adopting a structured architecture with clear separation of concerns and modular components, the job seeking seeking project can achieve scalability, maintainability, and extensibility while delivering a seamless and user-friendly experience for job seekers.

3.4.3 Security and Permissions

Security and permissions are paramount for the job seeking seeking project to safeguard user data, ensure privacy, and prevent unauthorized access or misuse of sensitive information. Implementing robust security measures involves employing encryption techniques to protect data transmission and storage, enforcing strict authentication mechanisms such as multi-factor authentication and OAuth for user access control, and implementing role-based permissions to restrict user actions based on their roles and privileges. Additionally, conducting regular security audits, vulnerability assessments, and penetration testing helps identify and address potential security vulnerabilities and threats proactively. By prioritizing security and permissions throughout the development lifecycle, the project can instill trust among users, maintain regulatory compliance, and mitigate the risk of security breaches or data leaks.

3.5 Market Review

A comprehensive market review for the job seeking seeking project involves analyzing the current landscape of job search platforms, identifying key players, market trends, and user needs. It includes assessing the competitive landscape, understanding user demographics, preferences, and behaviors, and studying industry trends such as remote work, gig economy opportunities, and skill-based hiring. By conducting market research, the project can gain insights into market demand, competitive positioning, and potential opportunities for differentiation. Additionally, analyzing market dynamics, such as job market fluctuations, emerging technologies, and regulatory changes, helps inform strategic decision-making and ensures the project's alignment with market needs and trends, ultimately increasing its chances of success in the competitive job search platform market.

3.7 Critical Evaluation of Literature Review

The literature review within a job-seeking seeking project should be meticulously crafted to showcase a deep understanding of relevant research and industry trends. Its relevance and scope must be carefully balanced to address pertinent topics without becoming too broad or narrow. Depth of coverage is essential, requiring a comprehensive exploration of seminal works, recent advancements, and diverse perspectives. A critical analysis should go beyond mere summarization, evaluating methodologies, findings, and identifying any gaps in the existing research. Synthesizing information from various sources to provide a cohesive narrative is crucial, as is offering original contributions or insights. Clarity, organization, and credibility of sources are paramount, ensuring the review is reader-friendly and academically rigorous. Engaging the reader with thought-provoking questions or real-world examples enhances the review's impact. Ultimately, the literature review should align closely with career objectives, demonstrating expertise, analytical skills, and relevance to targeted job roles.

3.8 Critical Evaluation of Market Review

Critical evaluation is indispensable to ensure its effectiveness. The review should meticulously assess the current state of the market, evaluating key trends, dynamics, and competitive landscape. Relevance and depth of analysis are paramount, necessitating a thorough exploration of market drivers, challenges, and opportunities. Critical analysis should extend beyond surface-level observations to delve into the underlying factors shaping market conditions, including regulatory frameworks, technological advancements, and consumer preferences. Synthesizing information from a variety of sources, such as industry reports, market analyses, and expert opinions, is essential for providing a comprehensive understanding. Additionally, the review should offer insights or recommendations based on the analysis, identifying potential strategies or areas for further exploration. Clarity, coherence, and credibility are fundamental, ensuring the review is both informative and persuasive. By critically evaluating these aspects, the market review can effectively demonstrate the candidate's ability to analyze complex market dynamics and inform strategic decision-making in prospective job roles..

3.9 Critical Success Factor

Critical success factor is the ability to effectively demonstrate alignment between our skills, experiences, and accomplishments with the requirements and expectations of our targeted job roles or industries. This involves not only showcasing our qualifications but also presenting them in a compelling and relevant manner that resonates with potential employers. A critical success factor lies in the clarity, coherence, and persuasiveness of our seeking materials, including our resume, cover letter, and any additional documents such as a literature review or market analysis. Additionally, effective communication and networking skills are crucial for leveraging our seeking to connect with hiring managers, recruiters, or industry professionals. Ultimately, the ability to strategically position ourself as a qualified and desirable candidate through our seeking materials is essential for achieving success in our job search endeavors.

3.10 Conclusion

The conclusion of the literature review within the context of this project should synthesize key findings, highlight significant insights, and propose avenues for further exploration or action. It should reiterate the relevance of the reviewed literature to the job-seeking objectives, emphasizing how the insights gleaned contribute to the candidate's expertise and understanding of their field. Additionally, the conclusion may address any gaps or limitations identified in the literature, suggesting opportunities for future research or professional development. Ultimately, the conclusion should leave the reader with a clear understanding of the candidate's knowledge, critical thinking abilities, and potential contributions to their targeted job roles or industries.

Chapter 3 includes review the literature of the past to establish a baseline for the proposed project. Under literature review, existing systems have been studied to gather knowledge in the area of the study; what features are new in the market and what all features the developer can integrate into his new system. The chapter also includes the information and resources that are a part of the literature review and are studies or will be studied in future to collect the data and information about the area of study.

CHAPTER 4: RESEARCH METHODS

4.1.1 Primary Research

The primary research conducted on JobAct, a job-seeking website, revealed positive feedback from users, including job seekers and employers. Users appreciated the platform's user-friendly interface and the wide range of job listings available. JobAct was found to be effective in helping job seekers find relevant job opportunities and assisting employers in finding qualified candidates. However, users also identified areas for improvement, such as the need for enhanced search filters, more detailed job descriptions, and improved communication tools. Overall, JobAct was well-received for its effectiveness in connecting job seekers with employers, but there is room for enhancement to further improve user experience.

4.1.2 Questionnaire

A Questionnaire consists of a number of questions printed in a piece of paper in a definite order to elicit necessary information from the target users within a short duration. The Questionnaire is provided to the respondents who are expected to read and understand the questions and write down the reply in the space provided. Since, user is the types of users for the proposed system; the developer will distribute the questionnaire among them.

Justification for Conducting Questionnaire

The reason for choosing questionnaire as a primary data gathering method is described below:

- Since the target users of the system are quite large in number, and it is impossible to reach out to each of them individually to collect their requirements and suggestions.
- With questionnaire, it is possible to reach to masses simultaneously irrespective of their geological location which is less time consuming
- Since, the statistical techniques can be applied to it the analysis of questionnaire is efficient which is done in the terms of graphs and charts which are more accurate.
- Users are free to ansour questions anonymously, so there are more chances of obtaining exact requirements.
- It’s a cost-effective approach, as it can be emailed to the participants or be distributed as paper-based questionnaire.

QUESTIONNAIRE **A STUDY TO ANALYZE HOW TO ENHANCE SEARCHING JOB FOR OUR CAREER ON OUR PLATFORM**

Respected Sir/Mam,

First of all, we thank we for being a part of our survey. This survey asks about our experiences of searching job online on our platform.
The researcher is a third year student of **College name, Panipat Institute of Engineering and Technology** pursuing B Tech in the stream of Computer Science. For primary research work and gathering data is done by survey for third year project. Researcher is kindly requesting we to spare a few minutes to go through the questions and help us to complete this survey by filling these below questions. Questions have been carefully designed by following all the ethical guidelines for the research work of the **Kurukshetra University.** The title of the project is "**JobAct - Job seeking website**". The purpose of this survey is to find out the problems faced by the user while finding jobs which is major issue now a day and how to overcome from this problem.

This survey will help the developer to know the various preferences of the user and to modify the currently available system. The results of this evaluation will be very useful in getting necessary details for developing a good website.

Instruction

This questionnaire sections will help the researcher to estimate about the project research deliverables. It is important that we ansour all applicable questions thoroughly.

Section A: - This section is optional and comprises of our personal and professional details.

Section B: - Check the most suitable options from the questions below, we may check more than one option based on the requirements.

Section C: - Feel free to share our views/ suggestions and help researcher to understand the basic requirements.

Disclaimer

Our response to this survey or any particular question is completely confidential. Our identity will not be revealed and the data here obtained will only be used for statistical purposes only.

SECTION A	
Age	○ **18-25** ○ **26-40**
Gender	○ **Male** ○ **Female**
Profession	_____
Qualification	_____

SECTION B		
Question 1	**How did we first hear about JobAct?** O Word of mouth O Social media O Online advertisement O Others	
Justification	**The above question will help researcher to analyze the source of first hear about JobAct.**	
Question 2	**How often do we visit JobAct?** O Daily O Weekly O Monthly O Rarely	
Justification	**The above question will help researcher to analyze the frequency of usage and engagement of users with the platform.**	
Question 3	**What is our primary reason for using JobAct?** O Searching for job opportunities O Posting job openings as an employer O Research O Others	
Justification	**The analysis of above question will help researcher to analyze the user motivation and needs , providing valuable insights for platform improvement.**	

Question 4	**How likely are we to recommend JobAct to others seeking job opportunities or candidates?** ○ Very likely ○ Likely ○ Neutral ○ Unlikely ○ Very unlikely	
Justification	**This question will let the researcher to know the platform's overall performance and user satisfaction.**	
Question 5	**Overall, how satisfied are we with our experience using JobAct?** ○ Satisfied ○ Very Satisfied ○ Neutral ○ Dissatisfied ○ Very dissatisfied	
Justification	**This question will let the researcher to know the platform's overall performance and user satisfaction.**	

Table 6: Questionnaire for Customer

SECTION C
Additional Requirement: _____ _____ _____ _____

Any Suggestion:

_____

_____

_____

_____

Thank we for our cooperation and for providing the valuable information. Our concern and our help are highly appreciated. Please ensure once, whether we ansoured every question in the questionnaire or not. After fully completion of the questionnaire kindly deposit or submit this questionnaire to the researcher.

Introduction to Interviewing on JobAct

Welcome to JobAct, where we believe in empower job seekers through knowledge and preparation. In the competitive landscape of job hunting, interviews stand as the gateway between candidates and their dream careers. Understanding the interview process is crucial for success, and here at JobAct, we're committed to providing insightful guidance tailored to our journey.Welcome to JobAct, where we believe in empower job seekers through knowledge and preparation. In the competitive landscape of job hunting, interviews stand as the gateway between candidates and their dream careers. Understanding the interview process is crucial for success, and here at JobAct, we're committed to providing insightful guidance tailored to our journey.

4.1.3 Interview

Interview is a type of primary research method in which a set of questions are pre-planned and are asked to the interviewee **face to face**. The questions are generally open ended. It is designed to assemble detailed information about a topic. For the proposed system, those questions are asked in the interviews whose ansours require bit detail description to understand the requirement. The interviewees for the proposed system is developer. The purpose was to get an exclusive view of the users to gather maximum information about the system requirements.

Interviews come in various shapes and sizes, each presenting its own set of challenges and opportunities. From traditional face-to-face meetings to virtual interactions over video calls, JobAct recognizes the diversity within the interview landscape. Our platform equips users with the tools and strategies necessary to excel in any interview scenario, ensuring they can confidently showcase their skills and experiences.

At JobAct, we understand the importance of preparation. Our resources delve deep into the intricacies of interview preparation, offering tailored advice on researching companies, understanding job roles, and practicing common interview questions. With JobAct's guidance, users can enter interviews feeling confident and well-prepared, ready to make a lasting impression on potential employers.

Justification for Conducting Interview

The reason for choosing interview as a primary research method is as follows:

- It provides first-hand information so more chances of getting actual facts and quality rich data, new insights and conclusions.
- It will help in gathering detailed information about the functionalities of the propose system as it is best for investigating problems.
- Apart from what they say, a person's feelings, thoughts, gestures can be noticed which can enable the intervieour to confirm that what they discuss is right or wrong.
- Interviews provide an opportunity for both parties to seek clarification and gain additional context.
- Interviews offer valuable feedback that candidates can use to improve their interviewing skills and overall candidacy
- JobAct understands the significance of this assessment process and equips candidates with the tools and techniques needed to showcase their skills effectively.
- In an increasingly digital world, interviews humanize the hiring process by bringing together individuals from diverse backgrounds and experiences.
- JobAct understands the significance of this assessment process and equips candidates with the tools and techniques needed to showcase their skills effectively.
- JobAct fosters a culture of continuous learning by providing resources and support to help candidates leverage interview feedback for future success.
- JobAct empoours individuals to navigate interviews with confidence and professionalism, ultimately leading to successful career opportunities.

Interview Questions for Developers

1. **Which type of System would we like to use for searching jobs and why?**

_____
_____
_____
_____

Justification: "Inquiring about the preferred system for job searching allows us to gauge a candidate's understanding of user experience and platform functionality within JobAct. Their response provides insight into their knowledge of various search systems—such as keyword-based, filter-based, recommendation, location-based, or advanced systems—and their suitability for enhancing the job search experience.

2. **What data storage solutions would we recommend for managing user information and job listings on our JobAct platform? How would we address potential data loss scenarios to ensure data integrity and platform reliability?**

_____
_____
_____
_____

Justification Understanding the candidate's approach to data storage is crucial for ensuring the reliability and security of the JobAct platform. By asking about their preferred data storage solutions and contingency plans for data loss, we gain insight into their knowledge of database management systems, data security measures, and disaster recovery protocols

.

3. **Do we think that searching for jobs in this system will be going to help we if yes please specify how?**

_____
_____
_____
_____

4. **Justification:** By asking candidates about their perspective on the effectiveness of job searching within our system, we aim to assess their understanding of the value proposition and user benefits offered by JobAct. . This question allows us to evaluate the candidate's

comprehension of the unique features and benefits that differentiate JobAct from other job search platforms

5. What is our assessment of the reliability and scalability of our data backup strategy, particularly when leveraging cloud storage solutions and redundant server systems? How would we ensure data integrity and accessibility in the event of system failures or data loss incidents?

_____
_____
_____
_____

Justification: By inquiring about their assessment of backup methods, especially when utilizing cloud technology and redundant server systems, we gain insight into their knowledge of data management best practices, disaster recovery protocols, and scalability considerations. This question allows us to evaluate the candidate's ability to design and implement robust data backup strategies

Understanding the candidate's perspective on the efficiency of our data backup strategy is crucial for ensuring the reliability and security of user data within the JobAct platform.

6. What potential challenges do we anticipate encountering during the development phase of the JobAct platform? How would we approach and mitigate these challenges to ensure the successful and timely delivery of the application?

_____
_____
_____
_____

Justification: Their response allows us to evaluate their ability to identify and address technical, logistical, and organizational challenges proactively. This question helps ensure that the candidate is equipped to navigate obstacles effectively, maintain project momentum, and deliver a high-quality, functional platform to our users within the designated timeframe.

7. Have there been any problems with the website? If yes, describe problems?

_____ _____ _____ _____ **Justification:** Assessing the candidate's experience in troubleshooting and problem-solving is crucial for ensuring the ongoing functionality and user satisfaction of the JobAct website. Its response will help to understand the problems faced by the retailers in the existing website, so that those problems can be eliminated in the proposed system. This question helps ensure that the candidate is equipped to address any potential issues that may arise during their tenure, contributing to the smooth operation and continuous improvement of the JobAct platform. Their response provides valuable information about their problem-solving approach, technical proficiency, and attention to detail.

Table 7: Interview Question for Developer

4.2 Secondary Research

Secondary research is usually conducted prior to primary research. It means gathering information from already published books, journals, research papers which are third party authenticated sources. It is done to learn from the mistakes that others have committed on the related domain because it is better to learn from other's mistakes and save time rather than repeating the same mistake.

JobAct, secondary research could involve:

- Market Analysis: Reviewing existing studies, reports, and industry publications to understand the job market landscape, trends, and demographics relevant to our target audience.

- Competitor Analysis: Studying competitor websites, industry benchmarks, and market reports to assess the strengths, weaknesses, and strategies of other job-seeking platforms.

- User Behavior and Preferences: Analyzing data from surveys, user feedback, and online forums to understand user preferences, pain points, and expectations when searching for jobs online.

- Regulatory and Legal Considerations: Reviewing government regulations, labor laws, and data protection policies relevant to job-seeking websites to ensure compliance and mitigate legal risks.

4.2.1 Technical Research

This is related to the technical part of the research means research related to selection of platform, programming language, database, technology and methodology. Conducting technical research for the proposed project is a critical factor that can affect the implementation of the project and thus is conducted before the system design and implementation phase begins. A wide-spread research is conducted that compares various platforms, programming languages, databases, technologies, methodologies and evaluates them to come to conclusion which would be chosen for the proposed project. Researching advancements in web development, user experience design, and recruitment technology to stay abreast of emerging trends and best practices relevant to our project.

Justification for Choosing Website as a Platform

Selecting the right platform for a website project is crucial, considering the diverse range of options available. Each platform offers its unique advantages and challenges, making the decision complex.

Websites have the advantage of being accessible across various devices and operating systems, including desktops, laptops, tablets, and smartphones. By opting for a website platform, we ensure maximum reach and accessibility for users regardless of their device or operating system preference.

What is a Website?

Android is a platform that provides tools and technologies which can be used to develop and build mobile applications. The android platform is an open source that includes an operating system, middleware services and also key applications for use in mobile devices. Android environment uses the Linux operating system at its core has a kernel based on Linux kernel. Its middleware, libraries and APIs are written in core C while the applications are developed for android using java with android class extension.

Why Website?

The researcher opted to work on website because of the certain reasons. Let's delve into why a website platform has been chosen over other alternatives.

1. Accessibility and Reach: Websites have the advantage of being accessible across various devices and operating systems, including desktops, laptops, tablets, and smartphones. By

opting for a website platform, we ensure maximum reach and accessibility for users regardless of their device or operating system preference.

2. Cost-effectiveness: Compared to developing native applications for different operating systems, building a website can be more cost-effective. With a single codebase that works across platforms, we can save resources on development and maintenance, making it a cost-effective solution for reaching a broader audience.

- When developing native applications for different operating systems (such as Android and iOS), developers need to create separate codebases for each platform. This means writing code specifically tailored to the requirements and languages of each platform (e.g., Java or Kotlin for Android, Swift or Objective-C for iOS).
- However, building a website involves creating a single codebase using web technologies such as HTML, CSS, and JavaScript. This codebase can be accessed across various devices and operating systems without the need for platform-specific adaptations.
- By using a single codebase for the website, developers can save resources on development time and costs. They don't need to allocate resources to develop and maintain separate codebases for different platforms. Additionally, updates and maintenance can be performed more efficiently, as changes can be applied universally without needing to address platform-specific issues.

3. Ease of Updates and Maintenance: Websites offer the flexibility of making updates and modifications in real-time without requiring users to download and install updates manually. This ease of maintenance allows for quick bug fixes, feature enhancements, and content updates, ensuring a seamless user experience.

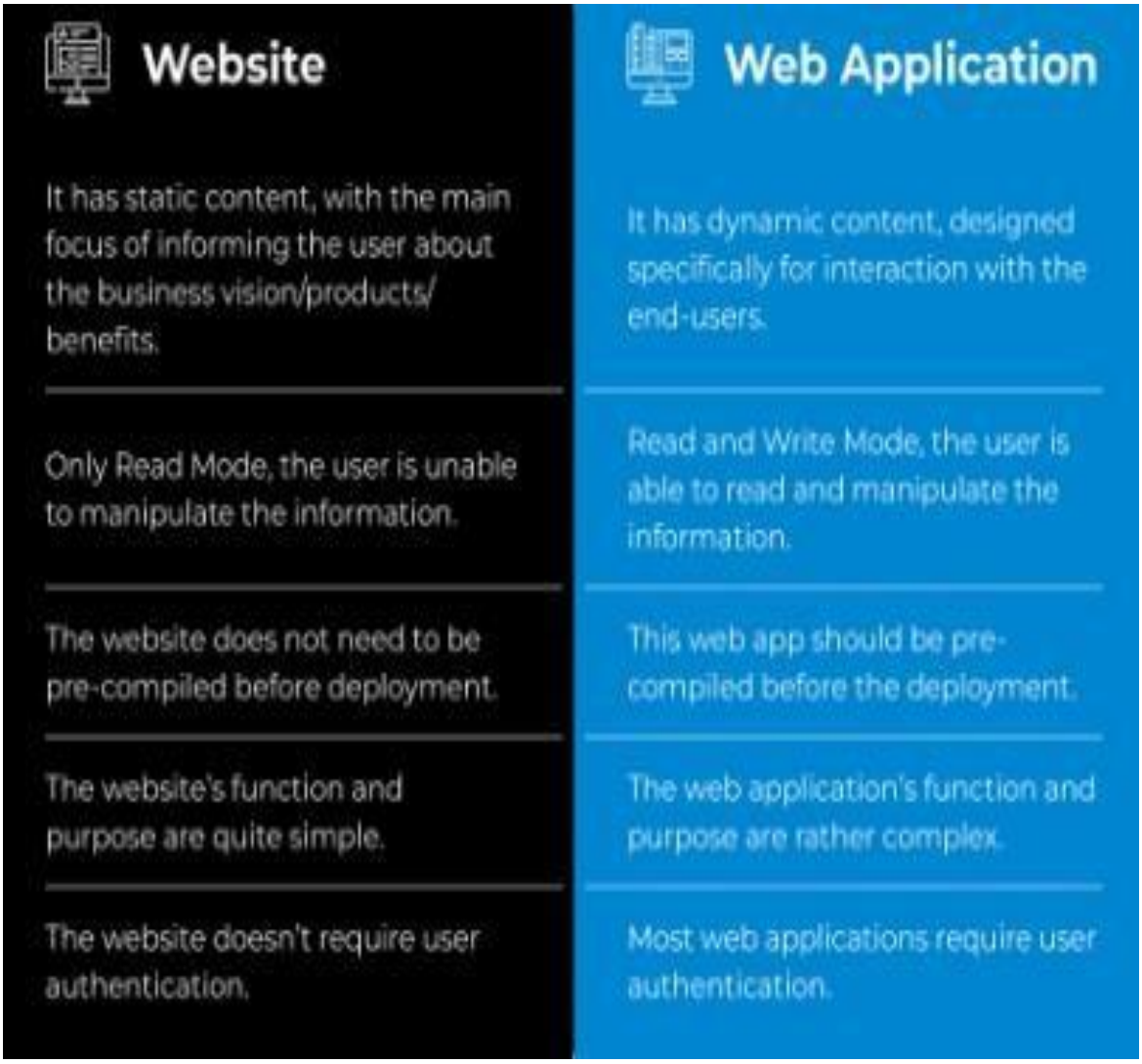
4. Search Engine Optimization (SEO) Benefits: Websites are inherently more search engine-friendly compared to mobile applications. With the right SEO strategies and practices, we can improve the visibility and ranking of the website in search engine results, driving organic traffic and enhancing discoverability**.**

Cross-platform Compatibility: By adopting web standards and technologies, we ensure cross-platform compatibility, enabling users to access the website across different web browsers and devices seamlessly. This ensures a consistent user experience regardless of the user's device or browser choice.

r website typically consists of client-side and server-side components. Client-side technologies like HTML, CSS, and JavaScript handle the user interface and interactivity. Server-side architecture involves web servers, application servers, and databases to manage requests, execute business logic, and store data. Frameworks and libraries such as React.js and Express.js streamline development, while databases like MySQL and Mongo DB store structured and unstructured data. Integration with third-party APIs and security measures like authentication ensure functionality and protect user data. Scalability is achieved through load balancers, CDNs, and horizontal scaling, ensuring optimal performance and reliability as our website grows.

Analytics and Tracking Capabilities: Websites offer robust analytics and tracking capabilities, allowing us to gather valuable insights into user behavior, preferences, and interactions. This data-driven approach enables us to refine and optimize the website continuously, enhancing user engagement and conversion rates .Comparison of Android with other Platforms

The following difference would more justify why website is chosen over other platforms:



Justification for programming language selection (HTML)

HTML (Hyper Text Markup Language) was chosen as the programming language for our project due to its fundamental role in web development. As the standard markup language for creating web pages, HTML provides a structured and semantic way to define the content and structure of our website. Its simplicity and widespread adoption make it an ideal choice for ensuring

compatibility across various browsers and devices. By leveraging HTML, we can create a user-friendly and accessible interface, laying the foundation for an engaging and responsive web experience for our users

Justification for programming language selection (CSS)

Cascading Style Sheets (CSS) oure chosen as the programming language for our project to enhance the visual presentation and user experience of our website. CSS provides poourful styling capabilities, allowing us to customize the lawet, typography, colors, and other visual aspects of our web pages. Its separation from HTML enables modular design and easy maintenance, promoting scalability and consistency across the site. With CSS, we can create a visually appealing and cohesive design that reflects our brand identity and engages our users effectively.

Justification for programming language selection (JAVASCRIPT)

JavaScript was chosen as the primary programming language for our project due to its versatility and widespread adoption in web development. As a client-side scripting language, JavaScript enables dynamic and interactive functionality on our website, enhancing user engagement and experience. Its extensive ecosystem of libraries and frameworks, such as React, Vue.js, and Angular, provides poourful tools for building complex web applications efficiently. With JavaScript, we can create responsive interfaces, handle user interactions, and integrate seamlessly with backend services, ensuring a rich and interactive user experience for our audience.

Justification for Database Selection (MSSQL , Firebase)

Why MSSQL?

- **Compatibility**: Our project is built on Microsoft technologies or integrates closely with other Microsoft products like .NET framework, Windows Server, or Azure cloud services, using MSSQL ensures seamless integration and compatibility

- **Robustness and Performance:** MSSQL is known for its robustness, reliability, and performance, making it suitable for handling large volumes of data and high transaction loads. Its advanced features such as indexing, query optimization, and built-in security mechanisms contribute to efficient data management and processing.
- **Scalability**: MSSQL offers scalability options such as partitioning, replication, and clustering, allowing our database to scale alongside our project's growth. Whether our

project experiences an increase in users, data volume, or workload, MSSQL can adapt to meet our scalability requirements.

- **Enterprise Support**: MSSQL is backed by Microsoft's extensive support network, providing access to comprehensive documentation, troubleshooting resources, and enterprise-level support services. This ensures that our project receives timely assistance and maintenance to keep it running smoothly.

- **Security**: MSSQL offers robust security features including encryption, access control, and auditing capabilities to protect our sensitive data from unauthorized access, tampering, or breaches. Compliance with industry standards such as GDPR and HIPAA is also facilitated by MSSQL's security features.

Why Firebase?

- **Authentication**: Firebase provides robust authentication services, including email/password authentication, social login (e.g., Google, Facebook, Twitter), and federated identity providers. This simplifies user management and authentication processes for our website, enhancing security and user experience.

- **Hosting**: Firebase Hosting allows us to deploy and host our website quickly and easily. With features like SSL encryption, CDN integration, and continuous deployment, Firebase Hosting ensures fast and secure delivery of our website to users worldwide.

- **Cloud Functions**: Firebase Cloud Functions enable we to run server-side logic in response to events triggered by Firebase features or HTTP requests. This allows us to extend the functionality of our website, such as sending notifications, processing data, or integrating with external services, without managing our own server infrastructure.

- **Analytics and Performance** : Monitoring: Firebase offers built-in analytics and performance monitoring tools that provide insights into user behavior, app usage, and performance metrics. This helps we make data-driven decisions to optimize our website and improve user engagement.

- **Scalability and Reliability**: Firebase is built on Google's infrastructure, providing scalability, reliability, and automatic scaling to handle fluctuations in traffic and workload. This ensures that our website remains responsive and available, even during peak usage periods.

Justification for Web Services Selection

Selecting the right web services for our project is crucial for ensuring seamless integration ,scalability and optimal performance.

Why APACHE?(Justification)

Apache:-

Apache is one of the most widely used web servers globally and is known for its reliability, performance, and flexibility. It's open-source and supports a wide range of operating systems, including Windows, making it a versatile choice for hosting websites developed using HTML, CSS, and JavaScript.

1. .Open Source and Free: Apache HTTP Server is open-source software distributed under the Apache License, making it freely available for use. This can be advantageous for projects with budget constraints, as it eliminates licensing costs associated with proprietary server software.
2. Platform Compatibility: Cross- Apache is compatible with various operating systems, including Windows, Linux, mac OS, and Unix-like systems. This flexibility allows us to deploy our project on a wide range of platforms, depending on our requirements and preferences.
3. Robustness and Stability: Apache is known for its stability and reliability, with a proven track record of pouring millions of websites worldwide. It offers robust features for handling high volumes of traffic, managing multiple concurrent connections, and serving static and dynamic content efficiently.
4. Extensibility: Apache supports a modular architecture that allows us to extend its functionality through third-party modules and plugins. This enables us to customize the server configuration to suit our project's specific requirements, such as enabling additional security features, caching mechanisms, or performance optimizations.

5. Community Support: Apache has a large and active community of developers and users who contribute to its ongoing development, documentation, and support. This vibrant community provides access to resources, forums, and knowledge bases where we can find assistance, troubleshoot issues, and stay updated on best practices.

6. Compatibility with Web Technologies: Apache seamlessly integrates with various web technologies and programming languages commonly used in web development, including HTML, CSS, JavaScript, PHP, Python, and Ruby. This allows us to deploy and serve web applications built using diverse tech stacks on the Apache server.

7. Security Features: Apache offers robust security features and configuration options to protect web applications and data from common security threats, such as DD OS attacks, injection attacks, and unauthorized access attempts. It supports SSL/TLS encryption, access control mechanisms, and logging capabilities to enhance security posture.

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4.2.2 Development Methodology

The "Website Methodology" diagram is used to explain the process of creating a website, from conception to launch. It typically includes steps such as planning, design, development, testing, and deployment. While there isn't a single definitive illustrator of this methodology, various designers and developers might create their own versions of such diagrams to suit their needs or the needs of their clients., the developer has concluded to implement "**V-MODEL**" for the development of the project.

V-model Methodology

After reviewing all website methodologies, the developer chose "**V-MODEL**" as it fits in with the constraints of the project. Any kind of changes in the system can be implemented at a minimum cost because of its frequency of new increments that are produced. The modifications can be discussed and features can be improvised or deleted based on the feedback. This would effectively give its customer the finished system they want or need. This methodology, divides its tasks into smaller time frames so that targets can be achieved.

Phases of V-Model Methodology

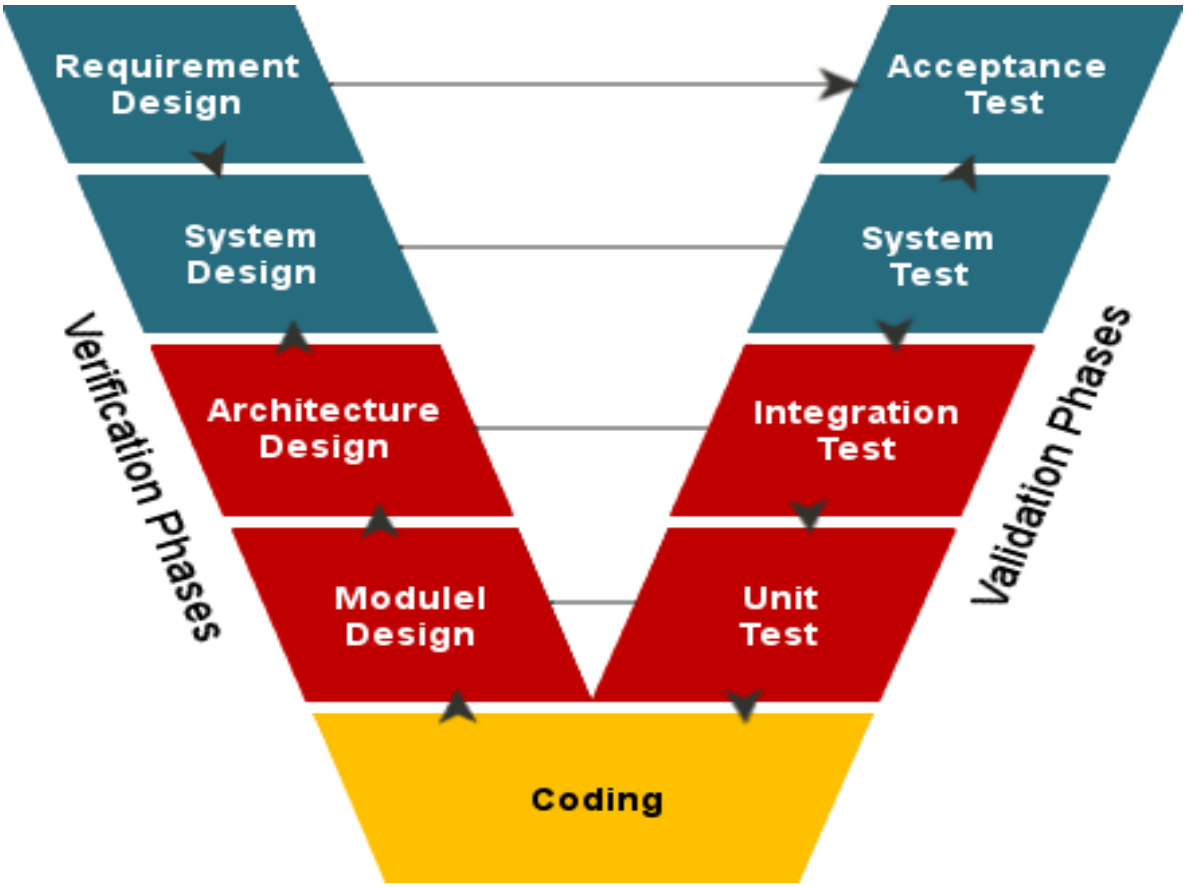


Table 21: Phases of V-Model Methodology

This methodology has following phase that developer will pursue while developing the system.

- **Requirement Design-**It is the first step in the verification process. In this stage the developer will not be going to deliberate how the system is going to be built; it is going to

be a generalized dialogue and a user requirement document is put onwards. This document will convey information regarding the function of the system, performance, security, data, interface etc. This document is required by the business analysts to convey the function of the system to the users. Meanwhile it will simply be a recommendation
.

- **System Design-**In this stage the possible design of the product is expressed. It is framed after keeping in mind the requirement summaries. Furthermore, while pursuing the documents, if there is somewhat that doesn't appropriate in the design, then the developer is made responsive of it and changes are consequently scheduled.

- **Architecture Design-** It is also known as the computer architecture design or the software design should understand the modules and the functionality of the modules which have to be integrated.

- **Module Design-**In this stage, the architectural design is again fragmented into sub components accordingly they can be planned and described distinctly. The units are known as modules. It can separately be decrypted by the programmer
.

The Validation Phases of the V model

- **Unit Testing-**It is design in the module design phase are executed on the code during this validation phase. Unit testing is the testing at code level and helps reduce bugs at an early stage, however all faults cannot be revealed by unit testing.
- **Integration Testing or Interface Testing**- It is related with the architectural design phase. Integration tests are performed to test the existence and communication of the internal modules within the system. In other words, in this phase the separate entities will be tested together to find out the faults in the interfaces.

- **System Testing-**It is directly allied with the System design phase. Its check the entire system functionality and the statement of the system under development with peripheral systems..

- **Acceptance Testing-**In the acceptance testing, related with the business requirement analysis phase and comprises testing the product in user environment. It exposes the compatibility issues with the other systems accessible in the user environment. Acceptance tests also determines the non-functional concerns such as load and performance faults in the actual user environment.

- **Release Testing-**It is in at this time that decision has to be made if the product or software which is created is suitable for the end user.

Justification for choosing V-Model

After some discussion, the developer chooses Waterfall Model for the development of this system. The most attractive factor for selection of V-Model is-

- **Stable project requirements:** As in our project most of the user requirements are restriction at the time of PSF so it specifies an unchanging project requirements and Waterfall methodology entirely supports a project which has requirements definite in advance.
- **Progress of system is measurable:** After each phase, it produces the documentation and as the structure of our third year project we need to submit the documentation after each phase so it will be best suitable.
- **Strict sign-off requirements:** As the developers aim will be to content the user and until the user will be gratified the developer will be providing the user preferred functionalities and proper features so this methodology will be best appropriate.
  - The highlighting on requirements and design before writing a single line of code confirms minimal wastage of time and effort and reduces the risk of schedule slippage, or of end user expectations not being met.
  - In modified waterfall model life cycle phases are acceptable to overlay. Because of the phases overlap, a lot of suppleness has been familiarized in the modified waterfall model in software engineering. Meanwhile, a number of tasks can function concurrently, which ensures that the defects in the website are removed in the development stage itself and the overhead cost of making changes to the website before implementation is saved.

4.2.3 Making changes to the basic design is also possible, as there are a number of phases lively at one point of time. In circumstance, there are any errors introduced because of the changes made, rectifying them is also easy (Testing can be done). This helps to reduce any error concerns.

4.2.4 Development Plan

TOTAL DURATION	6 week	START DATE	27th March 2024	END DATE	16th May,2024
PHASE AND DURATION		**TASKS**			
PROJECT DEFINITION *Duration: 1 week*		- Idea Generation - Project Title Selection - Abstract Draft Project Proposal - Project Proposal Form			

PROJECT PLANNING *Duration: 1 week*	↳ Work Breakdown Structure ↳ Schedule and Time Estimation ↳ Gantt Chart
REQUIREMENT ANALYSIS *Duration: 1week*	↳ **Define and Finalize Requirement Specification** » Project Background » Problem Context » User Requirements » Set Objectives » Identify Scope of Project » Features and Functionalities ↳ **Organizing Project Specification Form** ↳ **Research and Analysis** » **Research** ✓ Academic Research ✓ Secondary Research ✓ Human Computer Interaction » **Analysis** ✓ Domain Analysis ✓ Existing System Analysis ✓ User Requirements ✓ User Profiling and Modelling ✓ Risk Analysis
SYSTEM DESIGN *Duration: 1 Week*	↳ **Navigational Design** » Storyboarding ↳ **Abstract Interface Design** » Functionality Design » Interactivity Design ↳ **Design for Test Plan** » Acceptance Test » System Test » Interface Test
PROTOTYPING *Duration: 1week*	↳ Creating Prototypes ↳ Evaluate Prototype feedbacks
PRODUCTION AND IMPLEMENTATION *Duration: 1week*	↳ Program Code Generation ↳ Integrating Backend and Front end ↳ Module creation and Integration ↳ Implementation of working system

	↳ Midpoint Interview
TESTING & EVALUATION *Duration: 1week*	↳ Prototype Evaluation ↳ Test Plans ↳ Unit Testing ↳ Integration Testing ↳ System Testing ↳ Critical Evaluation
PROJECT ENDING *Duration: 1 week*	↳ Submission of the finished product

Table 8:Development Plan

4.3 Conclusion

Chapter 4 is being all about the research methods. The researcher conducted primary and secondary research under which technical research was conducted to come to a final conclusion of user requirements and technologies and tools to be used. Couple of research methods have been used by the developer, which includes Questionnaires and Interviews. The research was necessary to avoid waste of time in a later point of development phase. Now, the researcher is pretty sure of the features to be included in the system and how to remove existing problems. The developer is confident enough to implement the proposed website after performing extreme research related to domain, technology, language, tools etc.

CHAPTER 5: ANALYSIS

5.1 Analysis of Questionnaire

Refer to appendix

5.1.1 Overall Conclusion of Questionnaire

The questionnaires we distributed among the users like student, service man, business man etc. This type of primary research which is a kind of survey is beneficial for the developer in knowing the user's point of views about the problems faced by the user while searching for jobs and how this can be enhanced in the employment environment. The survey performed using the questionnaire helped the developer to have a complete knowledge and understanding of the requirement of the people searching for job So, their opinions helped the developer to include the functionalities preferred by such users.

In the realm of employment, understanding the needs and preferences of job seekers is paramount for developers aiming to create platforms that truly cater to their audience. Through the distribution and analysis of questionnaires among various user demographics such as students, service professionals, and businesspersons, our primary research has provided invaluable insights into the challenges faced by job seekers and the enhancements required in the employment environment.

Understanding User Perspectives

The survey conducted as part of our JobAct project has facilitated a comprehensive understanding of the perspectives of individuals actively seeking employment. By collecting data from diverse user groups, we have gained nuanced insights into the specific pain points experienced by different segments of the job-seeking population. From the frustrations of recent graduates navigating entry-level positions to the challenges encountered by seasoned professionals in transitioning careers, our research has shed light on the multifaceted nature of the job search process.

Identifying Key Issues

One of the primary objectives of our survey was to identify the key issues that users encounter while searching for jobs. Through targeted questioning and detailed analysis of responses, we have unearthed common themes such as:

Lack of Visibility: Many respondents expressed frustration with the limited visibility of job opportunities relevant to their skill set and experience level.

Complex Application Processes: The cumbersome nature of application processes was cited as a significant deterrent, with users highlighting the need for streamlined and user-friendly interfaces.

Insufficient Feedback: A notable concern among job seekers was the lack of feedback from employers, leading to uncertainty and frustration during the application process.

Alignment with Career Goals: Users emphasized the importance of aligning job opportunities with their long-term career goals and aspirations, underscoring the need for platforms that facilitate meaningful connections.

Informing Platform Development

The insights gathered from our survey have played a pivotal role in informing the development of the JobAct platform. By incorporating user feedback and preferences into our design and feature implementation processes, we aim to create a solution that not only addresses the existing challenges faced by job seekers but also exceeds their expectations. Some of the key functionalities derived from user opinions include:

Enhanced Job Matching Algorithms: Leveraging user data to refine job recommendations and ensure alignment with individual preferences and career trajectories.

Simplified Application Processes: Streamlining application processes through intuitive interfaces and automated tools to reduce friction and enhance user experience.

Transparent Communication Channels: Implementing transparent communication channels between employers and job seekers to facilitate feedback and foster greater transparency throughout the hiring process.

Personalized Career Guidance: Providing personalized career guidance and resources tailored to the unique needs and aspirations of individual users.

Future Directions

As we move forward with the development and refinement of the JobAct platform, our commitment to user-centric design and continuous improvement remains unwavering. Building upon the foundation established through our primary research, we will continue to iterate and

innovate, ensuring that our platform evolves in tandem with the ever-changing needs of the job market.

In conclusion, the survey conducted as part of our JobAct project has been instrumental in providing invaluable insights into the needs and preferences of job seekers. By leveraging these insights to inform platform development, we are confident in our ability to create a solution that not only addresses the existing challenges faced by users but also empowers them to navigate the job market with confidence and clarity.

5.2.1 Overall Conclusion of Interview

The research was conducted to gather the opinions of the developer about the proposed application to be developed. The type of research helped the developer a lot in identifying the problems faced by the users while searching for an appropriate job in employment environment and what can be the convenient solutions for the problems mentioned. The developer of the proposed system acquired knowledge about the required functionalities, pros and cons of each module only by the actual end-users who are going to implement the system. Thus, the developer targeted the user who are willing to get employed and want to get jobs of their choice where such a system could be implemented. So, through this research, the developer will be able to develop the proposed website in a productive manner, by integrating some new features and modules .

The interview segment of our project has provided a rich tapestry of insights into the experiences, perspectives, and aspirations of individuals engaged in the job-seeking process. Through in-depth conversations with a diverse range of participants, we have gained a nuanced understanding of the challenges they face, the strategies they employ, and the aspirations that drive them forward.

Understanding the Human Element

One of the most striking revelations from our interviews is the profound impact of the human element in the job-seeking journey. Behind every resume, cover letter, and job application lies a unique story filled with hopes, dreams, and aspirations. By engaging in meaningful dialogue with our interviewees, we have had the privilege of glimpsing into these narratives, each one serving as a testament to the resilience, determination, and ingenuity of the human spirit.

Uncovering Hidden Challenges

While certain challenges in the job-seeking process are widely acknowledged, our interviews have brought to light a myriad of hidden obstacles that often go unnoticed. From the psychological toll of rejection and uncertainty to the systemic barriers faced by marginalized communities, our conversations have underscored the complexity and multifaceted nature of the job-seeking landscape. By shedding light on these hidden challenges, we have taken a crucial step towards creating a more inclusive and empathetic approach to addressing the needs of job seekers.

Empowering Through Knowledge

Beyond merely identifying challenges, our interviews have also served as a platform for empowerment and education. By sharing their experiences, strategies, and insights, our interviewees have not only illuminated the path for others but have also empowered themselves in the process. Whether through sharing tips for resume optimization, networking strategies, or navigating the intricacies of the hiring process, each interview has contributed to a collective pool of knowledge that has the power to transform lives and shape futures.

Building Bridges for the Future

As we reflect on the wealth of insights gleaned from our interviews, it is clear that our work is far from over. Moving forward, we must leverage these insights to inform and inspire action, driving meaningful change in the realms of policy, practice, and technology. By building bridges between stakeholders, amplifying marginalized voices, and championing inclusive practices, we can create a future where every individual has the opportunity to thrive and succeed in the pursuit of meaningful employment.

A Call to Action

In conclusion, the interview segment of our project has been a journey of discovery, empathy, and empowerment. As we embark on the next phase of our work, let us carry forward the lessons learned and the stories shared, using them as beacons of inspiration to guide our efforts towards a more just, equitable, and compassionate future for all.

CHAPTER 6: SYSTEM DESIGN

6.1 Introduction

The design phase starts when the developer is done with the research and analysis phase. The design phase includes the transformation of user's specifications and website components into the website interface to build a platform for establishing the system. It covers the building of blue prints of the system that include physical modelling using engineering tools and methods.
In the design phase for the proposed system, the design is taking the requirements as the input and will produce a guideline for the implementation as output. Three to four design elements are to be produced for each and every module after completing the research and analysis part which will be fed as input to the design.

6.2 UML Diagram

Use Cases: Use case will be required by the developer so that the flow of the functionalities mentioned in the proposed system could be reviewed to validate the architecture and evaluation of the complexity level of individual modules could be assessed easily. Therefore, it would be helpful in testing the system through forward and reverse engineering. (Booch, Rumbaugh & Jacobson, 2008)

Activity Diagrams: Activity Diagrams will be used by the developer to show the flow of control of program modules from activity to activity. This would help us to show the concurrency as well as branches of control in the proposed system. (Booch, Rumbaugh & Jacobson, 2008)

Sequence Diagrams: Sequence Diagrams would help the developer to show the series of interactions prevailing between users and system/modules. (Booch, Rumbaugh & Jacobson, 2008)

Class Diagrams: UML class diagrams will be required to provide an independent description of the objects that would be used in the system and which would be helpful in the implementation phase. The design can be used as a reference to implement on any platform using any development environment. (Booch, Rumbaugh & Jacobson, 2008)

Entity-Relationship Diagram (ERD): ER diagrams will be required by the developer to identify the entities and relationship between them is beneficial in storing the data which would be then converted into tables in the normalization phase. (Booch, Rumbaugh & Jacobson, 2008)

10.2.1 Use Case

- **Use Case Diagram of Login**

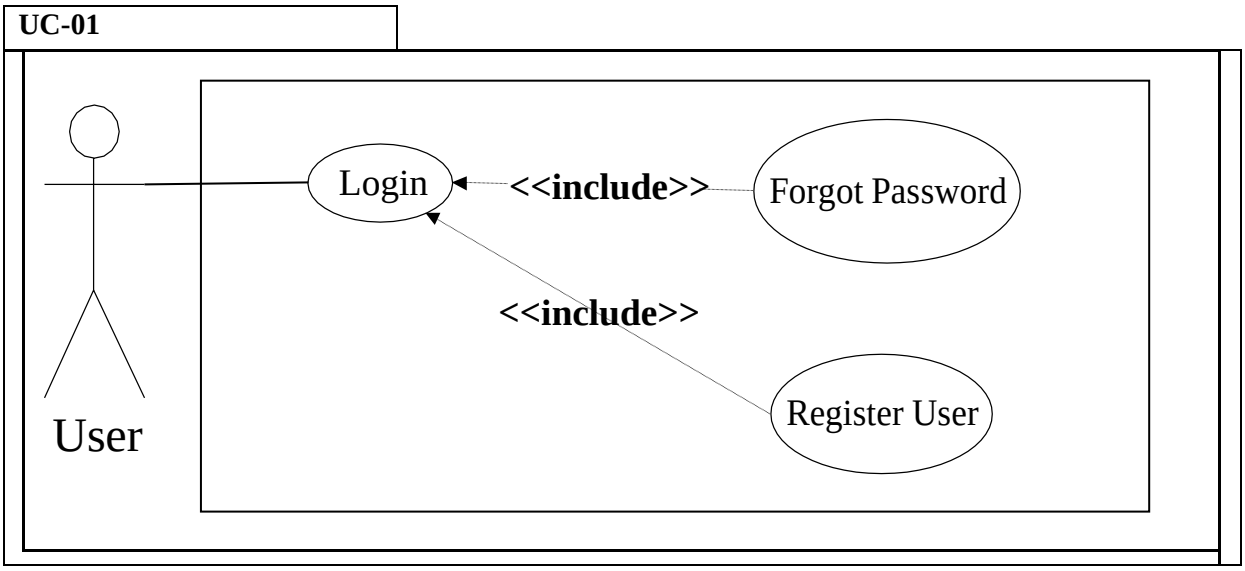


Table 9:Use Case Diagrams of Login

Use Case ID	**UC-01**
Use Case Name	Login
Description	This allows the user to sign in to his account.
Actor(s)	User/TTE/Admin
Assumption	Actor must have internet connectivity for signing in.
Pre-Condition	The actor must be a registered user.
Post-Condition	Signed In successfully.

Primary Pathway	.Actor taps on **Log In** button from the app dashboard. **.**Actor enters email and password. **.**Actor clicks on sign in.
Alternate Pathway(s)	.Necessary to sign in to synchronize. .Repeat steps 2 and 3 of primary pathway.
Exception Pathway	.Actor enters email and password. .The email or password is incorrect/does not exist in database. .System asks the actor to re-enter the username/password. .Go to step 2 of primary pathway.

Table 10:Use Case Description of Login

Use Case Diagrams for User Module

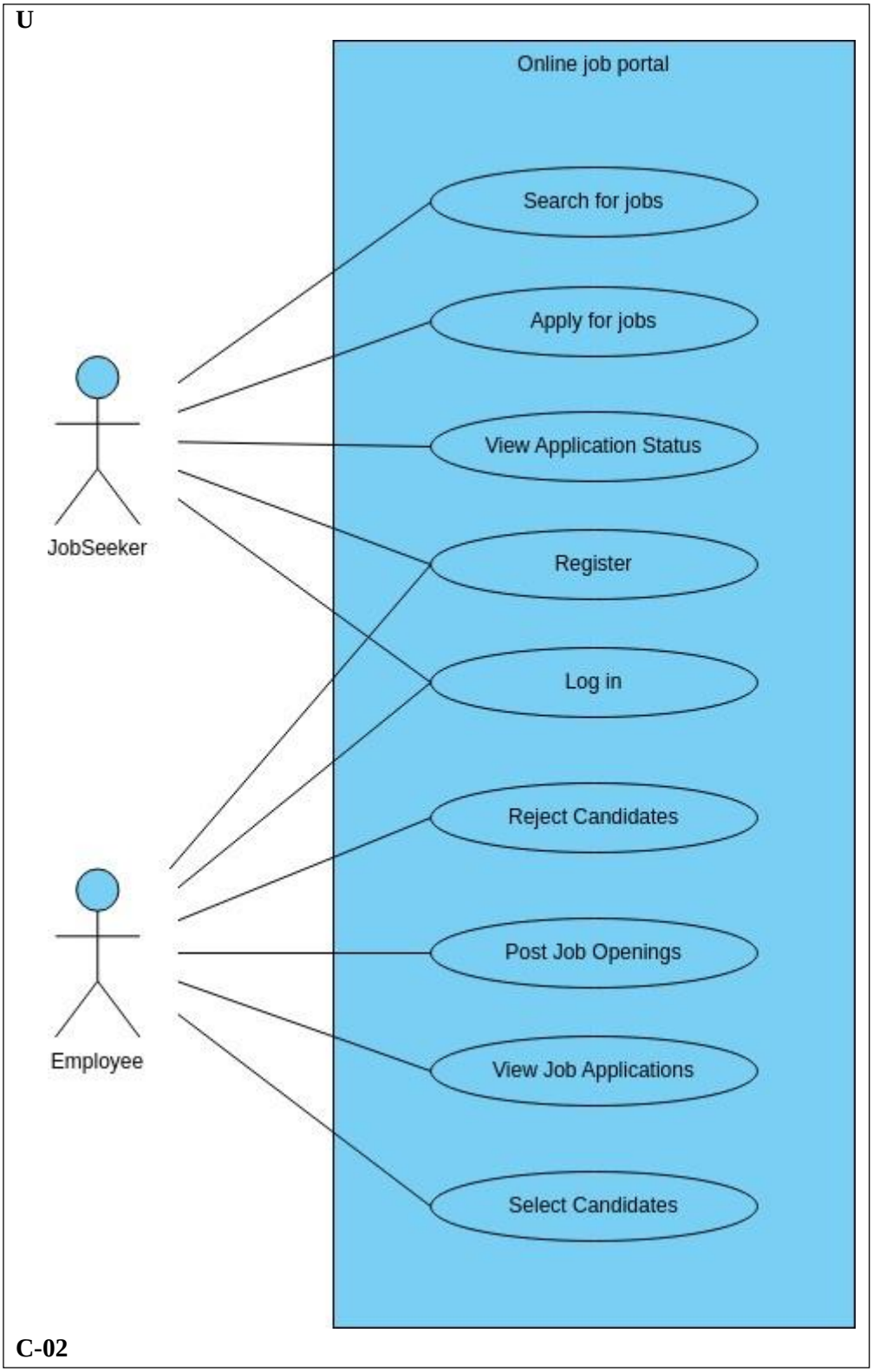


Table 11:Use Case Diagrams of User

Use Case ID	**UC-02**
Use Case Name	User Module
Description	User can Register, Login, Book Platform Ticket, Book General Ticket, View Platform and General Ticket History. It also views his own profile and the current account balance, it will also change the profile picture, it also views the recharge history and also able to change the password.
Actor(s)	"User" represents all users of the system who are willing to use the job-seeking website.
Assumption	Users are assumed to have basic computer skills and internet literacy to navigate and use the job-seeking website effectively.
Pre-Condition	The user must have a registered account on the job-seeking website to access the functionalities described in the use case.
Post-Condition	After completing interactions with the user module, the user will have successfully utilized the website to perform various actions such as registering, logging in, searching and applying for jobs, viewing account information, managing profile settings, and other related activities. Additionally, the user will have a positive experience using the website, finding it useful for job seeking purposes and potentially securing job opportunities through the platform.
Primary Pathway	**User Registration and Login:** .The user registers for an account on the job-seeking website, providing necessary information. .The user logs in to the website using their registered credentials. **Job Search and Application:** .The user searches for job listings based on criteria such as job title, location, and industry. .The user views detailed job descriptions and requirements.

	.The user applies for jobs by submitting their resume and other required information. **Profile Management:** .The user views and edits their profile information, including contact details, resume, and job preferences. .The user sets notification preferences for job alerts and updates. **Interaction with Job Listings:** .The user saves or bookmarks interesting job listings for future reference. .The user receives notifications for job application status updates.
Alternate Pathway(s)	None
Exception Pathway	.It may happen that at the time of login user enter the incorrect username and password.

Table 12:Use Case Description of User Module

Use Case Diagram: View Profile

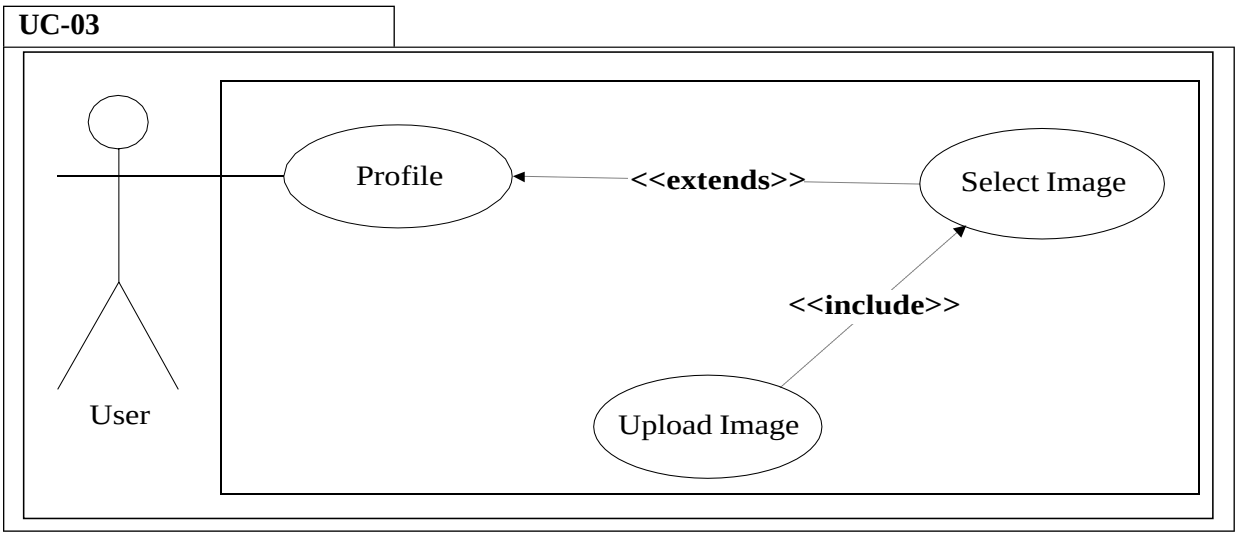


Table 13:Use Case Diagram of View Profile

Use Case ID	**UC-03**
Use Case Name	User Module: View Profile
Description	This allows the actor to view his own profile and also able to change the profile picture and also able to see the amount available in his account.
Actor(s)	User
Assumption	We assume that to change the profile it has select the image from phone gallery.
Pre-Condition	User must be having his login credentials.
Post-Condition	User is able to view the profile and profile is changed
Primary Pathway	Actor provides his login credentials.
Alternate Pathway(s)	None
Exception Pathway	It may happen that without select the any picture user wants to upload the picture.

Table 14:Use Case Description of View Profile

Use Case Diagram: Change Password

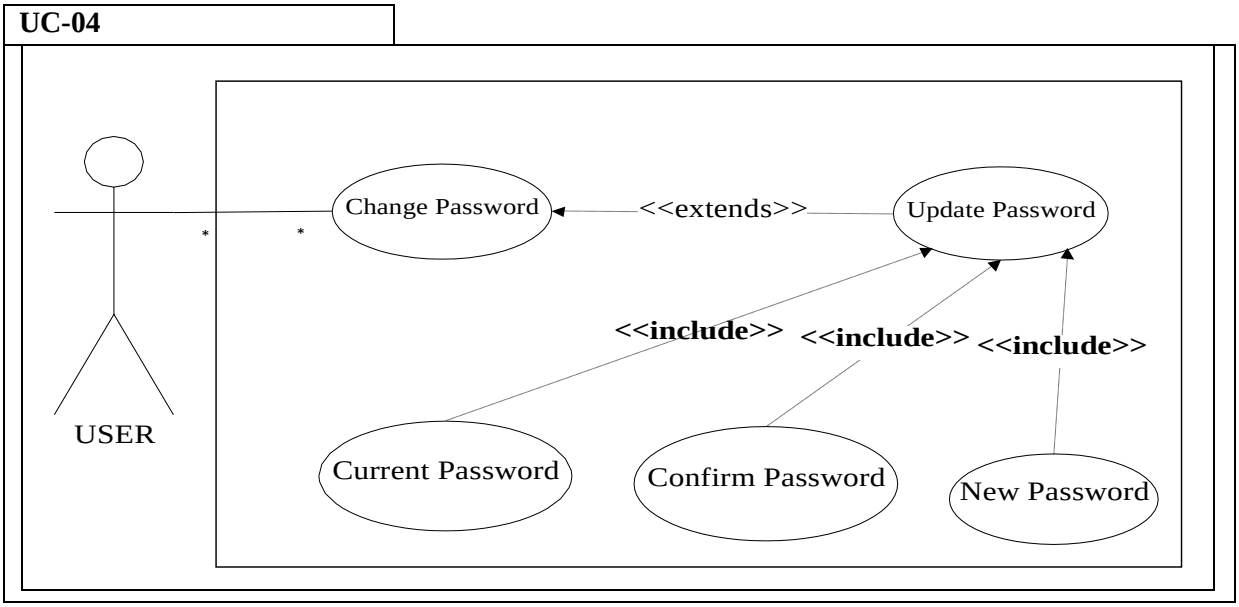


Table 29:Use Case Diagram Change Password

Use Case ID	**UC-04**
Use Case Name	Change password
Description	This allows the user to change the password of his account
Actor(s)	User's
Assumption	We assume that user already login into the system.
Pre-Condition	User must be login
Post-Condition	Change Password Successfully
Primary Pathway	Click on the change password Enter the current password Enter the new password Enter the confirm password
Alternate Pathway(s)	None
Exception Pathway	It may be possible user entered the wrong current password. It may be possible that new and confirm password does not match. It may be possible user do not fill any fields.

Table 15 :Use Case Description Change Password

- **Use Diagram for Admin**

UC-05

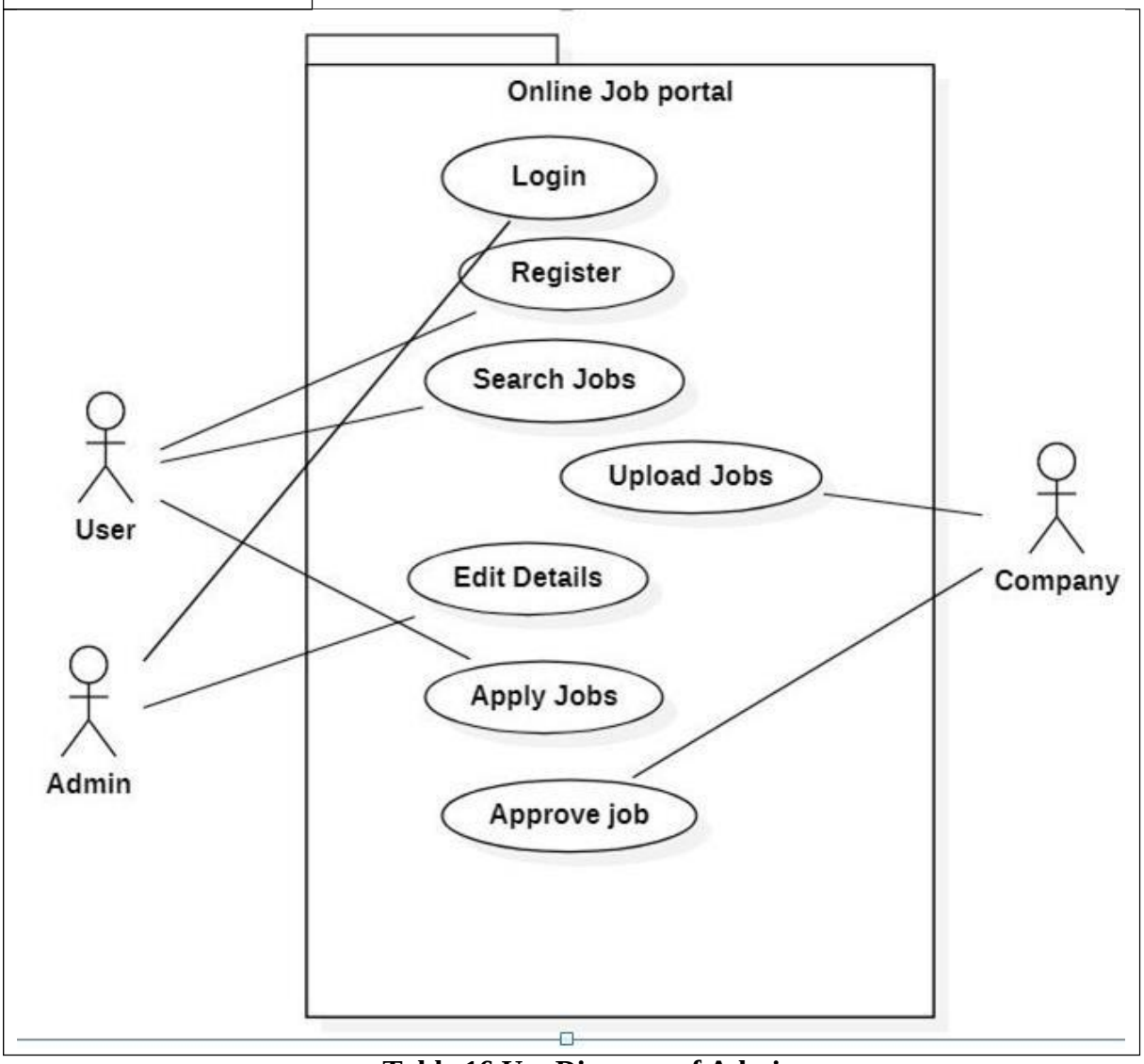


Table 16 Use Diagram of Admin

Use Case ID	UC-05
Use Case Name	Admin Module
Description	."Login" allows the admin to authenticate and access the admin dashboard. ."Manage Users" includes functionalities to add, remove, or update user accounts, as well as manage permissions. ."Manage Jobs" includes functionalities to add, remove, or update job listings, as well as review and approve job postings. ."View Reports" includes functionalities to generate and view reports related to user activity, job postings, and other relevant data. .This diagram illustrates the main interactions and functionalities available to the admin in managing the job portal.
Actor(s)	Admin
Assumption	.Admin should have some knowledge about the Admin terms. .Admin already login into the system.
Pre-Condition	.Admin must have an android device with auto perform the task.
Post-Condition	.The admin must have the necessary permissions and access rights to log in to the admin dashboard.
Primary Pathway	.Admin search the user. .Admin also able to view the own profile and have option to change the profile picture .Admin can update the details of the user
Alternate Pathway(s)	None
Exception Pathway	.It may happen that at the time of login admin enter the incorrect email and password.

Table 17 :Use Diagram Description for Admin

Use CaseDiagram: View Profile

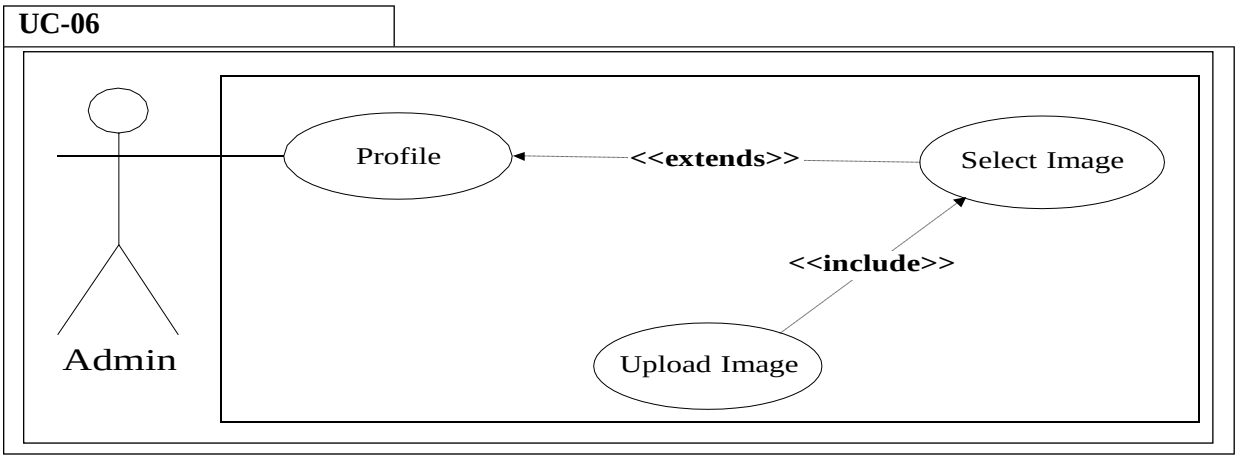


Table 18 :Use Case Diagram View Profile

Use Case ID	**UC-06**
Use Case Name	Admin Module: View Profile
Description	This allows the admin to view his own profile and also able to change the profile picture.
Actor(s)	Admin
Assumption	We assume that to change the profile it has select the image from phone gallery.
Pre-Condition	Admin must be having his login credentials.
Post-Condition	Admin is able to view the profile and profile is changed
Primary Pathway	Admin provides his login credentials.
Alternate Pathway(s)	None
Exception Pathway	It may happen that without select the any picture admin wants to upload the picture.

Table 34:Use Case Description of View Profile

- **Use Case Diagram: Search User**

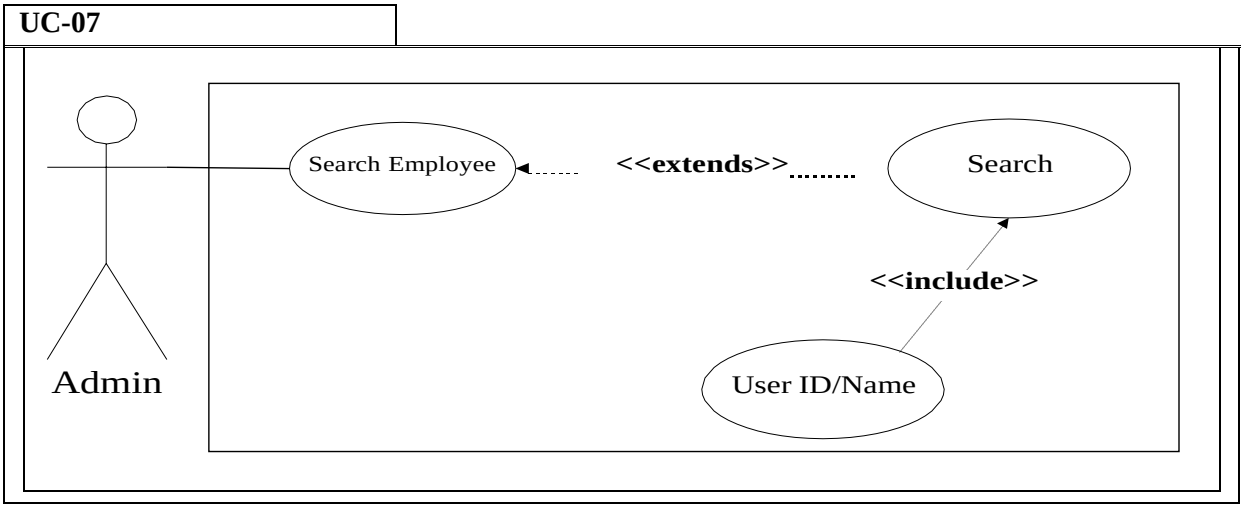


Table 35 :Use Case Diagram of Search User

Use Case ID	**UC-07**
Use Case Name	Search Employee
Description	This allows the admin to search the user from the system and perform the further task like update user, activate and deactivate user.
Actor(s)	Search Employee
Assumption	We assume that email exists in the database. We assume that field should not be blank at the time of search user
Pre-Condition	Admin must be login into the system Email exists in the database
Post-Condition	User is search successfully
Primary Pathway	Admin must be login into the system Email exists in the database. Admin click on the tc panel button Admin click on the search user button Admin enter the email id of the user
Alternate Pathway(s)	None
Exception Pathway	Email not exists in the database Search button not able to find the email

Table 36 :Use Case Description of Search User

- **Use Case Diagram: Active User**

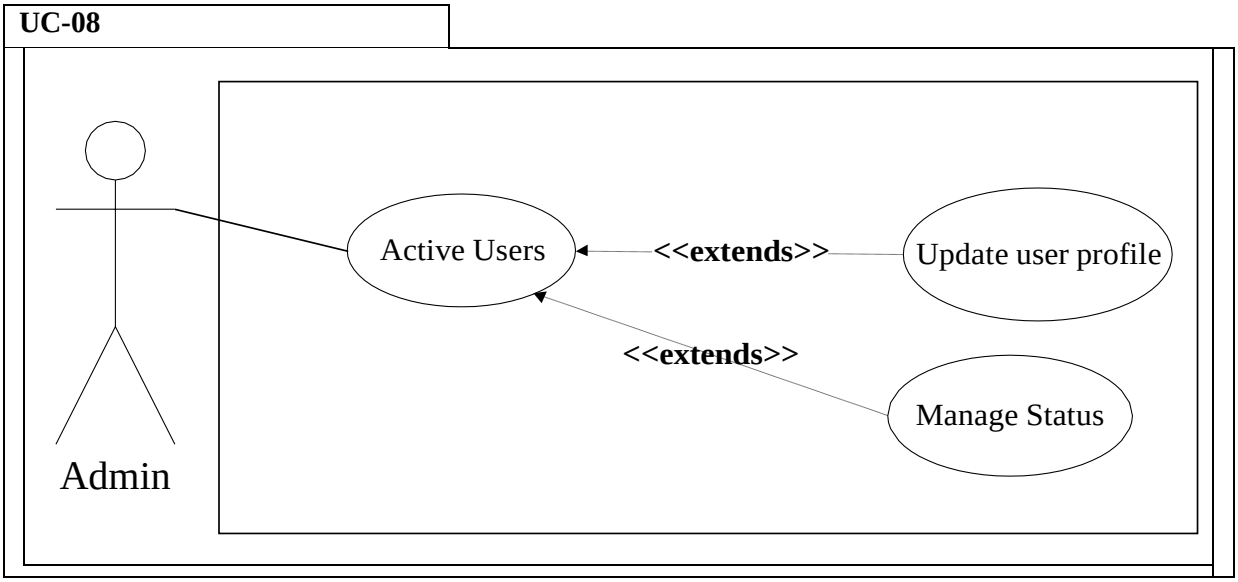


Table 37 :Use Case Diagram of Active User

Use Case ID	**UC-08**
Use Case Name	Active User
Description	This allows the admin to manage the status of the user. It has the authority to make the user activate or deactivate.
Actor(s)	Admin
Assumption	„We assume that some user is found in the active user list „We assume that button of the active user is work properly
Pre-Condition	„Admin must be login into the system „Active user exists in the database.
Post-Condition	„Active user displayed
Primary Pathway	„Admin must be login into the system „Admin click on the active user button
Alternate Pathway(s)	None
Exception Pathway	„It may happen that none of the active users are exists in the database

Table 38:Use Case Description of Active User

Use Case Diagram: Manage Status

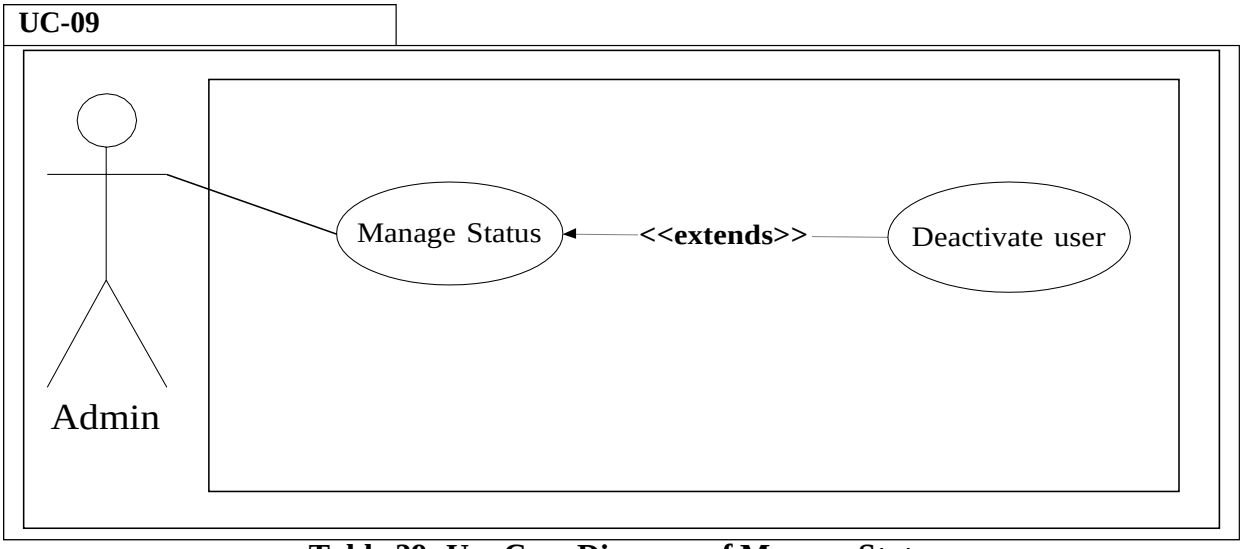


Table 39 :Use Case Diagram of Manage Status

Use Case ID	**UC-09**
Use Case Name	Manage Status
Description	This allows the admin to manage the details of the user
Actor(s)	Admin
Assumption	Some of the user is exists in the database to manage the status. Admin login into the system. Admin know how to manage the status of the user.
Pre-Condition	Admin must be login into the system.
Post-Condition	User status successfully.
Primary Pathway	Admin must be login into the system. Admin Click on the active user Admin click on the particular Email ID to manage the status.
Alternate Pathway(s)	None
Exception Pathway	Admin not click on the particular ID

Table 40:Use Case Description of Manage Status

Use Case Diagram: Change Password

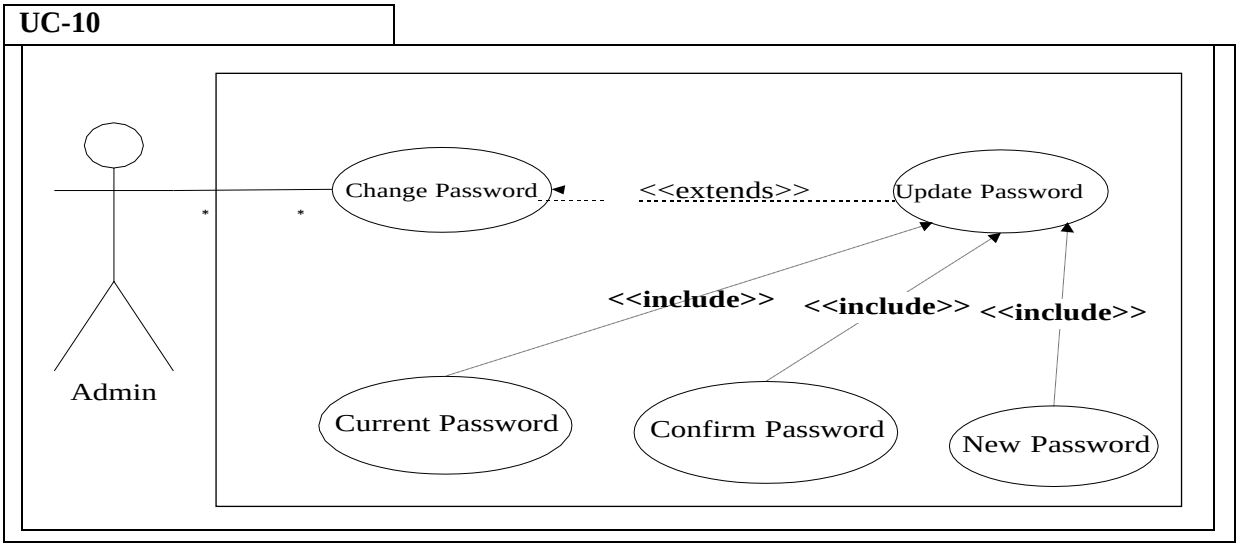


Table 41 :Use Case Diagram of Change Password

Use Case ID	**UC-10**
Use Case Name	Change password
Description	This allows the admin to change the password of his account
Actor(s)	Admin
Assumption	We assume that admin already login into the system.
Pre-Condition	Admin must be login
Post-Condition	Change Password Successfully
Primary Pathway	Click on the change password Enter the current password Enter the new password Enter the confirm password
Alternate Pathway(s)	None
Exception Pathway	It may be possible us admin entered the wrong current password. It may be possible that new and confirm password does not match. It may be possible user do not fill any fields.

Table 42:Use Case Description of Change Password

6.2.2 Sequence Diagrams

- **Sequence Diagrams for User**
- **Sign In**

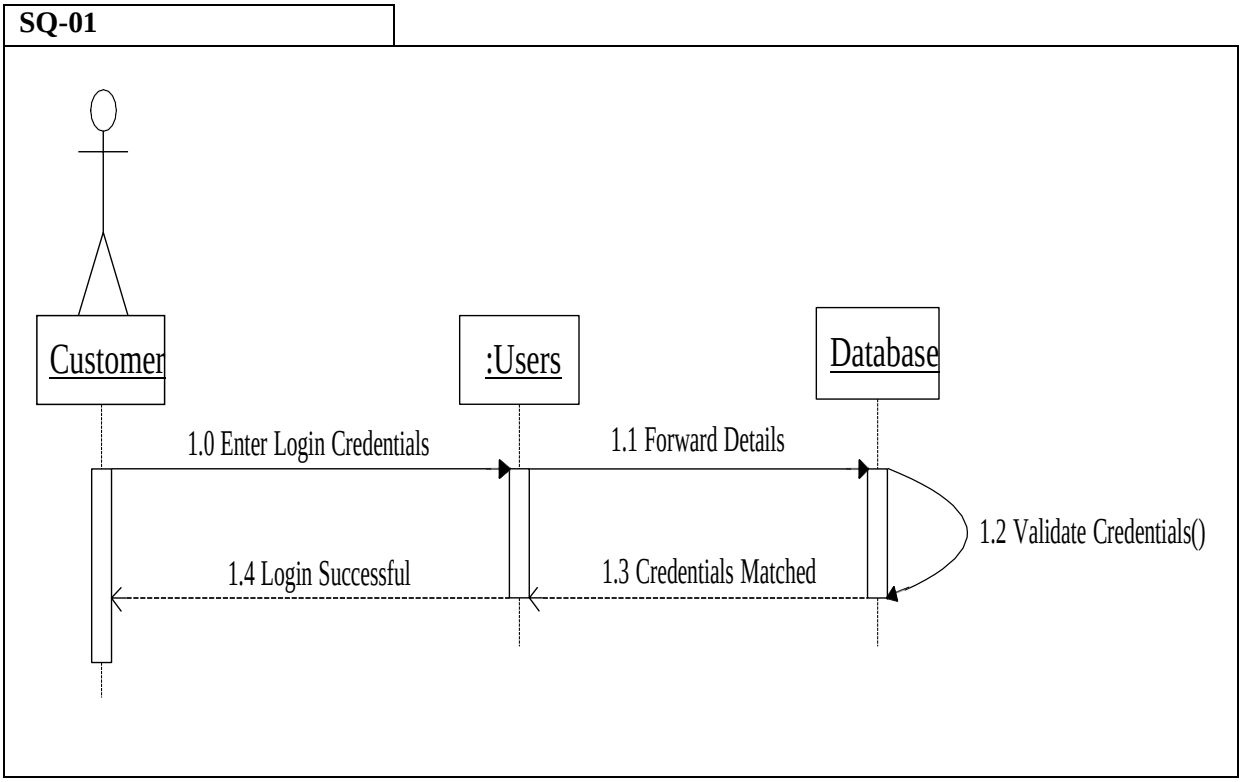


Table 43 :Sign In

Register

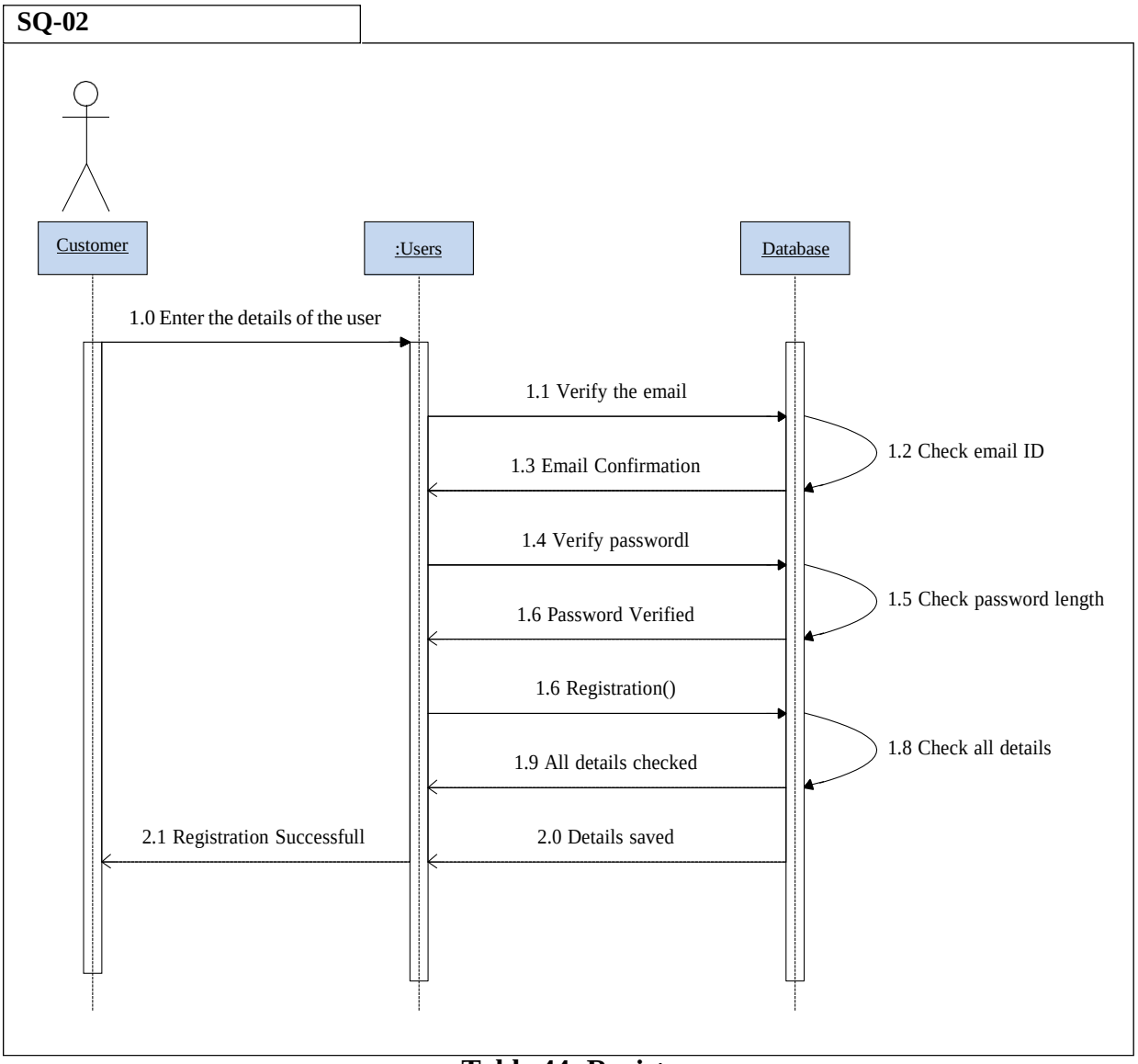


Table 44: Register

View Profile

SQ-03

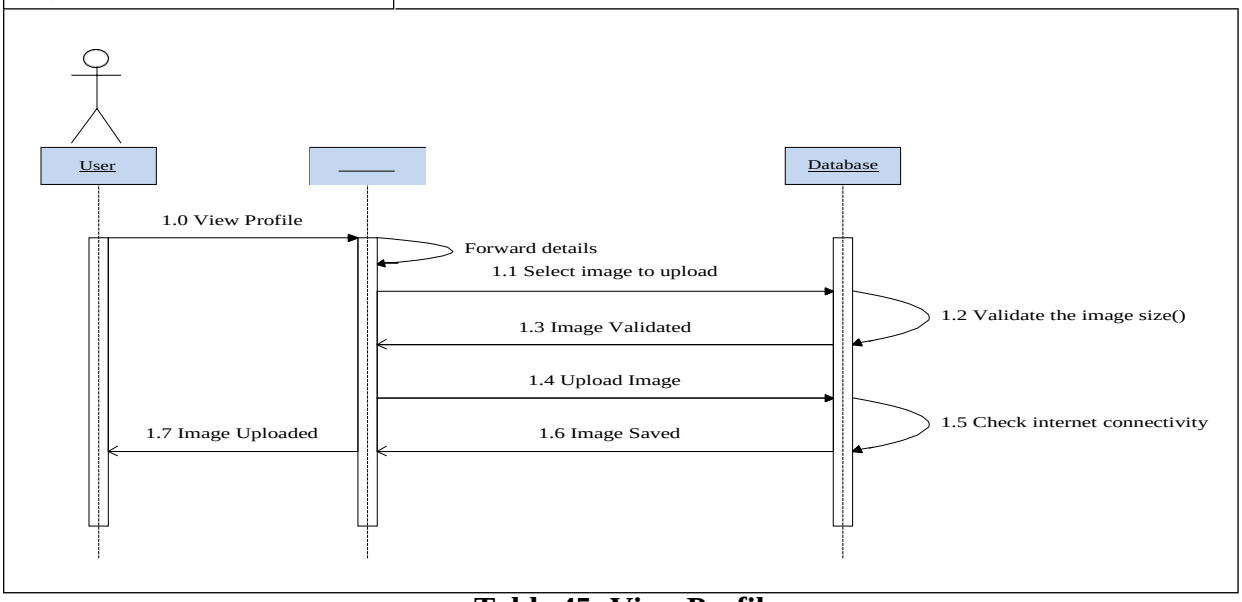


Table 45: View Profile

- **Change Password**

SQ-04

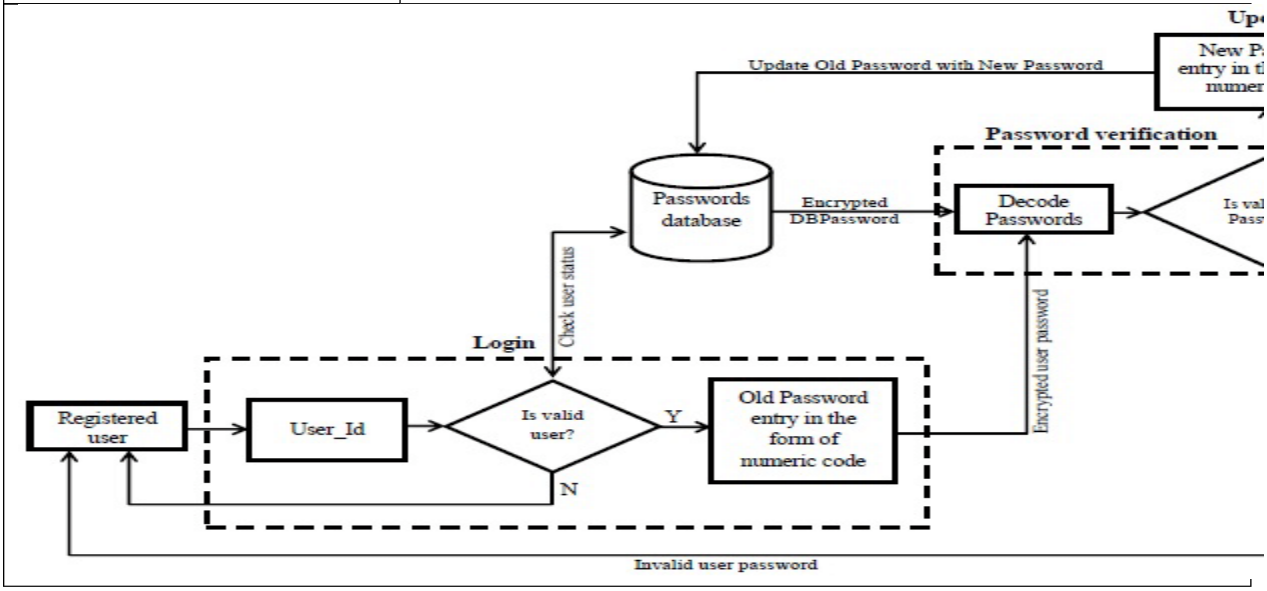


Table 46: Change Password

Change Password

SQ-05

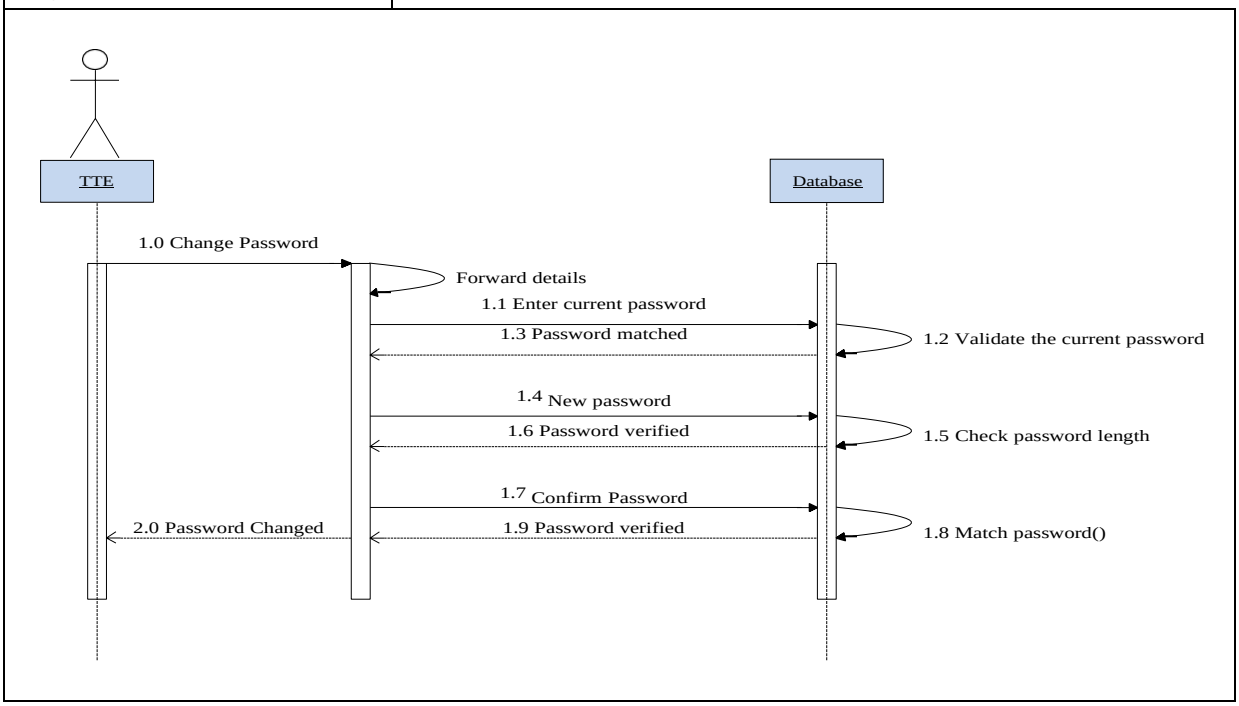


Table 47 :Change Password

- **Sequence Diagrams for Admin**

- **View Profile**

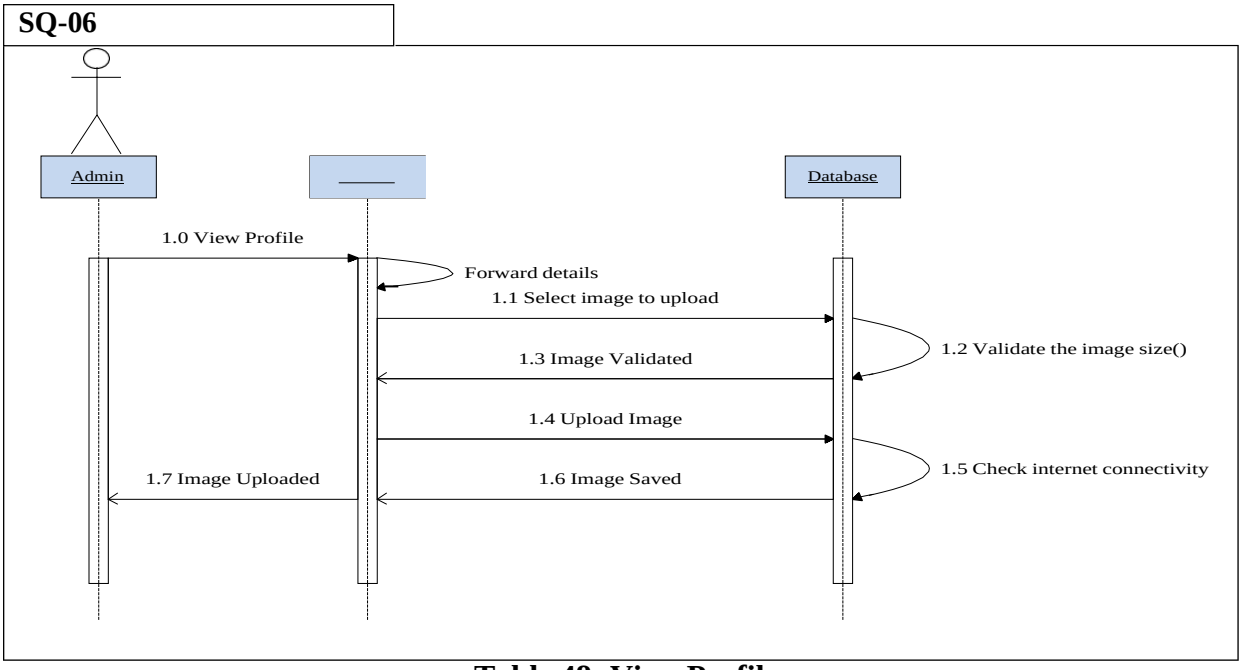


Table 48: View Profile

Register User

SQ-07

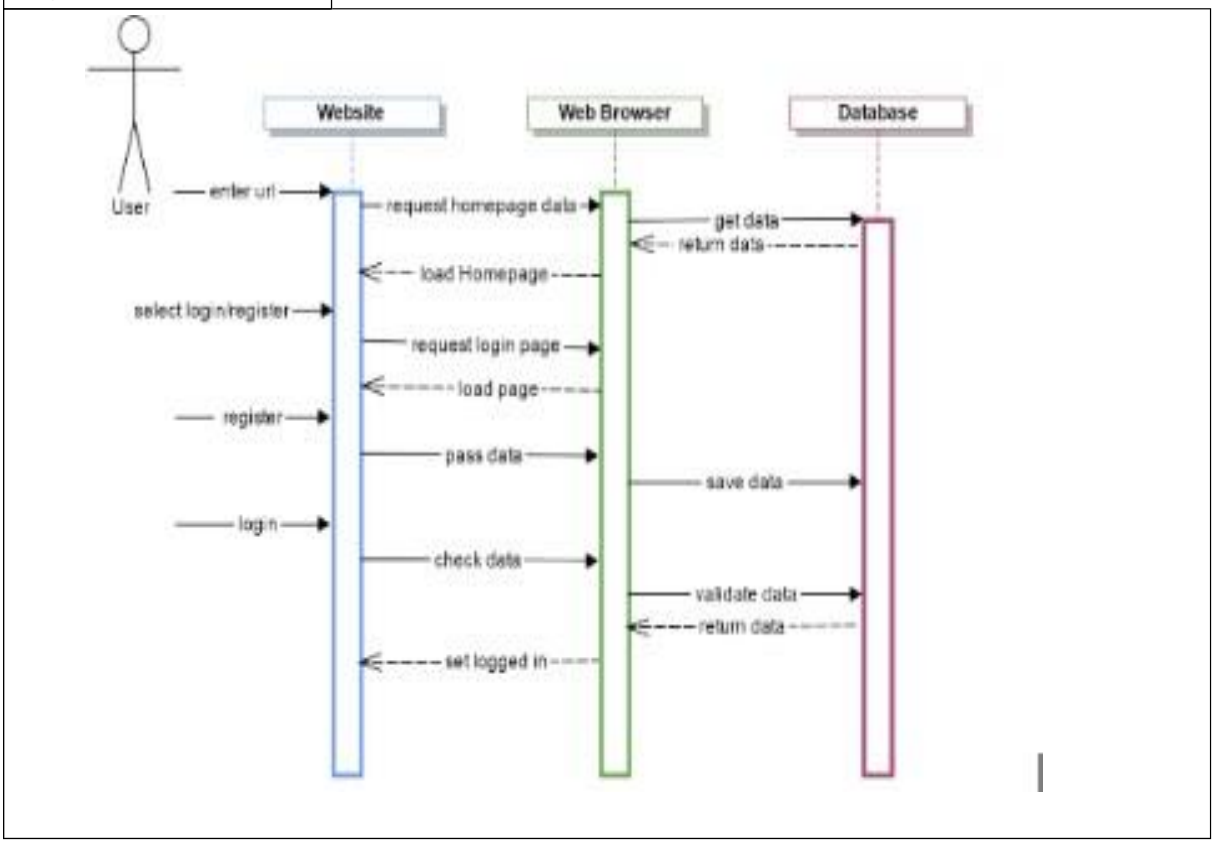


Table 49 :Register User

Change Password

SQ-08

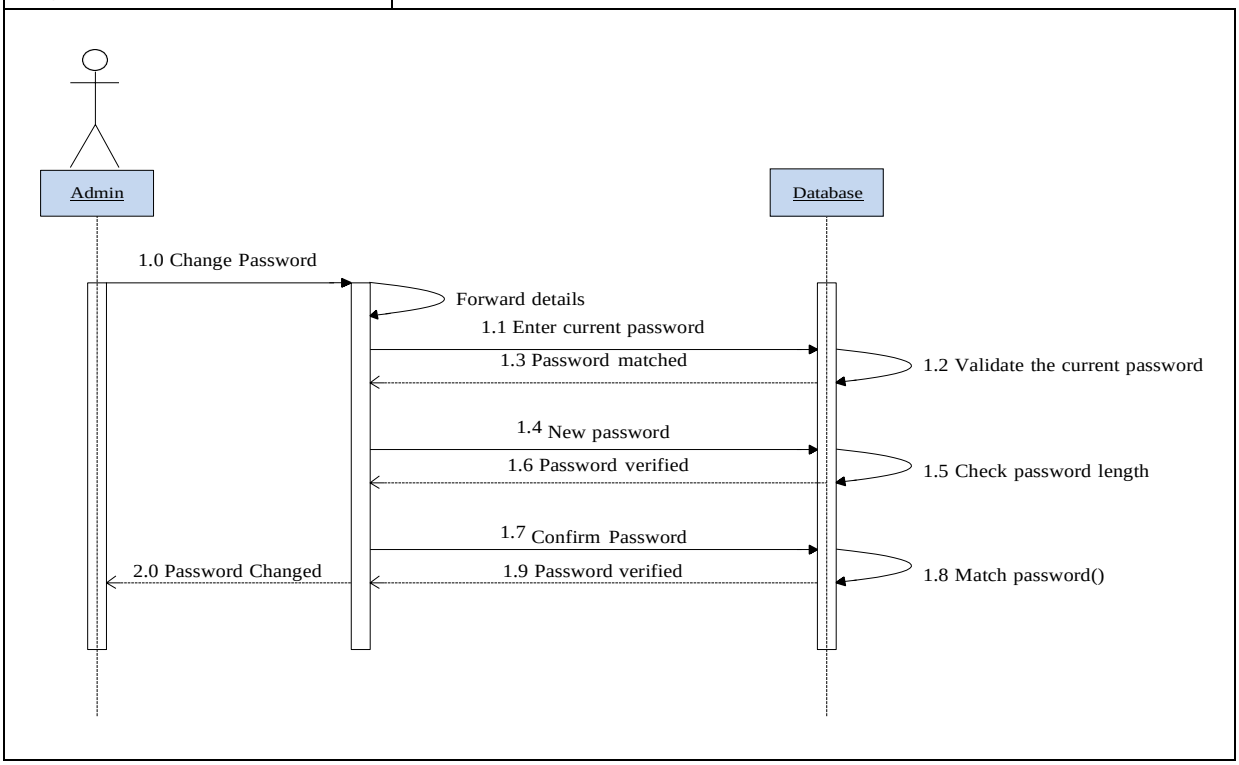


Table 50 :Change Password

Active User's

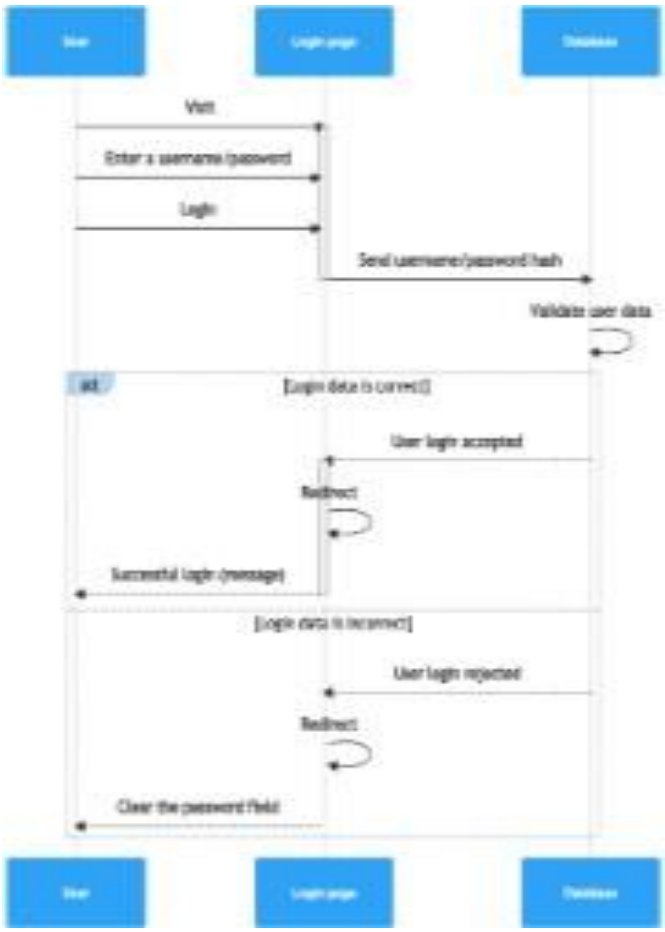
SQ-09


Table 51 :Active User's

- **Search User's**

SQ-10

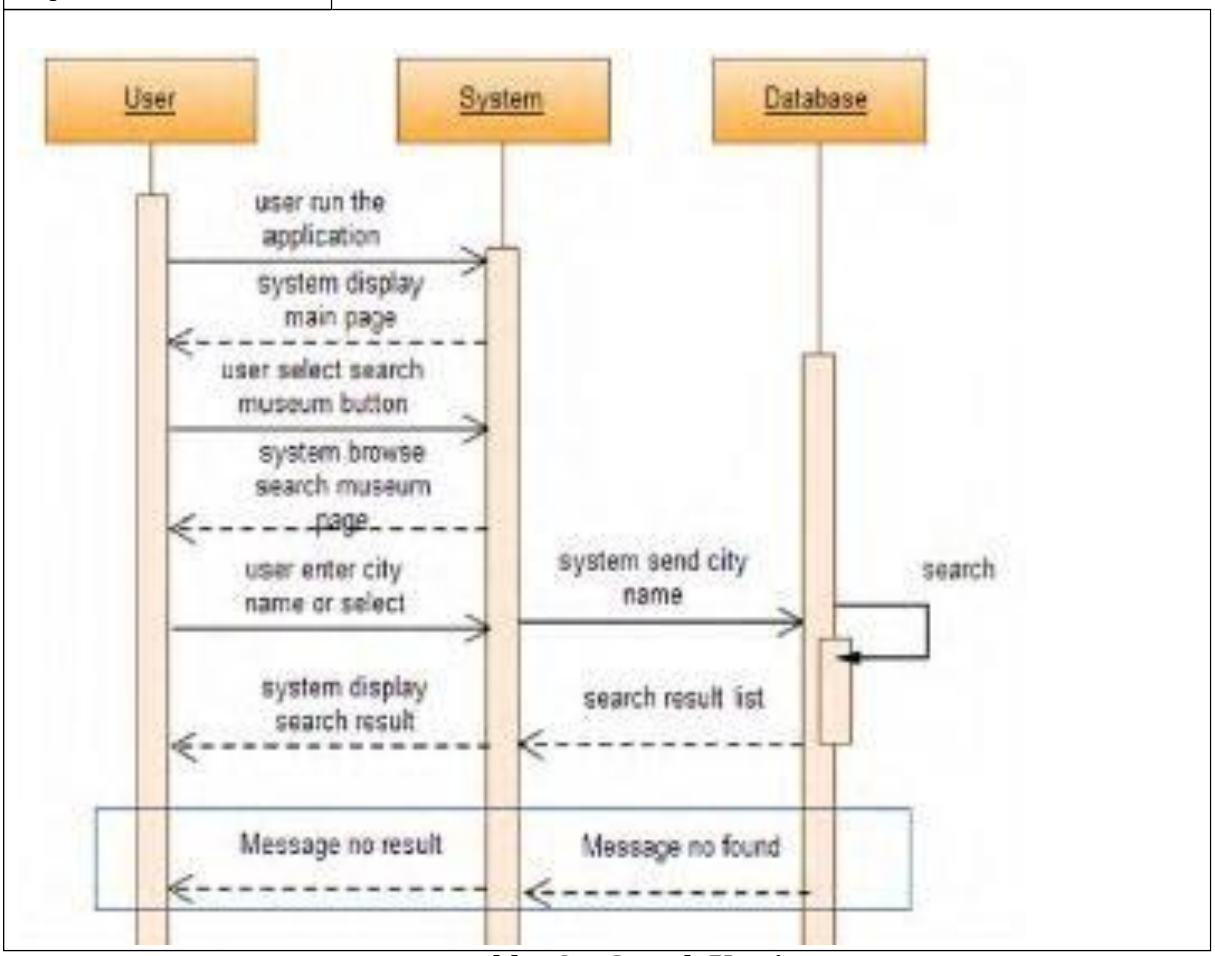


Table 52 :Search User's

6.2.3 Activity Diagram

- **Register**

AD-01

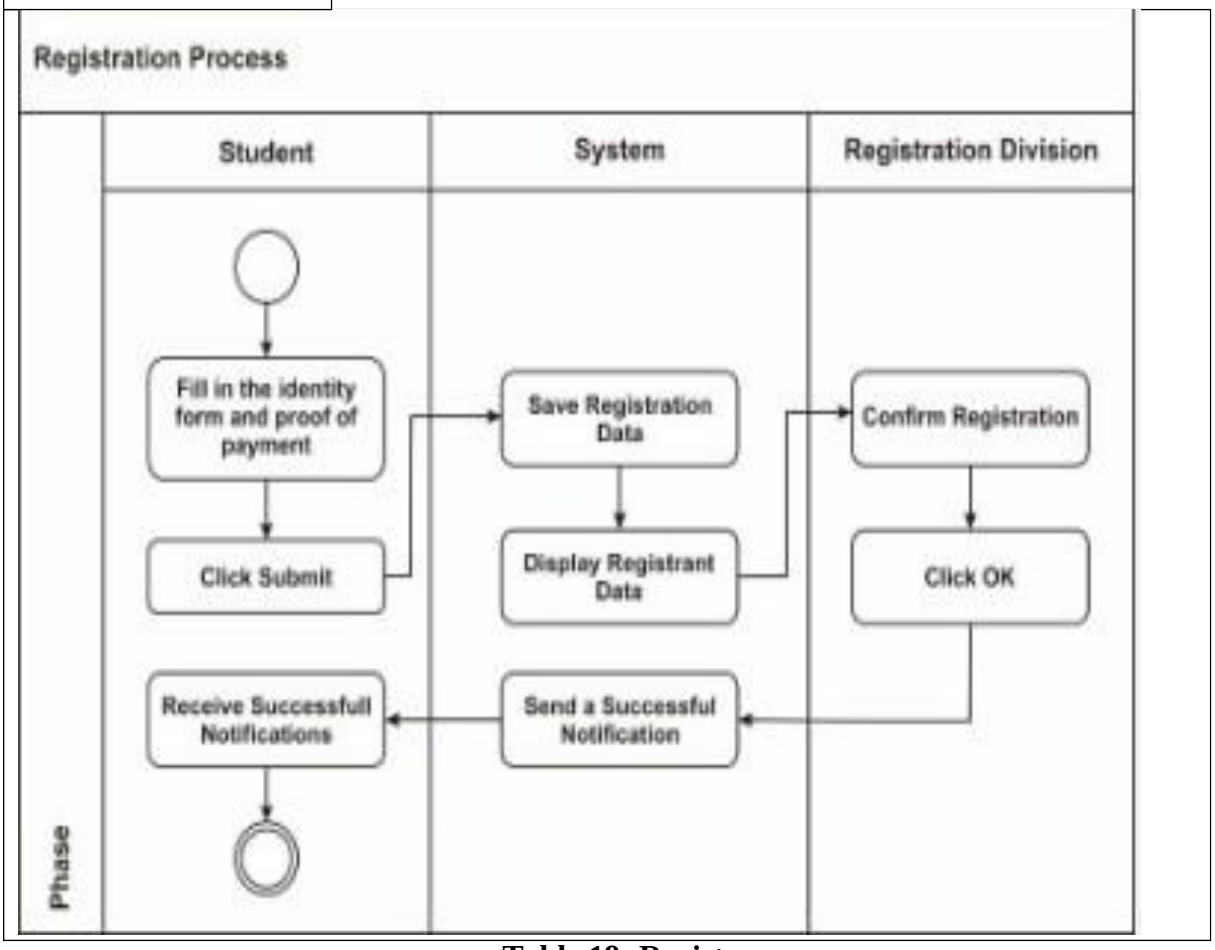


Table 19 :Register

Login

AD-02

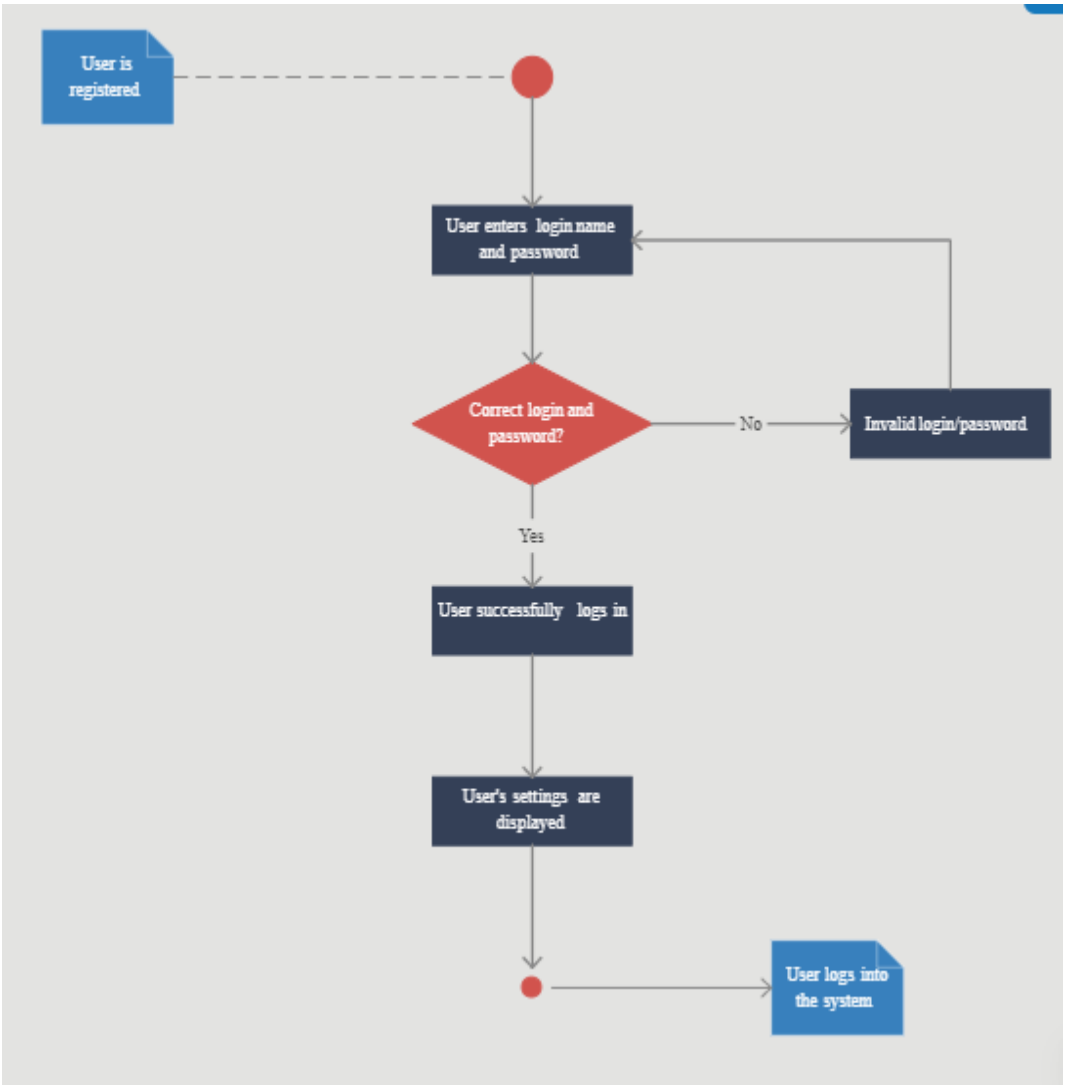


Table 54 :Login

- **Forgot Password**

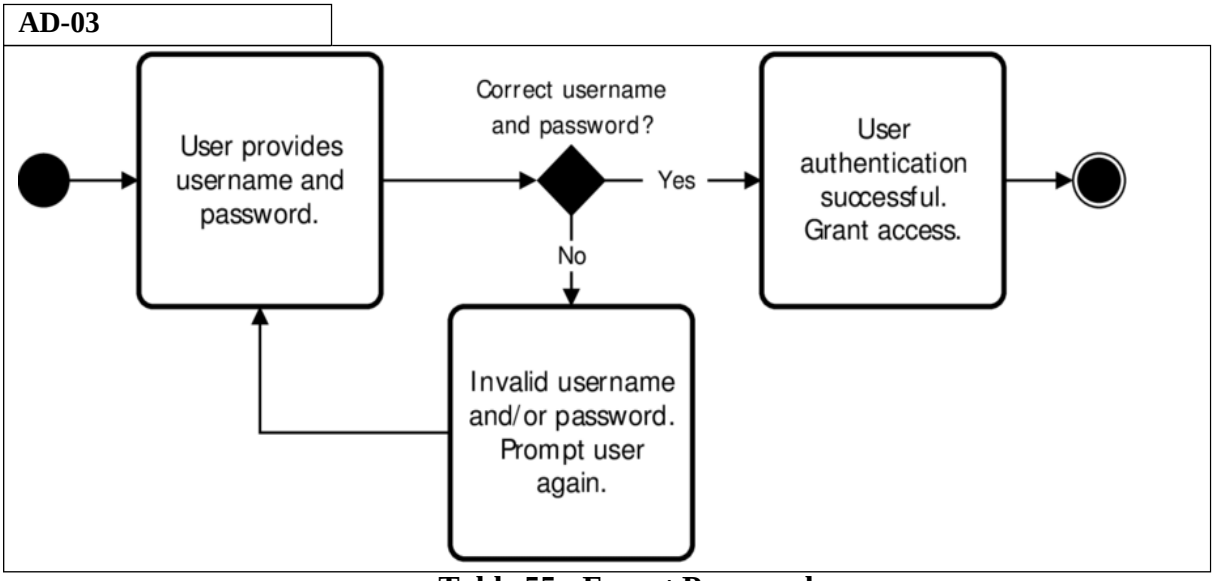


Table 55 :Forgot Password

- **Activity Diagrams for User**

- **View Profile**

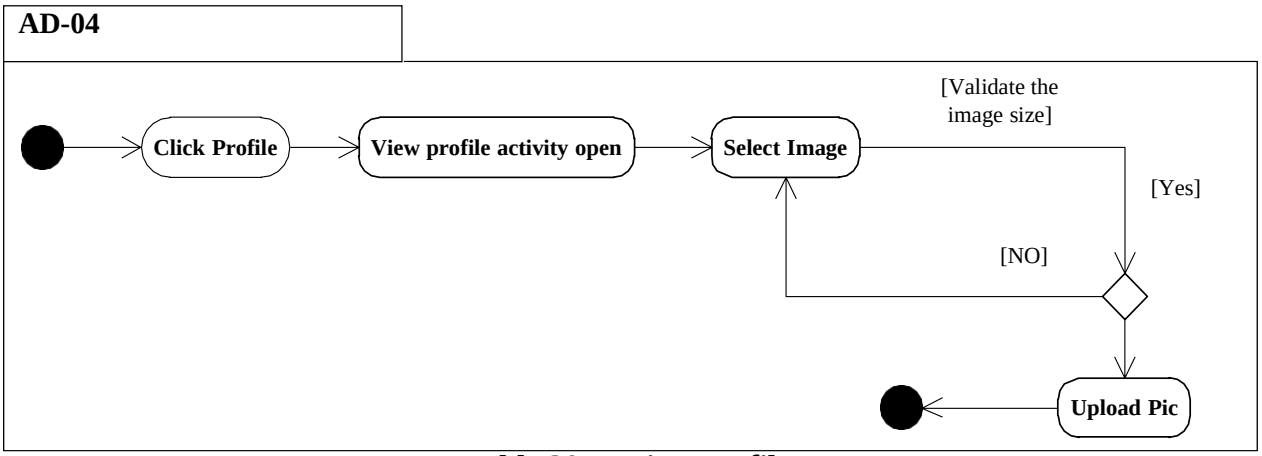


Table 20 :View Profile

Change Password

AD-05

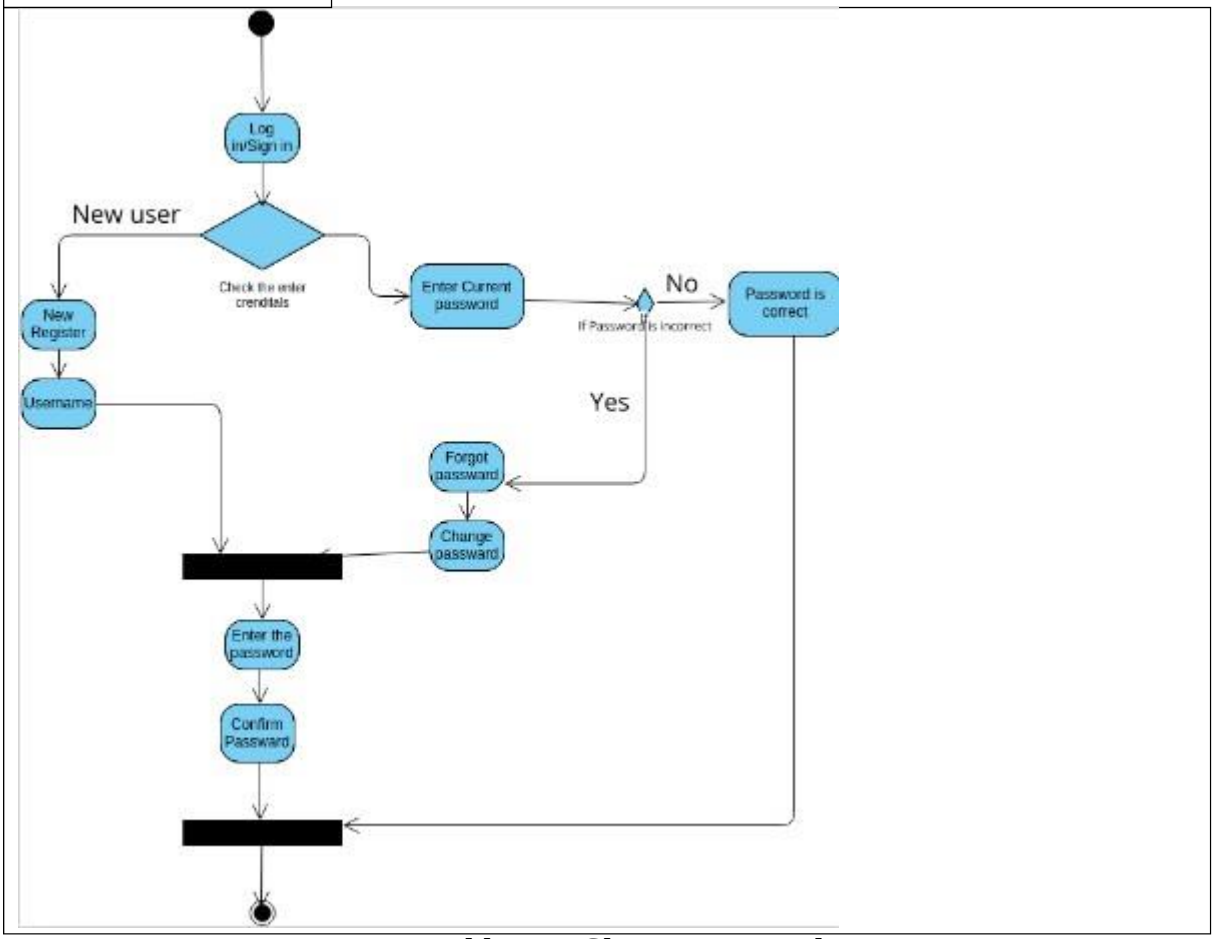


Table 57 :Change Password

- **Activity Diagrams for Admin**

- **View Profile**

AD-06

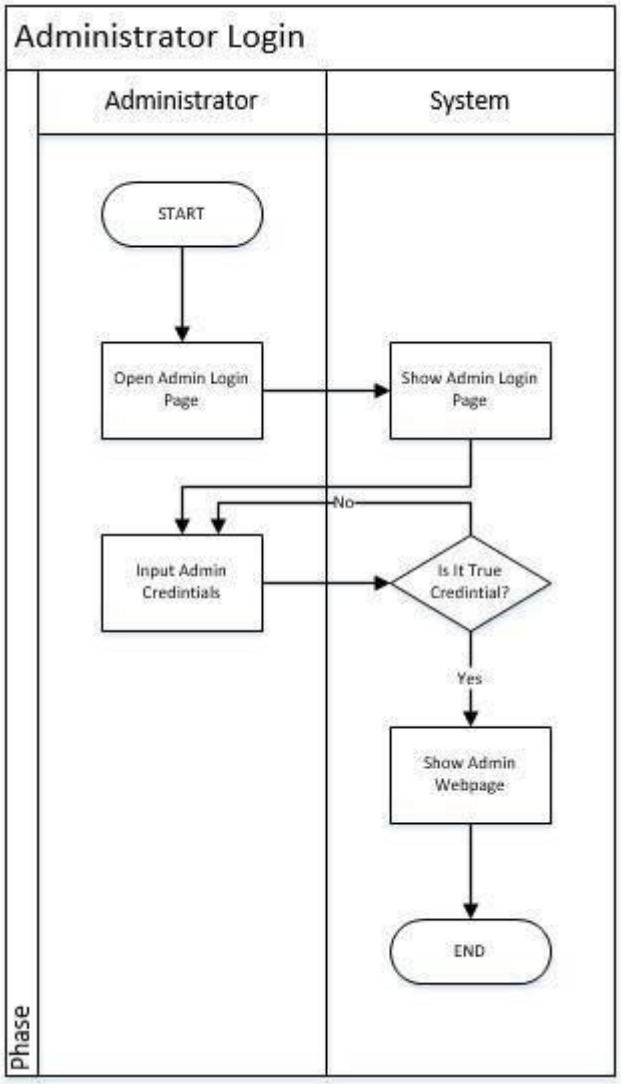


Table 58 :View Profile

Register New User

AD-07

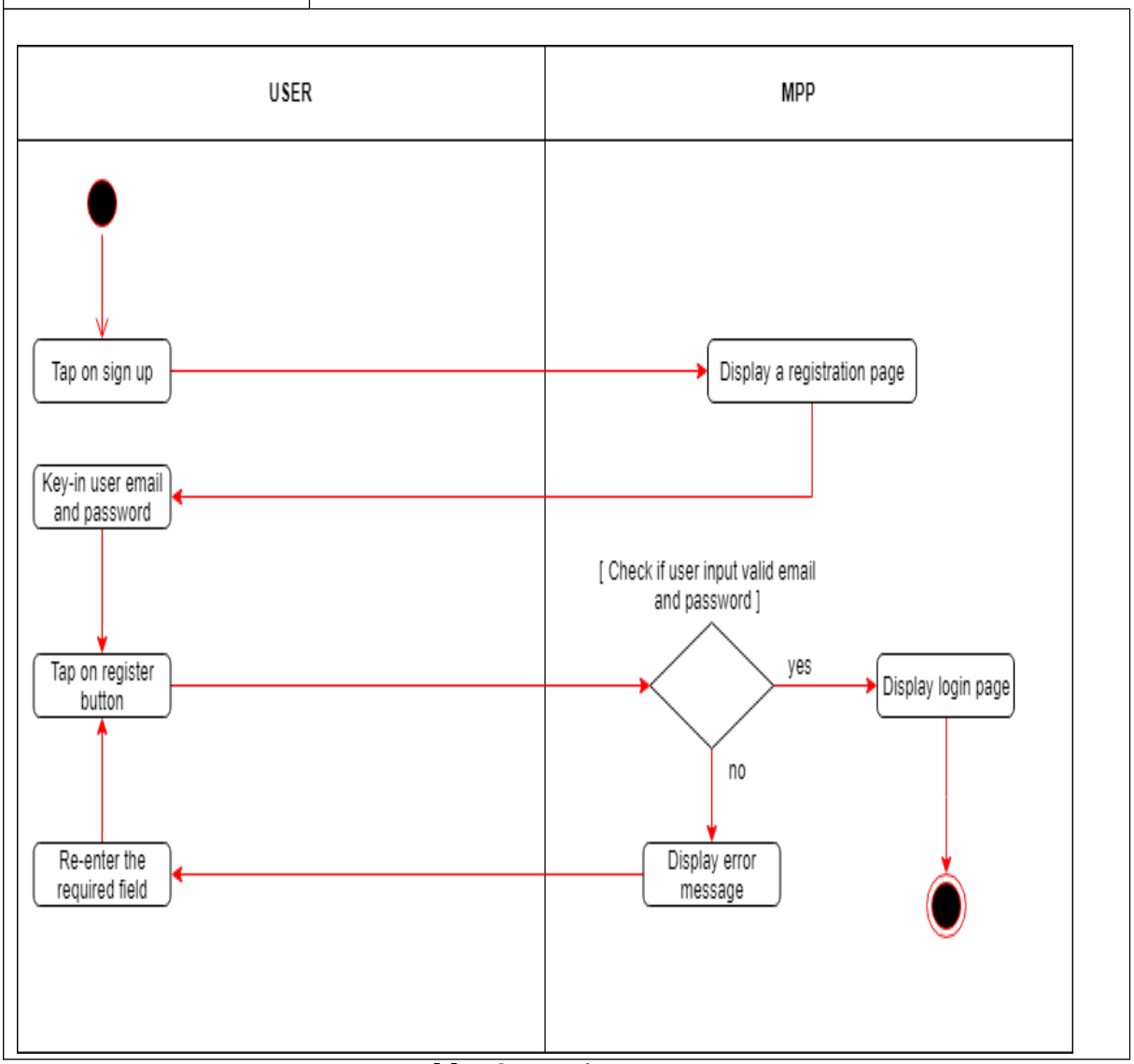


Table 59 :Register New User

Search User

AD-08

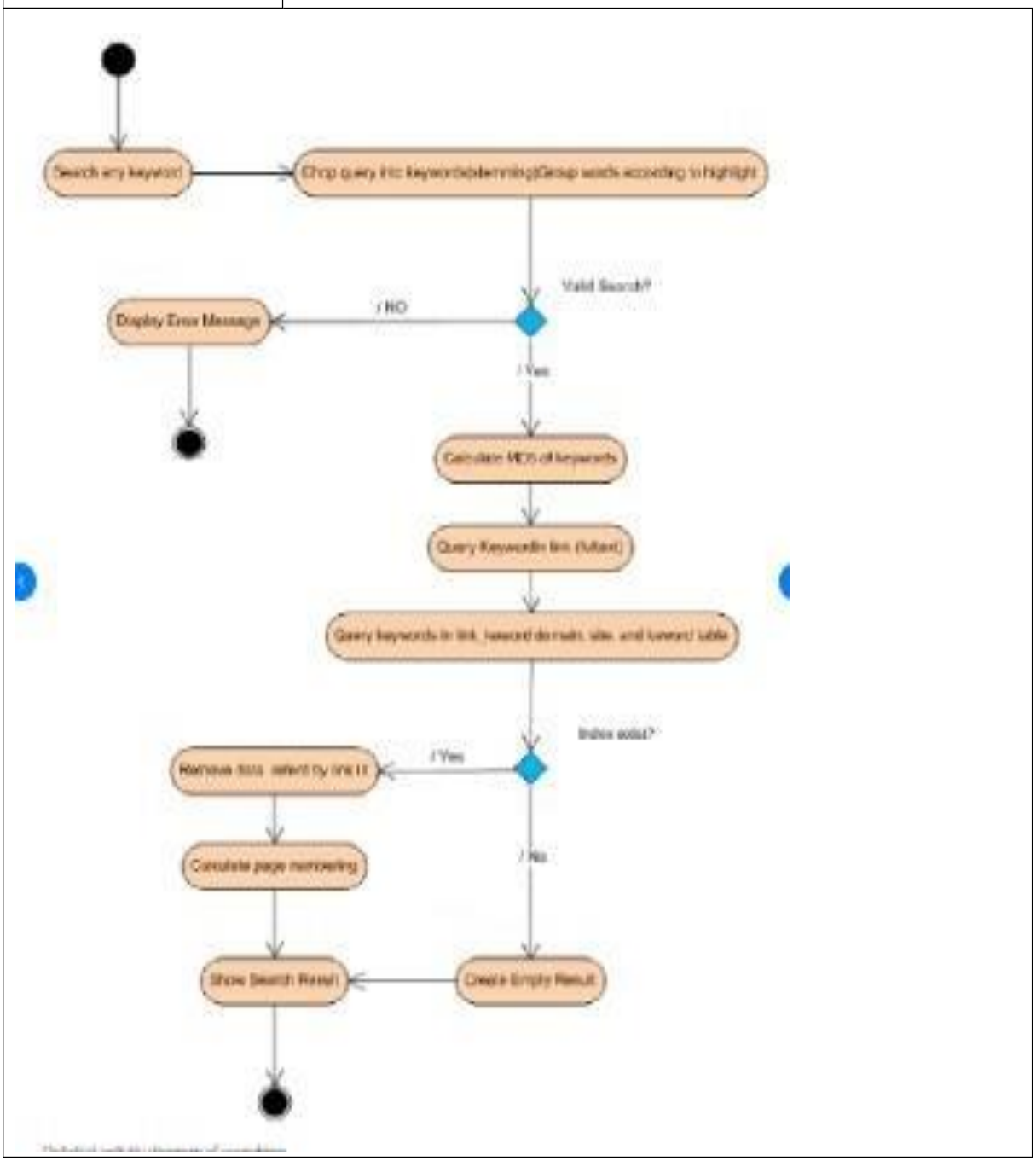


Table 60 :Search User

Active User

AD-09

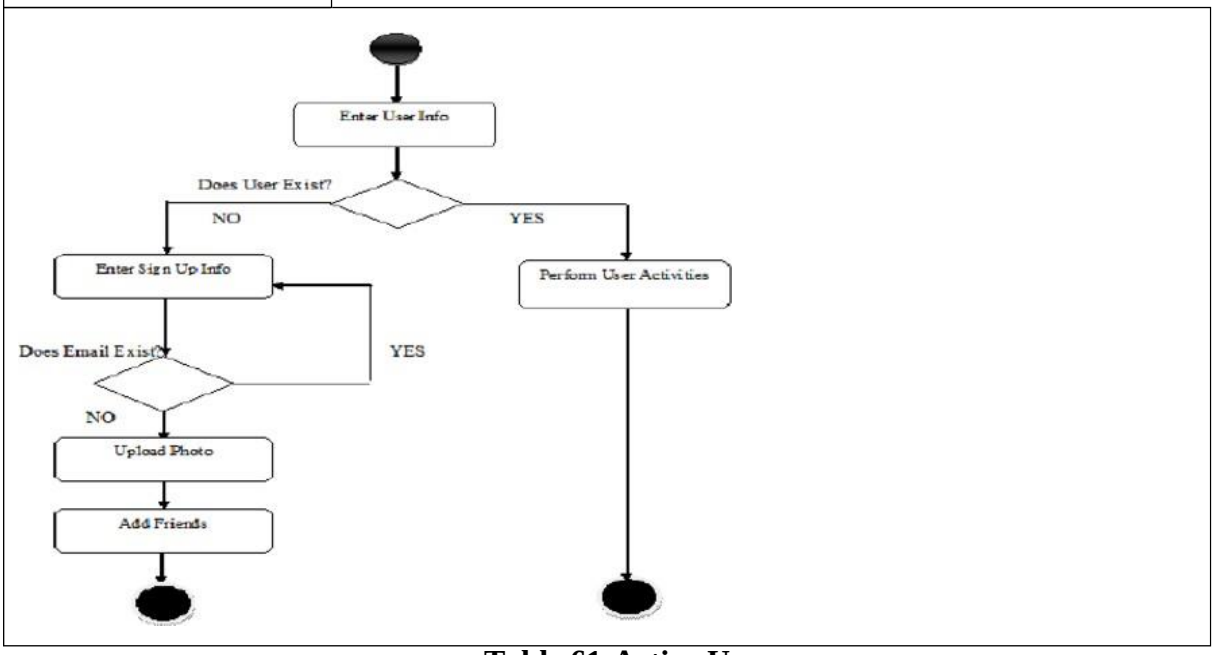


Table 61:Active User

Change Password

AD-10

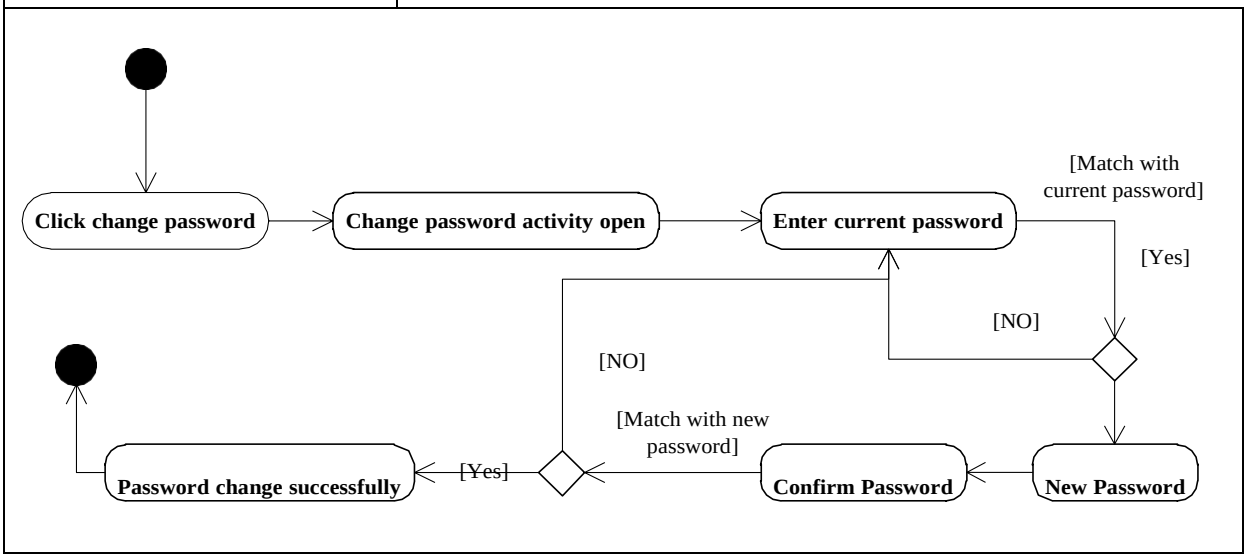
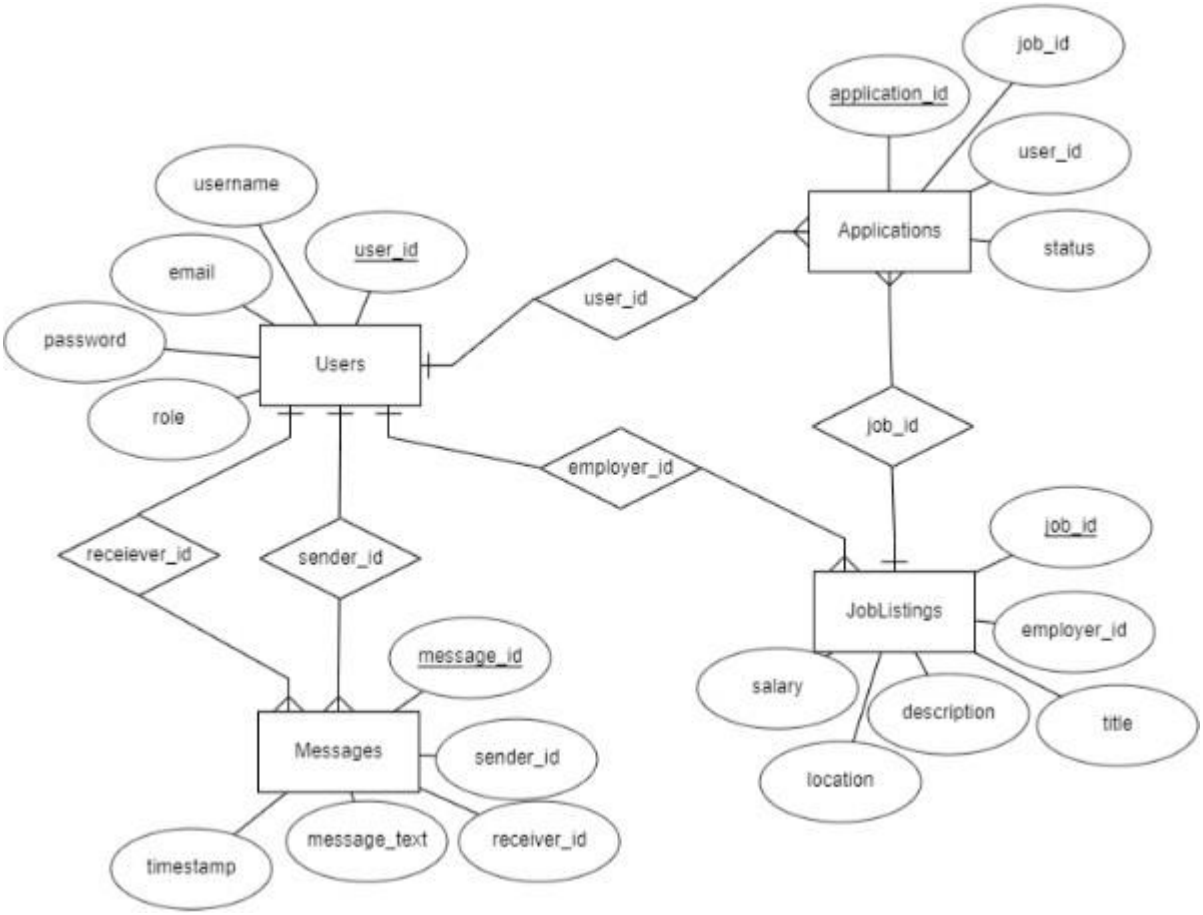


Table 62:Change Password

6.3 Entity Relation Model



6.3.1 List of Entities

S. No.	Entity	Attributes
1.	**User's**	userid, f_name, l_name, email, password, cur_date,user_type, username, status, father_name, amount
2.	**Admin**	userid, f_name, l_name, email, password, cur_date, user_type, username, status, father_name, amount _id
3.	**Job_id**	Salary , location, title, description,job_id
4.	**Message**	Message_id, sender_id, timestamp, receiver_id

Table 63: List of Entities

6.4 Normalization

6.4.1 First Normal Form

Job_id	userid	comapny	salary	location
1	22	HCL	80,000	delhi
2	32	Amazon	1,00,000	mumbai
3	26	Google	1,50,000	chennai

- Each attribute contains a single value.
- No two tuples (rows) are completely identical.
- Each attribute is identified by a primary key (Job_id), which is unique and not the same for any other attribute in the table.

6.4.2 Second Normal Form

JOB_ID	User_id	salary
1	22	80,000
2	32	1,00,000
3	26	1,50,000

JOB_ID	company	location
1	HCL	delhi
2	Amazon	mumbai
3	Google	chennai

Each table represents a single entity and follows the second normal form by eliminating partial dependencies on the primary key.

6.4.3 Third Normal Form

User_id	usernam	email
1	vishay	Vg@gmail.com
2	sharon	ss@gmail.com
3	akshat	ak@gmail.com

Job_id	User_id	comapny
1	22	HCL
2	32	Amazon
3	26	Google

Job_id	**salary**	**Date posted**
1	80,000	10 april 24
2	1,00,000	10 may 24
3	1,50,000	22 oct 22

There are no transitive dependencies between non-prime attributes. All attributes in each table are directly dependent on the primary key of that table, meeting the requirements of the third normal form.

CHAPTER 7: IMPLEMENTATION

7.1 Introduction

After the completion of the design phase, the developer analyzed that it was necessary that the requirements quoted down must meet the proposed system development schema. Implementation phase is one of the most essential stages of any project as the developer would work to implement the system design into a real system. Implementation phase involves the vivid usage of tools to convert the design modules into a real working system. For working on the real system, the prerequisite for the developer would be a programming language and a programming tool. The developer chooses to work with HTML, CSS, and JavaScript for the Job Act website. The developer had to undergo through a series of errors which was obstructing the implementation tenure. This chapter further throws light on how the design has been implemented and what are the shortcomings during the making of the system. Furthermore, a list of problems are mentioned and what are the probable solutions that are provided.

Significance of Implementation

The implementation phase stands as a testament to the culmination of meticulous planning, strategic decision-making, and creative problem-solving. It represents the bridge between theoretical ideation and practical realization, where the developer harnesses a myriad of tools and methodologies to breathe life into the envisioned solution. Within the context of our project, the implementation phase assumes heightened significance as we embark on the journey of transforming the conceptual framework of the Job Act website into a fully functional, user-centric platform.

Leveraging Tools and Technologies

At the heart of the implementation phase lies the adept utilization of tools and technologies tailored to the specific requirements of the project. As the developer navigates the intricate landscape of system development, the choice of programming language and tooling assumes critical importance. In the case of the Job Act website, the developer has elected to harness the power of HTML, CSS, and JavaScript – a versatile trifecta renowned for its flexibility, scalability, and cross-platform compatibility. Armed with these foundational building blocks, the developer embarks on a journey of creation and innovation, leveraging the inherent strengths of each technology to craft an immersive, user-centric digital experience.

Navigating Challenges and Obstacles

However, the path to implementation is rarely devoid of obstacles. Throughout the course of development, the developer encounters a myriad of challenges – from syntax errors and compatibility issues to unforeseen technical constraints – that threaten to impede progress and derail the project timeline. It is within these moments of adversity that resilience, perseverance, and creative problem-solving come to the fore, empowering the developer to navigate the complexities of implementation with grace and tenacity.

Unveiling Solutions and Innovations

This chapter serves as a chronicle of the implementation journey, offering a candid exploration of the triumphs and tribulations encountered along the way. Through a detailed examination of the design-to-development transition, we seek to shed light on the intricacies of system implementation, elucidating the methodologies employed, the challenges faced, and the innovative solutions devised to surmount obstacles and propel the project forward. Additionally, we present a comprehensive analysis of the problems encountered during the implementation process, accompanied by a curated list of proposed solutions aimed at addressing these challenges and fostering continuous improvement.

A Roadmap for Progress

As we embark on the implementation phase of the Job Act project, we do so with a steadfast commitment to excellence, innovation, and user-centric design. Armed with a potent combination of technical expertise, creative ingenuity, and unwavering determination, we are poised to transform the conceptual blueprint of our design into a tangible manifestation of digital innovation. Through the judicious application of tools, technologies, and best practices, we aspire to create a platform that not only meets the needs and expectations of our users but exceeds them, setting new benchmarks for excellence in the realm of online job search and recruitment.

7.2 Tools used for Implementation

The developer has mentioned all the tools that has been used in the development of the system.

Tools	Purpose
Windows 10	Used as an operating system to run the all the below mentioned tools for the development of the system.
Microsoft Visio 2010	Used to draw all the UML diagrams.
Microsoft Word 2010	Used to document the project.
Microsoft Project 2010	Used to prepare the Gantt Chart.
Microsoft Power Point 2010	Used to prepare the presentation slide.
Visual studio code	It is used to design the pages of the website
MSSQL	Used as a remote database (in the server side).

Table 64:Tools used for Implementation

7.3 Implementation Plan

7.3.1 Implementation Approach

This plan would give the developer an overview of the procedures involved to develop the real system. A strategic plan is required to successfully complete a system. **'Divide and conquer approach'** is used to divide the system into separate modules to detect and recover from errors easily. The plan is made to prioritize various modules on the basis of their complexity so that each and every module can be implemented on time and the complex modules should be developed first.

7.3.1 Implementation Approach Steps

1. User Interface Design: Start by designing the user interface (UI) of the website using HTML and CSS. Create mockups and wireframes to visualize the layout and design elements.
2. Homepage Development: Develop the homepage of the website, including the navigation menu, search bar, and featured job listings. Use HTML for structure and CSS for styling.

3. Registration and Login Pages: Create registration and login pages for users to create accounts and log in. Use HTML for form elements and CSS for styling.

4. Database Integration: Set up a database to store user accounts, job listings, and other relevant data. Use JavaScript to interact with the database through AJAX requests.

5. Job Search Functionality: Implement job search functionality using JavaScript. Allow users to search for jobs based on keywords, location, category, etc.

6. Job Listing Display: Display job listings dynamically based on search criteria. Use JavaScript to fetch and display job data from the database.

7. Apply for Jobs: Implement the ability for users to apply for jobs directly through the website. Use HTML forms and JavaScript for form validation.

8. User Profile Management: Allow users to manage their profiles, including updating personal information, uploading resumes, and viewing application history. Use JavaScript for form handling and data management.

9. Responsive Design: Ensure that the website is responsive and accessible on different devices and screen sizes. Use CSS media queries for responsive design.

10. Testing and Optimization: Test the website for functionality, performance, and compatibility. Optimize the code and assets for faster loading times.

11. Deployment: Deploy the website to a web server or hosting platform. Ensure that all features are working correctly in the live environment.

12 Maintenance and Updates: Regularly update the website with new job listings, features, and improvements. Monitor user feedback and make necessary changes to enhance user experience.

7.4 Traceability of Implementation Modules with Design

Functionality (Modules)	Use Case Diagram
Sign In(Login)	UC – 01
User Screen	UC – 02
View Profile	UC – 03
Change Password(User)	UC – 04
Admin	UC – 05
View Profile (Admin)	UC – 06
Search User	UC – 07
Active User	UC – 08
Manage Status	UC – 09
Change Password(Admin)	UC – 10

Table 65 :Traceability of Implementation Modules with Design

7.5 Implementation of Complex Modules

- **Advanced Search Functionality**

Advanced Search Functuinality	
Description	
This is one of the most important modules of the system because it describe how you implemented a robust search feature allowing users to filter job listings based on various criteria such as location, job title, experience level, salary range, and more. Highlight any algorithms or techniques used to optimize search results for efficiency and relevance.	
Pseudocode	
: advanced search functionality	function advanced Search(job Listings, criteria): results = empty list for job in job Listings:

	if matches Criteria(job, criteria): results. add(job) return results function matches Criteria(job, criteria): return job. location == criteria .location or job .job Title == criteria .job Title or job .experience Level == criteria .experience Level or (job .salary >= criteria .salary Range .min and job .salary <= criteria .salary Range .max)

Table 21: advanced search functionality

- **Recommendation Engine**

Recommendation Engine	
Description	
This is one of the most important modules of the system because from here user can Discuss the development of a recommendation system that suggests relevant job listings to users based on their profile, search history, and preferences. Explain the machine learning algorithms or collaborative filtering techniques utilized to personalize recommendations and improve user engagement.	
Pseudocode	

Recommendation Engine	function recommend Jobs(user Profile, job Listings):
	recommended Jobs = empty list
	
	for job in job Listings:
	if job Matches Preferences(user Profile, job):
	recommended Jobs .add(job)
	
	return recommended Jobs
	
	function job Matches Preferences(user Profile, job):
	return job. location == user Profile .location or
	job .title == user Profile .job Title or
	job. Experience Level == user Profile .experience Level

- ***Table 22:*** **Recommendation Engine**

- **Login**

Login	
Description	
This is one of the most important modules of the system because without this no one can access the system.	
Pseudocode	

Login	BEGIN.
	Input Email
	Input Password
	IF (Email Match with Password) THEN
	Display Respective User Type Homepage
	ELSE
	Please Enter Valid Email and Password
	END IF
	END

Table 23:Login

- **Real-time Notifications**

Real-time Notifications
Description
This feature allows the user discuss the implementation of real-time notifications to keep users informed about new job opportunities, application status updates, and messages from employers. Explain the technologies used, such as Web Sockets or server-sent events, to deliver timely notifications without affecting performance.
Pseudocode

Real-time Notifications	function setup Real Time Notifications(user):
	subscribe To Notifications(user)
	// Additional setup if needed
	
	function subscribe To Notifications(user):
	// Code to subscribe user to real-time notifications
	// For example, using Web Socket or Server-Sent Events
	
	function send Notification(user, message):
	// Code to send a real-time notification to a specific user
	// For example, using Web Socket or Server-Sent Events

Table 24: **Real-time Notifications**

7.6 Technical Quality and Other Features

7.6.1 Memory Utilization

- **Profiling:** Start by profiling our code to identify areas where memory is being heavily utilized. Profiling tools can help pinpoint memory-intensive operations, such as large data structures or inefficient memory management**.**

- **Optimization:** Once you've identified memory-intensive areas, optimize your code to reduce memory usage. This could involve implementing more memory-efficient data structures, minimizing the use of global variables, and reducing unnecessary memory allocations and de allocations.

- **Resource Management**: Proper resource management is crucial for efficient memory utilization. Ensure that resources like database connections, file handles, and memory allocations are properly managed and released when no longer needed to prevent memory leaks.

ArrayList
For utilizing less memory, the developer has used ArrayList as it utilizes the memory as required(Dynamically) instead of array that uses fix amount of memory whether that is usable or not.
Snippet

Table 25:Array List

- **Ending Previous Activities**

Finish( )
Ensure that any resources allocated by previous activities are properly released and cleaned up. This could include closing database connections, releasing file handles, or de allocating memory to prevent resource leaks and optimize resource utilization.

Table 26:Finish

7.6.2 Performance

- Our website is optimized for speed and responsiveness, ensuring swift loading times and seamless user experience across devices.
- Through efficient resource management and streamlined code, we prioritize fast page rendering and minimal latency. Our performance enhancements include browser caching, image optimization, and content delivery network integration. The application is flexible to work on slower net connectivity.
- . We are committed to delivering a high-performance website that delights users and maximizes engagement.

7.6.3 User Interface

- Our user interface is designed with user experience at the forefront, featuring an intuitive layout and sleek design.
- Visually appealing graphics and a cohesive colour scheme, our interface fosters engagement and encourages exploration .Metaphors are used for better understanding of menu-items, Buttons and text views.
- Our commitment to usability and aesthetics creates an immersive and enjoyable experience for every visitors.
- Users are greeted with a clean and modern interface that facilitates easy navigation and quick access to key features.

7.6.4 Naming Conventions

Naming Convention for Class	↳ All the class names start with uppercase letter and every subsequent word also start with uppercase letter. . Example: User Profile, Job Listing, Notification Service
Naming Convention for Methods	↳ All the method names starts with lower case letter and subsequent words start with uppercase letter. ↳ For Example – Update Profile(), Get Job List(), Send Notification()
Short name of major components	↳ **UI - User Interface** ↳ **DB - Database** ↳ **API - Application Programming Interface** ↳ **Auth - Authentication** ↳ **CDN - Content Delivery Network** ↳ **CMS - Content Management System** ↳ **CI/CD - Continuous Integration/Continuous Deployment** ↳ **SEO - Search Engine Optimization** ↳ **QA - Quality Assurance** ↳ **CDN - Content Delivery Network**

Table 27:Naming Conventions

7.6.5 Comments

Comments are one of the most significant aspects which describe the application technical quality. It supports the developer in re-reading the source code after a long time. Thus, relevant comments are provided for understanding.

```
//change navbar color
// $(document).read(function(){
//     $(windows).scroll(function(){
//         var scroll=$(windows).scrollTop();
//         if(scroll>150){
//             $(".navbar").css("background", "#222");
//             $(".navbar").css("box-shadow", "rgba(0,0,0,0.1) 0px 4px 12px");

//         }
//         else{
//             $(".navbar").css("background", "transparent");
//             $(".navbar").css("box-shadow","none");

//         }
//     })
// });

// //smooth scroll
// var navbarHeight=  $(".navbar").outerHeight();
// $(".navbar-menu a").click(function(e){
//     var targetHref=$(this).after("href");
//     $("html,body").animate({
//         scrollTop:$(targetHref).offset().top-navbarHeight
//     },1000)
//     e.preventDefault();
//     });

  //navbar mobile version
    const mobile=document.querySelector(".menu-toggle");
    const mobileLink = document.querySelector(".navbar-menu");

mobile.addEventListener("click",function(){
    mobileLink.classList.toggle("is-active");
    mobileLink.classList.toggle("active");
})


mobile.addEventListener("click",function(){
    const menuBars = document.querySelector(".is-active");
```

Figure 1: Comments

7.7 User Manual

This manual provides very simple and quick steps for running this website by walking through the Sample Tasks.

7.8 Technical Manual

Developer Note technical manual for [JobAct] manual provides developers with comprehensive insights into the architecture, development, and maintenance of our job-seeking platform.

1. Introduction

- Overview of the website
- Purpose of the technical manual
- Target audience

2. System Architecture

- High-level overview of the website's architecture
- Description of components and their interactions
- Diagrams (e.g., architecture diagram, data flow diagram)

3. Development Environment

- Programming languages and frameworks used
- Development tools and IDEs
- Version control system (e.g., Git)
- Dependencies and libraries

4. Installation and Setup

- Requirements for setting up the development environment
- Instructions for cloning the repository
- Configuration steps (e.g., environment variables, database setup)

5. **Database Design**

- Database schema and tables
- Relationships between tables
- Description of data stored in each table

6. **Backend Development**

- Overview of backend architecture
- Description of APIs and endpoints
- Explanation of business logic and algorithms

7. **Frontend Development**

- Overview of frontend architecture
- Description of UI components and design patterns
- Client-side scripting and interaction

8. **Testing**

- Types of testing (e.g., unit testing, integration testing)
- Testing tools and frameworks used
- Test coverage and results

9. **Deployment**

- Deployment process and tools (e.g., CI/CD pipelines)
- Server configuration and setup
- Monitoring and logging

10. **Maintenance and Support**

- Procedures for updating the website
- Troubleshooting common issues
- Contact information for technical support

CHAPTER 8: TESTING

"... You have as many testers as we have developers. And testers spend all their time testing, and developers spend half their time testing. We're more of a testing, a quality software organization than we're a software organization." – Bill Gates
(Information Week 2002)

8.1 Introduction

Testing is the process of exercising software with the intent of finding and correcting errors. The objective of the testing is to uncover different classes of errors and to do so with a minimum amount of time and effort. In order to provide highly acceptable and error free system, the system should have to face the testing procedure and evaluation of each and every module and functionality. (Mustafa & Khan, 2007)

Importance of Testing

The importance of testing cannot be overstated, as it plays a pivotal role in safeguarding against potential failures, vulnerabilities, and inconsistencies that may compromise the integrity and usability of a software system. By subjecting the system to a battery of rigorous tests, developers can identify and address a myriad of issues ranging from syntax errors and logic flaws to usability concerns and performance bottlenecks.

Types of Testing

Testing encompasses a diverse array of methodologies, each tailored to address specific facets of software functionality and behavior. Some common types of testing include:

Unit Testing: This involves testing individual components or units of code in isolation to ensure that they perform as expected.

Integration Testing: Integration testing focuses on verifying the interactions between different modules or subsystems within the software system.

System Testing: System testing evaluates the system as a whole, examining its functionality, performance, and compatibility with external dependencies.

Acceptance Testing: Acceptance testing involves validating the system against predefined criteria to determine whether it meets the requirements and expectations of end users.

Challenges in Testing

Despite its importance, testing presents a myriad of challenges and complexities that must be navigated with care and precision. Some common challenges include:

Resource Constraints: Limited time, budget, and personnel can constrain the extent and thoroughness of testing efforts.

Complexity of Systems: As software systems grow in size and complexity, testing becomes increasingly intricate, requiring sophisticated tools and methodologies to ensure comprehensive coverage.

Changing Requirements: Evolving user needs and shifting project requirements can necessitate frequent adjustments to testing strategies and priorities.

Legacy Systems: Testing legacy systems presents unique challenges due to outdated technologies, undocumented code, and accumulated technical debt.

Strategies for Effective Testing

To address these challenges and maximize the effectiveness of testing efforts, developers employ a variety of strategies and best practices, including:

Test Automation: Automating repetitive testing tasks can streamline the testing process, improve efficiency, and enhance test coverage.

Continuous Integration/Continuous Deployment (CI/CD): CI/CD pipelines facilitate the seamless integration and deployment of code changes, enabling rapid feedback and iteration.

Risk-Based Testing: Prioritizing testing efforts based on the perceived risk and impact of potential failures helps allocate resources effectively and mitigate critical issues.

User-Centric Testing: Incorporating user feedback and usability testing ensures that the software meets the needs and expectations of its intended audience.

Conclusion

In conclusion, testing is a cornerstone of software development, essential for ensuring the reliability, functionality, and performance of modern software systems. By adopting a systematic and rigorous approach to testing, developers can identify and address potential errors and vulnerabilities, ultimately delivering a product that meets the highest standards of quality and usability.

8.2 Need of Testing

The significance of the testing phase is done to verify and validate the completed system. So that it will executed and presented the way it was expected and all the functionalities function as defined in the project specification form. The testing does not require that the developer has to test each and every section of code to verify the bugs and recover from the errors and bugs that are present in it but its objective is to uncover the situations that could impact the system or the project or can lead in making the project unsuccessful. Thus, testing is done to enhance the quality of the system produced so that it is acceptable by the intended user with satisfaction. The highlights of this chapter include:

- ✓ The different types of testing done.
- ✓ The duration taken to test.
- ✓ The person(s) involved.
- ✓ The reported errors.
- ✓ The measures taken.

Error Detection and Correction: Testing is essential for uncovering errors, bugs, and inconsistencies within the software code and functionality. By systematically exercising the software, developers can identify and rectify issues before they manifest in real-world scenarios, thereby enhancing the reliability and stability of the system.

Quality Assurance: Testing serves as a quality assurance mechanism, ensuring that the software meets predefined standards of functionality, performance, and usability. By subjecting the system to rigorous testing procedures, developers can validate its adherence to requirements and specifications, mitigating the risk of defects and deficiencies.

Risk Mitigation: Software development inherently carries inherent risks, including the potential for errors, failures, and vulnerabilities. Testing helps mitigate these risks by systematically identifying and addressing potential issues, thereby reducing the likelihood of adverse consequences such as system crashes, data loss, or security breaches.

User Satisfaction: The ultimate goal of software development is to deliver a product that meets the needs and expectations of its intended users. Testing plays a crucial role in achieving this objective by validating the functionality, usability, and performance of the software from the user's

perspective. By incorporating user feedback and conducting usability testing, developers can ensure that the software delivers a seamless and satisfying user experience.

Compliance and Regulations: In many industries, compliance with regulatory standards and industry best practices is mandatory. Testing helps ensure that the software meets these requirements, enabling organizations to adhere to legal and regulatory obligations while maintaining the integrity and security of their systems.

Overall, testing is indispensable in the context of software development, serving as a cornerstone of quality assurance, risk management, and user satisfaction. By investing in comprehensive testing methodologies and best practices, developers can deliver software that not only meets the highest standards of quality and reliability but also exceeds the expectations of its users.

8.3 Test Plan

The test plan for our job-seeking website outlines a comprehensive approach to testing, encompassing functional, performance, security, and usability aspects. It defines the objectives, scope, and methodologies for testing, along with the test environment and tools required. Detailed test cases are provided for each feature and functionality, specifying inputs, expected results, and actual outcomes. Procedures for test execution, defect management, and regression testing are established, ensuring thorough coverage and effective resolution of issues. Additionally, performance and security testing are emphasized, with defined metrics and criteria for acceptance. Usability testing is conducted to assess user experience, with feedback collected to drive improvements. The test plan concludes with acceptance criteria for approving the release, along with recommendations for future enhancements. Overall, the test plan serves as a roadmap for ensuring the quality, reliability, and usability of our job-seeking website.

A comprehensive test plan is crucial for ensuring the success of the testing phase in the development of the Job Act website. This document serves as a detailed roadmap outlining the objectives, scope, methodologies, and responsibilities of the testing process. The test plan begins with an introduction providing an overview of the project, its objectives, and the purpose of the test plan. Clear objectives are then established, aligning testing goals with project requirements and user expectations. The test strategy outlines the overall approach to testing, including methodologies, techniques, and resource allocation. The scope of testing is defined, specifying the system components, modules, and functionalities to be tested, along with any environmental considerations. Test deliverables are identified, including documents, reports, and artifacts to be produced during testing. Procedures for executing test cases, recording results, and reporting defects are detailed, ensuring consistency and accuracy throughout the testing process. A well-

defined test schedule outlines timelines, milestones, and contingency plans to manage schedule deviations effectively. Risks and mitigation strategies are identified to address potential obstacles that may impact testing activities. Clear responsibilities are assigned to ensure accountability and effective communication among team members. Finally, approval and sign-off procedures are established to validate the completeness and adequacy of the test plan before proceeding with testing activities. Overall, a meticulously crafted test plan sets the stage for thorough and effective testing, ultimately ensuring the quality, reliability, and usability of the Job Act website.

8.3.1 Type of Testing

This illustrates the sequential execution of different types of testing for our job-seeking website, starting from functional testing and progressing through performance, security, usability, and regression testing. Each type of testing plays a crucial role in ensuring the quality and reliability of the website.

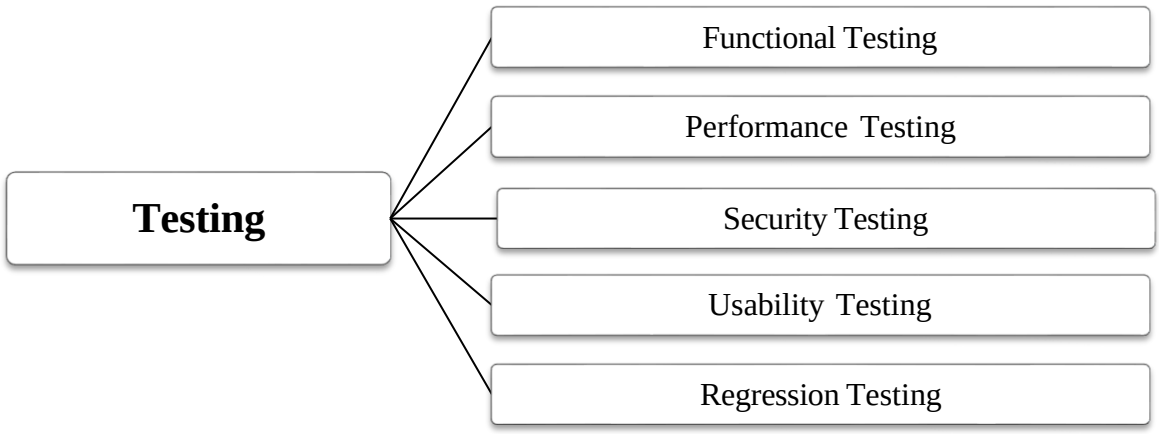


Table 28:Type of Testing

S. No	Testing Technique	Requirement
1.	**Functional Testing**	Functional testing requirements for your job-seeking website encompass a range of critical functionalities. Users should seamlessly register for accounts, with validations ensuring accuracy of provided details. Job search functionality should enable users to find listings based on diverse criteria, refining results with filters and sorting options. The application process must allow registered users to apply for jobs, requiring uploading resumes and cover letters. Employers should access a dashboard for managing job listings, including creation, editing, and deletion functionalities, along with access to analytics.
2.	**Performance Testing**	Performance testing requirements for our job-seeking website are pivotal in ensuring optimal functionality and responsiveness under varying conditions. Firstly, the website should be tested to ascertain its ability to handle expected user traffic without experiencing slowdowns or downtime, particularly during peak usage periods. Load testing should be conducted to evaluate the system's performance under heavy loads, simulating multiple concurrent users accessing the website simultaneously.
3.	**Security Testing**	Security testing requirements for our job-seeking website are crucial to safeguard sensitive data, protect against unauthorized access, and ensure compliance with regulatory standards. Firstly, the website should undergo vulnerability assessments to identify potential security weaknesses and vulnerabilities in its architecture, codebase, and configurations. Data encryption and transmission protocols should be evaluated to ensure that data is securely transmitted and stored, protecting against interception and unauthorized disclosure.

4.	**Usability Testing**	Usability testing requirements for our job-seeking website are essential to ensure an intuitive and user-friendly experience for all users. Firstly, the website should undergo testing to evaluate its overall ease of use, including navigation, layout, and functionality. This involves testing common user tasks such as registering for an account, searching for job listings, and applying for jobs to assess how easily users can accomplish these tasks. Feedback from users should be collected through surveys, interviews, and user testing sessions to identify pain points, preferences, and areas for improvement. Based on this feedback, iterative design changes should be made to enhance usability and address user needs effectively
5.	**Regression Testing**	Regression testing requirements for our job-seeking website are critical to ensure that new updates or changes do not inadvertently introduce defects or cause regressions in existing functionalities. Firstly, a comprehensive suite of regression test cases should be established to cover all critical features and functionalities of the website. These test cases should encompass both positive and negative scenarios to verify that all aspects of the website continue to function correctly. Regression testing is crucial for our job seeking website to ensure that recent code changes or updates haven't inadvertently affected existing features or functionalities. As our website evolves with new features, bug fixes, and enhancements, regression testing becomes essential to maintain its quality and reliability.

Table 29:Testing Description

8.3.2 Pass/Fail Criteria

- Any critical functionality failures, such as inability to register, login, or search for jobs, constitute an immediate fail and most probably should not be there.
- If the website experiences significant performance issues, such as slow loading times or frequent timeouts, it fails to meet performance criteria.
- The presence of security vulnerabilities that could compromise user data or the integrity of the website leads to an immediate fail.

- Non-compliance with accessibility standards, resulting in barriers to access for users with disabilities, leads to failure.
- UX issues that significantly impede user navigation or task completion, such as confusing interface design or frequent error messages, lead to failure.

8.4 Point of Contact of Troubleshooting Purpose

Name	:	Sharon Shareek
Designation	:	Web designer
Contact No.	:	+91-7982087340
Email ID	:	sharonshareek4@gmail.com

Table 30:Point of Contact for Troubleshooting Purpose

8.5 Testing Duration

S. No.	Testing Technique	Start Date	End Date
1.	Functional Testing	1st March2019	19th March 2019
2.	Performance Testing	20thMarch 2019	1st April 2019
3.	Security testing	2ndApril 2019	7thApril 2019
4.	Usability testing	8thApril 2019	10thApril 2019
5.	Regression Testing	12thApril 2019	12thApril 2019

Table 31:Testing Duration

8.6 Criteria of Test Cases

The system must comply with the success criteria mentioned in the specification. Some of the requirements are:

- Product Management Module should work efficiently.
- Test cases should also address scenarios such as edge cases
- Test cases should validate integration points with external systems, such as third-party APIs (e.g., job board aggregators, payment gateways), to ensure seamless data exchange and interoperability.
- Synchronization must work efficiently.
- System should satisfy all user requirements.

- UI should have a consistent layout and must follow the HCIU principle.
- Test cases should also address scenarios such as edge cases, boundary conditions, and negative testing to ensure robustness and error handling.

(Note: For more details, please refer to section of PSF)

8.7 Technical requirements for Testing

S. No.	Technical Requirements
1.	Operating system - Windows, mac OS, Linux
2.	Web Browsers: Chrome, Firefox, Safari, Edge, Opera, Internet services like Mobile Data Service and Wi-Fi
3.	Screen Resolutions: Desktop, Tablet, Mobile
4.	Cloud Platforms: AWS, Azure, Google Cloud
5.	Load Testing Tool: Apache J Meter, Load Runner, Gatling
6.	A good data/internet connection for customers

Table 32 :Technical requirements for Testing

8.8 Users Involved in Testing

The developer will play the role of tester.

8.9 Unit Testing

In order to test each small part of the developed system individual test cases are developed. Unit testing was very helpful as it helped the developer to test individual units of source code. This is performed before any other testing because it is easy to find out bugs at lower level that is at module level than to find them at integration or system level. It is performed at two levels; black box test cases are made and then white box testing is done. Two levels of unit testing are basically conducted, namely black box (also called functional testing) and white box (also called logical testing).

Unit testing plays a pivotal role in the software development lifecycle, offering developers a granular approach to validating the functionality and correctness of individual units of source code. By breaking down the system into its smallest components, unit testing enables developers to pinpoint and rectify errors at the module level, thus laying a solid foundation for subsequent testing phases. This segment of testing is particularly crucial as it allows for the early detection of bugs and inconsistencies, minimizing the risk of cascading failures and facilitating more efficient troubleshooting and debugging processes.

The Importance of Unit Testing

Unit testing serves as a cornerstone of software quality assurance, providing developers with a mechanism to verify the correctness of their code in isolation from other system components. This level of granularity is essential for ensuring that each module behaves as expected under various input conditions and edge cases, thereby enhancing the overall reliability and robustness of the system. Moreover, unit testing fosters a culture of accountability and ownership among developers, empowering them to take ownership of their code and proactively identify and address potential issues before they propagate to higher levels of the software stack.

Black Box vs. White Box Testing

Unit testing encompasses two distinct approaches: black box testing and white box testing. Black box testing, also known as functional testing, focuses on validating the external behavior of a module without regard to its internal implementation details. Test cases are designed based on the expected input-output relationships and functional specifications of the module, allowing developers to assess its adherence to predefined requirements and user expectations. On the other hand, white box testing, or logical testing, delves into the internal logic and structure of the code, examining its execution paths, decision points, and data flows. This level of scrutiny enables developers to uncover hidden errors and edge cases that may not be apparent from an external perspective, thereby ensuring comprehensive test coverage and code correctness.

Benefits of Unit Testing

The benefits of unit testing are manifold, extending beyond mere bug detection to encompass broader aspects of software quality and development efficiency. By facilitating early bug detection and resolution, unit testing helps streamline the overall development process, reducing the time and effort required for troubleshooting and debugging. Moreover, unit tests serve as living documentation of the system's behavior, providing valuable insights into its design rationale and expected functionality. This documentation is especially valuable for new team members or future maintainers who may need to understand the inner workings of the codebase. Additionally, unit tests serve as a safety net against regressions, allowing developers to refactor and modify code with confidence, knowing that existing functionality remains intact.

Conclusion

In conclusion, unit testing stands as a fundamental pillar of software development, providing developers with a powerful tool for ensuring the correctness, reliability, and maintainability of their code. By systematically testing individual units of source code through both black box and white box approaches, developers can identify and address errors at the earliest stages of development, thereby minimizing the risk of defects and enhancing the overall quality of the software. As the first line of defense against bugs and regressions, unit testing plays a critical role in fostering a culture of excellence and accountability within development teams, ultimately leading to the delivery of more robust, resilient, and user-friendly software solutions.

8.9.1 Justification for unit Testing

For the system produced named JobAct each module is tested and its corresponding test case is produced. Therefore, individual test cases are produced for all the modules. Unit testing is performed at the primary level for the system because for example if searching or applying for jobs module are integrated before they are tested and a bug occurs, it will be difficult to figure out which module the bug has occurred. Therefore, it will be useful finding jobs module after it is completed and applying for jobs module separately after its completion to figure out and remove the bugs easily.

In the development of the Job Act website, the justification for unit testing is multifaceted and essential for ensuring the quality, reliability, and maintainability of the software. Here's an elaboration on why unit testing is crucial in this context:

1. Bug Detection and Prevention

Unit testing serves as an effective mechanism for detecting and preventing bugs in the codebase of the Job Act website. By testing individual units of source code in isolation, developers can identify errors and inconsistencies at the module level before they propagate to higher levels of the software stack. This proactive approach to bug detection helps minimize the risk of critical failures and ensures a more robust and stable system.

2. Early Validation of Functionality

Unit testing enables developers to validate the functionality of each module of the Job Act website early in the development process. By defining test cases based on functional specifications and expected behavior, developers can verify that each unit performs as intended under various input conditions and edge cases. This early validation of functionality helps identify discrepancies between expected and actual behavior, allowing for timely adjustments and refinements to the codebase.

3. Facilitation of Code Refactoring and Maintenance

Unit testing plays a crucial role in facilitating code refactoring and maintenance efforts for the Job Act website. By providing a suite of automated tests that validate the behavior of individual units of code, unit testing helps developers refactor code with confidence, knowing that existing

functionality remains intact. Additionally, unit tests serve as a form of living documentation, capturing the intended behavior of each module and facilitating future maintenance and modification efforts.

4. Assurance of Code Quality and Reliability

Unit testing contributes to the overall quality and reliability of the Job Act website by ensuring that each module of the software behaves as expected under various conditions. By systematically testing individual units of code through both black box and white box approaches, developers can identify and address errors, edge cases, and performance bottlenecks, thereby enhancing the overall robustness and resilience of the system.

5. Reduction of Development Costs and Time

Unit testing helps reduce development costs and time by catching bugs early in the development process when they are less expensive and time-consuming to fix. By identifying and addressing errors at the module level, unit testing minimizes the need for extensive debugging and troubleshooting efforts later in the development lifecycle. This proactive approach to bug detection and prevention ultimately leads to faster delivery times and lower development costs for the Job Act website.

In summary, unit testing is essential for ensuring the quality, reliability, and maintainability of the Job Act website. By providing an effective means of bug detection and prevention, validating functionality, facilitating code refactoring and maintenance, assuring code quality and reliability, and reducing development costs and time, unit testing plays a critical role in the success of the software development effort.

8.9.2 Black box testing (Functional Testing)

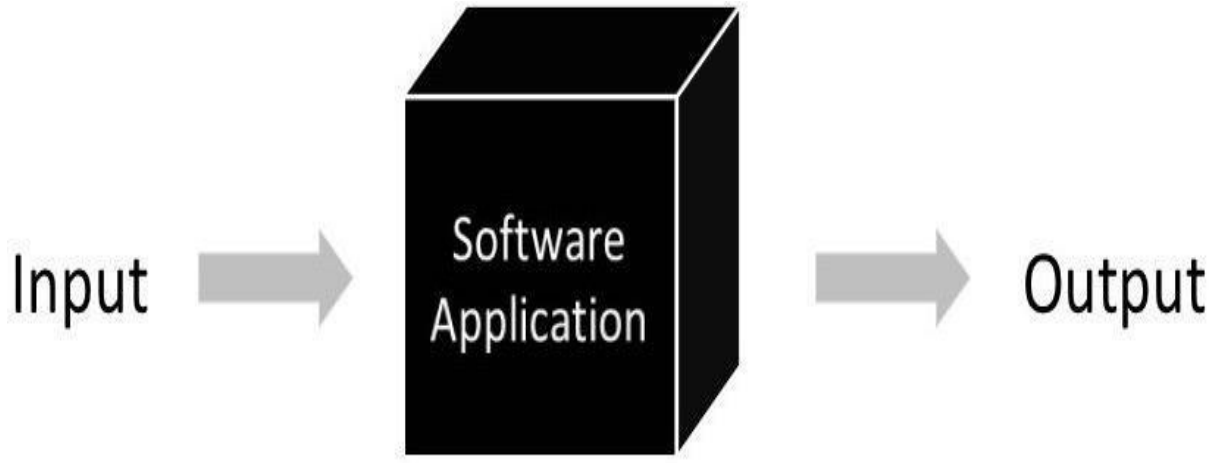


Figure 2 :Black Box

Black box testing is a software testing technique where the tester doesn't have access to the internal structure or code of the application being tested. When performing black box testing for a website, testers focus on the website's functionality, usability, and performance without examining its internal code.

- **Justification for Black Box Testing**

The testing is to be performed by the developer of the system but testing the functionalities of the system and not going into the code of the system.

Validation of User Experience

Black box testing is pivotal in ensuring that the Job Act website delivers an exceptional user experience. By focusing on the external behavior and functionality of the software without delving into its internal codebase, black box testing mirrors the perspective of end users. This approach allows testers to interact with the website as a typical user would, navigating through its various features, submitting forms, and accessing information. Through simulated real-world scenarios, black box testing uncovers usability issues, navigation challenges, and other user-facing concerns that could hinder user satisfaction and adoption. By identifying and addressing these issues early

in the development process, black box testing contributes significantly to the overall usability and user-friendliness of the Job Act website.

2. Independence from Implementation Details

One of the key advantages of black box testing is its independence from the internal implementation details of the software. Testers evaluate the functionality and behavior of the Job Act website solely based on its external interfaces and specifications, without being influenced by the intricacies of its underlying code structure or logic. This abstraction layer enables testers to maintain an objective and unbiased perspective, focusing on the observable behavior and performance of the software. By decoupling the testing process from implementation details, black box testing ensures a thorough and comprehensive assessment of the software's capabilities and limitations, ultimately leading to more accurate and reliable test results.

3. Identification of Functional Deficiencies

Black box testing plays a crucial role in identifying functional deficiencies and inconsistencies within the Job Act website. Test cases are meticulously designed based on functional requirements, user stories, and use cases, covering a wide range of possible scenarios and interactions. Testers systematically exercise the website's functionalities, verifying that each feature behaves as expected under various input conditions and usage patterns. By uncovering bugs, errors, and deviations from expected behavior, black box testing empowers developers to address functional deficiencies proactively, minimizing the risk of critical failures and ensuring the overall reliability and robustness of the software.

4. Coverage of End-to-End Scenarios

Black box testing provides comprehensive coverage of end-to-end scenarios that span multiple functionalities and components of the Job Act website. Testers simulate real-world user interactions, traversing through different pages, submitting forms, and validating results. This holistic approach to testing ensures that all critical pathways and user journeys are thoroughly evaluated, uncovering integration issues, data inconsistencies, and workflow bottlenecks that may arise from the interaction of different system components. By validating the website's behavior across its entire ecosystem, black box testing helps ensure seamless interoperability and cohesion, enhancing the overall user experience and satisfaction.

5. Alignment with User Expectations

Black box testing ensures that the Job Act website aligns closely with user expectations and business requirements. Test cases are designed to reflect common user workflows, preferences, and usage patterns, allowing testers to assess whether the software meets the needs and preferences of its target audience. By validating the website's functionalities against predefined criteria and specifications, black box testing minimizes the risk of feature gaps, usability issues, and functional discrepancies that may arise from misalignment with user expectations. This user-centric approach to testing helps enhance user satisfaction and adoption, ultimately driving the success and competitiveness of the Job Act website in the marketplace.

Conclusion

In conclusion, black box testing is indispensable for ensuring the quality, reliability, and usability of the Job Act website. By focusing on the external behavior and functionality of the software, independent of its internal implementation details, black box testing provides a holistic and user-centric perspective that aligns closely with end-user expectations and business requirements. By identifying and addressing usability issues, functional deficiencies, and alignment gaps early in the development process, black box testing contributes significantly to the overall success and competitiveness of the Job Act website, ultimately delivering a high-quality, user-friendly software solution that meets the needs and expectations of its intended users.

Log In Module

Project Name	**JOBACT**				
Test Case ID	JC - 01		**Testing Case Name**	Sign In	
Testing Priority	High		**Tester**	Developer	
Testing Date	May, 6th 2024		**Testing Duration**	3 Hours	
Description	This module deals with user authentication through email and password.				
Pre-Condition	User must have registered and have the valid email and password.				
S. No	**Test Step**	**Test Data**	**Expected Result**	**Actual Result**	**Status**
1.	Select Log In Button	Button Selection	Log In activity to be displayed.	Log in activity is displayed.	Pass
2.	Fill the email and password and click Log In button.	User details and Log In Button	The website should display Login successful if email& password matches as in the database	A toast message is displayed showing login successful and webpage opens.	Pass
3.	Click Sign In button without entering email and password.	User details and Log In Button.	A message should be displayed that “please enter the required fields.”	A message is displayed “please enter the required fields”.	Pass
4.	Click Log In button after entering invalid email and password.	User details and Log In Button.	A message should be displayed that “invalid email or password.”	A message should be displayed that “invalid email or password.”	Pass
Post-Condition	The user gets logged in to the system.				

Table 33:Black Box Testing of Log In Module

Registration Module

Project Name	**JOBACT**		
Test Case ID	JC - 02	**Testing Case Name**	Registration
Testing Priority	High	**Tester**	Developer
Testing Date	May 12, 2024	**Testing Duration**	2 Hours
Description	This module deals with user registration before logging into the system.		
Pre-Condition	User must have the details in order to register.		

S. No	**Test Step**	**Test Data**	**Expected Result**	**Actual Result**	**Status**
1.	Select Register Button	Button Selection	Registration Activity to be displayed.	Registration activity is displayed.	Pass
2.	Enter already registered email id and click register button.	User details and Register Button	A message should be displayed that "Email ID already exists".	Email ID Exists	Fail, because email id must be a primary key in the database.
Corrective Action for above Test Data : A MSSQL query should be used to check if a user with same email id already exists and if exists then the website should display email id already exists.					
3.	Enter an email and other details and click register button.	User details and Register Button.	A message should be displayed that user has been registered successfully.	As per the expected result.	Pass
Post-Condition	A user has been registered.				

Table 34:Black Box Testing of Black Box Testing of Registration Module

View Profile

Project Name	**JOBACT**		
Test Case ID	JC - 03	**Testing Case Name**	View Profile
Testing Priority	High	**Tester**	Developer
Testing Date	May 11, 2024	**Testing Duration**	2 Hours
Description	Admin, User's will view the profile and change the profile picture as per his desire.		
Pre-Condition	All user type log in into the system and know how to change the profile picture.		

S. No	**Test Step**	**Test Data**	**Expected Result**	**Actual Result**	**Status**
1.	Select view profile Menu	Menu Selection	View profile Activity is displayed.	View Profile Activity is displayed.	Pass
2.	Upload the picture without select any picture	Upload pic button	Error message is displayed to the user	As per the expected result	Fail and message is displayed to the user.
3.	When image is selected, and click on the upload pic button	Upload picture button	Confirmation message is displayed to the any user type	Toast message is displayed to the user	Pass

Table 35:Black Box Testing of View Profile

Change Password

Project Name	**JOBACT**				
Test Case ID	JC - 04		**Testing Case Name**	Change Password	
Testing Priority	High		**Tester**	Developer	
Testing Date	May 13, 2024		**Testing Duration**	3 Hours	
Description	Admin, User's change the password of the account if he wants to change				
Pre-Condition	User must login into the system to change the password.				
S. No	**Test Step**	**Test Data**	**Expected Result**	**Actual Result**	**Status**
1.	Select change password Menu	Menu Selection	Change password activity is displayed.	Change password activity is displayed.	Pass
2.	Enter the update password without fill any field.	Update button	Toast message is displayed to the user	As per the expected result	Fail
3.	Enter the wrong current password and other field	Update button	Error message is displayed to the user i.e. current password does not match	Message displayed to the user	Fail
4.	Enter correct password but new password and confirm password does not match	Update button	Message is displayed to the user like password not match	As per the expected result	Fail
5.	Enter correct current password and the new password and confirm password also match	Update button	Confirmation message is to be displayed to the user	Message like password change successfully is displayed to the user.	Pass

Table 36:Black Box Testing of Change Password

Search User

Project Name	**JOBACT**		
Test Case ID	JC - 05	**Testing Case Name**	Search User
Testing Priority	High	**Tester**	Developer
Testing Date	May 15, 2024	**Testing Duration**	2 Hours
Description	Admin can search the existing user from the system		
Pre-Condition	User must exist in the system.		

S. No	**Test Step**	**Test Data**	**Expected Result**	**Actual Result**	**Status**
1.	Select search user Menu	Menu Selection	Search user activity is displayed.	Activity is displayed.	Pass
2.	Enter the email id which is not exists in the database	Search button	Error message is displayed i.e. email not exists	As per the expected result	Fail
3.	When the field are blank	Search button	Toast message is displayed to the user like please fill the details.	Message is displayed to the user.	Fail
4.	When correct email is entered	Search button	User displayed to the admin	As per the expected result	Pass

Table 37:Black Box Testing of Search User

8.9.3 White Box Testing (Conceptual Testing)

White box testing, also known as conceptual testing for a website, involves examining the internal structure, code, and design of the website to validate its correctness, efficiency, and security. It focuses on ensuring that the website's components function as intended, identifying potential vulnerabilities, and optimizing performance through techniques such as code reviews, static analysis, and unit testing.

White box testing, also referred to as conceptual testing, constitutes a critical aspect of ensuring the reliability, security, and efficiency of a website such as the Job Act platform. Unlike black box testing, which evaluates the external behavior of the software, white box testing delves deep into its internal structure, codebase, and design to validate its correctness and optimize its performance. This comprehensive approach not only ensures that the website's components function as intended but also identifies potential vulnerabilities and areas for improvement.

Validation of Correctness and Efficiency

White box testing involves a meticulous examination of the website's codebase and internal architecture to validate its correctness and efficiency. Testers analyze the logic and flow of the code, identifying potential errors, bugs, and logical inconsistencies that may impact the website's functionality. By scrutinizing the underlying implementation details, white box testing helps ensure that the website operates flawlessly under various scenarios and usage conditions, delivering a seamless and error-free user experience.

Identification of Potential Vulnerabilities

In addition to validating correctness and efficiency, white box testing focuses on identifying potential vulnerabilities and security loopholes within the website's codebase. Testers conduct thorough security audits, analyzing the website's code for common security vulnerabilities such as injection attacks, cross-site scripting (XSS), and insecure authentication mechanisms. By proactively identifying and addressing security weaknesses, white box testing helps safeguard sensitive user data and mitigate the risk of cyber threats and data breaches.

Optimization of Performance

White box testing plays a crucial role in optimizing the performance of the website by identifying areas for improvement and implementing optimization strategies. Testers utilize techniques such as code reviews, static analysis, and performance profiling to identify bottlenecks and inefficiencies in the codebase. By analyzing the website's internal structure and execution pathways, white box testing helps developers optimize algorithms, improve database queries, and enhance overall system performance. This optimization process ensures that the website delivers fast response times, smooth user interactions, and optimal resource utilization, enhancing the overall user experience.

Integration with Unit Testing

White box testing is closely integrated with unit testing, wherein individual units of code are systematically tested in isolation to validate their correctness and functionality. Unit tests serve as a foundational building block for white box testing, providing developers with insights into the internal behavior and logic of the website's components. By conducting rigorous unit tests alongside white box testing, developers can ensure comprehensive test coverage and identify potential issues at the earliest stages of development, thereby reducing the likelihood of critical errors and enhancing the overall quality of the website.

Conclusion

In conclusion, white box testing is a critical component of the testing process for the Job Act website, ensuring its correctness, efficiency, and security. By examining the internal structure, code, and design of the website, white box testing helps validate its functionality, identify potential vulnerabilities, and optimize performance. Through techniques such as code reviews, static analysis, and unit testing, white box testing provides developers with valuable insights into the underlying implementation details of the website, enabling them to deliver a high-quality, secure, and efficient software solution that meets the needs and expectations of its users.

- **Update Profile**
-

Project Name	**JOBACT**		
Test Case ID	WB-01		
Testing Module	Update Profile	**Tester**	Developer
Testing Date	May 2,2024	**Testing Duration**	5 Hours
Description	To test whether the following code update profile to the local database or not.		
Objective	To update the user profile.		
Pre-Condition	User must be active user activity will open.		
Post-Description	User details is updated		
Test Input	Click update user, fill the details in editable box and then click the update button to update the user profile		
Expected Result	User Updated		
Actual Result	Identical to the expected result		

Code

```
<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
   <title>Update Profile</title>
   <!-- Add your CSS stylesheets here -->
   <link rel="stylesheet" href="styles.css">
</head>
<body>
   <header>
      <h1>Update Profile</h1>
   </header>
   <main>
      <form id="updateProfileForm">
         <label for="firstName">First Name:</label>
         <input type="text" id="firstName" name="firstName" required>
         <label for="lastName">Last Name:</label>
         <input type="text" id="lastName" name="lastName" required>
         <label for="email">Email:</label>
         <input type="email" id="email" name="email" required>
         <label for="address">Address:</label>
         <textarea id="address" name="address" required></textarea>
```

```
        <button type="submit">Update Profile</button>
    </form>
</main>
<footer>
    <!-- Add your footer content here -->
</footer>
<script>
    const updateProfileForm = document.getElementById('updateProfileForm');

    updateProfileForm.addEventListener('submit', async (e) => {
        e.preventDefault();

        const formData = new FormData(updateProfileForm);

        try {
            const response = await fetch('update_profile.php', {
                method: 'POST',
                body: formData
            });

            if (response.ok) {
                const data = await response.json();
                if (data.success) {
                    alert('Profile updated successfully!');
                } else {
                    alert('Failed to update profile. Please try again.');
                }
            } else {
                alert('Failed to connect to the server. Please try again later.');
            }
        } catch (error) {
            console.error('Error:', error);
            alert('An unexpected error occurred. Please try again later.');
        }
    });
</script>
</body>
</html>
```

Table 38:White Box Testing of Update Profile

Conclusion: The above result is the path found by the tester during testing the code of update profile module through Control Flow diagram. The given paths are favourable for module execution. Hence path and logic is correct in order to fulfil the requirements of update profile module

8.10 Integration Testing

Integration Testing is a testing technique that combines the individual units or the modules of the system and integrated them together to be tested whether the modules work properly as expected after integration or produce any bugs. The purpose of this testing to achieve the following:

- Each module should integrate with each other without any data loss.
- Each module should be independent of each other while running.
- To conduct incremental testing starting from lower level in the unit testing.

Integration testing involves the systematic combination of individual modules or units of the Job Act website, verifying that they integrate seamlessly without any loss of data or functionality. This ensures that the website operates as a unified entity, with each module contributing to the overall functionality and user experience. By validating the integration of modules, integration testing helps detect and address compatibility issues, interface mismatches, and data synchronization errors that may arise when integrating disparate components.

One of the key objectives of integration testing is to ensure that each module remains independent of each other while running within the integrated system. This independence ensures that changes or failures in one module do not adversely affect the functionality or performance of other modules. By isolating and testing each module within the integrated environment, integration testing helps identify dependencies, coupling issues, and communication bottlenecks that may impact the overall stability and reliability of the system.

Integration testing follows an incremental approach, starting from the lower levels of the system hierarchy and gradually integrating additional modules until the entire system is tested as a whole.

This incremental testing strategy allows developers to identify and address integration issues early in the development process, minimizing the risk of cascading failures and ensuring a smoother integration process. By conducting integration testing in iterative cycles, developers can validate the integration of modules step by step, building confidence in the overall integrity and functionality of the system.

Conclusion

In conclusion, integration testing is a crucial testing technique for ensuring the seamless integration and functionality of the Job Act website. By combining individual modules and verifying their integration within the system, integration testing helps detect and address compatibility issues, interface mismatches, and data synchronization errors. Through its focus on the integration of modules, independence of components, and incremental testing approach, integration testing plays a vital role in validating the integrity, stability, and reliability of the integrated system. By conducting thorough integration testing, developers can ensure that the Job Act website delivers a seamless and robust user experience, meeting the needs and expectations of its users effectively.

8.10. Technique used for Integration Testing

Bottom up integration testing is used which make sure that the module at the lowest level are developed first and other modules which go towards the 'main' program are integrated and tested one at a time.

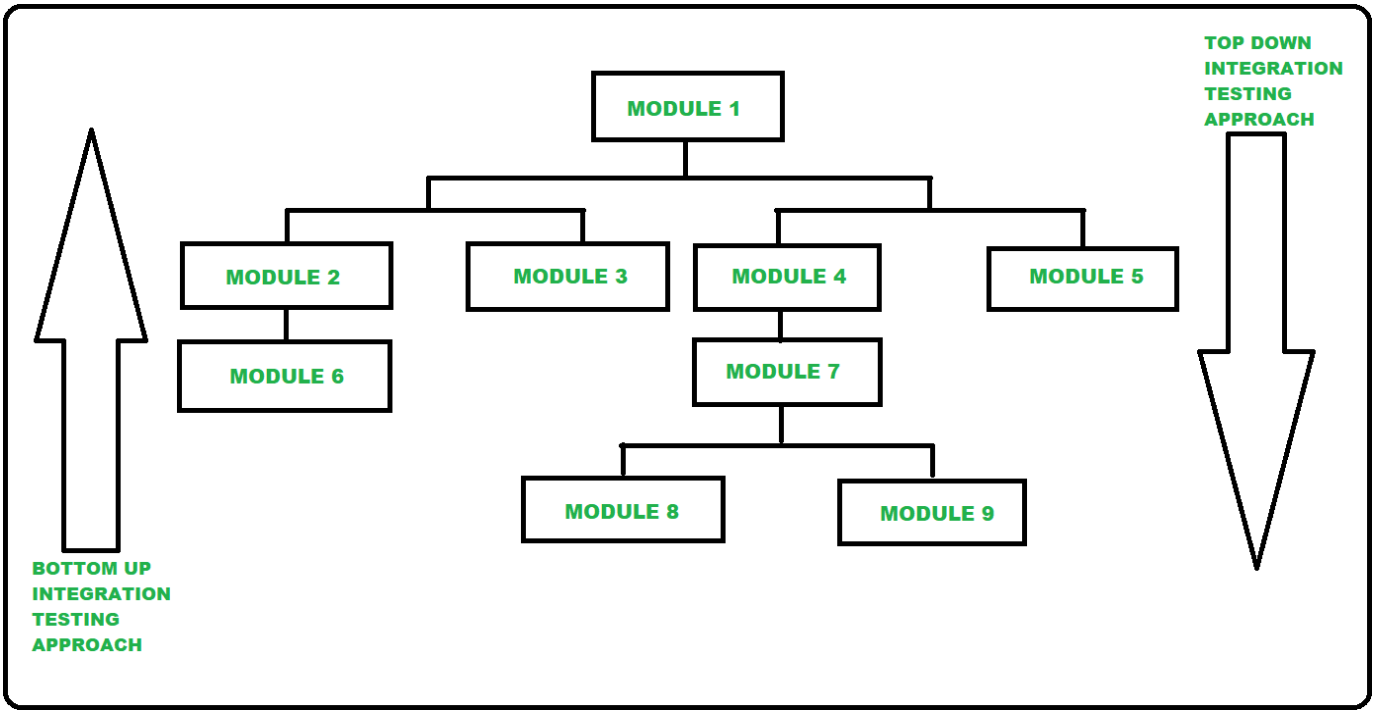


Figure 3:Integration Testing Technique

8.10.2 Justification for Integration Testing

Integration Testing is applicable when the developer has tested all the modules of the system individually. After testing individual modules, modules are integrated together to be tested whether they work properly after integration. For example, Applying for jobs Integrated with searching for jobs because without searching for jobs one cannot apply for them.

8.11 System Testing

System Testing is a testing technique that tests or verifies whether the system performs well and executed fine at a level when all the modules are integrated into one system as a whole. The testing also includes mapping of the requirements specified with the output of the system or the application produced.

System testing serves as the culmination of the testing process, providing a comprehensive evaluation of the Job Act website in its entirety. This crucial phase assesses the performance, functionality, and behavior of the integrated system, validating its adherence to specified requirements and ensuring its overall effectiveness in meeting user needs. Testers simulate real-world scenarios, interacting with the website's features to assess its responsiveness, reliability, and scalability. By subjecting the system to a battery of tests, system testing helps identify performance bottlenecks, resource constraints, and optimization opportunities that may impact the overall user experience. Moreover, system testing maps the specified requirements of the Job Act website to its actual outputs and behavior, ensuring that all functional requirements are met and validated. This validation process aligns the website's features and functionalities with user expectations and business objectives, providing assurance that the system performs as intended and delivers the desired value to its users. Additionally, system testing serves as a final checkpoint for identifying defects, errors, and inconsistencies within the website. Testers meticulously document any discrepancies between expected and actual outcomes, enabling developers to address issues comprehensively and ensuring that the website meets quality standards and is free from critical defects. Finally, system testing incorporates user acceptance and validation criteria, soliciting feedback from stakeholders to assess the usability, accessibility, and overall user satisfaction with the website. By incorporating user feedback into the testing process, system testing validates the alignment of the website with user requirements, preferences, and usability standards, driving continuous improvement and refinement of the software. In essence, system testing plays a pivotal role in ensuring the quality, reliability, and usability of the Job Act website, ultimately delivering a seamless and satisfying user experience.

8.11.1 Justification for System Testing

This type of testing is done for the proposed system to ensure that the system as a whole works appropriately as per the requirements and does not produce any errors or bugs after all the modules are integrated together and tested. After all the modules of the system, for example view profile module is integrated with the other module and tested for integration, then all the modules are done with integration testing individually, system testing is conducted to test the system as a whole.

The rationale behind system testing for the Job Act website is rooted in its pivotal role in ensuring the comprehensive functionality, reliability, and quality of the integrated system. This testing methodology is imperative to validate that the entire system operates seamlessly according to the specified requirements, devoid of any errors or bugs. System testing serves as the ultimate validation phase, occurring after all individual modules have been integrated and tested. For instance, once modules such as the "view profile" feature are integrated and tested for compatibility with other modules, system testing becomes essential to evaluate the collective performance of the entire system.

System testing is vital for verifying that the integrated system functions as intended, meeting all the functional requirements outlined in the project specifications. Through a series of tests, it ensures that all modules interact harmoniously and produce the desired outcomes without any loss of functionality or data. This comprehensive evaluation validates that the Job Act website delivers the expected features and functionalities to users, thereby enhancing their overall experience.

Furthermore, system testing plays a pivotal role in detecting and rectifying integration issues, defects, and inconsistencies that may arise during the integration of individual modules. By testing the integrated system as a whole, testers can uncover compatibility issues, interface mismatches, or communication failures between modules, ensuring smooth interoperability and seamless functionality. This proactive approach mitigates the risk of critical errors and enhances the overall stability and reliability of the system.

Moreover, system testing provides assurance that the Job Act website meets stringent quality and reliability standards, delivering a robust and dependable solution to users. By validating the system's adherence to specified requirements and performance benchmarks, system testing instills confidence in its ability to perform reliably in diverse operating environments and usage scenarios.

This assurance is vital for building trust and credibility among users, thereby enhancing the reputation and competitiveness of the website in the market.

Additionally, system testing facilitates user acceptance of the Job Act website by ensuring that it meets user expectations and preferences. By incorporating user feedback and validation criteria into the testing process, system testing validates the website's alignment with user needs, preferences, and usability standards. This user-centric approach drives continuous improvement and refinement of the software, ultimately enhancing user satisfaction and adoption rates.

In conclusion, system testing is an indispensable component of the testing process for the Job Act website, ensuring its overall functionality, reliability, and quality. Through comprehensive evaluation, detection of integration issues, assurance of system quality, and facilitation of user acceptance, system testing plays a pivotal role in driving the success and competitiveness of the website in the marketplace.

8.11.2 System Testing for User Module

Project Name	JOBACT			
S. No	**Testing Step**	**Expected Result**	**Actual Result**	**Status**
ST – 1	Click Register Button, enter valid details, Click Register button	Registration done successfully message is displayed	Toast message is displayed to the user	Pass
ST – 2	Click Sign In, Enter Valid email and Password.	Signed In successfully and respective activity is open.	Same as expected result.	Pass
ST – 3	Click view profile and select the profile picture from the phone and upload it	Profile view activity open and profile pic is uploaded	Same as expected result.	Pass
ST – 4	Change password, enter the current password, new and confirm password	Message displayed to the user	Message displayed successfully to the user	Pass
ST - 5	Apply for job	Apply now feature is displayed	Same as expected result	Pass
ST – 6	Click Register Button, enter valid details, Click Register button	Registration done successfully message is displayed	Toast message is displayed to the admin	Pass
ST – 7	Click Sign In, Enter Valid email and Password.	Signed In successfully and respective activity is open.	Same as expected result.	Pass
ST – 8	Click view profile and select the profile picture from the phone and upload it	Profile view activity open and profile pic is uploaded	Same as expected result.	Pass
ST - 9	Search User after entered the email in the field which exist in the database	Search user is displayed to displayed	Same as expected result.	Pass
ST – 10	Click on Active User button	Active user list displayed to the admin	List of all the user is displayed	Pass
ST – 11	Change password, enter the current	Message displayed to the user	Message displayed	Pass

	password, new and confirm password		successfully to the user	

Table 39: System Testing

8.12 Compatibility Testing

Compatibility testing is a type of non-functional testing that is performed to test the compatibility of the system produced with the hardware or the software platforms. The testing ensures that the completed application or the system works perfectly fine when tested on different platforms considering operating system and software and hardware tools. The purpose of this testing is to find out whether the proposed system executes in a particular environment consisting of hardware, software, network, operating system etc.

Compatibility testing emerges as a pivotal facet of non-functional testing, serving to assess the system's compatibility with various hardware and software platforms. This crucial testing paradigm ensures that the final application or system operates seamlessly across different environments, encompassing diverse operating systems, software configurations, and hardware setups. By subjecting the system to compatibility testing, developers ascertain its ability to function optimally across a spectrum of platforms, thereby enhancing its versatility and accessibility to users.

The primary objective of compatibility testing is to validate the system's performance in specific environments, encompassing hardware, software, networks, and operating systems. This entails evaluating how the system behaves when deployed across a range of configurations, ensuring that it remains functional and error-free irrespective of the underlying platform. Through meticulous testing, compatibility issues such as software conflicts, hardware dependencies, and network limitations can be identified and addressed, thus ensuring a seamless user experience across diverse environments.

Moreover, compatibility testing plays a crucial role in enhancing the system's market reach and adoption potential. By ensuring compatibility across a multitude of platforms, the system becomes accessible to a broader audience, spanning different devices, operating systems, and software configurations. This broader compatibility not only enhances user satisfaction but also contributes to the system's competitiveness and market viability.

Additionally, compatibility testing aids in future-proofing the system against technological advancements and evolving user preferences. By verifying compatibility with current hardware and software platforms, developers can anticipate and accommodate future changes, thereby ensuring the system's longevity and relevance in the rapidly evolving technological landscape. This proactive approach to compatibility testing mitigates the risk of obsolescence and facilitates seamless integration with emerging technologies, thereby enhancing the system's sustainability and adaptability over time.

In essence, compatibility testing stands as a critical component of the testing process, ensuring that the system delivers consistent performance across diverse platforms and environments. By validating compatibility with hardware, software, networks, and operating systems, this testing paradigm enhances the system's versatility, accessibility, and market viability, while also future-proofing it against technological advancements. Ultimately, compatibility testing plays a pivotal role in ensuring that the system meets user expectations and remains competitive in the dynamic digital landscape.

8.12.1 Justification for Compatibility Testing

JobAct – A job seeking website is to be tested for various hardware and software platforms whether the system is compatible for all the platforms.

Our website caters to a diverse audience who may access it using different devices (desktops, laptops, tablets, smart phones) and browsers (Chrome, Firefox, Safari, Edge).

- With compatibility testing, your website becomes accessible to a broader audience, including users with varying devices, browsers, and operating systems

In the context of JobAct, a comprehensive compatibility testing strategy is essential to ensure that the job-seeking website caters effectively to a diverse audience accessing it through various hardware and software platforms. The website's functionality and performance need to be validated across a spectrum of devices, including desktops, laptops, tablets, and smartphones, to ensure seamless accessibility and usability for all users. Additionally, compatibility testing must encompass an array of web browsers such as Chrome, Firefox, Safari, and Edge, as users may have different preferences and habits when it comes to browser usage.

By conducting compatibility testing, JobAct ensures that its website becomes accessible to a broader audience, accommodating users with varying devices, browsers, and operating systems. This approach not only enhances user satisfaction but also contributes to the website's competitiveness and market reach. Users can seamlessly access the website regardless of their preferred device or browser, fostering a positive user experience and driving engagement.

Moreover, compatibility testing plays a crucial role in mitigating potential issues or discrepancies that may arise when accessing the website across different platforms. By identifying and addressing compatibility issues early in the development process, JobAct can ensure that users encounter a consistent and reliable experience irrespective of the device or browser they use. This proactive approach helps maintain the website's reputation and credibility, positioning it as a reliable resource for job seekers across diverse demographics and technological preferences.

In essence, compatibility testing serves as a cornerstone in ensuring the effectiveness and accessibility of JobAct's website for its diverse user base. By validating compatibility across various hardware and software platforms, JobAct demonstrates its commitment to delivering a seamless and user-friendly experience, ultimately fostering user satisfaction and loyalty.

8.13 GUI Testing

GUI testing for your website involves evaluating the visual elements and user interactions to ensure a seamless user experience. This testing verifies the consistency of fonts, colors, layouts, and images across different pages and devices, enhancing the website's aesthetic appeal and professionalism. Navigation menus, links, buttons, and interactive elements are examined to ensure smooth navigation and functionality, preventing broken links or navigation errors. Form fields, dropdown menus, checkboxes, and validation prompts are tested to ensure accurate data input and submission. Additionally, GUI testing assesses how the website adapts to various screen sizes and resolutions, ensuring responsiveness and usability on desktops, laptops, tablets, and smartphones. Error messages and interactive features such as sliders and carousels are scrutinized for clarity and functionality. Furthermore, browser compatibility and accessibility are evaluated to ensure a consistent experience across different web browsers and compliance with

accessibility standards. Overall, GUI testing aims to optimize the visual appeal, usability, and accessibility of your website, ensuring a positive experience for all users.

GUI testing for the JobAct website plays a crucial role in ensuring a seamless user experience by evaluating its visual elements and user interactions across different platforms. This testing process encompasses a comprehensive examination of fonts, colors, layouts, and images to verify consistency and professionalism throughout the website's interface. By scrutinizing navigation menus, links, buttons, and interactive elements, GUI testing ensures smooth navigation and functionality, thereby preventing broken links or navigation errors that could hinder user experience.

Moreover, GUI testing focuses on form fields, dropdown menus, checkboxes, and validation prompts to validate accurate data input and submission processes. This includes assessing the clarity and effectiveness of error messages and interactive features such as sliders and carousels. Additionally, GUI testing evaluates how the website adapts to various screen sizes and resolutions, ensuring responsiveness and usability across desktops, laptops, tablets, and smartphones.

Furthermore, GUI testing places significant emphasis on browser compatibility and accessibility, ensuring that the website delivers a consistent experience across different web browsers and complies with accessibility standards. This entails assessing compatibility with popular browsers like Chrome, Firefox, Safari, and Edge, while also ensuring adherence to accessibility guidelines to accommodate users with disabilities.

Overall, GUI testing aims to optimize the visual appeal, usability, and accessibility of the JobAct website, ultimately contributing to a positive user experience for all users. By meticulously evaluating visual elements, user interactions, responsiveness, and accessibility, GUI testing plays a critical role in enhancing the website's functionality and ensuring its effectiveness across diverse platforms and user demographics.

The system is test for GUI based upon six design principles:

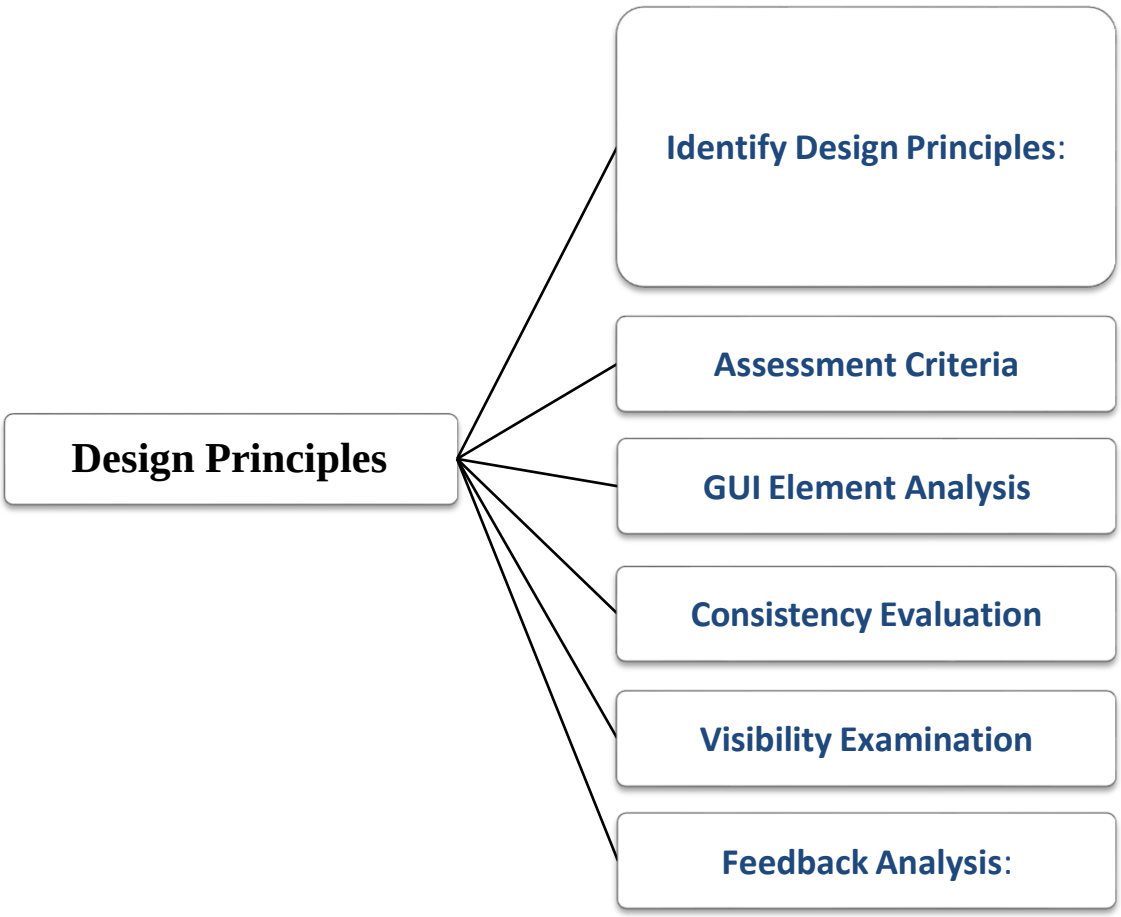


Figure 4:Design Principles to Test the GUI of the App

Project Name	JobAct		
Test Case ID	GUI	**Testing Case Name**	App GUI Test
Testing Priority	High	**Tester**	Developer
Testing Date	May,11,2024	**Testing Duration**	1 Day

Items	**Questions**	**Answers**		
functions	Do the function have meaningful presentation?	**Yes**	**No**	**N.A.**
	Do they describe the appropriate action?	**Yes**	**No**	**N.A.**
	Are appropriate functions used?	**Yes**	**No**	**N.A.**
Screen Design	Is the lay out logical so that the user does not have to search for typical functions?	**Yes**	**No**	**N.A.**
	Are graphics and text arranged on the screens in such a way that they are easy to view and are not clustered?	**Yes**	**No**	**N.A.**
Themes	Are themes used for all types of user?	**Yes**	**No**	**N.A.**
	Do the used themes colours are sufficient contrast to reduce eye strain?	**Yes**	**No**	**N.A.**
Fonts	Are fonts consistent throughout the system?	**Yes**	**No**	**N.A.**
	Are the fonts used are available are available in all types of operating system?	**Yes**	**No**	**N.A.**

Table 40:GUI Test

8.14 Usability Testing and its Justification

The usability testing is performed to check with how much ease and comfortable the interface of the system can be used and how much the system is user friendly to be used. It checks how much the system is usable or easy to use for different category of users. Thus, it is done from the user's point of view. Usability Testing hence ensures that the users of the system can execute the system's

functionalities easily, efficiently and effectively. Usability Testing is conducted by the end users to measure the system on five components; learnability, efficiency, memorability, errors and user satisfaction.

- **Learnability:** It measures how easy it is for end user to accomplish the system's functionalities or how much the system's interface is easy to execute. For example, proposed system has a user-friendly interface consisting of forms, buttons and other interactive GUI controls that makes it easy to learn. Also hints in the edit texts have been given for making it easier to use the system.

- **Efficiency:** It measures how fast system's functionalities and tasks can be executed. For example, the system is quite fast, directs the user from one activity to other efficiently.

- **Memorability** It measures how much the end user is able to memorize the system and its functionalities when he/she accesses the system after a long period of time. For example, the interactive interface and easy of using it makes it easy for the user to memorize the functions of the system. Metaphors have been used to enhance the memorability feature of the system.

- **Errors :**It measures how effectively the system can recover from errors. The proposed system proposed system is not prone to errors; toast message is provided wherever any error or exception is expected.

- **User Satisfaction :**It measures how much the user likes the system or satisfied with the system. For example, achievement of the above-mentioned components contributes towards user satisfaction, achieving learnability, memorability, efficiency and removing errors achieve user satisfaction.

Usability testing stands as a pivotal aspect of ensuring the effectiveness and user-friendliness of the JobAct website, focusing on evaluating how easily and comfortably users can interact with its interface. This testing methodology examines the system from the user's perspective, assessing its learnability, efficiency, memorability, error handling, and overall user satisfaction. By conducting usability testing, JobAct aims to ensure that users can effortlessly execute the system's functionalities, fostering a positive user experience.

Learnability is a key component of usability testing, measuring how easily users can accomplish tasks within the system and navigate its interface. The JobAct website incorporates a user-friendly interface comprising intuitive forms, buttons, and interactive GUI controls, enhancing learnability and simplifying the user's interaction with the system. Additionally, hints and tooltips are strategically provided within the interface to guide users and facilitate ease of use.

Efficiency is another critical aspect evaluated through usability testing, assessing how quickly users can perform tasks and navigate through different sections of the website. The JobAct system demonstrates efficiency by efficiently directing users from one activity to another, streamlining workflows, and minimizing unnecessary steps or delays in task execution.

Memorability is evaluated to gauge how well users can recall the system's functionalities after prolonged periods of non-use. The JobAct website leverages interactive interfaces and mnemonic aids to enhance memorability, ensuring that users can easily recall and navigate the system even after extended periods of inactivity. Metaphors and familiar visual cues are employed to reinforce users' memory of system functions and features.

Furthermore, usability testing scrutinizes the system's error-handling capabilities, measuring its ability to recover from errors and exceptions gracefully. The JobAct system mitigates the occurrence of errors through proactive measures such as providing informative toast messages to users whenever errors or exceptions are encountered, thereby enhancing user confidence and trust in the system's reliability.

Ultimately, user satisfaction is the overarching goal of usability testing, measuring how much users like or are satisfied with the system's performance and usability. By achieving components such as learnability, memorability, efficiency, and error mitigation, the JobAct website endeavors to enhance user satisfaction, fostering a positive perception and fostering user loyalty and engagement. In essence, usability testing plays a pivotal role in optimizing the JobAct website's usability and user experience, ultimately contributing to its success and competitiveness in the job-seeking marketplace.

- **Questionnaire**

1.	Was the system user friendly, easy to learn, easy to navigate through various forums or page?
2.	Was the system efficiency while performing various takes?
3.	Was the system free from errors or was capable enough to recover from errors?
4.	Was the system easy to memorize when executed again but after a period of time?
5.	Our we satisfied with the system completely?

Table 41 :Questionnaire for Usability Testing

- **Rating Criteria**

Excellent-5	Very-Good-4	Good-3	Average-2	Poor-1

Table 42 :Rating Criteria for Usability Testing

- **Usability Testing on the basis of five factors**

Users	Learnability	Efficiency	Memorability	Errors	User Satisfaction	Total	Average
Vishay	**5**	**5**	**4**	**4**	**3**	**21**	**4.2**
Akshat	**3**	**5**	**3**	**6**	**5**	**22**	**4.4**
Sharon	**4**	**5**	**4**	**5**	**5**	**23**	**4.6**
Overall Average: 4.44(88.80%); Usability Achieved							

Table 43 :Usability Test

8.14.1 User Acceptance Testing (UAT)

User Acceptance Testing is a software testing technique performed by keeping in mind the view of the end-user towards the proposed system or the application where the developer has to test the system to make sure that it satisfies the end user and is acceptable by the end-user.

8.14.2 Justification for User Acceptance Testing

The objective of UAT is to verify and map the requirements proposed in the project specification form with the completed project's features to make sure that it is easily acceptable by the end-user.

User Acceptance Test It is performed when the developer has conducted various other testing such as Unit Testing, Integration Testing, System Testing, Compatibility Testing etc. The User acceptance test is conducted at the end to enquire whether the developer has achieved the user satisfaction. Few individuals are selected as the end-users (testers) for the system and their opinions are collected as the result for User Acceptance Test.

User Acceptance Testing (UAT) serves as a critical phase in the software testing process, aligning the perspective of the end-user with the functionality of the proposed system or application. This testing technique is geared towards ensuring that the system meets the expectations and requirements of the end-users, thereby validating its acceptability and usability in real-world scenarios. The objective of UAT lies in verifying and mapping the requirements outlined in the project specifications with the actual features and functionalities of the completed project, thereby ensuring alignment with user expectations.

UAT is typically conducted after various other testing phases, including Unit Testing, Integration Testing, System Testing, and Compatibility Testing, have been completed. By the time UAT is initiated, the system has undergone rigorous testing to validate its functionality, reliability, and compatibility across different platforms. The primary focus of UAT is to gauge whether the developer has successfully achieved user satisfaction by addressing user needs and preferences effectively.

During the User Acceptance Test, a select group of individuals, representing the end-users, are chosen as testers for the system. Their feedback and opinions serve as the primary metric for evaluating the system's acceptability and usability. By collecting insights and perspectives from

these end-users, developers gain valuable insights into how well the system aligns with user expectations and whether any adjustments or refinements are necessary to enhance user satisfaction.

Ultimately, the justification for User Acceptance Testing lies in its ability to validate the system's readiness for deployment by ensuring that it meets the needs and preferences of the end-users. By incorporating user feedback and perspectives into the testing process, UAT helps bridge the gap between developers and end-users, fostering collaboration and ensuring that the final product delivers value and meets user expectations effectively. In essence, UAT plays a pivotal role in validating the acceptability and usability of the system from the end-user's perspective, thereby contributing to its overall success and adoption in the market.

8.15 Test Schedule

Name of the testers	Testing Date
Vishay gautam	May 13, 2024
Akshat aroara	May 4, 2024
Sharon shareek	May 12, 2024

Table 44 :Test Schedule for UAT

Project Name						
Test Date						
Test Type	User Acceptance					
Test Duration	10 Hour					
Modules	Vishay and Test Rating Percentage (%)		Akshat and Test Rating Percentage (%)		Sharon and Test Rating Percentage (%)	
Login	Yes	100	Yes	100	Yes	100
Registration	Yes	100	Yes	100	Yes	100
View Profile	Yes	100	Yes	100	Yes	100
Search jobs	Yes	100	Yes	100	Yes	100
Apply for jobs	Yes	95	Yes	90	Yes	98
Forgot password	Yes	90	Yes	94	Yes	90
Change Password	Yes	95	Yes	90	Yes	90
Active User	Yes	95	Yes	100	Yes	100
Update User Details	Yes	100	Yes	100	Yes	90

Table 45:User Acceptance Test

8.16 Documentation testing

This testing is done to check the accuracy and completeness of document. All important criteria must be satisfied and a well-presented document should be published so that it meets the entire standard required by the project manager. The completeness of Documentation was verified with the third Year Project documentation specification provided by the project manager.MS Word spell check also helped to correct spellings as well as write grammar.

Criteria from FYP Checklist	Status
Proper referencing and citation has been done.	Yes
Ethical form is signed by supervisor.	Yes
Documentation pages have proper numbering, header and footer. ↳ Header: P.I.E.T Logo (LHS) ↳ Project Title (Centre) ↳ Footer: Roll Number(LHS) ↳ Page Number (RHS)	Yes
There are no spelling mistakes in the documentation.	Yes
Documentation has been verified with Viper.	Yes
Questionnaires have been defined why they have been used and a justification is given for each particular question.	Yes
Credible internet references are used.	Yes
Must give reference	Yes
Justify has been given why an approach, tool, languages, concept etc. was chosen.	Yes
Ethical Form has been included.	Yes
All the log sheets are attached.	Yes
"Developer" word has been used instead of word "I"	Yes

Table 46 :Documentation Testing

8.17 Conclusion

Testing allows developers to deliver software that meets expectations, prevents unexpected results, and improves the long-term maintenance of the application. Early testing is of vital importance if

developer is trying to reduce costs, time loss and rework, and trying to increase quality. Software Testing has helped the developer to find out the bug or errors in the system ensure the productivity and quality of the system, examine and execute code in various environments on various platforms**.**

Depending upon the purpose of testing and the software requirements, the appropriate methodologies are applied such as bottom up methodology for integration testing. Various techniques of testing have been used at different levels to test the system functionally as well as logically. To test the system functionally, black box testing was conducted and to test the system logically, white box testing was conducted.

Unit testing is the first phase in testing that tests the individual module of the system, both functionally as well as logically. Test Cases have been produced to test the functionality of the modules as well as the code flow of the modules to test the bugs and errors if occurred and take further actions to remove them.

Integration testing, a logical extension of unit testing, is conducted when individual modules have been tested and are to be integrated further so as to test them whether they produce any issues or errors after integration. It is easy to perform integration testing after unit testing has been conducted because it is useful in identifying problems when units are combined. By using a test plan that required the developer to test each unit and ensure the viability of each before combining units, the developer knows that any errors discovered when combining units are likely related to the interface between units.

After integration testing, system testing was conducted to discover the problems encountered when all the units or modules are combined together to a system as a whole and corresponding test case has been produced and documented. Compatibility test was conducted for the system to check whether the system developed built is compatible in an environment that consists of hardware, network, software, database, operating system or some other software/ hardware or some tool.

GUI Testing was performed to verify the design of the system; how much it is user friendly

Usability and User Acceptance Testing are performed at the end by the end-users of the system to obtain their views for the system, how much the system is usable and if the system is such that it provides complete user satisfaction. System was found to be usable; as it achieved learnability, efficiency, memorability, free from errors and user satisfactory. User satisfaction was achieved making sure that the system is now ready to be deployed.

Documentation Testing was performed finally to ensure the system is well documented with proper level of English.

CHAPTER 9: CRITICAL EVALUATION

9.1 Critical Evaluation

After completion of the project from the developer side, it's time for critically evaluating the project by mapping the project and its requirements with the specifications given in the project specification form. Since the developer has made an extensive research on the system's functionalities, made a broad analysis of the same. After research and analysis, developer has designed the system to set the goals which oure further implemented and then tested to recover any errors if oure present in the system so as to produce a bug free system. Now time has come to critically evaluate the system that includes the complete assessment of the system. The critical evaluation is not done module by module but whole system is evaluated to determine the quality, significance and worth of the system.

Upon the completion of the project development phase, it becomes imperative to undertake a critical evaluation of the website, aligning its functionalities with the specifications outlined in the project specification form. The developer's journey involves extensive research into the system's requirements and functionalities, followed by meticulous analysis to understand its intricacies and nuances. Drawing upon this research and analysis, the developer proceeds to design the system with clear objectives and goals in mind, which are subsequently implemented and rigorously tested to identify and rectify any errors or discrepancies, thus ensuring the delivery of a bug-free system. Now, as the project reaches its culmination, it is time for a comprehensive critical evaluation of the entire system. Unlike evaluations conducted at the module level, this assessment entails a holistic evaluation of the entire system, aiming to ascertain its overall quality, significance, and worthiness. Every aspect of the website, from its user interface to its backend functionalities, is subjected to scrutiny to determine its effectiveness and alignment with project objectives. This critical evaluation serves as a final validation of the project's success, providing insights into areas of strength and opportunities for improvement. It not only ensures that the system meets the specified requirements but also assesses its broader impact and potential for delivering value to its intended users. Ultimately, the critical evaluation serves as a crucial milestone in the project lifecycle, offering valuable insights that inform future enhancements and iterations, thereby contributing to the continuous improvement and evolution of the website.

1. **User Experience (UX) Design:**

   Strengths: JobSeeker's user interface is intuitive and easy to navigate, enhancing user experience. The advanced search functionalities and personalized job recommendations contribute to a tailored experience for job seekers.
   Areas for Improvement: Continuous user feedback and usability testing could further refine the platform's design and ensure it remains user-centric. Accessibility features should also be prioritized to accommodate users with disabilities.

2. **Matching Algorithm:**

   Strengths: The utilization of advanced algorithms for matching job seekers with relevant job opportunities is commendable. This feature enhances efficiency and accuracy in connecting candidates with suitable roles.
   Areas for Improvement: Regular updates and refinement of the algorithm are essential to ensure it remains effective and adaptable to changing market trends and user preferences. Transparent communication about how the algorithm works can also build trust with users.

3. **Employer Services:**

   Strengths: Providing employers with tools for posting vacancies, managing applications, and searching for candidates streamlines the recruitment process. This feature adds value to employers and encourages their continued use of the platform.
   Areas for Improvement: Offering additional employer-centric features such as candidate assessment tools or integration with Applicant Tracking Systems (ATS) could further enhance the platform's appeal to employers.

4. **Career Resources:**

   Strengths: The inclusion of resources such as interview tips, resume building tools, and career advice demonstrates a commitment to supporting users beyond job search functionality. These resources can empower job seekers to improve their employability skills.
   Areas for Improvement: Regular updates to the content and resources are necessary to ensure relevance and accuracy. Incorporating interactive elements such as webinars or skill-building courses could further enrich the user experience.

5. Market Competition and Differentiation:

Strengths: JobSeeker's focus on providing a comprehensive and user-friendly job search platform sets it apart from competitors. The emphasis on both job seeker and employer needs creates a balanced ecosystem.

Areas for Improvement: Continuous market analysis and competitor benchmarking are crucial to identify emerging trends and stay ahead of the competition. Identifying unique selling points and effectively communicating them to the target audience can strengthen the platform's position in the market

.

9.2. Factors of Benefit (Usefulness of System to Target Audience)

The developed system renders much usefulness to the target users because the system is able to solve the problems mentioned in the problem description section of CHAPTER 2. The usefulness of the system was discussed in the tangible and intangible benefits of section 1.7. Some of the usefulness and benefits are recapitulated below:

- Several factors contribute to the benefit and usefulness of the system to its target audience:

- Efficient Job Search: JobSeeker provides users with advanced search functionalities, allowing them to filter job listings based on various criteria such as location, industry, experience level, and job type. This efficiency saves users time and effort in finding relevant job opportunities.

- Personalized Recommendations: The platform offers personalized job recommendations based on the user's profile, skills, and job preferences. This personalized approach increases the likelihood of users discovering suitable job openings that align with their qualifications and career goals.

- Resource Hub: JobSeeker provides a wealth of resources to support users in their job search and career development journey. This includes interview tips, resume building tools, career advice articles, and skill-building resources. These resources empower users with the knowledge and tools needed to enhance their employability and succeed in their job search.

- Transparent Matching Algorithm: The platform employs advanced algorithms to match job seekers with relevant job opportunities and employers with qualified candidates. The transparency of these algorithms instills confidence in users that the job matches provided are based on objective criteria rather than arbitrary factors.

- Employer Services: JobSeeker offers a range of services for employers, including job posting, candidate management, and applicant tracking. This attracts a diverse range of employers to

the platform, increasing the pool of job opportunities available to users.

- User-Friendly Interface: The platform boasts an intuitive and user-friendly interface, making it easy for users to navigate and utilize its features effectively. This accessibility ensures that users of all technical proficiencies can leverage the platform to its fullest potential.

- Community Engagement: JobSeeker fosters a sense of community among its users through features such as forums, networking events, and mentorship opportunities. This enables users to connect with peers, share insights, and seek support throughout their job search journey.

- Continuous Improvement: JobSeeker is committed to continuous improvement based on user feedback, market trends, and technological advancements. Regular updates and enhancements ensure that the platform remains relevant and responsive to the evolving needs of its users.

The JobSeeker platform stands out for its exceptional utility and benefits, offering a comprehensive solution to address the challenges outlined in the problem description. Through advanced search functionalities, personalized recommendations, and a wealth of resources, JobSeeker streamlines the job search process, saving users valuable time and effort. Transparent algorithms ensure fair and objective job matches, while employer services attract a diverse range of opportunities. With its intuitive interface, community engagement features, and commitment to continuous improvement, JobSeeker fosters a supportive ecosystem where users can thrive in their career pursuits. Overall, JobSeeker emerges as a valuable asset for its users, empowering them with the tools and support needed to navigate the job market effectively and achieve their professional aspirations.

Cost Efficient Benefits	
↳ **Reduced Recruitment Costs:** For employers, JobSeeker offers a cost-effective alternative to traditional recruitment methods such as job advertisements and hiring agencies. By providing a platform where employers can post job vacancies and access a pool of pre-screened candidates, JobSeeker helps minimize recruitment expenses. ↳ **Time Savings:** JobSeeker streamlines the job search process for both job seekers and employers, resulting in significant time savings. Job seekers can quickly find relevant job opportunities without the need to browse multiple job boards or attend in-person events. Similarly, employers can efficiently manage job postings, review applications, and communicate with candidates through the platform, saving time and resources. ↳ **Resource Optimization:** The platform's advanced algorithms optimize resource allocation by matching job seekers with the most suitable job opportunities and employers with qualified candidates. This reduces the need for manual screening and ensures that resources are	↳

directed towards the most promising matches, increasing the efficiency of the recruitment process.
Mobility
↳ **Accessibility:** JobSeeker's mobile-responsive design allows users to access the platform from any device with an internet connection, including smartphones and tablets. This accessibility ensures that users can search for jobs, update their profiles, and communicate with employers on the go, enhancing flexibility and convenience. ↳ **Geographical Flexibility**: JobSeeker facilitates job searches beyond geographical boundaries, enabling users to explore opportunities in different locations or even internationally. This mobility expands job seekers' options and allows employers to access a diverse talent pool regardless of their physical location.
Increased Productivity
↳ **The Streamlined Communication:** JobSeeker's communication features, such as messaging and application tracking, facilitate seamless interaction between job seekers and employers. Clear communication channels reduce misunderstandings and delays, enabling faster decision-making and smoother recruitment processes. ↳ **Focused Job Matching:** By leveraging advanced algorithms and user preferences, JobSeeker delivers highly targeted job recommendations to users. This focused approach increases the likelihood of successful matches, reducing the time and effort spent on irrelevant job applications or candidate searches. ↳ **Resource Integration:** JobSeeker integrates various resources, such as resume building tools, interview tips, and career development articles, directly into the platform. This integration eliminates the need for users to switch between multiple tools or websites, allowing them to access all necessary resources within the JobSeeker ecosystem, thereby enhancing productivity.

Table 47:Factors of Benefits.

9.3 Comparison with Other Systems

S. No.	Keys	Features
1.	**User Experience (UX):**	JobSeeker: Offers an intuitive and user-friendly interface with advanced search functionalities and personalized job recommendations. Other Systems: UX may vary significantly depending on the platform. Some systems may have

		cluttered interfaces or lack advanced search capabilities, leading to a less satisfying user experience.
2.	**Matching Algorithm:**	JobSeeker: Utilizes advanced algorithms to match job seekers with relevant job opportunities and employers with qualified candidates. The transparency of these algorithms instils confidence in users. Other Systems: While some systems may also employ matching algorithms, the effectiveness and transparency of these algorithms may vary. Users may encounter issues with inaccurate matches or a lack of visibility into how matches are determined.
3.	**Employer Services:**	JobSeeker: Provides a range of services for employers, including job posting, candidate management, and applicant tracking, all within a user-friendly interface. Other Systems: Different systems offer varying levels of employer services, but they may not always be as comprehensive or integrated as those provided by Job Seeker.
4.	**Cost Efficiency:**	Job Seeker: Offers cost-efficient benefits by reducing recruitment costs, optimizing resource allocation, and providing a platform that is accessible from any device. Other Systems: Cost structures and benefits vary among different systems. Some systems may have high subscription fees or additional charges for premium features, while others may offer more affordable options.
5.	**Mobility:**	Job Seeker: Features a mobile-responsive design that allows users to

		access the platform from any device, enhancing flexibility and convenience. Other Systems: While many systems offer mobile access, the quality of the mobile experience may differ. Some platforms may have limited functionality or may not be optimized for smaller screens.
6.	**Community Engagement:**	Job Seeker: Fosters a sense of community among users through features such as forums, networking events, and mentorship opportunities. Other Systems: Community engagement features vary among platforms. Some may offer networking events or discussion forums, while others may not prioritize community-building activities.
7.	**Continuous Improvement:**	Job Seeker: Committed to continuous improvement based on user feedback, market trends, and technological advancements. Other Systems: The frequency and effectiveness of updates and improvements can vary. Some platforms may struggle to adapt to user needs or may have longer development cycles.

Table 48:Comparison with Another System

9.3.1 Success Assessment

The success assessment consists of analyzing whether the output received matches to what was proposed. It consists of comparing the project outcomes to the results expected. The present project meets all the requirements mentioned in PSF. It fulfils the scope and boundary of the project. The following results prove it:

Criteria	Result	Success Degree (out of 10)
User interaction	YES	9
Project management	YES	9
Project requirements	YES	10
Secured	YES	8
Testing	YES	9
Quality	YES	9
Graphical interface	YES	9
Academic goals achieved	YES	10
Project objective achieved	YES	9
Feedback	YES	9
Overall Success Rating of the system		9+9+10+8+9+9+9+10+9+9 = 91/100 **Success Rate: 91%**

Table 49:Success Assessment

9.3.2 Degree of Success

The rate of success of any project is determined on the mapping of the requirements documented for the proposed system in the project specification form. The system should satisfy the quality standards for project development and implementation should be feasible.

The degree of success of a project is a multifaceted concept that hinges on various factors, foremost among them being the alignment of the project's outcomes with the documented requirements outlined in the project specification form. This foundational document serves as a blueprint for the project's development and implementation, outlining the key objectives, functionalities, and

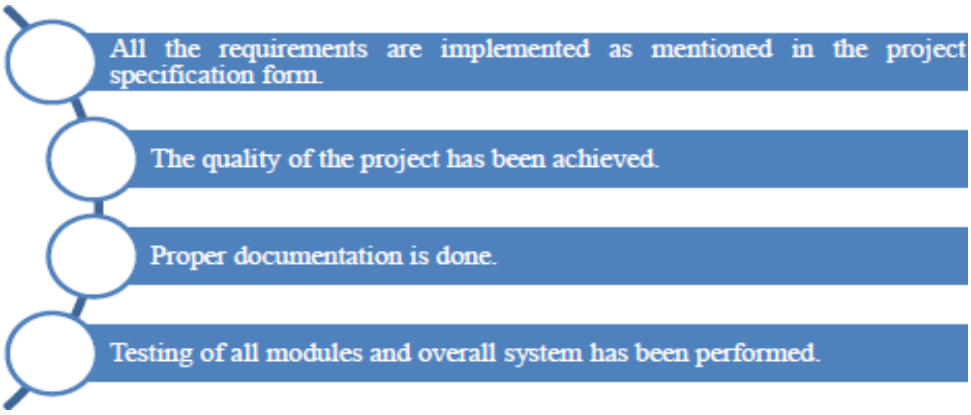
specifications that the proposed system is expected to fulfill. Therefore, the success of a project is intrinsically linked to its ability to meet these predefined requirements and specifications
.

Quality standards play a pivotal role in determining the success of a project. Adherence to established quality benchmarks ensures that the developed system meets the desired levels of reliability, functionality, usability, and performance. This involves rigorous testing, validation, and verification processes throughout the project lifecycle to identify and rectify any deviations from the specified requirements. By upholding quality standards, the project can deliver a final product that meets or exceeds user expectations, thereby enhancing its success rate.

Additionally, the feasibility of project development and implementation is a critical factor in determining its success. Feasibility encompasses various aspects, including technical feasibility, financial feasibility, operational feasibility, and schedule feasibility. A project must demonstrate feasibility across these dimensions to ensure its viability and eventual success. Technical feasibility entails assessing whether the proposed system can be developed using available technology and resources within the stipulated time frame. Financial feasibility involves evaluating the project's cost-effectiveness and return on investment, ensuring that it can be implemented within budgetary constraints. Operational feasibility examines whether the project aligns with organizational goals, processes, and capabilities, while schedule feasibility assesses the project's timeline and milestones to ensure timely delivery.

Ultimately, the degree of success of a project is determined by its ability to satisfy the specified requirements, adhere to quality standards, and demonstrate feasibility across technical, financial, operational, and schedule dimensions. By meticulously planning, executing, and monitoring the project's development and implementation processes, project stakeholders can enhance the likelihood of achieving success and delivering value to stakeholders. Effective communication, stakeholder engagement, and continuous improvement efforts further contribute to the project's success by fostering collaboration, transparency, and accountability throughout its lifecycle.

Figure 5:Degree of success



Critical Appraisal

JobSeeker demonstrates numerous strengths in its user-centric approach, technological innovation, market differentiation, business model sustainability, community engagement, and ethical practices, there are also areas for improvement in each of these aspects. Continuous iteration, adaptation, and responsiveness to user feedback and market dynamics are essential for the long-term success and impact of the JobSeeker project.

User-Centric Approach:

Strengths: JobSeeker demonstrates a strong commitment to user needs, offering a user-friendly interface, personalized recommendations, and a wealth of resources to support job seekers. This focus enhances user satisfaction and engagement.
Areas for Improvement: Continuous user feedback and usability testing are essential to ensure that the platform remains aligned with evolving user preferences and needs. Additionally, incorporating diverse perspectives and addressing accessibility considerations can further enhance inclusivity.

Technological Innovation:

Strengths: JobSeeker leverages advanced algorithms and mobile-responsive design to deliver efficient job matching and accessibility across devices. These technological innovations enhance the platform's functionality and appeal.
Areas for Improvement: Regular updates and investments in technology infrastructure are necessary to keep pace with advancements in the job market and digital landscape. Proactive monitoring of emerging technologies can also identify opportunities for further enhancement.

Market Differentiation:

Strengths: JobSeeker distinguishes itself from competitors through its comprehensive feature set, including personalized job recommendations, employer services, and community engagement initiatives. This differentiation strengthens its position in the market.
Areas for Improvement: Continuous market analysis and competitor benchmarking are essential to identify emerging trends and areas for differentiation. Clear communication of unique value propositions can further solidify JobSeeker's market position.

Business Model Sustainability:

Strengths: JobSeeker's cost-efficient benefits and revenue streams, such as employer subscription fees or premium features, contribute to its financial sustainability. This ensures continued operation and growth.
Areas for Improvement: Diversifying revenue streams and exploring partnerships or collaborations can mitigate reliance on any single source of income. Additionally, periodic financial assessments and adjustments may be necessary to maintain profitability in changing market conditions.

Community Engagement and Support:

Strengths: JobSeeker fosters a sense of community among users through forums, networking events, and mentorship opportunities, enhancing user engagement and support.
Areas for Improvement: Scaling community engagement efforts while maintaining quality and inclusivity can be challenging. Regular community feedback sessions and transparent communication can help address user concerns and foster a sense of belonging.

Ethical and Responsible Practices:

Strengths: JobSeeker prioritizes ethical practices such as transparency in algorithmic decision-making and safeguarding user data privacy. These practices build trust and credibility with users.
Areas for Improvement: Regular audits and compliance checks can ensure ongoing adherence to ethical standards and regulatory requirements. Transparent communication about data handling practices can also reassure users and stakeholders.

User-Centric Approach:

Strengths:
JobSeeker is lauded for its unwavering dedication to meeting user needs. Its user-friendly interface, coupled with personalized recommendations and a plethora of resources, significantly enhances user satisfaction and engagement. By prioritizing the user experience, JobSeeker establishes itself as a trusted ally in the job search process.

Areas for Improvement:

While JobSeeker excels in its user-centric approach, there is always room for enhancement. Continuous solicitation of user feedback and rigorous usability testing are crucial to ensuring that the platform remains attuned to evolving user preferences and requirements. Furthermore, JobSeeker can strive towards inclusivity by incorporating diverse perspectives and addressing accessibility considerations, thereby broadening its reach and impact.

Technological Innovation:

Strengths:

JobSeeker leverages cutting-edge algorithms and mobile-responsive design to facilitate efficient job matching and seamless accessibility across various devices. These technological innovations bolster the platform's functionality and attractiveness, setting it apart from competitors and positioning it as a leader in the industry.

Areas for Improvement:

To maintain its technological edge, JobSeeker must remain vigilant in its pursuit of innovation. Regular updates and investments in technology infrastructure are imperative to keep pace with advancements in the job market and digital landscape. Additionally, proactive monitoring of emerging technologies can unveil opportunities for further enhancement and differentiation.

Market Differentiation:

Strengths:

JobSeeker distinguishes itself from competitors through a comprehensive feature set, encompassing personalized job recommendations, employer services, and community engagement initiatives. This differentiation fortifies its foothold in the market, attracting users and solidifying its position as a preferred choice among job seekers.

Areas for Improvement:

In the ever-evolving landscape of the job market, JobSeeker must continuously assess its competitive positioning and seek avenues for differentiation. This entails ongoing market

analysis and benchmarking against competitors to identify emerging trends and areas for improvement. Clear communication of its unique value propositions is essential to cementing JobSeeker's standing as an industry leader.

Business Model Sustainability:

Strengths:

JobSeeker's sustainable business model, underpinned by cost-efficient benefits and diversified revenue streams, ensures its continued operation and growth. Revenue streams such as employer subscription fees and premium features contribute to its financial stability, safeguarding its longevity in the market.

Areas for Improvement:

While JobSeeker's business model is robust, there are opportunities for further optimization. Diversifying revenue streams and exploring strategic partnerships or collaborations can mitigate reliance on any single source of income, enhancing resilience against market fluctuations. Periodic financial assessments and adjustments are necessary to maintain profitability in dynamic market conditions.

Community Engagement and Support:

Strengths:

JobSeeker fosters a vibrant community among its users through interactive forums, networking events, and mentorship opportunities. These initiatives bolster user engagement and support, fostering a sense of camaraderie and mutual assistance among members of the JobSeeker community.

Areas for Improvement:

Scaling community engagement efforts while upholding quality and inclusivity poses a notable challenge for JobSeeker. To address this, regular community feedback sessions and transparent communication channels can facilitate constructive dialogue and address user concerns effectively. By prioritizing community engagement and support, JobSeeker can nurture a thriving ecosystem conducive to user success and satisfaction.

Ethical and Responsible Practices:

Strengths:

JobSeeker upholds ethical principles such as transparency in algorithmic decision-making and stringent data privacy safeguards, earning the trust and confidence of its user base. By

prioritizing ethical practices, JobSeeker sets a high standard for responsible conduct in the industry, fostering trust and credibility with users and stakeholders alike.

Areas for Improvement:

To maintain its ethical standing, JobSeeker must remain vigilant in its adherence to regulatory requirements and industry best practices. Regular audits and compliance checks can ensure ongoing adherence to ethical standards, while transparent communication about data handling practices can reassure users and stakeholders of JobSeeker's commitment to responsible conduct. By prioritizing ethical and responsible practices, JobSeeker can safeguard its reputation and maintain the trust of its user base, laying a solid foundation for long-term success and impact.

CHAPTER 10: CONCLUSION

10.1 Success Criteria

The proposed system named “JOBACT” has proved to be significantly useful for the end-user as it meets all the requirement of the user as well as fulfils the entire criterion that judge the quality and success of the system. The success for the proposed system is achieved as it has met the success criteria and established what it was supposed to. The system has resolved the issues that oure discussed in the chapter 2 regarding the problems raised and the solutions provided.

By monitoring and evaluating these success criteria, the JobSeeker project can measure its effectiveness in achieving its goals of revolutionizing the job search and recruitment process, empowering users, and creating value for both job seekers and employers.

User Engagement and Satisfaction: Measure the level of user engagement with the platform, including metrics such as active users, time spent on the platform, and frequency of interactions. Conduct user satisfaction surveys to gather feedback on the platform's usability, features, and overall experience.

Job Matching Accuracy: Evaluate the effectiveness of the platform's job matching algorithm by assessing the percentage of successful job placements and user satisfaction with job recommendations. Monitor metrics such as application-to-hire ratio and user feedback on the relevance of suggested job opportunities.

Employer Adoption and Retention: Track the number of employers using the platform to post job vacancies, manage applications, and engage with candidates. Measure employer satisfaction with the recruitment process, including metrics such as time-to-hire, candidate quality, and retention rates.

Job Seeker Success Stories: Collect and showcase success stories of job seekers who found employment opportunities through the platform. Highlight key milestones such as securing interviews, receiving job offers, and achieving career advancement as a result of using JobSeeker.

Community Growth and Engagement: Monitor the growth of the JobSeeker community, including the number of forum members, networking event attendees, and mentorship program participants. Measure engagement levels through metrics such as active participation, knowledge sharing, and collaboration among users.

Financial Viability: Evaluate the financial performance of the JobSeeker project, including revenue generation, cost management, and profitability. Monitor key financial metrics such as subscription fees, advertising revenue, and operating expenses to ensure sustainable growth and long-term viability.

Market Penetration and Competitor Analysis: Assess the platform's market penetration by tracking user acquisition rates, market share, and brand recognition. Conduct regular competitor analysis to benchmark performance against industry peers and identify opportunities for differentiation and improvement.

Continuous Improvement and Innovation: Implement a feedback loop to gather user input and insights for continuous improvement. Regularly update the platform with new features, enhancements, and optimizations based on user feedback, market trends, and technological advancements

Picture a canvas alive with the hues of engagement: users weaving through listings, discovering opportunities, and ultimately finding their place in the workforce. Our success begins with the smiles of those who secure their dream jobs and the businesses thriving with their perfect hires.

, JobAct stands not just as a platform, but as a beacon of hope and opportunity. Our success isn't a destination; it's the ongoing journey we embark on, hand in hand with every user, towards a brighter, more fulfilling future

10.2 Limitations and Errors in the Developed System:

- Algorithm Bias: Despite efforts to develop fair and unbiased algorithms, the job matching algorithm may still exhibit biases based on factors such as gender, race, or socioeconomic background. These biases can result in unequal opportunities for certain groups of users and undermine the platform's fairness and inclusivity.

- Data Privacy Concerns: The collection, storage, and processing of user data may raise privacy concerns, especially in relation to sensitive information such as employment history, education, and personal preferences. Data breaches or unauthorized access to user data could have serious consequences for user trust and regulatory compliance.

- Technical Glitches and Downtime: The system may experience technical glitches, bugs, or downtime due to factors such as server issues, software updates, or maintenance activities. These interruptions can disrupt user access, degrade performance, and lead to frustration among users.

- Limited Coverage and Accessibility: Despite efforts to expand coverage, the platform may still have limited access to certain geographic regions or industries. Users in underserved areas or niche sectors may encounter fewer job opportunities and less engagement with the platform, reducing its effectiveness and relevance.

- User Interface Complexity: The user interface may be overly complex or overwhelming for some users, especially those with limited technical proficiency or accessibility needs. Complex navigation, cluttered layouts, or unfamiliar terminology can hinder usability and discourage user engagement.

- Inaccurate Job Listings: The platform relies on employers to accurately and truthfully represent job listings, which may not always be the case. Inaccurate or misleading job postings can lead to mismatches, wasted time for job seekers, and damage to the platform's credibility.

- Lack of Diversity in Employer Pool: Despite efforts to attract a diverse range of employers, the platform may still lack representation from certain industries, company sizes, or geographic regions. A limited employer pool can restrict job seekers' options and limit the platform's effectiveness in catering to diverse user needs.

- Dependency on Internet Connectivity: JobSeeker's reliance on internet connectivity may pose challenges for users in areas with limited or unreliable internet access. Poor connectivity can disrupt access to the platform, hinder communication, and impede the job search process for affected users.

10.3 Future Enhancement

- AI-Powered Personalization: Implement advanced artificial intelligence (AI) algorithms to further personalize the user experience. This could include leveraging machine learning to analyze user behavior, preferences, and career goals to provide even more tailored job recommendations and resources.

- Blockchain-Based Credential Verification: Integrate blockchain technology to verify and authenticate user credentials such as education, certifications, and work experience. This would enhance trust and transparency in the recruitment process by providing immutable records of individuals' qualifications.

- Augmented Reality (AR) Job Previews: Explore the use of AR technology to offer job seekers immersive previews of potential workplaces, job environments, and company cultures. This would provide job seekers with a more realistic and engaging understanding of

job opportunities before applying.

- Expanded Mentorship and Networking Features: Enhance the platform's mentorship and networking capabilities by facilitating connections between job seekers and industry professionals. This could include virtual mentorship programs, networking events, and industry-specific forums for knowledge sharing and collaboration.

- Predictive Analytics for Skill Development: Utilize predictive analytics to identify emerging skill trends and recommend relevant training and development opportunities to job seekers. This proactive approach would help users stay ahead of the curve and remain competitive in the job market.

- Gamification Elements for Engagement: Introduce gamification elements such as badges, challenges, and leaderboards to incentivize user engagement and motivate job seekers to actively participate in their career development journey.

- Integration with Emerging Technologies: Explore integration with emerging technologies such as virtual reality (VR), natural language processing (NLP), and voice assistants to offer innovative features and enhance the user experience. For example, VR simulations for interview practice or NLP-powered chatbots for personalized assistance.

- Global Expansion and Localization: Expand the platform's reach by targeting new geographic regions and language markets. This would involve localization efforts to adapt the platform's content, features, and user interface to the cultural and linguistic preferences of diverse user segments.

- Partnerships and Ecosystem Integration: Forge strategic partnerships with industry stakeholders, educational institutions, government agencies, and other platforms to create an integrated ecosystem for talent acquisition, career development, and workforce planning.

- Continuous User Feedback Loop: Establish a robust mechanism for gathering and incorporating user feedback into the platform's development roadmap. Regular surveys, focus groups, and user testing sessions would ensure that future enhancements align with user needs and expectations.

10.4 What would have been done if given time to redo the project?

If the developer is provided a second chance to make this project then he would certainly make this project a better one.

Enhanced User Research: Conduct comprehensive user research to gain deeper insights into the needs, preferences, and pain points of job seekers and employers. This would involve engaging with a diverse range of users through surveys, interviews, and usability testing sessions to better understand their requirements.

Iterative Design and Development: Adopt an iterative approach to design and development, incorporating user feedback early and often throughout the project lifecycle. This would enable the developer to validate assumptions, identify potential issues, and make course corrections in a timely manner.

Focus on Accessibility: Prioritize accessibility considerations from the outset, ensuring that the platform is inclusive and accessible to users with diverse needs. This would involve implementing best practices for web accessibility, conducting accessibility audits, and incorporating features such as screen reader compatibility and keyboard navigation.

Strategic Partnerships: Forge strategic partnerships with industry stakeholders, educational institutions, and other platforms to create a more integrated ecosystem for talent acquisition and career development. This could involve integrating with complementary services, leveraging data partnerships, and expanding the platform's reach through collaborative initiatives.

Advanced Analytics and Insights: Invest in advanced data analytics capabilities to gain deeper insights into user behavior, engagement patterns, and market trends. This would enable the developer to make data-driven decisions, personalize user experiences, and optimize the platform's performance based on real-time feedback.

Continuous Improvement: Establish a culture of continuous improvement within the project team, with regular reviews, retrospectives, and feedback loops to identify areas for enhancement and experimentation. This would ensure that the developer remains agile and responsive to evolving user needs and market dynamics.

Scalability and Performance Optimization: Design the platform with scalability and performance optimization in mind to accommodate future growth and increasing user demand. This would involve leveraging scalable infrastructure, implementing caching mechanisms, and optimizing code to ensure fast and reliable performance under varying loads.

Community Engagement: Foster a strong sense of community engagement within the JobSeeker ecosystem, encouraging users to connect, collaborate, and support each other in their career journeys. This could involve hosting user forums, organizing networking events, and facilitating mentorship opportunities to empower users and build a thriving community.

10.4 Computational Challenges

In the development and implementation of the JobSeeker project, several computational challenges may arise:

Algorithm Complexity: The development of advanced matching algorithms for job seekers and employers requires addressing algorithmic complexity issues. Ensuring that the algorithms are efficient and scalable, especially when dealing with large datasets of job listings and user profiles, presents a significant computational challenge.

Data Processing and Storage: Managing and processing large volumes of user data, including job listings, user profiles, and interaction logs, can strain computational resources. Efficient data storage solutions and optimized data processing pipelines are essential to handle the scale and complexity of the platform's data requirements.

Real-time Processing and Updates: Providing real-time updates and notifications to users, such as job recommendations or application status changes, requires timely processing of data and efficient communication channels. Implementing real-time processing capabilities while maintaining system responsiveness poses a computational challenge, particularly during periods of high user activity.

Scalability and Performance: As the user base and data volume grow, ensuring the scalability and performance of the platform becomes increasingly challenging. Scaling computational resources, optimizing database queries, and implementing caching mechanisms are necessary to maintain system performance under varying loads.

Privacy and Security: Safeguarding user data privacy and ensuring platform security are paramount concerns. Implementing robust encryption algorithms, access controls, and security protocols to protect sensitive user information adds computational overhead and complexity to the system.

Natural Language Processing (NLP): Processing and analyzing unstructured text data, such as job descriptions and user-generated content, using NLP techniques presents computational challenges. Implementing efficient NLP algorithms for tasks such as keyword extraction, sentiment analysis, and semantic matching requires computational resources and expertise.

Machine Learning Models: Developing and training machine learning models for tasks such as job matching, user behavior prediction, and sentiment analysis involves computational challenges. Optimizing model training pipelines, feature engineering, and hyperparameter tuning to achieve desired performance metrics requires computational resources and expertise.

Distributed Computing: Leveraging distributed computing frameworks and parallel processing techniques to distribute computational tasks across multiple nodes or clusters can help address scalability and performance challenges. However, designing and managing distributed computing architectures adds complexity to the system infrastructure.

10.6 Learning Experience Gathered

- **Learnt a lot from research work:** In the preliminary stage of the project, the developer was quite confused about what features to be included in the system. So, the developer carried out secondary research by studying the research works of various authors and pointing out what all mistakes they have done. It helped in gathering intense knowledge about the subject domain and critically analysing similar systems in terms of their features and drawbacks. Finally, the developer conducted primary research to gather real time user requirements.
- **Learned to manage stress and time:** While working through the different phases of SDLC, the developer played various roles as follows: analyser, researcher, database and developer and tester. This gave the developer the skill to manage both stress and time efficiently. The developer was able to complete the project within the scheduled time period overcoming all stresses and time constraints that came during the development phase.
- **Had an experience of project management:** The project gave a wonderful experience and feeling of working as if in some corporate world. The developer also played a vital role of a project manager by getting the completed-on time, delivering a quality system, fulfilling user requirements, using fact finding techniques to collect requirements. **Divide and conquer** approach was used to divide the entire project into small tasks and completing them according to the schedule prepared in the Gantt chart.
- **How to resolve errors and learn from them**: While implementing the system, the developer encountered many errors and exceptions which are corrected after applying various methods. This gave an understanding how to debug and rectify errors **using top down approach.** Also, the developer came to know how to find errors and fix them which is very unique skill needed to deliver an error free system.
- **Gained lot of confidence**: Before implementing the system, the developer was in a dilemma how to implement the complex modules of the system. But gradually things became easier after doing research work in each phase of the development which itself paved a pathway to plan the logic and flow of the entire system. Although it required consistent and sincere effort, but the developer became assure of one thing that **'where there is a will, there is a way'**. This learning has motivated the developer to accept greater challenges by strongly believing that to every problem there is a solution.

Last but not the least, this final year project gave a great learning and pleasant experience of working on real time projects and created a deep interest in the mobile application development field which will help in reaping benefits for having a bright career in future.

10.5 Conclusion

In conclusion, the JobSeeker project represents a significant endeavor aimed at revolutionizing the job search and recruitment process. Throughout its development, implementation, and ongoing iterations, the project has demonstrated a steadfast commitment to innovation, user-centric design, and technological excellence.

The JobSeeker platform stands as a testament to the power of technology to empower individuals in their career journeys. By leveraging advanced algorithms, personalized recommendations, and comprehensive resources, JobSeeker has provided job seekers with the tools and support they need to navigate the complexities of the job market with confidence and ease. Additionally, the platform has empowered employers to connect with top talent efficiently and transparently, streamlining the recruitment process and driving organizational success.

As we reflect on the journey of the JobSeeker project, it is clear that its impact extends far beyond the digital realm. By facilitating meaningful connections between job seekers and employers, JobSeeker has played a vital role in shaping careers, fostering economic growth, and contributing to societal advancement.

Looking ahead, the success of the JobSeeker project will depend on its ability to adapt, innovate, and evolve in response to changing user needs and market dynamics. By remaining agile, responsive, and committed to continuous improvement, JobSeeker will continue to serve as a beacon of hope and opportunity for individuals seeking to realize their full potential in the world of work.

In closing, I am immensely proud of the achievements of the JobSeeker project team and grateful for the support and collaboration of all stakeholders involved. Together, we have created a platform that not only transforms the job search experience but also empowers individuals to embark on new beginnings and pursue their dreams with confidence and determination. The journey of JobSeeker may have reached its conclusion, but its impact will endure for years to come, shaping the future of work and opening doors to endless possibilities.

At last the final project is critically evaluated to come to a conclusion, how the system can benefit its end-users and how much the project is successful from the user’s point of view.

CHAPTER11: REFERENCES

11.1 Books

- Hooked: How to Build Habit-Forming Products" by Nir Eyal - Offers strategies for creating products and services that encourage user engagement and retention, which can be valuable for designing a platform like JobSeeker that seeks to keep users coming back regularly.

- "Designing Your Life: How to Build a Well-Lived, Joyful Life" by Bill Burnett and Dave Evans - Provides a framework for applying design thinking principles to career planning and development, which can be beneficial for job seekers using the JobSeeker platform to navigate their career paths.

- "Measure What Matters: Online Tools for Understanding Customers, Social Media, Engagement, and Key Relationships" by Katie Delahaye Paine - Offers practical advice on how to measure and analyze key metrics related to user engagement, satisfaction, and platform performance, which can inform decision-making and optimization efforts for JobSeeker.

- "The UX Book: Agile UX Design for a Quality User Experience" by Rex Hartson and Pardha Pyla - Provides comprehensive coverage of user experience (UX) design principles, methodologies, and techniques, which can be helpful for designing and refining the user interface and interaction design of the JobSeeker platform.

- "Predictive Analytics: The Power to Predict Who Will Click, Buy, Lie, or Die" by Eric Siegel - Explores the principles and applications of predictive analytics, including its use in talent acquisition, job matching, and candidate evaluation, which can inform the development of algorithmic features for JobSeeker.

- "Lean Analytics: Use Data to Build a Better Startup Faster" by Alistair Croll and Benjamin Yoskovitz - Offers guidance on how to use data-driven insights to measure, analyze, and improve the performance of digital products and services, which can be valuable for optimizing the JobSeeker platform based on user feedback and usage data.

- "Cracking the Tech Career: Insider Advice on Landing a Job at Google, Microsoft, Apple, or any Top Tech Company" by Gayle Laakmann McDowell - Provides practical tips and strategies for navigating the tech job market, including resume writing, interview preparation, and negotiation tactics, which can be helpful for JobSeeker users seeking employment in the

technology industry.

- "Data Science for Business: What You Need to Know about Data Mining and Data-Analytic Thinking" by Foster Provost and Tom Fawcett - Offers a comprehensive introduction to data science concepts and techniques, with a focus on practical applications in business and industry, which can be relevant for understanding the role of data analytics in talent acquisition and recruitment.

- "The Lean Startup" by Eric Ries: Provides insights into lean startup methodology, which emphasizes iterative development, validated learning, and rapid experimentation, all of which are relevant to the development of JobSeeker.

- "Designing with the Mind in Mind: Simple Guide to Understanding User Interface Design Rules" by Jeff Johnson: Offers practical guidelines and principles for designing user interfaces that are intuitive, efficient, and user-friendly, which are essential considerations for the JobSeeker platform.

11.2 Journals

- "Enhancing the Effectiveness of Online Job Portals: A Review" by Dr. S. Balasubramanian and Dr. V. Vijayakumar: Provides insights into the features and functionalities of online job portals and their impact on job seekers' effectiveness in finding suitable employment.

- "The Impact of Artificial Intelligence on Recruitment, Selection, and Performance Evaluation" by Dr. T. Srinivasan and Dr. S. Ananthakumar: Explores the role of artificial intelligence in transforming recruitment processes, including the use of algorithms for job matching and candidate evaluation

- Journal of Computer-Mediated Communication (JCMC) - Publishes research on the impact of digital communication technologies on various aspects of society, including online job search behavior, social networking, and virtual communities.

- International Journal of Human-Computer Interaction (IJHCI) - Covers research on human-computer interaction (HCI) principles, methods, and applications, including usability testing, user interface design, and user experience evaluation, which are relevant to designing user-friendly platforms like JobSeeker.

- Journal of Management Information Systems (JMIS) - Publishes research on the use of information systems and technology in business and management, including topics such as online recruitment, talent management, and the role of technology in shaping organizational behavior.

- Computers in Human Behavior - Examines the impact of computer technology on human behavior and interaction, including studies on online job search behavior, social networking, and the psychological aspects of using digital platforms for career development.

- International Journal of Selection and Assessment - Focuses on research related to employee selection and assessment processes, including the use of technology in recruitment, job matching algorithms, and the evaluation of candidate competencies and fit.

- Information Systems Research (ISR) - Publishes research on the design, development, and management of information systems, including topics such as decision support systems, data analytics, and the use of technology in human resource management and talent acquisition.

- Journal of Vocational Behavior - Covers research on vocational psychology, career development, and workforce behavior, including studies on job search strategies, career decision-making, and the psychological factors influencing employment outcomes.

- Journal of Business and Psychology - Publishes research at the intersection of business and psychology, including topics such as organizational behavior, leadership, employee motivation, and the impact of technology on workplace dynamics and performance.

11.3 Websites

- Glassdoor (www.glassdoor.com): Offers job listings, company reviews, salary information, and interview insights, providing valuable resources for job seekers to research employers and prepare for interviews.

- LinkedIn (www.linkedin.com): A professional networking platform that connects job seekers with employers, recruiters, and industry professionals. Users can create profiles, search for job opportunities, and network with others in their field.

- Indeed (www.indeed.com): A popular job search engine that aggregates job listings from various sources, including company websites, job boards, and staffing agencies. Job seekers

can search for opportunities, upload resumes, and receive email alerts for new postings.

- CareerBuilder (www.careerbuilder.com): Offers job search tools, career resources, and advice for job seekers, as well as recruitment solutions for employers. Users can search for jobs, create profiles, and access articles and guides on resume writing, interviewing, and career development.

- Monster (www.monster.com): Provides job search tools, resume-building services, and career advice for job seekers, as well as recruitment solutions for employers. Users can search for jobs, post resumes, and access articles and videos on job search strategies and professional development.

- The Muse (www.themuse.com): Offers career advice, job search tools, and company profiles to help job seekers find fulfilling careers. The site features articles, videos, and resources on topics such as resume writing, interviewing, and workplace culture.

- ZipRecruiter (www.ziprecruiter.com): A job search platform that uses AI-driven matching technology to connect job seekers with employers. Users can search for jobs, upload resumes, and receive personalized job alerts based on their preferences.

- Career One Stop (www.careeronestop.org): Sponsored by the U.S. Department of Labor, Career One Stop offers a variety of tools and resources for job seekers, including career exploration, resume writing, job search assistance, and training opportunities.

11.4 E-Books

"The UX Book: Process and Guidelines for Ensuring a Quality User Experience" by Rex Hartson and Pardha Pyla: This e-book provides comprehensive coverage of user experience (UX) design principles, methodologies, and techniques, which can be helpful for designing and refining the user interface and interaction design of the JobSeeker platform.

"Designing Your Life: How to Build a Well-Lived, Joyful Life" by Bill Burnett and Dave Evans: This e-book offers a framework for applying design thinking principles to career planning and development, which can be beneficial for job seekers using the JobSeeker platform to navigate their career paths.

"Lean Analytics: Use Data to Build a Better Startup Faster" by Alistair Croll and Benjamin Yoskovitz: This e-book provides guidance on how to use data-driven insights to measure, analyze,

and improve the performance of digital products and services, which can be valuable for optimizing the JobSeeker platform based on user feedback and usage data.

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"Hooked: How to Build Habit-Forming Products" by Nir Eyal: This e-book offers strategies for creating products and services that encourage user engagement and retention, which can be valuable for designing a platform like JobSeeker that seeks to keep users coming back regularly.

"Measure What Matters: Online Tools for Understanding Customers, Social Media, Engagement, and Key Relationships" by Katie Delahaye Paine: This e-book provides practical advice on how to measure and analyze key metrics related to user engagement, satisfaction, and platform performance, which can inform decision-making and optimization efforts for JobSeeker.

11.5 Academic Journals and Articles:

"Enhancing the Effectiveness of Online Job Portals: A Review" by Dr. S. Balasubramanian and Dr. V. Vijayakumar: Provides insights into the features and functionalities of online job portals and their impact on job seekers' effectiveness in finding suitable employment.
"The Impact of Artificial Intelligence on Recruitment, Selection, and Performance Evaluation" by Dr. T. Srinivasan and Dr. S. Ananthakumar: Explores the role of artificial intelligence in transforming recruitment processes, including the use of algorithms for job matching and candidate evaluation.

11.6 Industry Reports and Whitepapers:

"Future of Work: Trends Shaping the Global Job Market" by McKinsey & Company: Offers insights into emerging trends and challenges in the global job market, including the role of

technology in shaping the future of work.
"The State of AI in Talent Acquisition" by LinkedIn Talent Solutions: Provides an overview of how artificial intelligence is being used in talent acquisition, including the impact on recruitment processes and candidate experience.

11.7 Online Courses and Webinars:

Coursera: Offers courses on topics such as user experience design, data science, and machine learning, which are relevant to the development of the JobSeeker platform.
LinkedIn Learning: Provides a wide range of courses on job search strategies, career development, and recruitment best practices, which can offer valuable insights for both job seekers and employers using the JobSeeker platform.

11.8 Conferences and Events:

HR Tech Conference: An annual event that showcases the latest trends and innovations in HR technology, including recruitment software and job search platforms.
UX/UI Design Conferences: Events focused on user experience and interface design, where professionals can learn about best practices, emerging trends, and innovative approaches to designing user-friendly platforms like JobSeeker.

11.9 Online Communities and Forums:

Reddit: Subreddits such as r/jobs and r/careeradvice provide forums for job seekers to seek advice, share experiences, and discuss strategies for navigating the job market.
Stack Overflow: A community of developers and technologists where professionals can ask questions, share knowledge, and seek guidance on technical challenges encountered during the development of projects like JobSeeker.

APPENDIX

Analysis of Questionnaire

Analysis of Interview

Gantt chart

Log Sheets