



Faculty of Computer Science and Information Technology

***ONLINE-BASED PORTAL FOR INTEGRATED HIRING IN HR RECRUITMENT
(OPIH)***

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(Software Engineering)
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DECLARATION

I hereby, declare that the project entitled “ONLINE BASED PORTAL FOR INTEGRATED HIRING IN HR RECRUITMENT” is done by me expect the citation as well as the quotation. Those are required from various sources like books, journals and articles.

ACKNOWLEDGEMENT

All praises belong to the Almighty. Without Allah's help, nothing would be possible. I wish to convey my sincere gratitude to all of those who helped and contributed to finish my Final Year Project, especially my dear friends – Haizar, Daniel Zamri, Daniel Aiman Fiqri, Mathius, Nasrul, Mahtar and Petrus. I would like to thank all of them sincerely from my heart.

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ABSTRACT

ONLINE BASED PORTAL FOR INTEGRATED HIRING IN HR RECRUITMENT is a web-based system designed to simplify and manage the recruitment process by allowing public users to search and apply for jobs online while enabling employers to handle job postings, applications, interviews, and user access in one integrated platform. This project aims to fulfill the need for a centralized and user-friendly hiring system by identifying essential requirements, developing functional modules, and evaluating the system through functional testing, usability testing, and User Acceptance Testing (UAT). The system has successfully achieved its objectives and demonstrates its potential for real-world use in improving hiring efficiency and applicant experience.

Keywords: job portal, recruitment system, HR management, Laravel, usability testing, UAT, web-based application.

ABSTRAK

PORTAL BERASASKAN DALAM TALIAN UNTUK PENGAMBILAN BERSEPADU DALAM PENGAMBILAN HR ialah sistem berasaskan web yang direka bentuk untuk memudahkan dan mengurus proses pengambilan dengan membenarkan pengguna awam mencari dan memohon pekerjaan dalam talian sambil membolehkan majikan mengendalikan siaran pekerjaan, permohonan, temu duga dan akses pengguna dalam satu platform bersepadu. Projek ini bertujuan untuk memenuhi keperluan untuk sistem pengambilan pekerja berpusat dan mesra pengguna dengan mengenal pasti keperluan penting, membangunkan modul berfungsi dan menilai sistem melalui ujian kefungsian, ujian kebolehgunaan dan Ujian Penerimaan Pengguna (UAT). Sistem ini telah berjaya mencapai objektifnya dan menunjukkan potensinya untuk kegunaan dunia sebenar dalam meningkatkan kecekapan pengambilan pekerja dan pengalaman pemohon.

Kata kunci: portal kerja, sistem pengambilan, pengurusan HR, Laravel, ujian kebolehgunaan, UAT, aplikasi berasaskan web.

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LIST OF ABBREVIATIONS

List Of Abbreviations

OPIH	Online-based Portal for Integrated Hiring in HR recruitment
HR	Human Resource
UAT	User Acceptance Testing
HTML	Hyper Text Markup Language
CSS	Cascading Style Sheets
ERD	Entity Relationship Diagram
MySQL	My Structured Query Language
UI	User Interface
Tailwind CSS	Tailwind Cascading Style Sheets
UX	User Experience
APIs	Application Programming Interfaces
CI	Continuous Integration
SMEs	Small-to-medium Enterprises
ATS	Applicant Tracking Systems
CVs	Curriculum Vitae
SEEK	Search Engine for Employment and Knowledge
SPA Malaysia	Suruhanjaya Perkhidmatan Awam Malaysia
PERKESO	Pertubuhan Keselamatan Sosial
AI	Artificial Intelligence
DBMS	Database Management System
PostgreSQL	Post Ingres Structured Query Language
NoSQL	Not Only SQL / Non-SQL
CPU	Central Processing Unit
RAM	Random Access Memory
E-Recruitment	Electronic Recruitment
AJAX	Asynchronous JavaScript and XML
XML	Extensible Markup Language
GraphQL	Graph Query Language

PHP	Hypertext Processor / Personal Home Page
REST	Representational State Transfer
PC	Personal Computer
macOS	Macintosh Operating System
iOS	iPhone Operating System
Mbps	Million bits per second
PWAs	Progressive Web Applications
UML	Unified Model Language
ID	Identification
CPRE	Certified Professional for Requirements Engineering
PMP	Project Management Professional
KIV	Keep In View

CHAPTER 1: INTRODUCTION

1.1 Introduction

Opih is a comprehensive portal that will develop as part of an HR management solution, specifically designed to streamline and enhance the hiring process. By integrating essential features such as application submission, status tracking, and interview scheduling, *Opih* provides HR teams with a unified and efficient solution for managing the entire recruitment lifecycle. This portal enables employers to handle everything from job postings to candidate selection within a single interface, significantly improving workflow efficiency and reducing administrative complexity.

1.2 Problem statements

Many HR teams struggle with ununified portals for managing the recruitment lifecycle, leading to inefficiencies in job postings, candidate tracking and selection processes. This lack of integration often results in disconnected processes across job postings, candidate tracking, and selection workflows, making it difficult to maintain seamless coordination. The absence of a unified platform exacerbates administrative workloads, as HR staff must frequently toggle between systems to retrieve and update candidate information, which leads to time-consuming manual data handling.

Communication delays are also a common issue, as information about candidates or job postings may not be readily accessible or synced in real-time across platforms, ultimately creating bottlenecks in decision-making and follow-up with applicants. These inefficiencies can not only hinder productivity within HR teams but also risk diminishing the candidate experience through inconsistent communication and slower response times.

This growing demand for consolidated HR solutions underlines the need for platforms like *Opih*, which are purpose-built to streamline and centralize the entire hiring process. By providing a single interface for job postings, applicant tracking, and interview scheduling, *Opih* offers HR teams a cohesive solution to optimize workflow, reduce redundancies, and foster a more consistent and positive experience for candidates from initial application to final selection.

1.3 Objectives

The aim of this project is to provide a unified portal for HR teams, enabling efficient management of the recruitment lifecycle from job postings to candidate selection. In order to achieve this aim, the following are the objectives:

1. To identify the requirements for the integration of online hiring system.
2. To develop the integrated portal for managing hiring process.
3. To evaluate the functionalities and reliability of the proposed system using User Acceptance Testing (UAT).

1.4 Scope of project

The project scope involves developing a robust job recruitment module within an HR management system using Laravel and Livewire. This module will enable various critical functionalities for the recruitment process, such as application submission, status tracking, and interview scheduling. It will feature dynamic status updates, interactive user interfaces for managing applications, and integrated tools for scheduling interviews.

1.5 Significant of the project

The significance of this project is in its capacity to offer a cohesive, unified system for HR teams, improving the efficiency and effectiveness of the hiring procedure. Through the combination of Laravel, Breeze, and Livewire, the portal provides safe user authentication, instantaneous feedback, and an adaptable user interface, enhancing teamwork and interaction. This initiative streamlines job advertisements and applicant tracking, while also adjusting to changing needs using Agile methods, promoting a culture of constant enhancement and creativity in the company.

1.6 Methodology



Figure 1.1 Agile Methodology (Laoyan S., 2024)

The project will adopt the **Agile methodology**, which emphasizes iterative development, continuous integration, and frequent feedback loops. This allows for faster deployment cycles, improved collaboration between development and operations teams, and the flexibility to adapt to changing requirements throughout the project lifecycle. This project will use this methodology by following these phases which is **Plan, Design, Develop, Test, Prototype Deploy and Review** (InterQuality, 2024).

1.6.1 Plan

For planning phase, it is compulsory to list down the requirements needed for developing the system. The software requirements for this project are Laravel Framework, with the Breeze starter kit combined with Livewire integration. Moreover, the requirements also include the foundation of front-end web development which is Hyper Text Markup Language (HTML), Cascading Style Sheets (CSS) and JavaScript. Other than that, this project mainly using PHP programming language for both front-end and back-end web development.

1.6.2 Design

During the designing phase, the structure of the system will be defined, emphasizing the connection between different parts, specifically how Laravel Livewire aids in communication between server and client elements. Laravel Breeze will be included for user authentication and session management to guarantee safe access (Laravel, 2024). A MySQL database will depict the connections between entities, like users and job applications, through an Entity Relationship Diagram (ERD). The UI will focus on easy navigation and clear design, utilizing Tailwind CSS for responsiveness, with wireframes illustrating important pages such as the login form and admin dashboard. When it comes to User Experience (UX), well-defined user paths will outline how applicants submit applications and admins handle job postings, with Livewire's live feedback features improving interaction without the need for page refreshes. The system will utilize reusable Livewire components for flexibility, prioritizing role-based access control through Laravel Breeze for security and data protection. Moreover, strategies are in place for potential integration of third-party APIs and implementing a plan for continuous integration (CI) to ensure smooth deployment procedures during the Agile development phase.

1.6.3 Develop

In the development phase, the project team will begin to build the application based on the designs and requirements established in the previous phases. The team will focus on implementing features using Laravel and Livewire, ensuring that each component is functional and integrates well with others. During this phase, developers will write code for both the front-end and back-end, creating endpoints for user interactions and database operations. Emphasis will be placed on developing reusable Livewire components to enhance efficiency and maintainability. Regular code reviews and pair programming practices will help ensure high-quality code and adherence to best practices.

1.6.4 Test

Once the development is complete, the testing phase will commence. This phase is crucial for identifying and resolving any defects or issues before the application is deployed. Various types of testing will be conducted, including unit testing, integration testing, and user acceptance testing (UAT).

Automated tests will be written for key functionalities to ensure that any future changes do not introduce new bugs. Feedback from UAT will be gathered from actual users, allowing the team to refine features based on real-world usage and improve the overall user experience.

1.6.5 Prototype Deployment

In the prototype deployment phase, the application will be prepared for launch in a production environment. This involves setting up servers, configuring databases, and ensuring that all dependencies are correctly installed. The project team will follow a CI process, automating the deployment steps to minimize errors and streamline the launch. Documentation and training materials will also be prepared to assist users and administrators in navigating the new system. The deployment phase is critical for ensuring that the application is stable and performs well under expected user loads.

1.6.6 Review

After deployment, the review phase will focus on assessing the project's outcomes and gathering feedback from targeted client. The team will analyze user feedback, performance metrics, and any issues that arose during the deployment. This phase is essential for identifying areas for improvement and lessons learned throughout the project lifecycle. Stakeholders will participate in review meetings to discuss what worked well and what could be enhanced in future iterations. The insights gained during this phase will inform the next cycle of development, fostering a culture of continuous improvement.

1.7 Project schedule

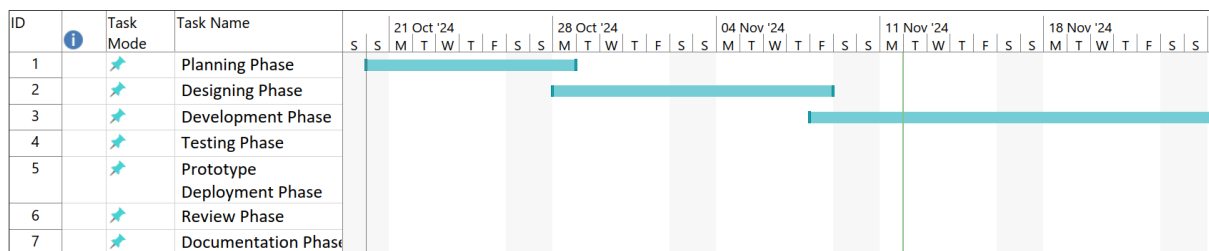


Figure 1.2 Gantt Chart for OPIH

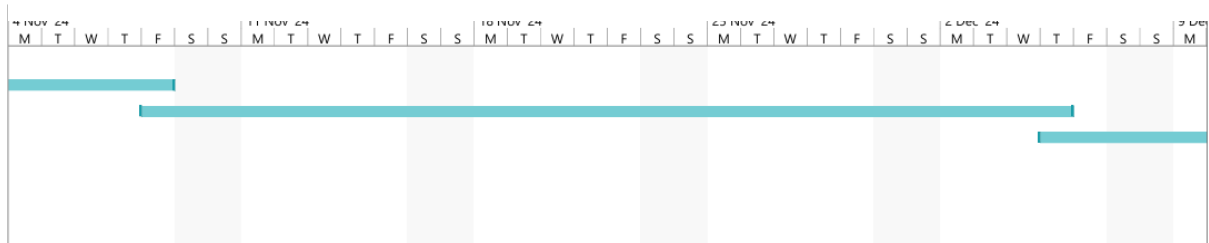


Figure 1.3 Gantt Chart for OPIH

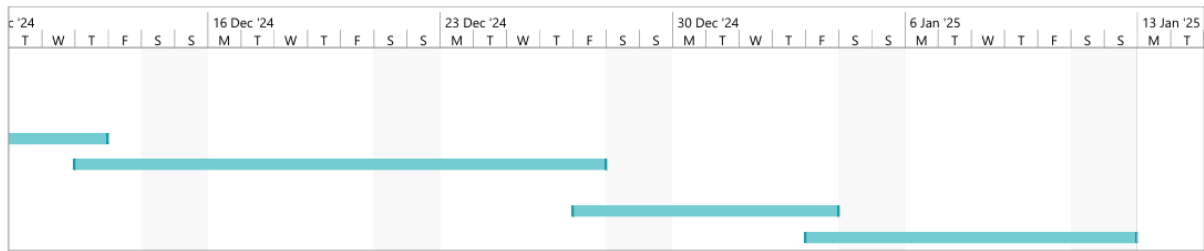


Figure 1.4 Gantt chart for OPIH

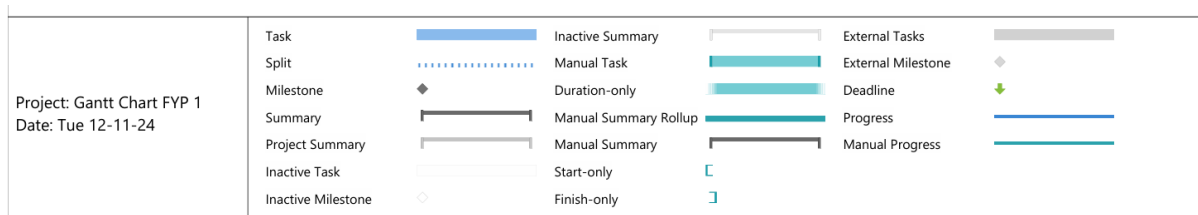


Figure 1.5 Gantt Chart for OPIH

This Gantt chart outlines the timeline of various phases in the *Opih: Online-based Portal for Integrated Hiring in HR recruitment* project. The project starts with the **Planning Phase** on October 21, 2024, followed by the **Designing Phase** which overlaps with the planning. The **Development Phase** begins shortly after, around October 28, continuing for several weeks. The **Testing Phase** overlaps with development, ensuring quality during the creation process. A brief **Prototype Deployment Phase** is scheduled in parallel with testing, followed by the **Review Phase** and then the final **Documentation Phase** to complete the project. Each phase has its own timeline to ensure structured and iterative progress.

1.8 Project outline

This project report consists of five parts. Every section comprises a step-by-step depiction of the full task. The content of each chapter is discussed below.

Chapter One is the starting piece of the full project. This part conducts a total review of the system, problem statement, an introduction to the methodology, scope of the project, objectives, project significant and the expected outcome on project compilation.

Chapter Two is a review of the literature part. This part conducts precise research which is finished regarding the proposed system. It additionally, researching the existing system. Discuss about the advantages of the proposed system over the current system is likewise done.

Chapter Three is a brief description and revision of the methodology used to develop for the desired project.

Chapter Four is the elaboration of the result of the project. At the point when the web application will be produced, testing will be performed. The outcomes and discoveries will be clarified in section four.

Chapter Five is the last section of the project where the reach at the end of the project. Project discoveries and a brief about future work are done here.

1.9 Project outcomes

Opih will significantly improve the efficiency of HR professionals by centralizing and automating key tasks such as application management, status tracking, and interview scheduling. By streamlining these processes, the system will reduce administrative overhead, enabling HR teams to focus on more strategic activities such as candidate evaluation and selection.

1.10 Summary

The *Opih* proposal presents a holistic solution aimed at improving and simplifying the hiring process for small-to-medium enterprises (SMEs). It addresses the inefficiencies found in current Applicant Tracking Systems (ATS), which often suffer from disorganized application management and difficult interview scheduling. Opih intends to deliver a cohesive portal that consolidates these tasks into one location. By integrating crucial features such as application submission, status tracking, and interview scheduling, the system empowers HR professionals to efficiently oversee the recruitment lifecycle, minimizing administrative burdens and enhancing overall operational efficiency. The proposal highlights the creation of an intuitive job application interface alongside an administrative dashboard, enabling HR teams to effectively track and manage applications, thereby tackling real-world recruitment challenges and improving HR functions.

The project will adopt an Agile methodology, facilitating iterative development and ongoing feedback throughout the process. This strategy not only allows for adaptability in accommodating evolving requirements but also guarantees that the final product aligns closely with user needs. The project timeline spans six months and includes distinct phases, covering everything from requirement gathering and design to development, testing, and deployment. By prioritizing the enhancement of HR efficiency and the candidate experience, Opih is set to offer SMEs a budget-friendly and adaptable recruitment solution that fosters improved candidate engagement and more efficient hiring workflows. This initiative aims to play a significant role in transforming the recruitment management landscape, enabling smaller organizations to take advantage of contemporary technological solutions without the limitations often faced with larger ATS portals.

CHAPTER 2: LITERATURE REVIEW

2.1 Background study

Human Resource (HR) denotes the department or role in an organization that is dedicated to overseeing and enhancing the workforce (Wright, 2024). It is the strategic method for efficiently managing individuals within a company or organization to ensure they contribute to the business's competitive edge. HR plays a fundamental role in recruitment process. Job recruitment system is designed to streamline and automate the process of attracting, assessing and hiring candidates. The system will support HR functionality by helping them in handling recruitment efficiently.



Figure 2.1 Introduction of HR department (Copymate, 2024)

An internet-based job portal is a digital site that links job hunters with companies, streamlining the hiring process via the web. These platforms enable users to build profiles, upload CVs, and apply for job openings directly, while employers can advertise job positions and look for appropriate candidates. The system simplifies the application process by delivering alerts to job seekers regarding pertinent job listings, thereby improving efficiency for both sides and minimizing the time and resources utilized in conventional recruitment approaches (Ramadhani F. & Zarlis M., 2019). Moreover, these platforms usually feature sophisticated search filters and algorithms that align candidates with job openings according to their qualifications, geographic location, and employment preferences, providing a more personalized job search experience. Moreover, various platforms provide real-time communication features, enabling recruiters and candidates to converse or arrange interviews effortlessly, thereby improving the overall recruitment process. With the ongoing digitization of the recruitment sector, job portals have become essential in influencing contemporary hiring methods, minimizing geographical obstacles, and broadening the scope for both job seekers and employers worldwide (Shobika P. et al., 2024).

Integrated hiring in HR recruitment denotes the seamless combination of various recruitment processes, tools, and technologies into a unified system (Lever, 2024). This approach aims to streamline the hiring process by merging tasks such as posting job ads, sourcing candidates, scheduling interviews, and facilitating onboarding, thus reducing administrative burden and enhancing overall efficiency. By integrating tools such as applicant tracking systems (ATS), recruitment marketing platforms, and employee referral initiatives, organizations can improve talent acquisition, enrich candidate experience, and facilitate data-informed decision-making.

2.2 Processes of recruitment

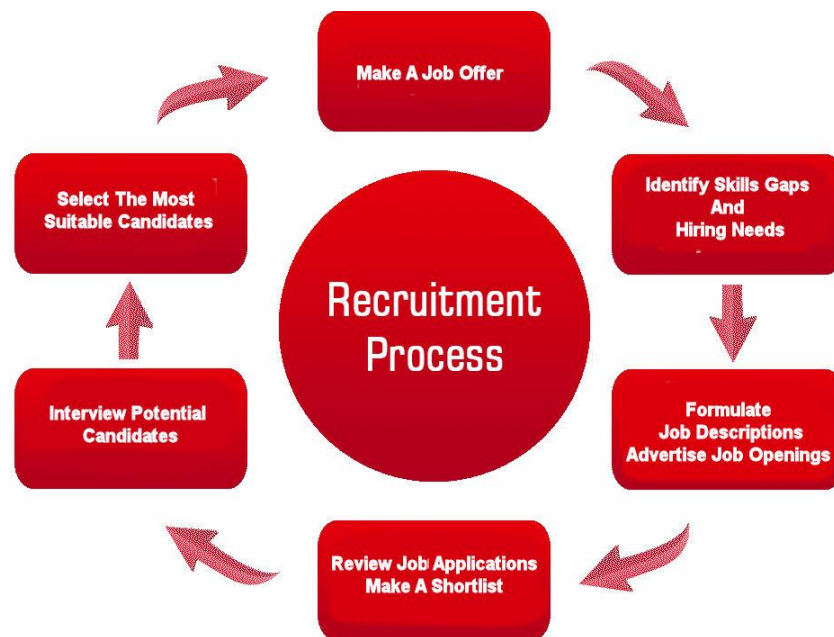


Figure 2.2 Job Recruitment Process (Sojdie M., 2023)

The figure above shows the processes of job recruitment, specifically done by HR team (Sojdie, 2023).

The first step of this process is to identify skills gaps and hiring needs. The company need to analyze which department team that require more workforce, and list out the justifications as why they need to search more worker in that particular area of work. In order to detect skill gaps and determine where additional talent is needed to meet organisational goals, HR teams work in tandem with department heads. This stage usually includes assessing the competencies of present employees, project requirements, and performance indicators. HR can ensure that the hiring process satisfies both short-term and long-term requirements by identifying specific positions that need staffing and aligning recruitment efforts with the organization's strategic goals.

The second step is to formulate job descriptions and advertise job openings. As the job vacancy has already been identified, HR teams need to provide job descriptions for that job. It is important because job seeker have the audacity to know and understand about the details of the job. A well-written

job description outlines the fundamental responsibilities, credentials, abilities, and experience needed for the position (Al-Otaibi, S. T. & Ykhlef M., 2012). It also highlights the organization's culture and principles, attracting applicants who share its goals. Following the completion of the job descriptions, HR advertises the openings through a variety of platforms, such as social media, online job boards, recruitment agencies, and internal referral programs. This ensures that a diverse range of potential candidates are targeted by the job posting.

The third step is to review job applications and make a shortlist. After the job seeker or applicant are interested with the job postings, they will apply job by fill in application form, and fill in their personal details such as e-mail address and phone number, so that the recruiter can contact the applicant afterwards. By applicant submitting their application form, there will be a tons of job applications and need to be reviewed by HR to sort out the eligible applicants to take over the job. This phase frequently includes initial resume assessment, automated applicant tracking systems (ATS), and the manual review of candidates' qualifications. After that, HR will shortlist the applicants whom are passed for their qualifications and need to proceed with interview session. Shortlisting ensures a more effective selection process by enabling HR to concentrate resources on candidates with the greatest potential (A. Yalcin, 2019).

The next step would be interview potential candidates. To assess their qualifications for the role, candidates who made the shortlist are invited to participate in interviews. The process may include several rounds of interviews, comprising technical evaluations, behavioral assessments, and initial screenings. Hiring managers and HR teams will assess candidates' skills, backgrounds, problem-solving skills, and cultural compatibility through standardized interview formats. To evaluate specific skills, interviews might sometimes incorporate group discussions, practical exercises, or presentations. This phase is crucial for identifying if the applicant aligns with the company's goals and values. This interview session is the most effective way to determine if an applicant is suitable for a particular job and a good fit for the company (Ramadhani F. & Zarlis M., 2019).

The fifth step is to select the most suitable candidates. After conducting interviews and evaluating performance through a variety of assessments, HR teams collaborate with hiring managers to select the best applicants for the position. When making this decision, a number of factors are taken into account, including credentials, skills, experience, interview outcomes, and cultural compatibility. HR may also conduct reference or background checks to verify the veracity of the candidate's claims. The people who best meet the needs of the organisation and demonstrate the capacity to make a major contribution to its success are selected. It is crucial in selecting the most suitable candidate for a job as it will enhances organizational performance, reduces turnover costs and improves team dynamics (Rathee R. & Bhuntel R., 2017).

The last step is HR teams are required to make a job offer to the candidate. HR creates a detailed offer letter that specifies the terms of employment, such as the job title, duties, salary, benefits, working hours, and other contractual information. The offer letter contains details regarding the company's policies and expectations. HR conveys the offer to the candidate, addresses any inquiries, and negotiates terms if needed. By this offer letter, it will mark as an official invitation from the company to the candidate by congratulates and welcoming them as they successfully hired for the desired job. As soon as the candidate agrees to the offer, the onboarding procedure starts, formally welcoming them to the organization.

2.3 Issues and challenges in HR recruitment

The field of Human Resources (HR) recruitment faces a myriad of issues and challenges that can impact the efficiency and effectiveness of the hiring process. To provide a comprehensive understanding, this section will delve into **three** significant issues and challenges encountered in HR recruitment, offering detailed insights into their root causes and potential implications for organizations.

2.3.1 Lack of applicants

The lack of qualified candidates is a significant obstacle faced by many recruitment systems, heavily impacting an organization's ability to fill open positions. A key factor contributing to this problem is the gap between the skills that candidates have and the requirements of the jobs. As industries evolve and job roles become increasingly specialized, organizations often find it challenging to locate candidates with the necessary skills and expertise. Additionally, fierce rivalry for talented employees in certain sectors exacerbates this issue, since different companies vie for a limited talent pool, complicating the process for any single organization to attract suitable candidates (Rathee R. & Bhuntel R., 2017).

Since organizations operate in a continually evolving environment that demands diverse skill sets, depending solely on CVs has proven inadequate, frequently leading to a mismatch between candidates and job requirements. Additionally, the competition for top-tier talent is fierce, prompting employers to develop a strong brand identity while consistently engaging potential candidates through innovative methods such as gamification and social media interaction. This proactive approach is essential for tapping into a wider talent pool and ensuring that organizations can draw in individuals who are both skilled and compatible with their culture and values (Uma V. R. et al., 2023).

2.3.2 Distributed recruitment systems

One of the challenges in HR recruitment is the existence of distributed recruitment systems, where the recruitment process is spread across multiple platforms and tools rather than being centralized in a single system. This fragmentation can lead to inefficiencies, as HR teams may need to juggle several systems for tasks such as posting job openings, tracking applications, scheduling interviews, and communicating with candidates. When recruitment functions are not integrated into one cohesive system, it can result in duplication of efforts, increased administrative work, and a disjointed experience for both the HR team and applicants. Furthermore, managing multiple systems can lead to data silos, making it difficult to have a clear, comprehensive view of the recruitment pipeline and hindering effective decision-making.

Additionally, distributed recruitment systems can create barriers to collaboration within HR teams and other departments involved in the hiring process. Different team members might be working with separate tools, making it challenging to share candidate information, feedback, or updates in real time. This lack of integration can slow down the recruitment process, causing delays in critical stages such as interviews or job offers. Moreover, candidates may experience a fragmented application process, receiving communication from multiple platforms and encountering inconsistencies in information. To address these challenges, organizations can benefit from adopting an integrated recruitment system that centralizes all recruitment activities into a unified platform, streamlining processes and enhancing both efficiency and candidate experience.

2.3.3 Poor candidate experience

A poor candidate experience can have significant negative implications for an organization's recruitment efforts and overall employer brand. When candidates encounter a lack of communication, unclear job expectations, or inefficient interview processes, they often feel undervalued or frustrated, which can lead to them withdrawing from the process or rejecting job offers. For example, delayed responses to applications or feedback, lack of transparency about the status of the hiring process, or a complicated application interface can create a sense of disorganization or disregard for the candidate's time. This experience not only harms the organization's reputation with that particular candidate but can also lead to negative reviews on employer rating platforms, further deterring high-quality candidates from applying in the future.

Furthermore, a poor candidate experience can diminish an organization's ability to attract top talent in the long term. Word-of-mouth and online reviews play a pivotal role in shaping perceptions about a company, and a negative experience can spread quickly. Talented professionals often rely on personal networks or online platforms to assess potential employers, and negative feedback can lead to fewer applicants, particularly among highly qualified individuals who may have other job opportunities.

For these reasons, it's essential for organizations to invest in improving candidate experience by streamlining the application process, providing timely updates, ensuring respectful and professional interactions during interviews, and maintaining clear communication throughout the hiring process. This not only enhances the likelihood of attracting the right talent but also positions the organization as an employer of choice.

2.4 Comparison of existing HR systems

There are a lot of online-based job recruitment portal designed with different with different operations and functionalities. In this section, **five** different HR recruitment system will be reviewed where each one of them has its own benefits and drawbacks. The systems that I chose to compare are **JobStreet (JobStreet, n.d.)**, **LinkedIn (LinkedIn, n.d.)**, **SPA Malaysia (SPA Malaysia, n.d.)**, **Glassdoor (Glassdoor, n.d.)** and **MYFutureJobs (MYFutureJobs, n.d.)**.

2.4.1 List of five existing HR recruitment systems

2.4.1.1 JobStreet

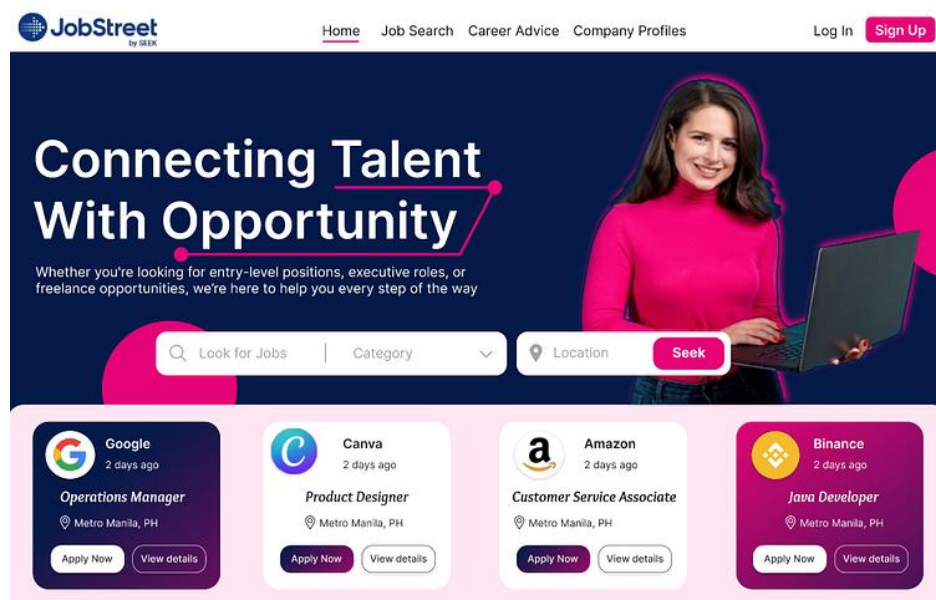


Figure 2.3 JobStreet Homepage (JobStreet, n.d.)

JobStreet is a prominent online job platform that links job applicants with companies in numerous sectors. Founded in 1997, it primarily functions in Southeast Asia, catering to nations like Malaysia, Singapore, the Philippines, Indonesia, and Vietnam. JobStreet offers a platform for posting jobs, tracking applications, and managing talent, streamlining recruitment for businesses while

providing tools such as resume creation and career guidance for job hunters. As a component of SEEK which is a worldwide frontrunner in employment solutions, JobStreet utilizes technology and insights to simplify recruitment and enable people to enhance their careers. Its dedication to closing employment gaps has established it as a reliable source for millions of users in the area (JobStreet, n.d.).

2.4.1.2 LinkedIn

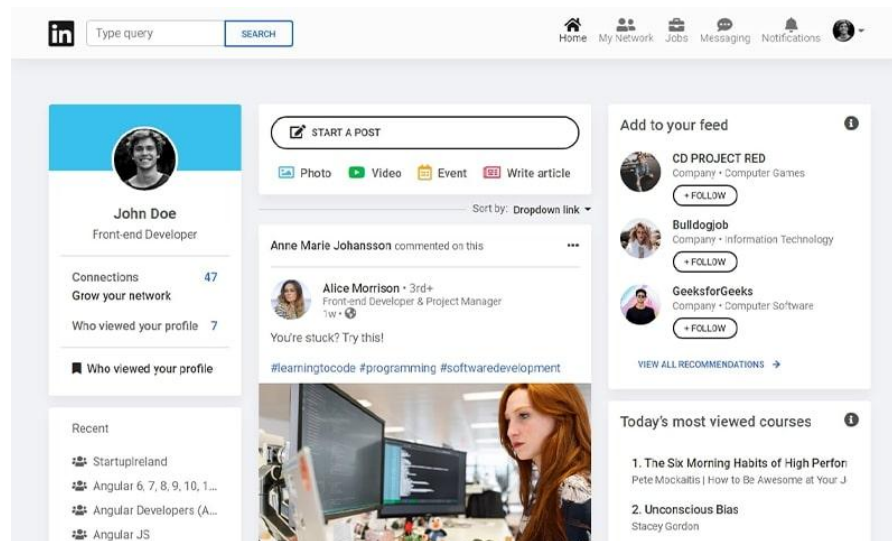


Figure 2.4 LinkedIn Homepage (LinkedIn, n.d.)

The second existing HR systems that I bring in comparison table below is LinkedIn. LinkedIn, the world's largest professional networking platform, was established to connect professionals from different sectors with resources, opportunities, and each other. LinkedIn, founded in 2003 and based in Sunnyvale, California, enables users to create detailed profiles showcasing their achievements, experiences, and skills. Featuring job postings, employee endorsements, and LinkedIn Learning, it simplifies the process of job searching, hiring, professional development, and connecting with others in the industry. By 2024, the platform is expected to have more than 900 million members globally, acting as a space for sharing professional trends and ideas. LinkedIn, acquired by Microsoft in 2016, employs cutting-edge technology to provide data-centric solutions for professional development and talent recruitment (LinkedIn, n.d.).

2.4.1.3 SPA Malaysia



Figure 2.5 SPA Malaysia Homepage (SPA Malaysia, n.d.)

The third existing online-based job portal is SPA Malaysia. The Public Service Commission of Malaysia, also known as Suruhanjaya Perkhidmatan Awam Malaysia, is the main organisation in charge of overseeing and arranging the hiring of civil workers for the Malaysian public sector. In order to preserve the effectiveness and integrity of the Malaysian civil service, SPA was founded in 1957 in accordance with Article 144 of the Federal Constitution. It guarantees a transparent, merit-based hiring procedure. Through tests, interviews, and evaluations, the agency manages the hiring, advancement, and selection of applicants for a range of federal jobs. Through its online portal, which offers job applications, status tracking, and application instructions, SPA Malaysia also provides a platform for Malaysians to investigate career options in the public sector (Suruhanjaya Perkhidmatan Awam Malaysia, n.d.).

2.4.1.4 Glassdoor

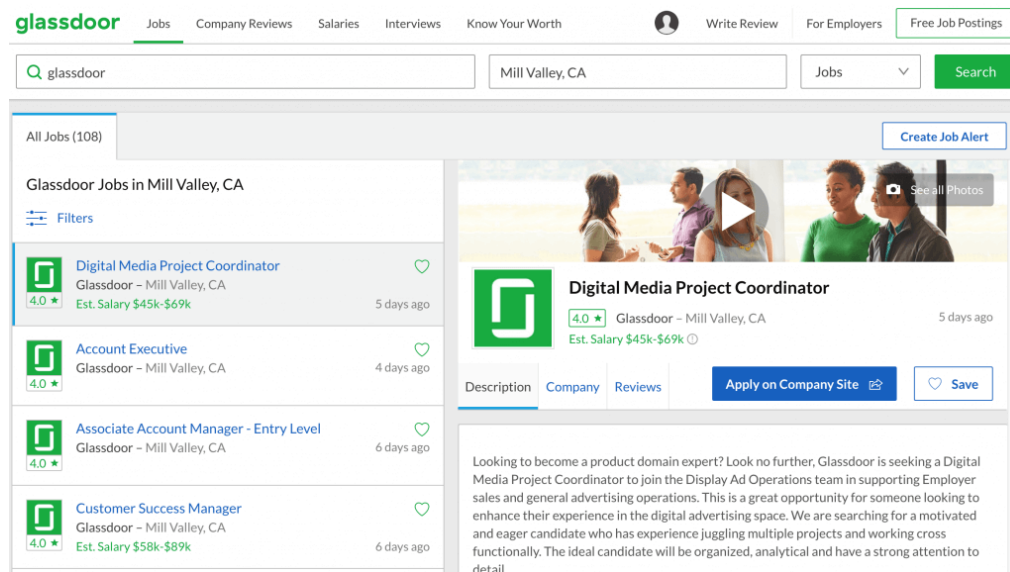


Figure 2.6 Glassdoor Homepage (Glassdoor, n.d.)

The fourth system in comparison table is Glassdoor job portal. Glassdoor is a leading online platform offering information about companies and careers, enabling job seekers and employees to make knowledgeable choices regarding their professional paths. Established in 2007 and based in San Francisco, California, Glassdoor provides a plethora of user-created content, such as company reviews, salary information, interview accounts, and workplace observations. Job applicants can browse job postings and acquire insights into workplace culture, leadership styles, and employee happiness. Employers, for their part, utilize Glassdoor as a resource for branding and attracting talent. Aiming to promote workplace transparency and with its integration under the Recruit Holdings umbrella alongside Indeed, Glassdoor has emerged as a reliable source for millions globally (Glassdoor, n.d.).

2.4.1.5 MYFutureJobs



Figure 2.7 MYFutureJobs Homepage (MYFutureJobs, n.d.)

The last and fifth existing HR recruitment system in the comparison table is MYFutureJobs system. Malaysia's national employment portal, MYFutureJobs, is run by the Ministry of Human Resources' Social Security Organisation (PERKESO). It was started in 2020 with the goal of helping employers and job seekers match while assisting government efforts to combat unemployment and workforce development. With features including skill evaluations, career counselling, training program access, and personalised job suggestions, MYFutureJobs provides a comprehensive platform. The platform is available to employers for workforce planning and talent acquisition. In addition to handling government employment programs and hiring incentives, MYFutureJobs is a vital component of Malaysia's active labour market policies, which support economic growth and recovery (PERKESO, n.d.).

2.4.2 Description of features in comparison between existing HR recruitment systems

In the comparison table of existing HR systems below, there are eight different features to compare between these systems. The features are **type of platforms, software requirements (front-end, back-end, database management systems), job search, end-user hardware requirements and accessibility.**

2.4.2.1 Type of platforms

The type of platforms pertains to the medium or technology utilized by a recruitment system, including web-based platforms, mobile apps, or desktop software. This aspect is vital as it influences the system's accessibility, usability, and alignment with user preferences. For instance, online platforms are easily reachable on any internet-enabled device, which makes them suitable for a wide audience, whereas mobile apps target users desiring convenience and accessibility while traveling. Desktop applications might provide specific features but tend to be less adaptable. Evaluating the kinds of platforms is essential since it influences how well job seekers and employers can engage with the system. It also affects user engagement, adoption levels, and the effectiveness of the system's integration into the current workflows of businesses or individuals. Grasping these distinctions aids in pinpointing the platform that most aligns with the requirements and tastes of the target audience (A. Yalcin, 2019).

2.4.2.2 Software requirements (front-end)

Second feature to be compare is front-end as it is one of software requirements for system. The front-end of an HR recruitment system pertains to the user interface (UI) and user experience (UX) design that job applicants, employers, and HR professionals engage with directly. It includes the visual components, navigation, adaptability, and general usability of the system. This aspect is crucial because it affects how easily users can carry out actions such as posting jobs, looking for opportunities, or handling applications. An effectively designed front-end guarantees that the system is intuitive, accessible, and user-friendly, which boosts engagement and minimizes the learning curve for newcomers. Evaluating the front-end of various systems aids in determining their capacity to deliver a smooth experience across devices, adhere to accessibility guidelines, and meet user expectations. A well-designed front-end not only draws in users but also guarantees that they can engage with the system effectively and productively.

2.4.2.3 Software requirements (back-end)

The next feature to be compared is the back-end of the system. The server-side functionality that drives an HR recruitment system, such as databases, server logic, APIs, and system design, is referred to as the back-end. It is in charge of managing integrations with third-party technologies like payroll or email services, processing user requests, handling data storage, and guaranteeing security. It is crucial to compare the back-end of various systems since it has a direct bearing on the system's dependability, security, scalability, and performance. A strong back-end, for instance, guarantees quick

response times even during periods of high user traffic and offers safe management of private information, such as payroll and personal data. We can determine which solutions provide superior infrastructure, compatibility with contemporary technology, and support for cutting-edge features like data analytics or AI-powered application tracking by evaluating the back-end. This comparison helps determine the system's ability to meet the technical demands of organizations and provide long-term value.

2.4.2.4 Software requirements (Database Management Systems)

The fourth feature to be compare between all five existing HR recruitment systems is Database Management Systems which is one of software requirements of a system. The database management system (DBMS) of an HR recruitment system refers to the software used to organize, store, retrieve, and manage the data related to job postings, applications, user profiles, and system activities. It forms the backbone of the system, ensuring data integrity, scalability, and efficient access. Comparing the DBMS across different systems is crucial because it affects the system's ability to handle large volumes of data, support complex queries, and maintain performance under heavy usage. For example, systems using relational databases like MySQL or PostgreSQL may excel in structured data handling, while those with NoSQL databases like MongoDB might offer better flexibility for unstructured data. Databases are essential for hiring because they let businesses keep track of possible applicants, allowing for more focused hiring efforts (Yalcin A., 2019). They increase the likelihood of finding qualified applicants by facilitating effective matching between job seekers and available positions. Databases also facilitate the hiring process by arranging candidate data for convenient access and analysis.

2.4.2.5 Job search

The fifth comparison feature is job search feature. The job search function in a recruitment system allows job seekers to locate and apply for openings according to specific criteria like keywords, location, type of job, and industry. It frequently features filtering options, sorting functions, and the ability to save searches or establish alerts for new listings. This functionality simplifies the job search process, enhancing efficiency for candidates in finding appropriate job openings (Yalcin A., 2019). AI-powered suggestions based on the user's profile, search history, or uploaded resume are another example of advanced job search tools. Because it saves time and displays the most pertinent results, this feature immediately affects the user experience and raises satisfaction and engagement. Employers may increase the effectiveness and success of the hiring process by ensuring that the suitable people can readily see their job ads thanks to an efficient job search function.

2.4.2.6 End-user hardware requirements

Next comparison feature is end-user hardware requirements. Hardware requirements denote the precise physical parts and specifications required for a system or application to operate effectively. This encompasses the required processing capability (CPU), memory (RAM), storage space, and any extra peripherals (such as sensors or networking equipment) that are vital for peak performance. Satisfying these criteria guarantees that the software operates efficiently and effectively without any performance problems (Li H., 2021). This factor is especially important for companies looking to optimize recruitment procedures while ensuring high standards of availability and security.

2.4.2.7 Accessibility

The last feature to be compared between these five HR existing systems is accessibility. Accessibility in HR recruitment systems refers to the ease with which candidates can access and navigate the recruitment process, including job postings, application forms, and communication channels. E-recruitment systems enhance accessibility by allowing candidates to apply online at any time, using various devices, and providing a wide range of job portals. This ensures a diverse candidate pool and improves the overall efficiency of the recruitment process (Rathee R. & Bhuntel R., 2017). Accessibility in HR recruitment systems is essential because it guarantees that every candidate, irrespective of their abilities or disabilities, can engage in the application process. This inclusiveness not only expands the talent pool for employers but also improves the company's image and dedication to diversity. Moreover, accessible systems can enhance user experience, resulting in increased engagement and satisfaction for job seekers (Ramadhani F. & Zarlis M., 2019).

Table 2.1 Comparison table between existing HR recruitment systems

	JobStreet	LinkedIn	SPA Malaysia	Glassdoor	MYFutureJobs
Type of platforms	Web-based with mobile apps	Web-based with mobile apps	Web-based only	Mobile app and PWAs	Web-based with mobile apps
Software requirements (Front-end)	Core languages: HTML, CSS and JavaScript	Core languages: HTML, CSS and JavaScript	Core languages: HTML, CSS and JavaScript	Core languages: HTML, CSS and JavaScript	Core languages: HTML, CSS and JavaScript
	Styling libraries: Bootstrap and custom CSS	Styling libraries: Custom CSS with some Bootstrap	Styling libraries: Bootstrap	Styling libraries: Bootstrap, Custom CSS	Styling libraries: Bootstrap
	Dynamic loading: AJAX	Dynamic loading: AJAX and GraphQL	Dynamic loading: Minimal AJAX, mostly static content	Dynamic loading: AJAX and React for dynamic pages	Dynamic loading: AJAX
Software requirements (Back-end)	Core language: PHP	Core language: Java	Core language: PHP	Core language: PHP, Java	Core language: PHP
	Framework: Laravel Framework	Framework: Play Framework (Scala)	Framework: Custom PHP	Framework: Spring Boot (Java) and custom PHP	Framework: Laravel Framework
	API system: RESTful APIs	API system: RESTful and GraphQL APIs	API system: Basic RESTful APIs for government data	API system: RESTful APIs	API system: RESTful APIs

Software requirements (Database Management Systems)	MySQL	Oracle, MySQL and some NoSQL (for analytics)	MySQL or PostgreSQL	MySQL	MySQL
Job search features	Advanced keyword search with filters for location, salary, and job type.	Comprehensive search with networking options and personalized recommendations.	Basic keyword search for government job vacancies.	Search with filters and access to company reviews and salary insights.	Keyword search with job-matching recommendations and career advice.
End-User Hardware requirements	- PC/Laptop (Windows/macOS/Linux) - Mobile devices (Android/iOS) - Stable internet connection (5 Mbps or more)	- PC/Laptop (Windows/macOS/Linux) - Mobile devices (Android/iOS) - Stable internet connection (5 Mbps or more)	- PC/Laptop (Windows/macOS/Linux) - Basic smartphones for accessing website - Stable internet connection	- PC/Laptop (Windows/MacOS/Linux) - Mobile devices (android/IOS) - Stable internet connection (5 Mbps or more)	- PC/Laptop (Windows/macOS/Linux) - Mobile devices (Android/iOS) - Stable internet connection
Accessibility	Online only	Can be accessed by both online and offline. Offline only for profile viewing and article reading .	Online only	Online only	Online only

2.4.3 Comparison of features between existing HR recruitment systems

Based on comparison table above, I will explain in detail for each feature comparison between these existing HR recruitment systems.

2.4.3.1 Type of platforms

There are three HR recruitment systems, which are JobStreet, LinkedIn and Glassdoor that have both web-based application and mobile apps. SPA Malaysia only has web-based system. While Glassdoor have both mobile apps and Progressive Web Application (PWAs). Based on this comparison, we can identify that all five systems have web-based as their type of system platforms. Four systems use mobile apps as their platform type. Align with my system proposal which is Online-based portal for Integrated Hiring in HR recruitment (OPIH), it is reasonable for me to choose **web-based** as the system's type of platform.

2.4.3.2 Software requirements (front-end)

All five systems use HTML, CSS and JavaScript as their core languages of front-end. All five systems use these core technologies because they are universally supported by browsers and form the foundation for more advanced frameworks and libraries.

As for styling libraries, JobStreet, LinkedIn and Glassdoor use custom CSS and bootstrap. While both SPA Malaysia and MYFutureJobs both use only bootstrap for their styling libraries.

For dynamic loading, all five systems use AJAX but some system have their own additional dynamic loading feature. For example, LinkedIn uses AJAX and GraphQL, while Glassdoor also use React for their dynamic loading.

As for the proposed system, I will use HTML, CSS and JavaScript as its core languages. Then I will choose TailwindCSS with some Bootstrap for its styling libraries. And AJAX for the dynamic loading feature.

2.4.3.3 Software requirements (back-end)

Most of the system which are JobStreet, SPA Malaysia, Glassdoor and MYFutureJobs use PHP as their core language. Two of the systems which is LinkedIn and Glassdoor use Java as another core language for the system's back-end.

JobStreet and MYFutureJobs use Laravel framework as their back-end framework. This framework is known as one of the most reliable back-end frameworks in global trend (Dainis B., 2023). LinkedIn uses Play framework, which is based on Scala language. SPA Malaysia uses custom PHP as

their back-end framework. While Glassdoor uses Spring Boot (Java) and custom PHP for its back-end framework.

For API system, all five systems use RESTful APIs. A RESTful API (Representational State Transfer Application Programming Interface) is a web service that follows the principles and limitations of the REST architectural style. This API introduce a well-known resource-based structure such as GET, POST, PUT & DELETE (RedHat, n.d.).

I will use PHP as the core language of the proposed system. Laravel framework will be used as it's back-end framework as this framework is originally built using PHP language (Laravel, n.d.). As for API system, the proposed system will use RESTful APIs.

2.4.3.4 Software requirements (Database Management System)

All five systems use MySQL as their main database. Systems mainly utilize MySQL as their main database because of its dependability, user-friendliness, and robust performance in managing substantial amounts of data. MySQL provides strong security features, scalability, and the ability to handle complex queries, making it ideal for applications such as e-recruitment systems that need effective data management and retrieval. Moreover, its compatibility with PHP programming improves the development workflow, enabling smooth integration in web applications (Ramadhani F. & Zarlis M., 2019).

The proposed system will use MySQL as its primary database.

2.4.3.5 Job search features

The job search tools differ greatly among JobStreet, LinkedIn, SPA Malaysia, Glassdoor, and MYFutureJobs, highlighting their unique areas of emphasis. JobStreet provides an enhanced keyword search feature with options to filter by location, salary, and job type, making it perfect for personalized job searching (Jobstreet, n.d.). LinkedIn adopts a thorough strategy, merging search functionalities with networking features and tailored suggestions to link users with prospects via professional connections (LinkedIn, n.d.). Conversely, SPA Malaysia offers a simpler keyword search that targets exclusively government job openings (SPA Malaysia, n.d.). Glassdoor improves its search features by adding insights like company reviews and salary data, enabling users to make well-informed choices (Glassdoor, n.d.). MYFutureJobs enhances its keyword search by providing job-matching suggestions and career guidance, assisting users looking for support during their job search (MYFutureJobs, n.d.). These varied characteristics address different user requirements, ranging from simple searches to comprehensive career investigation.

The proposed system will also use job search features in the system. The search feature can filter job type, job title and job description. The search can also be used in administration system, where

the feature will be put in all pages such as application list, shortlist for interview and interview list page. The search feature is mandatory for ease in searching out precisely for desired applicant and any sort of details.

2.4.3.6 End-user hardware requirements

The hardware requirements of end-user are similar for each existing HR systems. The required hardware for end-user to use the systems is PC that uses any operating systems (OS) like MacOS, Windows and Linux. These systems are also compatible to use in mobile devices that use either Android or Ios.

And the most important part of the hardware requirements is stable internet connection. Some of the systems like JobStreet, LinkedIn and Glassdoor are required to have a connection speed of 5mbps or above.

Hardware that is required for this proposed online-based job portal is a computer or laptop with an internet connection, as it is a web application. During the development phase, we required a desktop or computer.

2.4.3.7 Accessibility

User are needed to access all these existing systems only by online. However, there are certain systems that is permissible to access by offline, but limited only to some functions. For example, LinkedIn can be accessible by offline if user want to view profile and read article by saving those articles into “save for later” folder in online mode, then user can read them when it is offline connection. The proposed system can only be accessed through online mode, as it is online-based job portal and is required to use a stable internet connection to access it.

2.5 Required tools for development

To develop the proposed **Online-based Portal for Integrated Hiring in HR Recruitment (OPIH)** efficiently, various development tools will be required.

For the **Integrated Development Environment (IDE)**, **Visual Studio Code (VS Code)** is recommended due to its lightweight nature, extensive extensions, and compatibility with Laravel development. **PHPStorm** is another option, offering deep PHP and Laravel integration.

For **version control**, **Git** will be used alongside **GitHub** for collaborative development, tracking changes, and maintaining code integrity.

For **package management**, **Composer** will manage PHP dependencies, ensuring smooth integration with Laravel packages, while **npm** or **yarn** will handle JavaScript dependencies.

A **local development server** such as **Laragon** or **XAMPP** will be used to set up a testing environment, including **Apache**, **MySQL**, and **PHP**. **Docker** may also be considered for containerized deployment.

For **database management**, **MySQL Workbench** or **phpMyAdmin** will be used for visualizing and managing the database efficiently.

For **API testing**, **Postman** will be utilized to test RESTful API endpoints to ensure data retrieval and manipulation function correctly.

For **testing and debugging**, **PHPUnit** will be used for unit testing Laravel components, while browser developer tools (Chrome DevTools) will assist in front-end debugging.

For **deployment**, the system can be deployed using **Laravel Forge** or **GitHub Actions** for automated deployment and **cPanel** for shared hosting environments.

These tools will streamline the development process, ensuring efficient coding, testing, and deployment of the system.

2.6 Summary

In this chapter, those five systems above are reviewed and after making comparison with all those systems with the proposed system, it is identified that there are lots of functionality that need to be added into the proposed system. The analysis reveals areas where improvements can be made to meet the growing demands of modern HR recruitment processes. By identifying gaps in the existing systems, the proposed system aims to offer a more streamlined, efficient, and user-centric approach to recruitment management.

CHAPTER 3: METHODOLOGY

3.1 Introduction

In this chapter, we will study the approach taken to develop the web-based application. As mentioned in the first chapter, Agile methodology will be employed for developing this web-based application. In the methodology section, various techniques, schedules, and strategies are thoroughly outlined that are employed to enhance this application.



Figure 3.1 Agile Methodology

This chapter establishes the foundation for the system's development through Agile methodology and organized planning, guaranteeing that the final product fulfill the goals set in previous chapters and aligns with the overarching aims of the OPIH recruitment portal. This project will use this Agile methodology by following these phases which is **Plan, Design, Develop, Test, Prototype Deploy and Review** (InterQuality, 2024).

The development of the **OPIH: Online-based Portal for Integrated Hiring in HR Recruitment** requires a methodology that emphasizes flexibility, iterative progress, and continuous feedback to accommodate the dynamic and evolving needs of online job recruitment processes. For this reason, the Agile methodology is selected, as it provides a structured yet adaptable framework that supports the development of complex systems like the OPIH recruitment portal (Paulk M. C., 2002). This methodology is particularly well-suited for projects that involve online-based platforms, where user experience, data integration, and real-time updates are critical. Agile allows the development team to stay closely aligned with HR professionals and other stakeholders, ensuring the system adapts to the fast-paced and ever-changing landscape of recruitment.

By implementing Agile, this project guarantees that every stage—**Plan, Design, Develop, Test, Prototype Deploy, and Review**—is carried out with an emphasis on providing incremental value to the web-based job portal. This method promotes ongoing cooperation with HR teams and job applicants, making certain that input is included in each phase of development. The iterative approach of Agile methodology reduces the risks linked to extensive system developments, all while keeping the portal user-friendly, scalable, and operational. By utilizing this approach, the OPIH job portal aims to resolve the shortcomings in the hiring process, offering a streamlined and effective solution for both HR teams and job seekers.

3.2 Plan

This part outlines the planning stage of the project, and it represents the initial stage of the Agile development life cycle. The planning phase began with an activity to gather requirements, which identifies both functional and non-functional requirements, as well as user needs related to software and system specifications. We utilized the comparison table of current HR recruitment systems from chapter two (Literature Review), as a requirement analysis for this project. Additionally, UML diagrams like use case diagrams, sequence diagrams, and activity diagrams are utilized to illustrate the flow of the project, outline the overall process, and specify the interactions and relationships in this proposed system.

3.2.1 Use case diagram

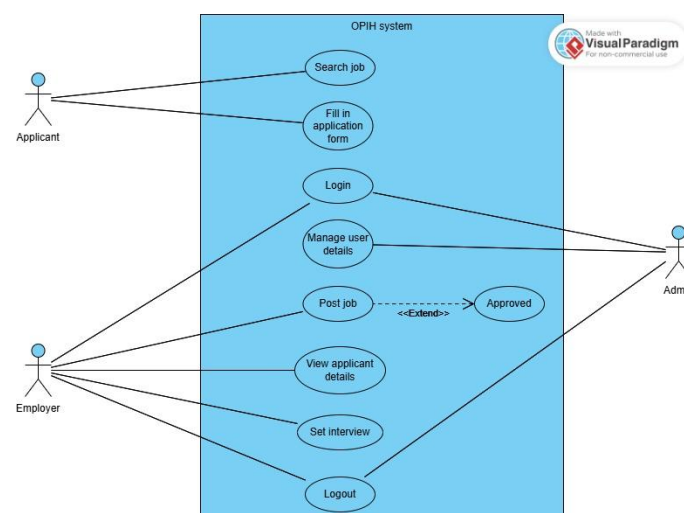


Figure 3.2 Use Case diagram

Based on the above use case diagram, there are three actors as well as nine use cases and one include use case, one extends are identified. In this diagram, the three actors are the Applicant (job seeker), Employer (company representative) and system admin.

Table 3.1 Use case: Search job

Use Case Name	Search Job
Actor	Applicant
Pre-condition	The user has access to the job portal and a device with an internet connection.
Post-condition	The user views job listings matching their search criteria.
Main flow	1. The user navigates to the job portal homepage. 2. The user enters keywords, filters (e.g., job location, category), or both. 3. The system processes the query and retrieves matching job postings. 4. The system displays the results to the user in a list format. 5. The user reviews the results and selects a job for detailed information.

Table 3.2 Use case: Fill in application form

Use Case Name	Fill in Application Form
Actor	Applicant
Pre-condition	The user has selected a job posting and is on the job application page.
Post-condition	The application form has been submitted successfully, and the system confirms receipt.
Main flow	1. The user selects the 'Apply' button on the job posting. 2. The system displays the application form. 3. The user fills in the required fields (e.g., personal information, education, emergency contact information). 4. The user reviews the completed form to ensure accuracy. 5. The user submits the application form by clicking 'Submit' button. 6. The system validates the input and stores the application in the database.

	7. The system displays a confirmation message to the user.
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Table 3.3 Use case: Login

Use Case Name	Login
Actor	Employer, Admin
Pre-condition	Username and password should not be empty
Post-condition	None
Main flow	1. The user navigates to the login page. 2. The user enters their username/email and password. 3. The user clicks the 'Login' button. 4. The system validates the credentials. 5. If valid, the system authenticates the user and start the session. 6. The system redirects the user to their dashboard.
Alternate flow	4a. If the credentials are invalid, the system displays an error message (e.g., "Invalid username or password"). 4b. The user re-enters credentials and repeats the process.

Table 3.4 Use case: Manage user details

Use Case Name	Manage user details
Actor	Admin
Pre-condition	The admin is logged into the system and has the appropriate permissions to manage user details.
Post-condition	Admin add, update or delete user details.
Main flow	1. The admin navigates to the 'User Management' section in the system dashboard. 2. The admin selects a specific user from the list of users. 3. The system displays the user's details (e.g., name, email, role). 4. The admin updates fields (e.g., role) or deletes the user. 5. The admin clicks the 'Save changes' button or 'Delete' button. 6. The system validates the input and saves the changes in the database. 7. The systems display a confirmation message indicating success.

Alternate flow	8. If validation fails (e.g., required fields missing, invalid email), the system displays an error message, and the admin is prompted to correct the input.
-----------------------	--

Table 3.5 Use case: Post job

Use Case Name	Post Job
Actor	Employer
Secondary Actor	Admin
Pre-condition	• The Employer must login and post a job vacancy. • The Admin is logged in and has the authority to approve or reject job postings.
Post-condition	Require admin approval for visible in the system
Main flow	1. The Employer navigates to the “Post Job” section in the system. 2. The Employer fills out the job details (e.g., title, description, responsibilities). 3. The Employer clicks the “Submit” button. 4. The system saves the job as a draft and notifies the Admin of the pending approval. 5. The Admin reviews the job posting. 6. The Admin approves the job posting. 7. The system posts the job on the portal and alerts the Employer about the approval.
Alternate flow	8. If the Admin rejects the job posting, they provide a reason for rejection. 9. The system notifies the Employer of the rejection, including the Admin’s feedback. 10. The Employer revises the job details and resubmits the job for approval.

Table 3.6 Use case: View applicant details

Use Case Name	View Applicant Details
Actor	Employer
Pre-condition	• The applicant has submitted an application form for a job posting. • The Employer is logged in and has the necessary permissions to view applicant details.
Post-condition	The Employer either schedules an interview or discards the applicant.
Main flow	1. The Employer navigates to the ‘Applications’ section in the system, then hover to ‘Application List’ sub-section. 2. The system displays a list of applicants, showing summary details (e.g., name, application date). 3. The Employer can filter the application list by clicking on ‘Filter’ button to specify the job posting, and also can click search bar to search specific applicant. 4. The Employer clicks on ‘view’ button at the right side of the applicant’s row to view detailed information. 5. The system displays the applicant’s details as filled in the application form (e.g., personal information, resume, cover letter). 6. The Employer reviews the details and decides on the next action. 7. If the Employer decides to proceed, they click the “Set Interview” button. 8. The system redirects to the “Shortlisted For Interview” page where interview details are entered. 9. If the Employer decides to discard the applicant, they click the ‘Delete’ button. 10. The system marks the applicant as discarded and removes them from the active applicant list.

Table 3.7 Use case: Set Interview

Use Case Name	Set Interview
Actor	Employer
Pre-condition	The Employer has reviewed an applicant's details and decided to proceed with an interview.
Post-condition	The interview is scheduled, and the applicant is notified.
Main flow	1. The Employer selects an applicant for the interview process. 2. The system prompts the Employer to enter interview details (e.g., date, time, interview mode). 3. The Employer fills in the required details and clicks the 'Submit' button to set the interview. 4. The system saves the interview details and updates the applicant's status to "Call for Interview". 5. The system sends an email notification to the applicant with the interview details (date, time, location or video link).
Alternate flow	1. If the Employer cancels the interview scheduling, no changes are saved, and the applicant's status remain unchanged. 2. If required fields (e.g., date, time) are missing, the system prompts the Employer to fill in the missing information.

Table 3.8 Use case: Logout

Use Case Name	Logout
Actor	Employer, Admin
Pre-condition	The user is logged into the system
Post-condition	The user is logged out and redirected to the public homepage or login page.
Main flow	1. The user clicks the 'Logout' button in the system's header or menu. 2. The user confirms the logout action by clicking 'Yes' (or the system logs out automatically). 3. The system ends the user session and clears the session data. 4. The system redirects the user to the public homepage or login page.

Alternate flow

3a. If the user cancels the logout action, the system returns to the current page, and no changes are made.

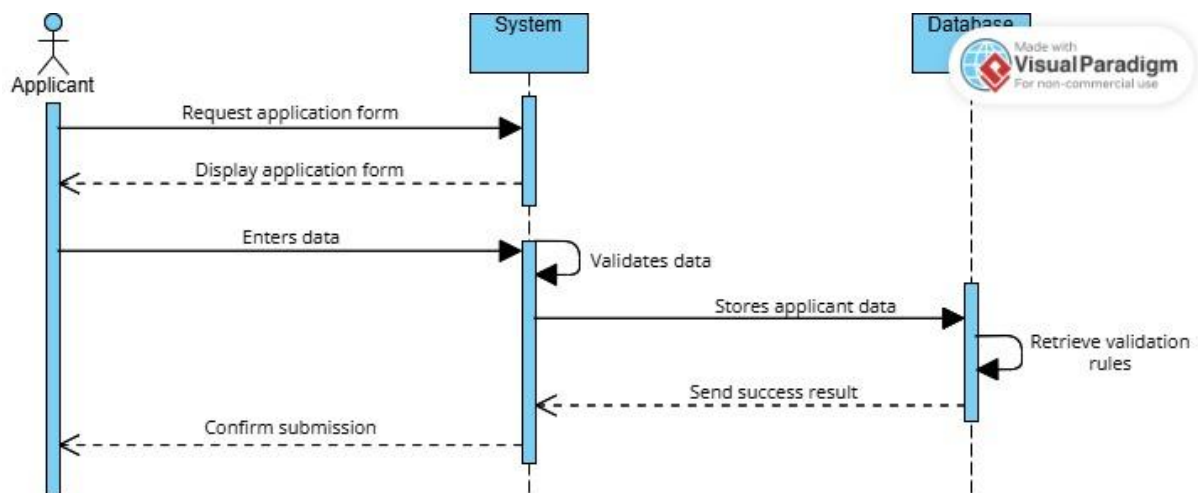
3.2.2 Sequence diagram: Fill in application form

Figure 3.3 Sequence diagram (Fill in application form)

Above is the sequence diagram for the applicant. The diagram shows that the applicant, which is the job seeker will request the application form by clicking “Apply” button from job advertisement page. Then the system will redirect to application form page and display the job application form. Applicant will key-in their data such as personal information and documents into the application form. Then the applicant will click “submit” button, as to submit their completed form. The system will validate the data keyed-in by applicant. If the validity of data is proven, then the system will store applicant data into the database. The database will retrieve validation rules of the data given by the system, then it will store the data. As result, the system will send confirmation message to the applicant as a signal of confirm submission of the application form.

3.2.3 Sequence diagram: Post job vacancy

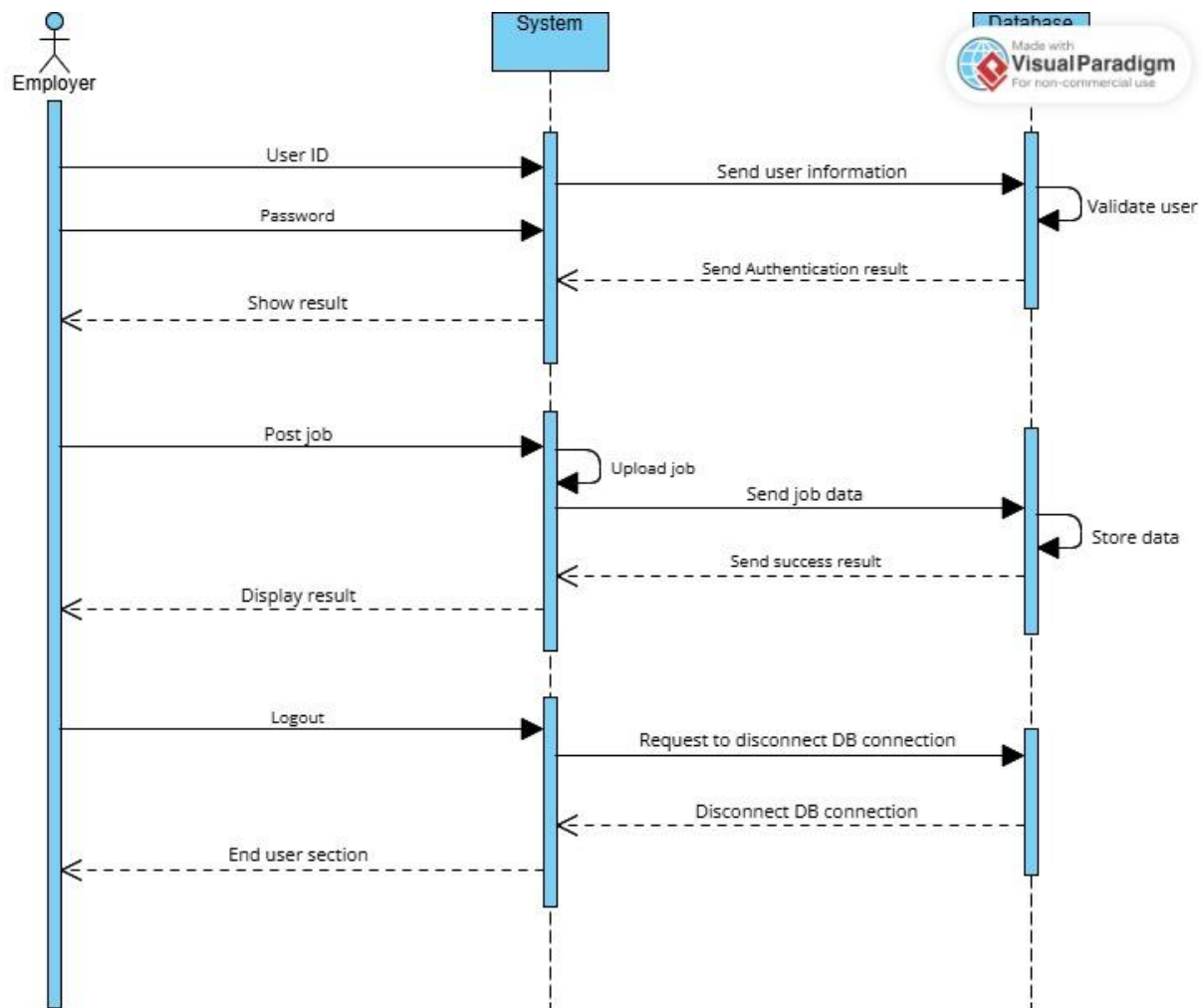


Figure 3.4 Sequence diagram (Post job vacancy)

The diagram above illustrates the sequence for the Employer. The diagram illustrates that as the employer logs in by entering the user ID and password into the system, the system subsequently transmits the information to the database. The system receives the authentication results from the database and then provides the outcome to the employer.

The employer will list the job opening and submit it into the system. The system transmits information to the store database. The database transmits successful results to the system, making them visible to the user.

3.2.4: Sequence diagram: View applicant details

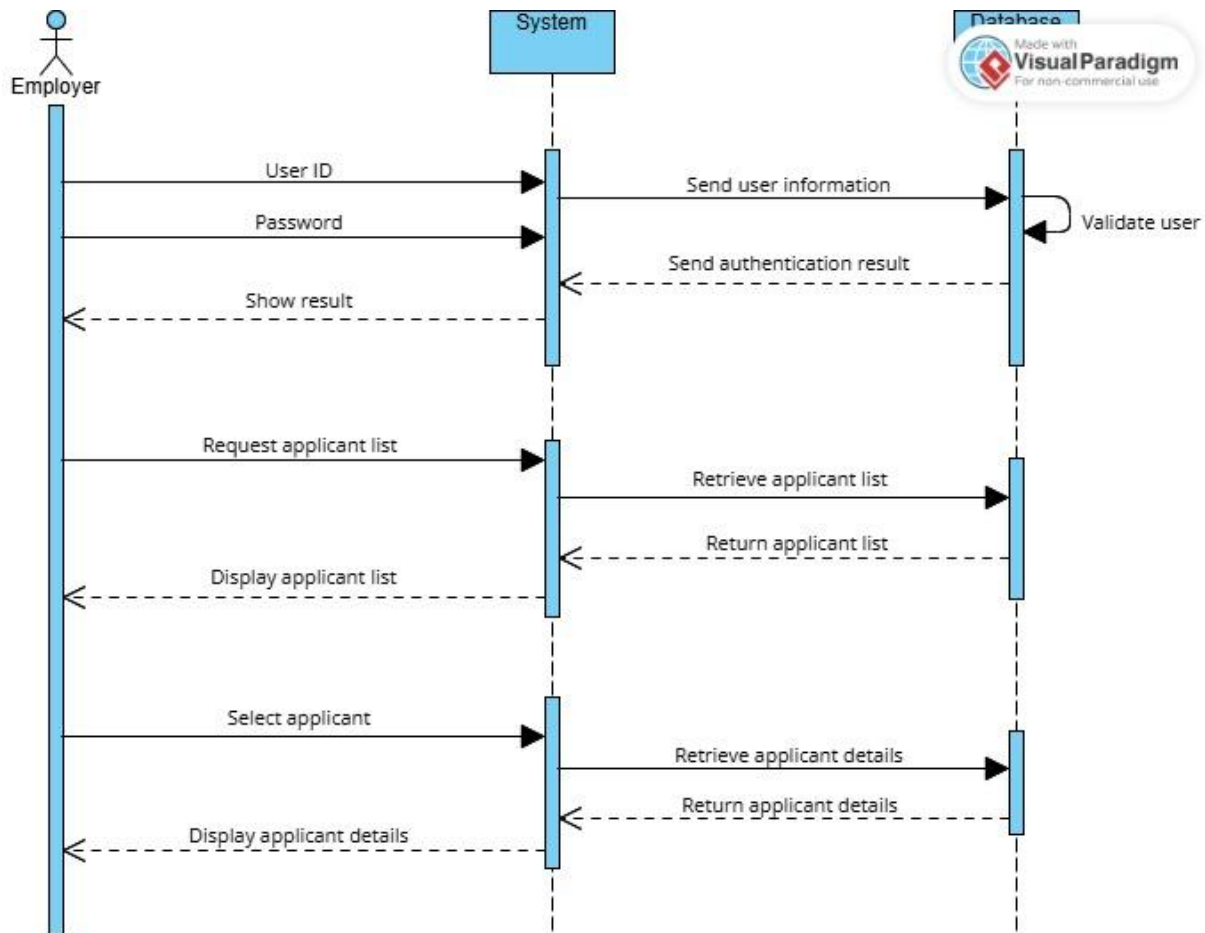


Figure 3.5 Sequence diagram (View applicant details)

Above is the sequence diagram for employer. Employer will login into the system using their user ID and password, then system will authenticate the user to ensure the security of the system.

Employer will request applicant list to the system by clicking onto “Applications” section. And the applicant list page is located beneath “Application List” sub-section. The system will fetch the applicant list from database, then database will return the applicant list, and the applicant list will be display to the employer.

From the applicant list page, employer can select any applicant from the system. The system will retrieve applicant details from database, then the applicant details will be display to the employer for further review, allowing them to evaluate qualifications, work history, and other relevant data.

3.2.5 Sequence diagram: Approve post

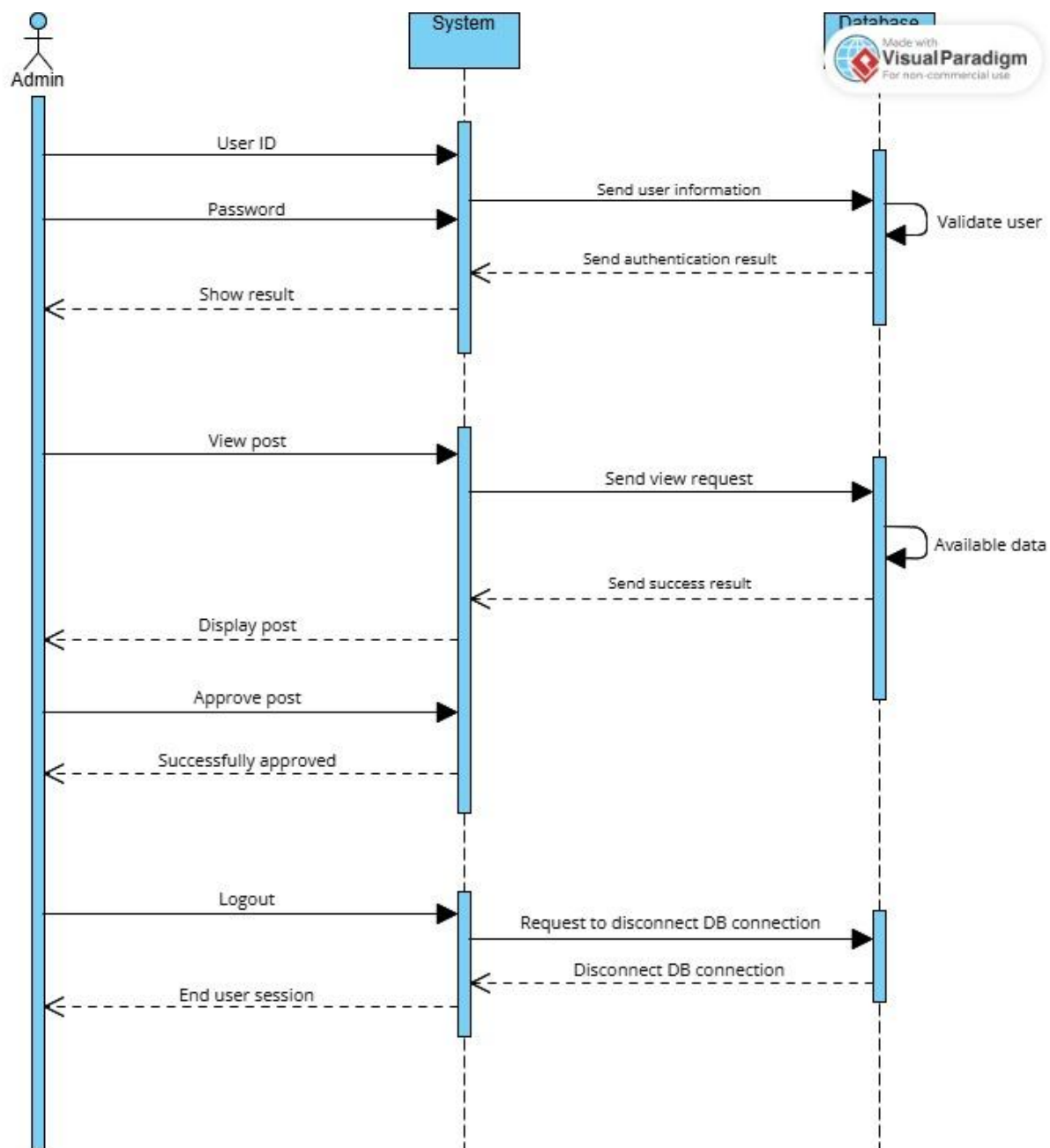


Figure 3.6 Sequence diagram (Approve post)

Above is the sequence diagram for system admin. The diagram illustrates that as the admin attempts to log in and provide details to the system, the system subsequently transmits the information to the database. The database transmits the authentication results to the system, which then relays the outcome to the admin.

The administrator is able to see job postings in the system. The system will request available data from the database, and once the database returns the data, the system will present the job postings to the

admin. The administrator can either sanction or remove the post. Finally, when the admin logs out of the system, the connection will be terminated, the admin session will end, and the user will be redirected to the home page.

3.2.6 Activity diagram: Applicant

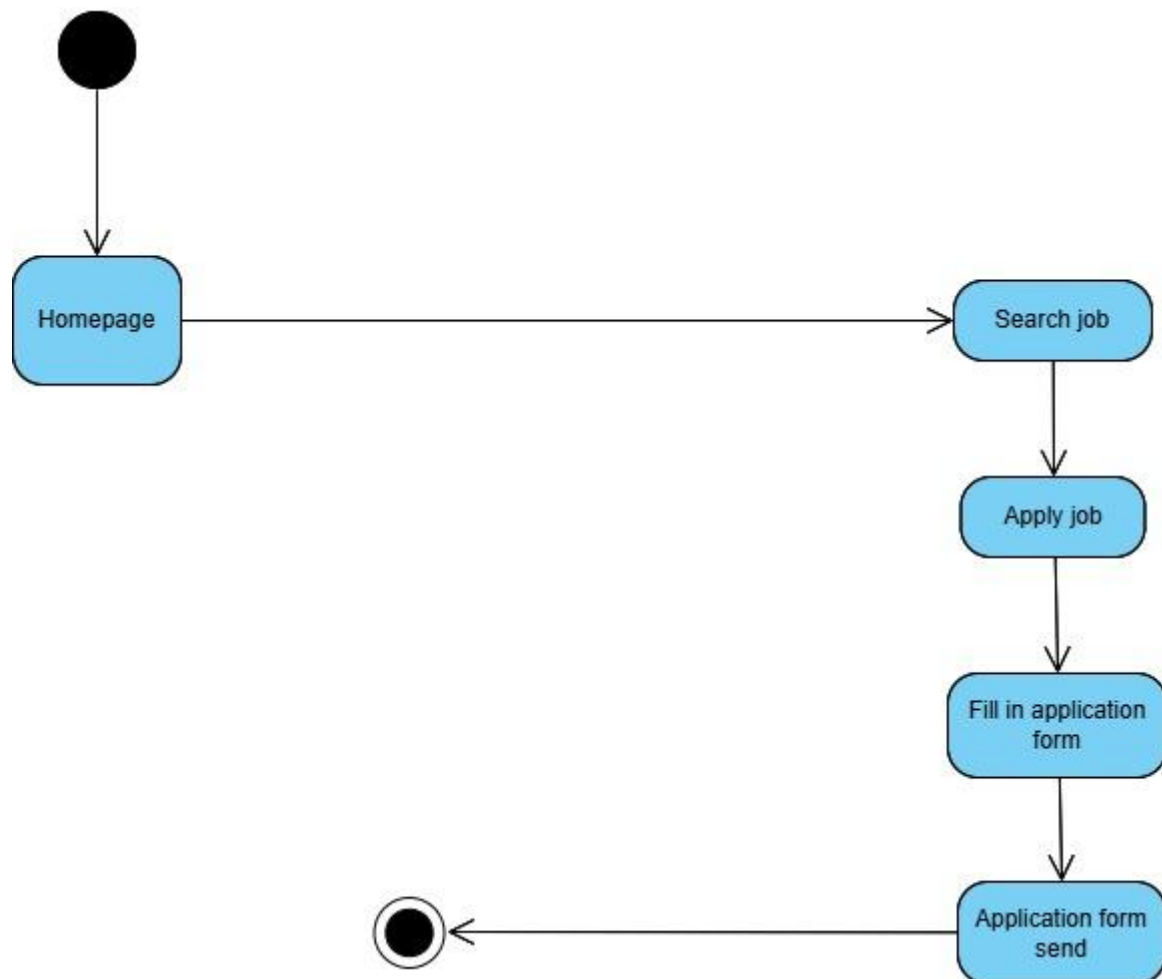


Figure 3.7 Activity diagram (Apply job)

The activity diagram illustrates the applicant's experience with the system, starting at the Homepage, where they initiate their interaction. From there, the applicant navigates to the Search Job section to explore job listings based on preferences like location, title, or salary. Once a suitable job is found, they proceed to Apply Job, where they complete an application form with personal details, work history, education, and supporting documents such as resumes. Finally, the applicant submits the form in the Application Form Send step, which stores the application in the system for employer evaluation, completing the process.

3.2.7 Activity diagram: Employer

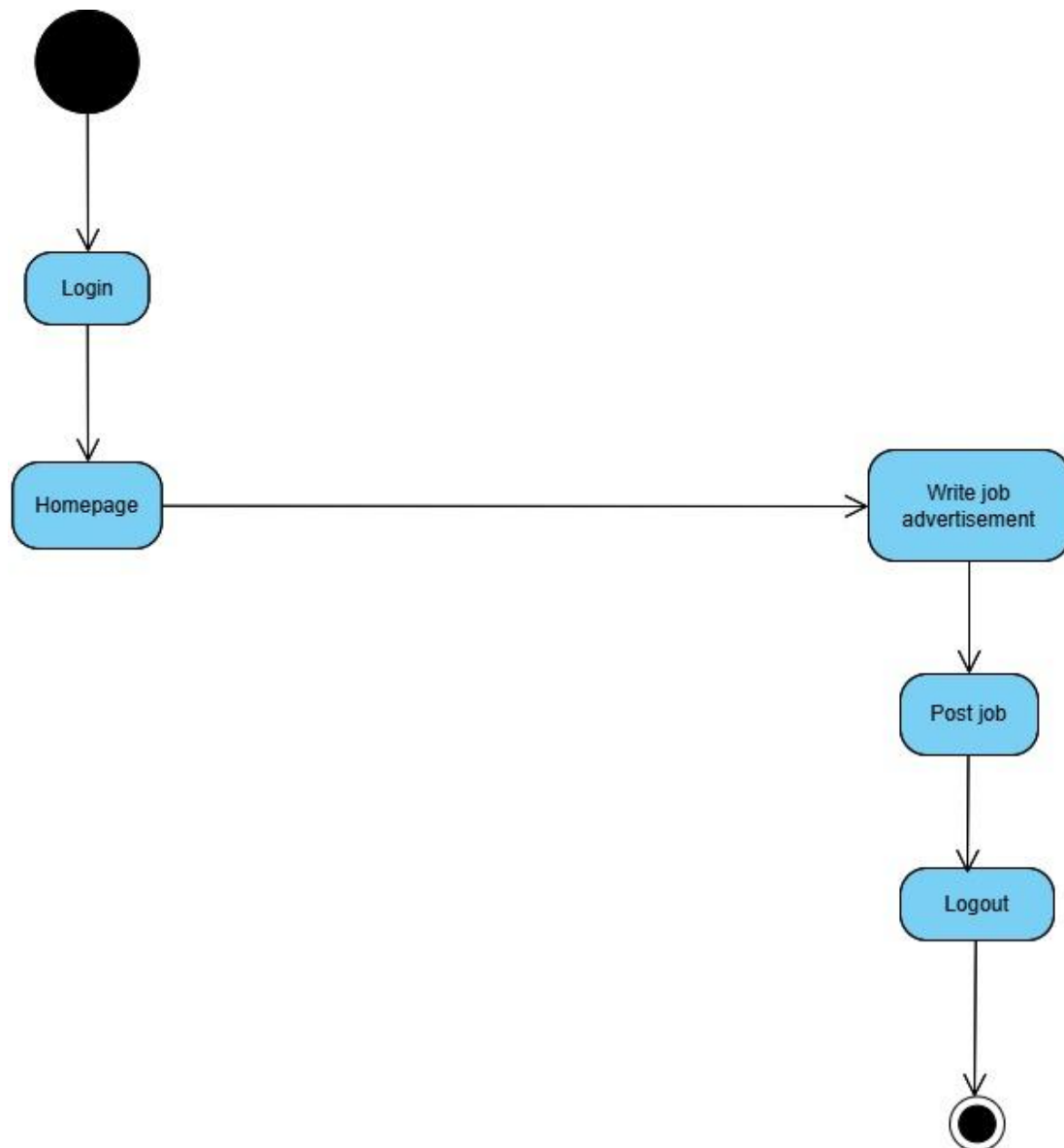


Figure 3.8 Activity diagram (Post job)

This activity diagram depicts the procedure an employer adheres to on the hiring platform. The procedure starts with the employer either logging in or registering if they haven't done so already. After a successful login, the employer is taken to the homepage, which acts as the main navigation hub. From the main page, the employer can start the job listing process. This includes creating a comprehensive job posting that contains information like job title, responsibilities, necessary skills, and other pertinent details. After the advertisement is finalized, the employer uploads it to the system, allowing potential applicants to view it. Once they finish their tasks, the employer can log out of the system, which safeguards their account's security.

3.2.8 Activity diagram: Admin

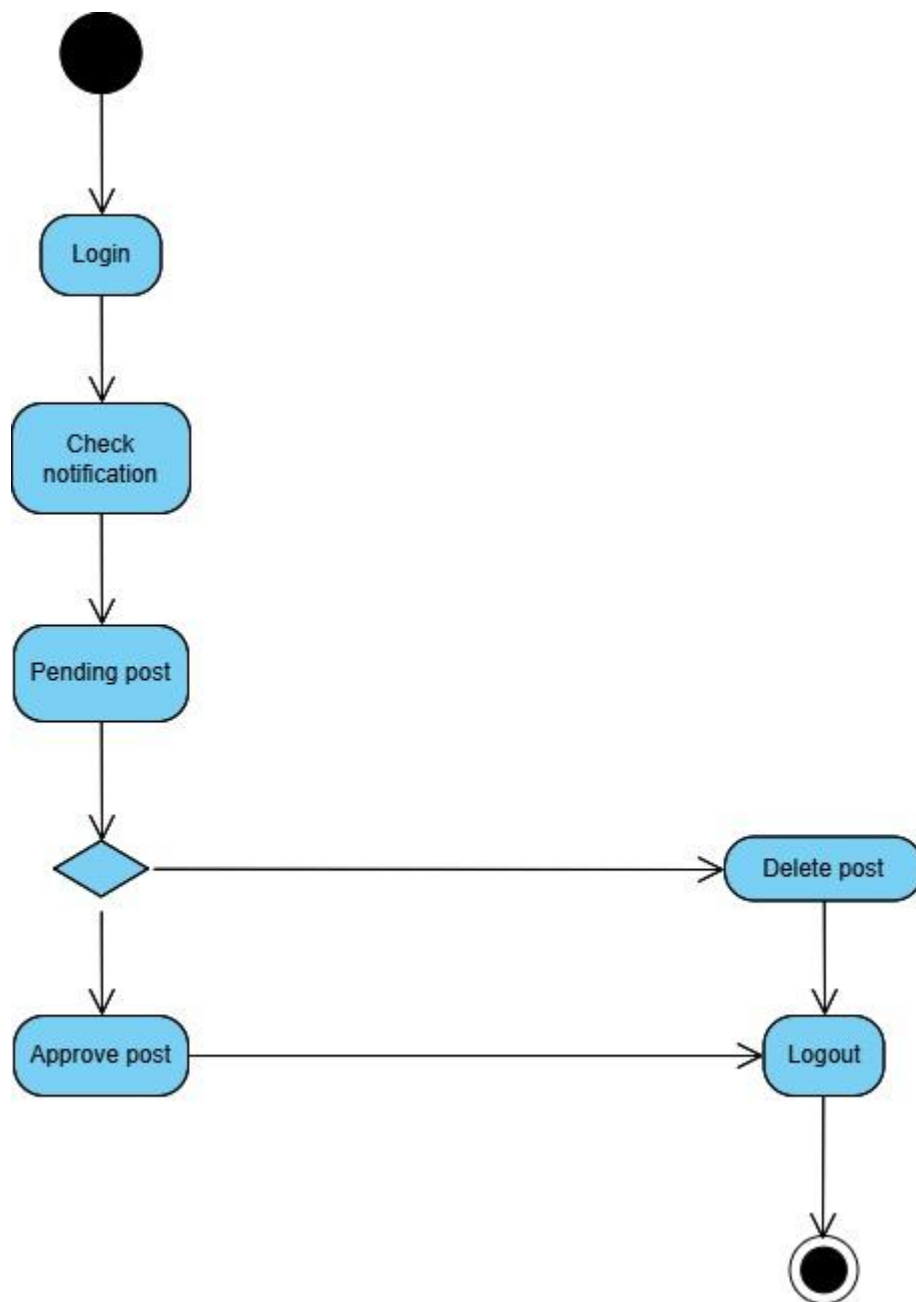


Figure 3.9 Activity diagram (Approve post)

The system administrator will begin by logging into the system. The admin will review posts that have not yet been seen. If the job advertisement has not been seen yet, then the system administrator will have the power to either approve or remove the post. After completing those tasks, the final action is to log out from the system.

3.2.9 Class diagram

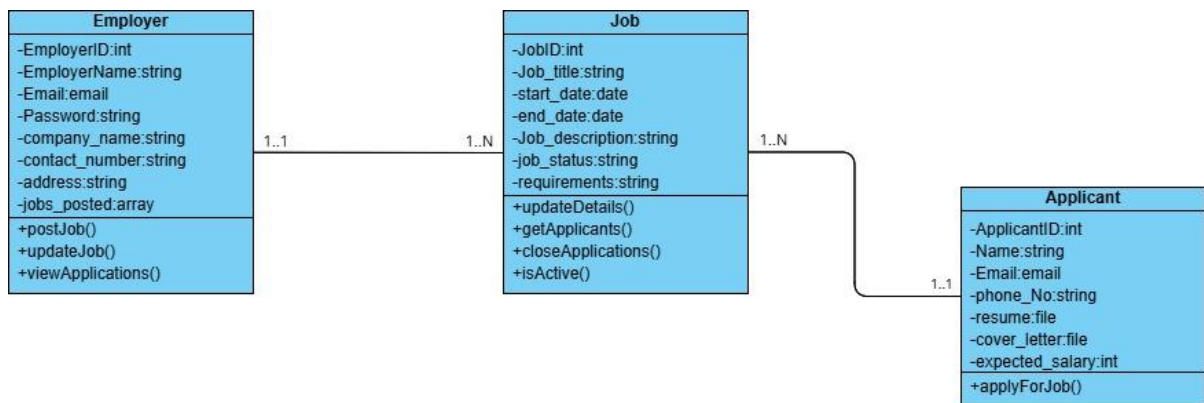


Figure 3.10 Class diagram

Table 3.9 Class diagram: Attributes & methods

Class	Attributes	Methods
Employer	EmployerID; EmployerName; Email; Password; Company_name; Contact_number; Address; Jobs_posted;	PostJob(); UpdateJob(); ViewApplications();
Job	JobID; Job_title; Start_date; End_date; Job_description; Job_status; Requirements;	UpdateDetails(); GetApplicants(); CloseApplications(); isActive();
Applicant	ApplicantID; Name; Email; Phone_No; Resume; Cover_letter; Expected_salary;	applyForJob();

3.3 Design

During the Design Phase of this system, the visual and structural groundwork is laid out to guarantee it meets user needs efficiently (Ilieva S. et. al., 2004). This stage involves developing comprehensive Figma designs for essential system components, including the login screen, application list screen, interview shortlist screen, and application form screen. These layouts offer a distinct representation of the user interface and features, guaranteeing an intuitive and smooth user experience. Moreover, an Entity-Relationship Diagram (ERD) is created to specify the database framework, demonstrating the connections between entities such as users, applications, and interviews. Collectively, these design artifacts act as a framework for the system's creation, harmonizing the technical components and user interface features with the project's goals.

3.3.1 User interface: Login Page



Figure 3.11 Login page

Users that are authorized to access the administration of the system are required to log in into the system. Users must log in with their system account username and password. The username is their respective work ID, to ensure security and filter the work ID that only has the accessibility to enter the administration system. User can also use forgot password when forgot their password or wants to renew their password.

3.3.2 User interface: Job Application form

Applicant who wants to apply the job will need to fill in this application form. The form consists of **7 sections**. These sections have been carefully made so that the company can assess the applicant's transparency and seriousness in applying for the listed job.

3.3.2.1 Job Application form – Personal Information Section



[COMPANY PROFILE](#)
[RESOURCES](#)
[PEOPLE](#)
[CONTACT](#)

APPLICATION FOR: ☒ Employment ☐ Internship

Specialized Area

Please select

Position Applied for

Please select

Preferred Centre

Please select

PERSONAL INFORMATION

WORK EXPERIENCE

EDUCATION

PROFESSIONAL CERTIFICATION

EMERGENCY CONTACT INFORMATION

DOCUMENTS / OTHERS

APPLICANT DECLARATION



Upload your latest photo
Recommended image upload size is 400 x 400 pixels and maximum file size is 2MB

Upload

Full Name

Nationality

Please select

Type of Identity Card

Please select

NRIC / Passport No.

Date of Birth

dd/mm/yyyy

Age

Place of Birth

Gender

Please select

Religion

Please select

Race

Please select

Marital Status

Please select

Mobile Phone No.

E-mail

EPF No.

Income Tax No.

Media Social / Portfolio Links

Correspondence Address

Country

Please select

State

Please select

City

Please select

Postcode

☐ Please mark if the permanent address is the same as correspondence address.

Permanent Address

Country

Please select

State

Please select

City

Please select

Postcode

Next →



[COMPANY PROFILE](#)
[RESOURCES](#)
[PEOPLE](#)
[CONTACT](#)






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Figure 3.12 Job Application Form [Personal Information section]

Based on this form section, applicants are required to fill in their personal information. Applicants are required to upload their profile picture. Moreover, applicants need to provide their personal details such as full name, identification card number, email, correspondence address and many more. This section has been created to assess how serious an applicant is in applying for a job.

3.3.2.2 Job Application form – Experience Section

The screenshot displays the 'Experience Section' of a job application form. At the top, the OPIH logo is visible alongside navigation links for 'COMPANY PROFILE', 'RESOURCES', 'PEOPLE', and 'CONTACT'. The form is titled 'APPLICATION FOR : Employment' (selected) and 'Intership'. Below this, there are three dropdown menus: 'Specialized Area', 'Position Applied For', and 'Preferred Centre'. The main content area is divided into several sections: 'PERSONAL INFORMATION', 'WORK EXPERIENCE' (highlighted), 'EDUCATION', 'PROFESSIONAL CERTIFICATION', 'EMERGENCY CONTACT INFORMATION', 'DOCUMENTS / OTHERS', and 'APPLICANT DECLARATION'. The 'WORK EXPERIENCE' section contains fields for 'Name of Company', 'Position', 'Last Salary (RM)', 'Working Period (Start)', 'Working Period (End)', and 'Reason for Leaving'. There is an 'Add Experience' button and navigation arrows for 'Previous' and 'Next'.

Figure 3.13 Job Application Form [Experience section]

This is experience section. This section is made for applicant to fill in if they have previous work experience in their previous company. Then HR team can overview the applicant's last salary and reason for leaving their previous company and can decide whether to proceed with interview or discard the application.

3.3.2.3 Job Application form – Education Section

The screenshot displays the 'Education Section' of the OPIH Job Application Form. At the top, the OPIH logo is on the left, and navigation links for 'COMPANY PROFILE', 'RESOURCES', 'PEOPLE', and 'CONTACT' are on the right. The 'CONTACT' link is highlighted with a blue button. Below the navigation, the form is divided into two main sections. The left section is a sidebar with a list of navigation links: 'PERSONAL INFORMATION', 'WORK EXPERIENCE', 'EDUCATION' (which is highlighted with a blue underline), 'PROFESSIONAL CERTIFICATION', 'EMERGENCY CONTACT INFORMATION', 'DOCUMENTS / OTHERS', and 'APPLICANT DECLARATION'. The right section is the main form area. It starts with 'APPLICATION FOR : ☒ Employment ☐ Internship'. Below this are three dropdown menus: 'Specialized Area', 'Position Applied For', and 'Preferred Centre', each with a 'Please select' prompt. The main form area is titled 'University / College / Secondary School' and contains several input fields: 'CGPA / Grade', 'Year Study (Start)', 'Year Study (End)', 'Qualification', and 'Course Name'. There is a blue '+ Add Education' button below the 'Qualification' field. At the bottom of the form area, there are 'Previous' and 'Next' navigation arrows. The OPIH logo is centered at the bottom of the page, with the same navigation links as the top. Below the logo are social media icons for Facebook, Instagram, X, and TikTok. At the very bottom, there is a copyright notice: '2024 © All rights reserved. OPIH.my'.

Figure 3.14 Job Application Form [Education Section]

This is education section. Applicant are required to fill in this section, to help the employer in viewing applicant's education history. Employer can evaluate the applicant's performance in work based on their previous education grade. If an applicant has many educations which is surpass Diploma or Foundation level, and already reach Degree level, then the applicant himself or herself has a better chance to be hired by the company.

3.3.2.4 Job Application form – Professional Certification Section

APPLICATION FOR : ☒ Employment ☐ Internship

Specialized Area Position Applied For Preferred Centre

PERSONAL INFORMATION

WORK EXPERIENCE

EDUCATION

PROFESSIONAL CERTIFICATION

EMERGENCY CONTACT INFORMATION

DOCUMENTS / OTHERS

APPLICANT DECLARATION

Name of Certification

Issue Date Expired Date (if applicable)

Issuing Organization Certification No file chosen
Maximum file size is 2MB

[+ Add Personal Certification](#)

[← Previous](#) [Next →](#)

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COMPANY PROFILE RESOURCES PEOPLE CONTACT

[f](#) [@](#) [X](#) [d](#)

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Figure 3.15 Job Application Form [Professional Certification Section]

This is professional certification section. Applicant are not required to fill in this section, only those who have certain certification can fill in and upload their certification into this professional certification section. Applicant can upload their professional certifications such as Certified Professional for Requirements Engineering (CPRE) and Project Management Professional (PMP). It is not required, but the chance of getting hired would be higher as these certifications are being valued by certain company.

3.3.2.5 Job Application Form – Emergency Contact Information Section

The screenshot shows the 'Emergency Contact Information' section of the Job Application Form. The form is titled 'APPLICATION FOR:' with radio buttons for 'Employment' (selected) and 'Internship'. Below this are three dropdown menus for 'Specialized Area', 'Position Applied For', and 'Preferred Centre'. The left sidebar contains links for 'PERSONAL INFORMATION', 'WORK EXPERIENCE', 'EDUCATION', 'PROFESSIONAL CERTIFICATION', 'EMERGENCY CONTACT INFORMATION' (highlighted), 'DOCUMENTS / OTHERS', and 'APPLICANT DECLARATION'. The main form area contains fields for 'Name', 'Date of Birth', 'Contact No.', 'Address', 'Country', 'State', 'City', and 'Postal Code'. Navigation buttons 'Previous' and 'Next' are at the bottom. The footer includes the OPIH logo, navigation links, social media icons, and copyright text.

Figure 3.16 Job Application Form [Emergency Contact Information section]

This is emergency contact information section. For the applicant, it guarantees that a trusted person can be reached quickly in case of an emergency or unexpected situations while on the job. For the organization, it offers a dependable way to quickly reach a specific person during emergencies, improving workplace safety and cultivating a sense of readiness and concern for staff.

3.3.2.6 Job Application Form – Documents section

The screenshot shows the 'Documents' section of the Job Application Form. The form is titled 'APPLICATION FOR:' with radio buttons for 'Employment' (selected) and 'Internship'. Below this are three dropdown menus for 'Specialized Area', 'Position Applied For', and 'Preferred Centre'. The left sidebar contains links for 'PERSONAL INFORMATION', 'WORK EXPERIENCE', 'EDUCATION', 'PROFESSIONAL CERTIFICATION', 'EMERGENCY CONTACT INFORMATION', 'DOCUMENTS / OTHERS' (highlighted), and 'APPLICANT DECLARATION'. The main form area contains fields for 'Resume / CV' (with a 'Choose File' button), 'Cover Letter' (with a 'Choose File' button), 'Expected Salary (\$/hr)', and 'Notice Period / Available to Start'. Navigation buttons 'Previous' and 'Next' are at the bottom. The footer includes the OPIH logo, navigation links, social media icons, and copyright text.

Figure 3.17 Job Application Form [Documents section]

The documents section is a specific area of the job application form where candidates must upload important documents, like their resume and cover letter. This part allows applicants to offer detailed details regarding their qualifications, experiences, and reasons for pursuing the position. By incorporating these documents, the recruitment team can efficiently assess the appropriateness of candidates and make well-informed choices throughout the hiring process. Detailed instructions are offered to assist applicants in uploading their documents in the proper format and adhering to the designated size restrictions.

3.3.2.7 Job Application Form – Applicant Declaration Section

The screenshot displays the 'Applicant Declaration' section of the OPIH job application form. At the top, the OPIH logo is on the left, and navigation links for 'COMPANY PROFILE', 'RESOURCES', 'PEOPLE', and 'CONTACT' are on the right. The 'CONTACT' link is highlighted in a blue button. Below the navigation bar, the form is titled 'APPLICATION FOR:' with two radio buttons: 'Employment' (selected) and 'Internship'. Below this, there are three dropdown menus: 'Specialized Area' (set to 'ILLUSTRATION / ANIMATION DESIGN'), 'Position Applied For' (set to '2D/3D ANIMATOR'), and 'Preferred Centre' (set to 'MIRAZUMA'). A left sidebar contains a list of form sections: 'PERSONAL INFORMATION', 'WORK EXPERIENCE', 'EDUCATION', 'PROFESSIONAL CERTIFICATION', 'EMERGENCY CONTACT INFORMATION', 'DOCUMENTS / OTHERS', and 'APPLICANT DECLARATION' (which is underlined in blue). The main content area of the 'APPLICANT DECLARATION' section contains three bullet points, each with a blue checkmark icon: 'I certify that all answers given herein are true and complete to the best of my knowledge.', 'I authorize investigation of all statements contained in this application for employment as may be necessary in arriving at an employment decision.', and 'In the event of employment, I understand that false or misleading information given in my application or interview may result in discharge.' A blue 'Save Application' button is positioned to the right of these statements. Below the main content area is a 'Previous' link with a left-pointing arrow. At the bottom of the page, the OPIH logo is centered, followed by the same navigation links as at the top. Below the links are social media icons for Facebook, Instagram, Twitter, and YouTube. At the very bottom, a small copyright notice reads '2024 © All rights reserved. OPIH Inc.'.

Figure 3.18 Job Application Form [Applicant Declaration section]

The Applicant Declaration part is the last stage in the job application form, where candidates confirm the correctness and honesty of the details they have submitted. By signing or recognizing this section, the applicant permits the company to confirm the information provided and comprehends the possible repercussions of giving false or misleading details, which may include job termination if found out subsequently. This part is crucial for the applicant as it showcases their integrity, responsibility, and dedication to openness, which are essential qualities appreciated by employers.

3.3.3 User interface: Application page

Bk.	Applied Date	Applied Position	Candidates	Contact Number	Status
1.	30/05/2024	CREATIVE DESIGNER (INTERNSHIP)	SYED BADRUL HISHAM BIN SYED ROSYAM syedbdrul@gmail.my	(+6012 3456789)	New Applicant
2.	15/05/2024	SOFTWARE ENGINEER - FULL STACK	MOHAMMAD NUR AFFIZI BIN ANJAR n.nuraffizi@gmail.my	(+6012 3456789)	New Applicant
3.	26/04/2024	FINANCE EXECUTIVE	IZAN ZURAIHAN BINTI MOHAMED IDRES izan-zuraih@gmail.my	(+6012 3456789)	New Applicant
4.	26/04/2024	MULTIMEDIA DESIGNER	WONG TENG LIM @ WONG PENG LIM wongtenglim@gmail.my	(+6012 3456789)	Screening
5.	20/04/2024	ADMINISTRATION EXECUTIVE	RABIATUL HIDAYAH BINTI ISMAIL hdayahrb@gmail.my	(+6012 3456789)	Screening
6.	17/04/2024	CREATIVE DESIGNER (INTERNSHIP)	PUTERA ROZIE NAUFAL BIN AMIR HANIZAH puterarozienufal@gmail.my	(+6012 3456789)	Screening
7.	16/04/2024	UI/UX DESIGNER (INTERNSHIP)	MALLIKATH-VEY A/P MARAPAN mullikathvey202@gmail.my	(+6012 3456789)	Screening
8.	16/04/2024	SOFTWARE ENGINEER - FLUTTER	NOR ASMAINEYRA BINTI AZMAN ADNAN asmaaineyraazmanadnan@gmail.my	(+6012 3456789)	Interview
9.	10/04/2024	SOFTWARE QUALITY ASSURANCE ENGINEER	NOR MARLIZA BINTI ABDEL HAMID norliza.buraid@gmail.my	(+6012 3456789)	Rejected
10.	06/04/2024	PROJECT EXECUTIVE	MUHAMMAD ANAS ZULFAKAR BIN ALIM anas.zulfakar@gmail.my	(+6012 3456789)	Missed

Figure 3.19 Application List

This is Application List page, where it contains a table of application, which is list of applicants that submitted their application form. This page is mainly used by employer and HR Manager, as they are the ones in charge in handling applicants.

3.3.4 User interface: Application Details page

Bk.	Applied Date	Applied Position	Candidates	Contact Number	Status
1.	30/05/2024	CREATIVE DESIGNER (INTERNSHIP)	SYED BADRUL HISHAM BIN SYED ROSYAM syedbdrul@gmail.my	(+6012 3456789)	New Applicant
2.	15/05/2024	SOFTWARE ENGINEER - FULL STACK	MOHAMMAD NUR AFFIZI BIN ANJAR n.nuraffizi@gmail.my	(+6012 3456789)	New Applicant
3.	26/04/2024	FINANCE EXECUTIVE	IZAN ZURAIHAN BINTI MOHAMED IDRES izan-zuraih@gmail.my	(+6012 3456789)	New Applicant
4.	26/04/2024	MULTIMEDIA DESIGNER	WONG TENG LIM @ WONG PENG LIM wongtenglim@gmail.my	(+6012 3456789)	Screening
5.	20/04/2024	ADMINISTRATION EXECUTIVE	RABIATUL HIDAYAH BINTI ISMAIL hdayahrb@gmail.my	(+6012 3456789)	Screening
6.	17/04/2024	CREATIVE DESIGNER (INTERNSHIP)	PUTERA ROZIE NAUFAL BIN AMIR HANIZAH puterarozienufal@gmail.my	(+6012 3456789)	Screening
7.	16/04/2024	UI/UX DESIGNER (INTERNSHIP)	MALLIKATH-VEY A/P MARAPAN mullikathvey202@gmail.my	(+6012 3456789)	Screening
8.	16/04/2024	SOFTWARE ENGINEER - FLUTTER	NOR ASMAINEYRA BINTI AZMAN ADNAN asmaaineyraazmanadnan@gmail.my	(+6012 3456789)	Interview
9.	10/04/2024	SOFTWARE QUALITY ASSURANCE ENGINEER	NOR MARLIZA BINTI ABDEL HAMID norliza.buraid@gmail.my	(+6012 3456789)	Rejected
10.	06/04/2024	PROJECT EXECUTIVE	MUHAMMAD ANAS ZULFAKAR BIN ALIM anas.zulfakar@gmail.my	(+6012 3456789)	Missed

Figure 3.20 View function in Application List

- Dashboard
- Jobs
- Applications
 - Application List
 - Job List
 - Shortlist
 - Interview
 - Calendar
- Setting
 - User Management
 - Company
 - Center
 - Postcode
 - Care
 - Position

Applications / Application List

Back

Application Details

Application For: **EMPLOYMENT**

Specialized Area: Illustration / Animation (2D/3D)

Position Applied For: 2D/3D Animator

Preferred Centre: MZR GLOBAL

Date & Time of Application: 14/03/2024 16:59

Expected Salary (RM): 3000

Holiday Period / Available to Start: 1 MONTHS

AHMAD ZAQRI ACHA BIN ZAHARI

MALAYSIA

(+6011) 3500698

zaqriadha.zahari@gmail.com

PERSONAL INFORMATION

Type of Identity Card: MyKAD

NRIC / Passport No.: 950227-05-9599

Date of Birth: 27/02/1995 Age: 29

Place of Birth: HOSPITAL BESAR SEREMBAN

Gender: MALE Marital Status: SINGLE

Religion: ISLAM Race: MALAY

Correspondence Address: NO.152, JALAN SEREMBAN U6/21, BUKIT SELUTONG, 40150 SHAH ALAM, SELANGOR, MALAYSIA

Permanent Address: NO.6, LAMAN BAKKAWALL, JALAN A/1, KOTA SEREMAS, 71800 NILAI, NEGERI SEMBILAN, MALAYSIA

WORK EXPERIENCE

MARDON STUDIO SDN BHD

May 2023 - Present

Position: 2D/3D ANIMATOR

Last Salary: RM 2600

Reason for Leaving: -

HAPPY MULTIMEDIA SDN BHD

February 2020 - April 2022

Position: MOTION DESIGNER

Last Salary: RM 2200

Reason for Leaving: Company layoffs

STUDIO QUASA NAWA SDN BHD

September 2018 - January 2020

Position: JUNIOR 2D/3D ANIMATOR

Last Salary: RM 1300

Reason for Leaving: End of contract

EDUCATION

MULTIMEDIA UNIVERSITY

May 2016 - April 2019

COPPA / Grade: 3.1

Qualification: Bachelor's Degree

Name of Qualification: Bachelor of Multimedia (Hons) Animation

POUTEKNIK ISRAHIM SULTAN

June 2011 - April 2014

COPPA / Grade: 2.7

Qualification: Certificate or Diploma

Name of Qualification: Diploma Teknologi Kreatif Digital Animasi

SEKOLAH MENENGAH KEBANGSAAN KOMPLEKS KLIA

January 2008 - December 2010

COPPA / Grade: 2B 4C 1E 1D

Qualification: SECONDARY SCHOOL

Name of Qualification: siji pelajaran malaysia (SPM)

PROFESSIONAL CERTIFICATION

CERTIFICATE IN DIGITAL CREATIVE CONTENT

Issued 26 March 2019

Sunway University, Shah Alam

APPLICANT DECLARATION

☒ I certify that all answers given herein are true and complete to the best of my knowledge.
☒ I authorize investigation of all statements contained in this application for employment as may be necessary in arriving at an employment decision.
☒ In the event of employment, I understand that false or misleading information given in my application or interview may result in discharge.

Figure 3.21 Application Details

This is Application Details page. From Application List page, user can select any applicant and click “View” button. Then it will redirect to this page, where user can view applicant’s details, including their personal information and attached documents such as resume, cover letter and professional certifications if any.

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3.3.5 User interface: Shortlisted for Interview List page

Shortlisted

Bil.	Interview Date & Time	Applied Position	Candidates	Person in Charge	Status
1.		CREATIVE DESIGNER (INTERNSHIP)	SYED BADRUL HISHAM BIN SYED ROSYAM syedhisham@gmail.my		Shortlisted
2.		SOFTWARE ENGINEER - FULL STACK	MOHAMMAD NUR AFFIZI BIN ANUAR m.nuraffizi@gmail.my		Shortlisted
3.	30/05/2024 11:04 AM	FINANCE EXECUTIVE	IZAN ZURAIHAN BINTI MOHAMED IDRIS izan-zurahang@gmail.my	TAN LEE PIN Administrative Assistants	Call For Interview
4.	30/05/2024 11:04 AM	MULTIMEDIA DESIGNER	WONG TENG LIM @ WONG PENG LIM wongtenglim@gmail.my	NORHAYATI BINTI ABDUL WAHAB Human Resources (HR)	Call For Interview
5.	30/05/2024 11:04 AM	ADMINISTRATION EXECUTIVE	RABIATUL HIDAYAH BINTI ISMAIL hidayahismail@gmail.my	SYARIABDILLAH BIN ARIPIN Lead Developer	Call For Interview
6.	30/05/2024 11:04 AM	CREATIVE DESIGNER (INTERNSHIP)	PUTERA RIZQIE NAUFAL BIN AMIR HAMZAH puterarizqieaufal@gmail.my	NORHAYATI BINTI ABDUL WAHAB Human Resources (HR)	Call For Interview
7.	30/05/2024 11:04 AM	UI/UX DESIGNER (INTERNSHIP)	MALLIGATHEVY A/P MARIAPAN malligathevy2022@gmail.my	SYARIABDILLAH BIN ARIPIN Lead Developer	Call For Interview
8.	30/05/2024 11:04 AM	SOFTWARE ENGINEER - FLUTTER	NOR ASMANIEYRA BINTI AZMAN ADNAN asmanieyrazmanadnan@gmail.my	SYARIABDILLAH BIN ARIPIN Lead Developer	Keep In View (KIV)
9.	30/05/2024 11:04 AM	SOFTWARE QUALITY ASSURANCE ENGINEER	NOR MARLIZA BINTI ABDUL HAMID marliza.hamid@gmail.my	NORHAYATI BINTI ABDUL WAHAB Human Resources (HR)	Call For Interview
10.	30/05/2024 11:04 AM	PROJECT EXECUTIVE	MUHAMMAD ANAS ZULFAKAR BIN ALIMI anas.zulfakar08@gmail.my	TAN LEE PIN Administrative Assistants	Call For Interview

Figure 3.22 Shortlisted for Interview List Page

Shortlisted

Bil.	Interview Date & Time	Applied Position	Candidates	Person in Charge	Status
1.		CREATIVE DESIGNER (INTERNSHIP)	SYED BADRUL HISHAM BIN SYED ROSYAM syedhisham@gmail.my		Shortlisted
2.		SOFTWARE ENGINEER - FULL STACK	MOHAMMAD NUR AFFIZI BIN ANUAR m.nuraffizi@gmail.my		
3.	30/05/2024 11:04 AM	FINANCE EXECUTIVE	IZAN ZURAIHAN BINTI MOHAMED IDRIS izan-zurahang@gmail.my	TAN LEE PIN Administrative Assistants	Call For Interview
4.	30/05/2024 11:04 AM	MULTIMEDIA DESIGNER	WONG TENG LIM @ WONG PENG LIM wongtenglim@gmail.my	NORHAYATI BINTI ABDUL WAHAB Human Resources (HR)	Call For Interview
5.	30/05/2024 11:04 AM	ADMINISTRATION EXECUTIVE	RABIATUL HIDAYAH BINTI ISMAIL hidayahismail@gmail.my	SYARIABDILLAH BIN ARIPIN Lead Developer	Call For Interview
6.	30/05/2024 11:04 AM	CREATIVE DESIGNER (INTERNSHIP)	PUTERA RIZQIE NAUFAL BIN AMIR HAMZAH puterarizqieaufal@gmail.my	NORHAYATI BINTI ABDUL WAHAB Human Resources (HR)	Call For Interview
7.	30/05/2024 11:04 AM	UI/UX DESIGNER (INTERNSHIP)	MALLIGATHEVY A/P MARIAPAN malligathevy2022@gmail.my	SYARIABDILLAH BIN ARIPIN Lead Developer	Call For Interview
8.	30/05/2024 11:04 AM	SOFTWARE ENGINEER - FLUTTER	NOR ASMANIEYRA BINTI AZMAN ADNAN asmanieyrazmanadnan@gmail.my	SYARIABDILLAH BIN ARIPIN Lead Developer	Keep In View (KIV)
9.	30/05/2024 11:04 AM	SOFTWARE QUALITY ASSURANCE ENGINEER	NOR MARLIZA BINTI ABDUL HAMID marliza.hamid@gmail.my	NORHAYATI BINTI ABDUL WAHAB Human Resources (HR)	Call For Interview
10.	30/05/2024 11:04 AM	PROJECT EXECUTIVE	MUHAMMAD ANAS ZULFAKAR BIN ALIMI anas.zulfakar08@gmail.my	TAN LEE PIN Administrative Assistants	Call For Interview

Figure 3.23 Set Interview function

Set Interview

Candidate
SYED BADRUL HISHAM BIN SYED ROSYAM

Email
syedhisham@gmail.my

Position
CREATIVE DESIGNER INTERNSHIP

Interviewer
ANAS YUSUF BIN ABDUL MUHAMMAD - MANAGER HUMAN RESOURCES OPIH
MUHAMMAD ZULHELM BIN KHALIL - SENIOR CREATIVE DESIGNER

Date
12/05/2024

Time Start
10:00 AM

Time End
11:00 AM

Interview Platform
Virtually

Remarks

Cancel Submit

Figure 3.24 Fill in interview details

This is Shortlisted for Interview List page. This page will display list of applicants whom are being reviewed and approved by upper management to proceed with set interview. If HR Manager or employer want to set interview for certain applicant, they can click “Set Interview” button and the Set Interview modal will pop-up on screen. Employer can fill in the interview details by selecting the interviewer involved, date of interview, start time, end time, interview mode either online or face to face, and provide meeting link if the interview mode is online.

3.3.6 User interface: Interview List Page

Sl.	Interview Date & Time	Applied Position	Candidates	Person in Charge	Status
1.	12/06/2024 10:00 AM	CREATIVE DESIGNER (INTERNSHIP)	SYED BADRUL HISHAM BIN SYED ROSYAM syedbdrul@gmail.my	NORHAYATI BINTI ABDUL WAHAB Human Resources (HR)	Accepted Interview
2.		SOFTWARE ENGINEER - FULL STACK	MOHAMMAD NUR AFFIZI BIN ANUAR m.nuraffizi@gmail.my		Shortlisted
3.	30/05/2024 11:04 AM	FINANCE EXECUTIVE	IZAN ZURAHAN BINTI MOHAMED IDRIS izan-zurahang@gmail.my	TAN LEE PIN Administrative Assistant	Accepted Interview
4.	30/05/2024 11:04 AM	MULTIMEDIA DESIGNER	WONG TENG LIM @ WONG PENG LIM wongtenglim@gmail.my	NORHAYATI BINTI ABDUL WAHAB Human Resources (HR)	Accepted Interview
5.	30/05/2024 11:04 AM	ADMINISTRATION EXECUTIVE	RABIATUL HIDAYAH BINTI ISMAIL hidayahismail@gmail.my	SYARIABDILLAH BIN ARIPIN Lead Developer	Accepted Interview
6.	30/05/2024 11:04 AM	CREATIVE DESIGNER (INTERNSHIP)	PUTERA RIZQIE NAUFAL BIN AMIR HAMZAH puterarizqienaufal@gmail.my	NORHAYATI BINTI ABDUL WAHAB Human Resources (HR)	Declined Interview
7.	30/05/2024 11:04 AM	UI/UX DESIGNER (INTERNSHIP)	MALLIGATHEVY A/P MARIAPAN malligathevy2023@gmail.my	SYARIABDILLAH BIN ARIPIN Lead Developer	Declined Interview
8.	30/05/2024 11:04 AM	SOFTWARE ENGINEER - FLUTTER	NOR ASMANEYRA BINTI AZMAN ADNAN asmaneyrazmanadnan@gmail.my	SYARIABDILLAH BIN ARIPIN Lead Developer	Keep in View (KIV)
9.	30/05/2024 11:04 AM	SOFTWARE QUALITY ASSURANCE ENGINEER	NOR MARLIZA BINTI ABDUL HAMID marliza.hamid@gmail.my	NORHAYATI BINTI ABDUL WAHAB Human Resources (HR)	Declined Interview
10.	30/05/2024 11:04 AM	PROJECT EXECUTIVE	MUHAMMAD ANAS ZULFAKAR BIN ALIMI anas.zulfakar08@gmail.my	TAN LEE PIN Administrative Assistant	Call For Interview

Figure 3.25 Interview List Page

Sl.	Interview Date & Time	Applied Position	Candidates	Person in Charge	Status
1.	12/06/2024 10:00 AM	CREATIVE DESIGNER (INTERNSHIP)	SYED BADRUL HISHAM BIN SYED ROSYAM syedbdrul@gmail.my	NORHAYATI BINTI ABDUL WAHAB Human Resources (HR)	Accepted Interview
2.		SOFTWARE ENGINEER - FULL STACK	MOHAMMAD NUR AFFIZI BIN ANUAR m.nuraffizi@gmail.my		Shortlisted
3.	30/05/2024 11:04 AM	FINANCE EXECUTIVE	IZAN ZURAHAN BINTI MOHAMED IDRIS izan-zurahang@gmail.my	TAN LEE PIN Administrative Assistant	Accepted Interview
4.	30/05/2024 11:04 AM	MULTIMEDIA DESIGNER	WONG TENG LIM @ WONG PENG LIM wongtenglim@gmail.my	NORHAYATI BINTI ABDUL WAHAB Human Resources (HR)	Accepted Interview
5.	30/05/2024 11:04 AM	ADMINISTRATION EXECUTIVE	RABIATUL HIDAYAH BINTI ISMAIL hidayahismail@gmail.my	SYARIABDILLAH BIN ARIPIN Lead Developer	Accepted Interview
6.	30/05/2024 11:04 AM	CREATIVE DESIGNER (INTERNSHIP)	PUTERA RIZQIE NAUFAL BIN AMIR HAMZAH puterarizqienaufal@gmail.my	NORHAYATI BINTI ABDUL WAHAB Human Resources (HR)	Declined Interview
7.	30/05/2024 11:04 AM	UI/UX DESIGNER (INTERNSHIP)	MALLIGATHEVY A/P MARIAPAN malligathevy2023@gmail.my	SYARIABDILLAH BIN ARIPIN Lead Developer	Declined Interview
8.	30/05/2024 11:04 AM	SOFTWARE ENGINEER - FLUTTER	NOR ASMANEYRA BINTI AZMAN ADNAN asmaneyrazmanadnan@gmail.my	SYARIABDILLAH BIN ARIPIN Lead Developer	Keep in View (KIV)
9.	30/05/2024 11:04 AM	SOFTWARE QUALITY ASSURANCE ENGINEER	NOR MARLIZA BINTI ABDUL HAMID marliza.hamid@gmail.my	NORHAYATI BINTI ABDUL WAHAB Human Resources (HR)	Declined Interview
10.	30/05/2024 11:04 AM	PROJECT EXECUTIVE	MUHAMMAD ANAS ZULFAKAR BIN ALIMI anas.zulfakar08@gmail.my	TAN LEE PIN Administrative Assistant	Call For Interview

Figure 3.26 View function in Interview List Page

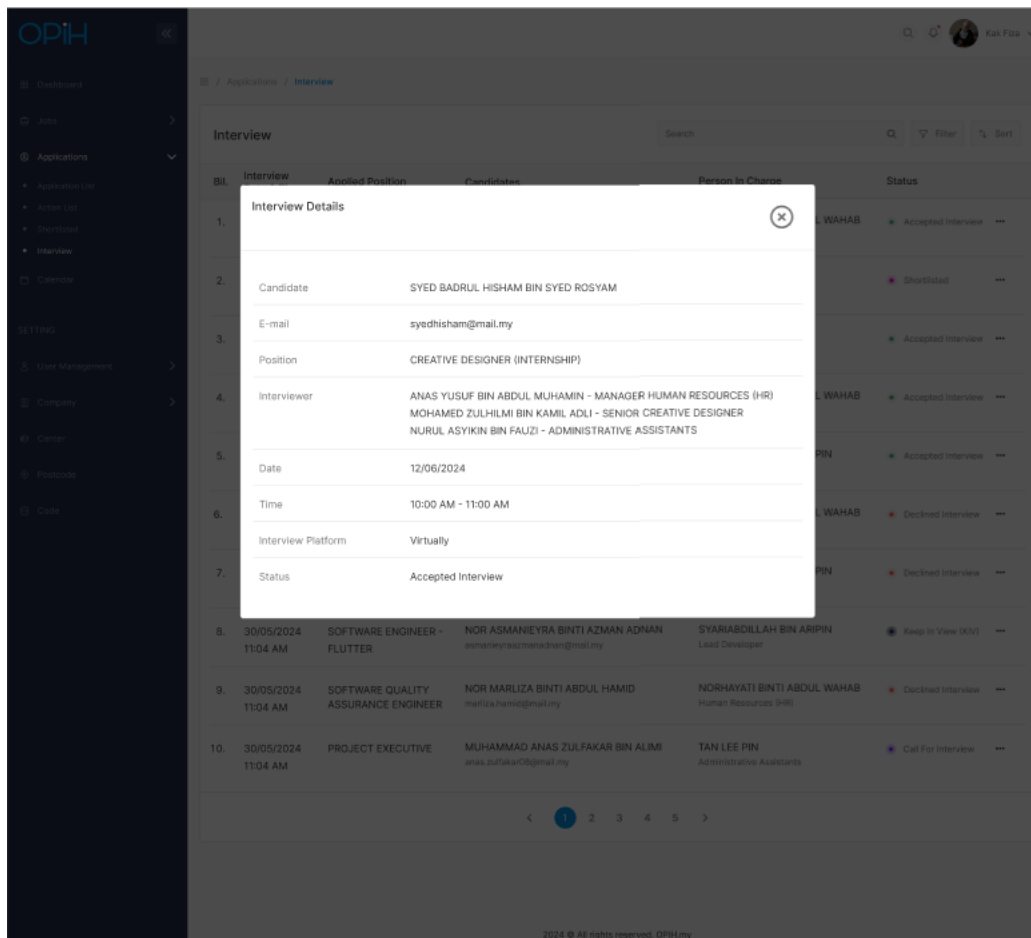
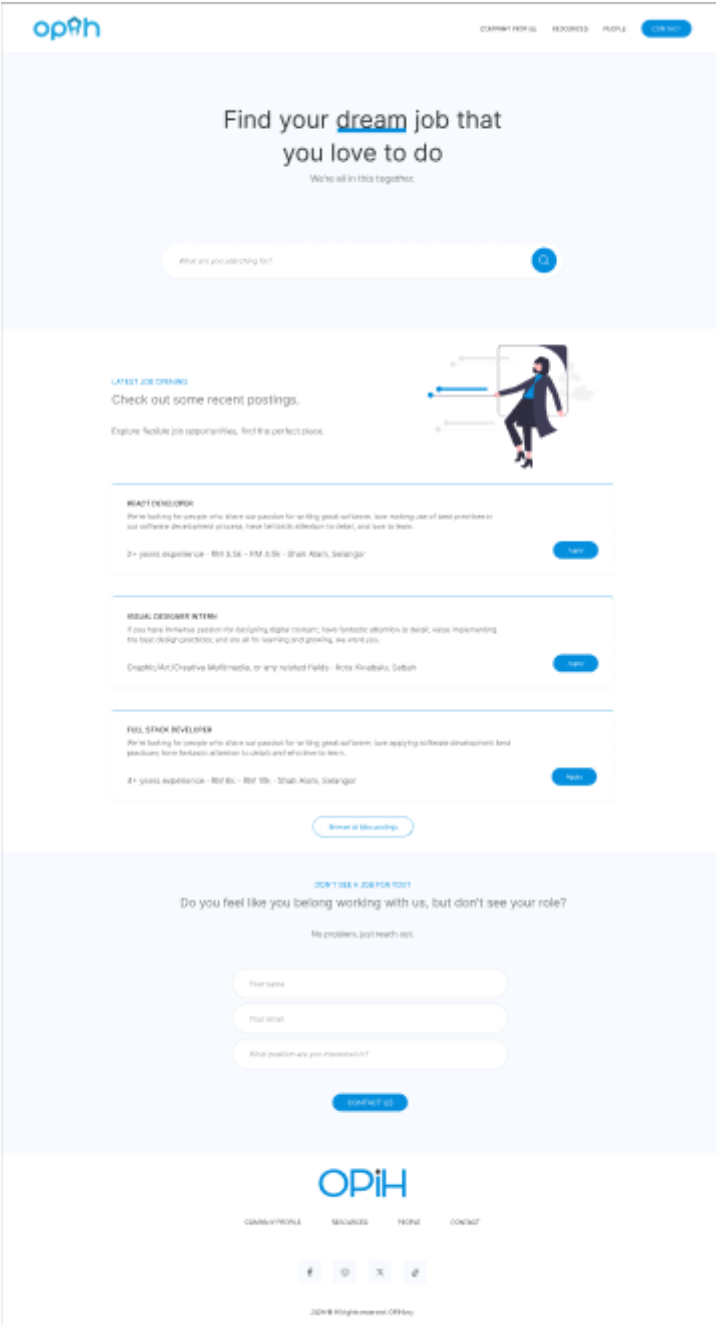


Figure 3.27 View interview details

The Interview List Page acts as a central point for overseeing candidates set for interviews with the company. This page presents an extensive list of candidates, featuring their names, application statuses, arranged interview dates, times, and pertinent information. It enables HR staff and recruiters to effectively monitor and arrange interviews, guaranteeing a smooth workflow. This page offers a clear summary of future interviews, which aids in maintaining organization, improves communication with candidates, and facilitates effective decision-making during the hiring process.

3.3.7 User interface: Applicant homepage



The screenshot displays the OPIH Applicant homepage. At the top, the OPIH logo is on the left, and navigation links for 'CURRENT FORMS', 'RESOURCES', 'PEOPLE', and 'CONTACT' are on the right. The main header features the text 'Find your dream job that you love to do' with 'dream' underlined, followed by the tagline 'We're all in this together.' Below this is a search bar with the placeholder text 'What are you searching for?' and a magnifying glass icon. The 'LATEST JOB OPENING' section is titled 'Check out some recent postings.' and includes an illustration of a person climbing a ladder. It lists three job openings: 'WEBSITE DEVELOPER' (2+ years experience, RM 3.5k - RM 5.5k, Shah Alam, Selangor), 'VISUAL DESIGNER INTERN' (Creative Multimedia, RM 3k - RM 5k, Shah Alam, Selangor), and 'FULL STACK DEVELOPER' (2+ years experience, RM 4k - RM 6k, Shah Alam, Selangor). Each listing has an 'Apply' button. A 'View all listings' button is at the bottom of the list. The 'JOIN TODAY' section asks 'Do you feel like you belong working with us, but don't see your role?' and includes a 'No problem, just reach out.' message. It features three input fields for 'Your name', 'Your email', and 'What position are you interested in?', followed by a 'Contact us' button. The footer contains the OPIH logo, navigation links, social media icons, and the text '©2018 OPIH. All rights reserved. OPIH.my'.

Figure 3.28 Applicant homepage

This is the applicant homepage or job portal, where applicant search for their desired job. This page is a public access, so no need to login or signup from any account. After applicant found their desired job, they can read the details of the job postings. If they interested, they need to click “Apply” button to fill in the application form.

3.3.8 User interface: Post job

The screenshot shows the 'Create Job' form in the OPIH system. The form is titled 'Job Details' and contains several sections:

- Job Position:** GRAPHIC DESIGNER
- Department:** CREATIVE DEPARTMENT
- Specialized Area:** GRAPHIC DESIGN, USER EXPERIENCE UX DESIGN
- Company:** MZR GLOBAL SDN BHD
- Campus/Centre:** HQ
- Job Type:** FULL-TIME
- Remote:** ON-SITE
- Experience Level:** ENTRY LEVEL
- Salary Range:**
- Position Overview:** As a React Native Developer, you'll be an integral member of a software engineering team that designs and develops world-class applications with React Native. You'll be working closely with other engineers and team members to work on delightful applications and features that make a big impact on users.
- Perks and Benefits:**
- Description:** Responsibilities
 - Developing new user-facing features using React.js
 - Building reusable components and front-end libraries for future use
 - Translating designs and wireframes into high quality code
 - Optimizing components for maximum performance across a vast array of web-capable devices and browsers
 - Stay up-to-date with the latest trends and best practices in front-end development, incorporating new technologies as appropriate.

The form has 'Cancel' and 'Submit' buttons at the bottom.

Figure 3.29 Create job description

An employer can post job vacancies for the hiring employee by giving job details information. Firstly, the user must give the job title. The title is important for the job seeker which is applicant as they will search the job by using the title keyword.

3.3.9 User interface: Employer homepage

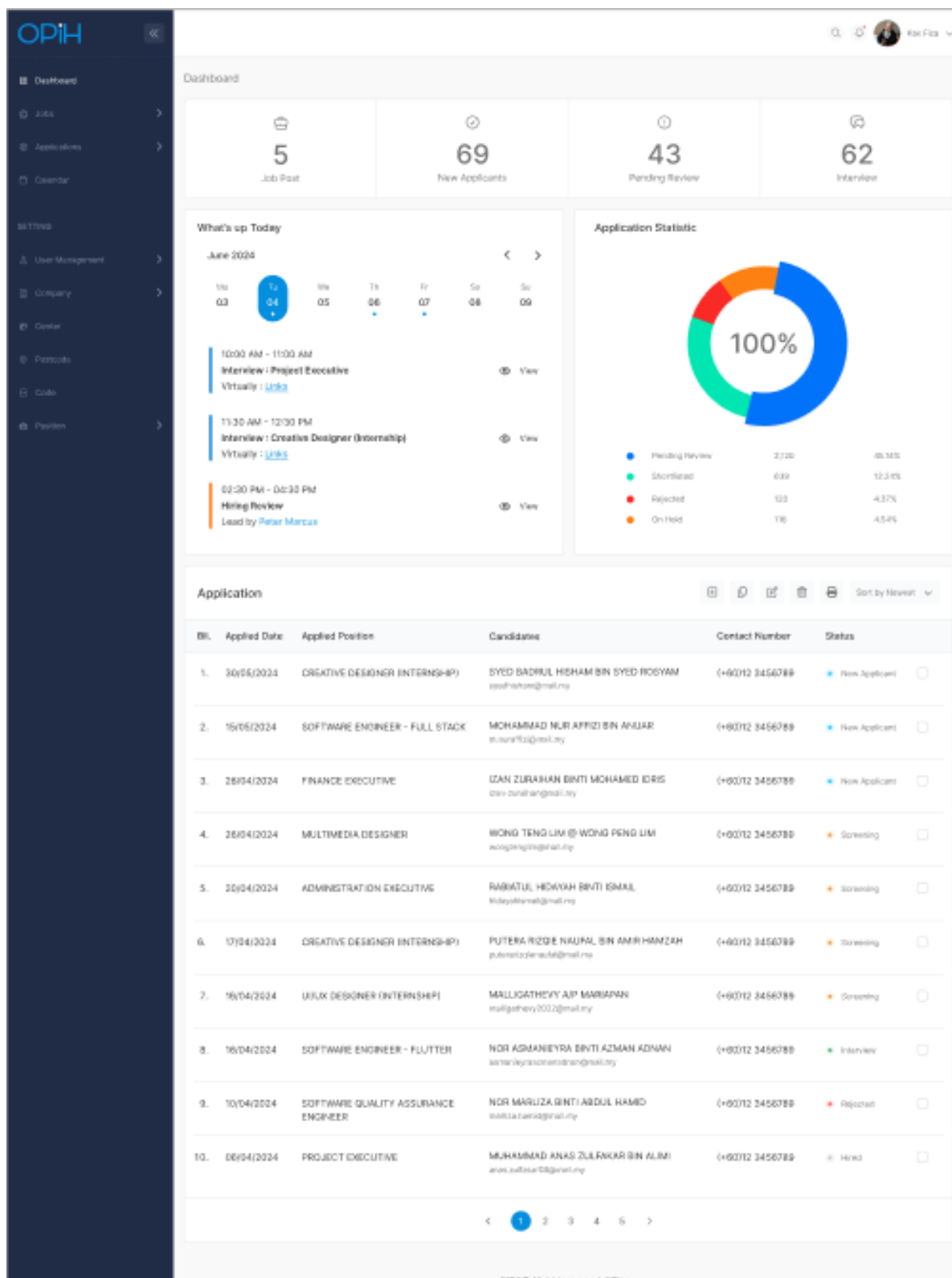


Figure 3.30 Employer homepage

This interface is for Company employer. The employer can search their posts as well as can post a job for recruiting employees. The pie chart shows the percentage for each job status such as New Applicant, Review, Shortlisted for Interview, Interviewed, KIV and Rejected.

3.3.10 ERD diagram: Database design

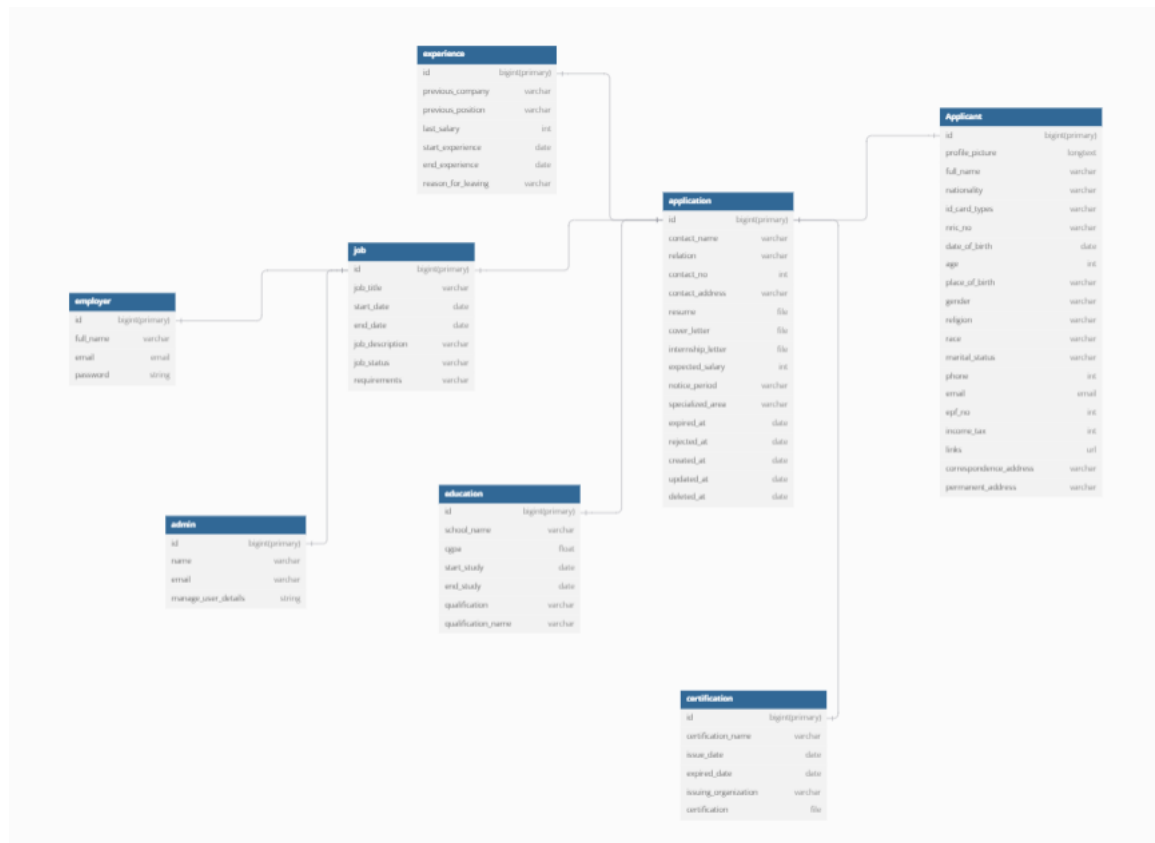


Figure 3.31 Entity Relationship diagram

This entity-relationship diagram contains 8 entities, with each of them have entities between 4 to 21 attributes.

Table 3.10 Entity-relationship database in table

Entity	Attribute	Data Type
Employer	EmployerID	Char (20)
	Full_name	Char (25)
	Email	Char (25)
	Password	String (30)
Job	JobID	Char (20)
	Job_title	Char (50)
	Start_date	Date
	End_date	Date
	Job_description	Char (300)
	Job_status	Char (20)
	Requirements	Char (300)
Application	ApplicationID	Char (20)
	Contact_name	Char (25)
	Relation	Char (20)
	Contact_No	Integer (20)
	Contact_address	Char (100)
	Resume	Varchar (255)
	Cover_letter	Varchar (255)
	Internship_letter	Varchar (255)
	Expected_salary	Integer (5)
	Notice_period	Char (20)
	Specialized_area	Char (20)
	Expired_at	Date
	Rejected_at	Date
	Created_at	Date
	Updated_at	Date
Applicant	ApplicationID	Char (20)
	Profile_picture	Longtext (500)
	Full_name	Char (25)
	Nationality	Char (20)
	Identification_types	Char (20)
	Nric_No	Char (30)
	Date_of_birth	Date

	Age	Integer (3)
	Place_of_birth	Char (20)
	Gender	Char (10)
	Religion	Char (10)
	Race	Char (10)
	Marital_status	Char (15)
	Phone_No	Integer (12)
	Email	Char (25)
	Epf_No	Integer (20)
	Income_tax	Integer (20)
	Correspondence_address	Char (50)
	Permanent_address	Char (50)
Experience	ApplicationID	Char (20)
	Previous_company	Char (20)
	Previous_position	Char (20)
	Last_salary	Integer (5)
	Start_experience_date	Date
	End_experience_date	Date
	Reason_for_leaving	Char (50)
Education	ApplicationID	Char (20)
	School_name	Char (30)
	Grade	Float (20)
	Start_study	Date
	End_study	Date
	Qualification_type	Char (15)
	Qualification_name	Char (20)
Professional Certification	ApplicationID	Char (20)
	Certification_name	Char (30)
	Issue_date	Date
	Expired_date	Date
	Issuing_organization	Char (30)
	Certification	Varchar (255)
Admin	AdminID	Char (20)
	Name	Char (25)
	Email	Char (25)

	Manage_user_details	Char (20)
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3.4 Develop

This is the third phase in this project which is the development phase. This phase is the step in which the design of the system is turned into a completely operational application. In this stage, the technical execution of the suggested features occurs, including coding the user interface, integrating backend functionalities, and setting up database connections. For the OPIH system, this entails creating modules for user authentication, managing job applications, scheduling interviews, and other essential features. The process is conducted in iterations, guaranteeing that every feature is evaluated and improved according to feedback to satisfy user needs and uphold system quality. This stage establishes the basis for providing a dependable and effective system. This phase will be discussed further in chapter four (Implementation and Testing).

3.5 Test

The fourth phase in this project is testing phase. This phase is an essential step where the system is assessed to confirm it operates as expected and fulfills the defined requirements (Ilyvia S. et. al., 2004). This stage encompasses different testing methods, including unit testing, integration testing, system testing, and user acceptance testing (UAT), to detect and fix any bugs or problems. For this proposed system, assessments are performed to confirm functionalities such as user login, job application submission, interview arrangements, and database operations. Input from testers and stakeholders is utilized to implement iterative enhancements, guaranteeing the system is strong, easy to use, and prepared for deployment. The testing will be explained in details in chapter four (Implementation and Testing).

3.6 Prototype deploy

The next phase in this project is prototype deployment phase. The prototype deployment phase involves releasing a preliminary version of a software product to gather user feedback and validate design choices (Paulk M. C., 2002). This stage enables stakeholders to engage with the prototype, offering feedback on usability, functionality, and possible enhancements. The input gathered during this stage is essential for enhancing the final product, making sure it aligns with user requirements and anticipations prior to comprehensive development. This phase will be discussed further in chapter four (Implementation and Testing).

3.7 Review

The last phase of this proposed system is reviewing phase. The aim of this phase is to evaluate the project's advancement, collect input, and confirm alignment with project objectives and client expectations (Ilieva S. et. al., 2004). During this stage, input from stakeholders, such as HR experts

and prospective users, is collected through demos, testing outcomes, and prototype assessments. This stage also entails recording insights gained and preparing for any essential modifications or future improvements to guarantee the system's enduring success and scalability. This reviewing phase will be elaborate in details in chapter four (Implementation and Testing)

3.8 Summary

Chapter 3 describes the Agile approach employed for creating the OPIH web application, highlighting adaptability and incremental advancement through various stages. It starts with the Planning stage, where objectives for the project are established, then moves to the Design stage, which emphasizes system architecture and user interface. The Development stage subsequently converts these designs into a working application, followed by the Testing stage, where the system undergoes thorough evaluation for performance and functionality. The Prototype Deployment stage facilitates engagement and feedback from stakeholders, whereas the Review stage assesses the project's conformity with goals. These linked stages prepare for Chapter 4, which will expand on the Implementation and Testing processes, outlining the results and success of the Agile method in fulfilling user requirements and project objectives.

CHAPTER 4: IMPLEMENTATION

4.1 Introduction

A process that defines in what way the system is built is known as the system implementation (Hardy, 1973). A new system can be implemented in four ways. All the details related to software as well as hardware that is used to develop the system proposed in order to fulfil the system requirements and client demands are covered in system implementation. The logical and physical implementation used in the system also explained in this segment. Development of the interface is discussed in physical development and the system's functionality is discussed in logical implementation. Process that is concerned about yielding with system elements that are lowest level in the system hierarchy is system implementation (Molnar & Maris, 2015).

4.2 Details of implementation

The logical and physical implementation of the system will be covered in this segment as mentioned above, this part covers the physical logical implementation of the system. Later in this chapter, we will discuss about the software and hardware that are used to build the proposed system.

4.2.1 Software Required

- 1) Visual Studio Code
- 2) Development environment tool (Laragon)
- 3) Microsoft Edge

4.2.1.1 Visual Studio Code

Visual Studio Code (VS Code) is a source code editor. There are many source code editor tools available, but VS Code is the most convenient for web-application development. It is easy to understand and implement its functionality. VS Code is a source-code editor with powerful features like debugging, Git integration, extensions, and support for many programming languages VS Code is also very reliable (Visual Studio Code, n.d.). PHP is used as a programming language in it, but other languages can also be used. To develop the proposed application for this project, VS Code is used.

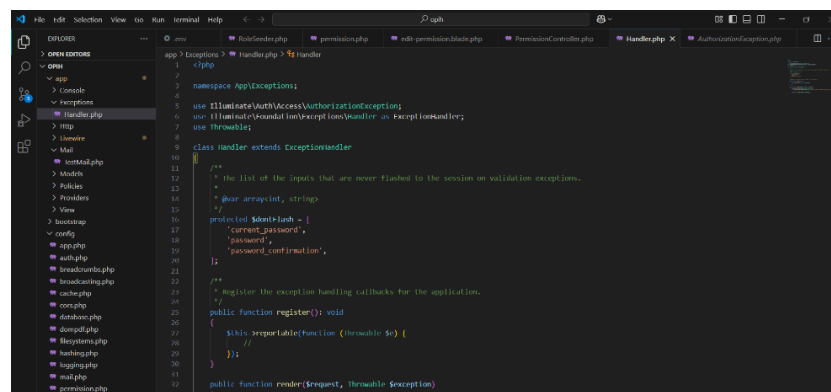


Figure 4.1 Visual Studio Code

4.2.1.2 Development environment tool (Laragon)

Laragon is a portable, powerful and user-friendly local development environment for Windows. Laragon simplifies the procedure for configuring web development stacks. It comes pre-configured with essential tools like Apache or Nginx, MySQL or MariaDB, PHP and Node.js which allowing developers to create and manage projects quickly without dealing with complex configurations. Laragon is recognized for its fast performance, user-friendly interface, low resource consumption, and modular design, making it perfect for developing contemporary web applications (Laragon, n.d.). As for this proposed project, we will be using MySQL and Nginx to setup the development environment for the web-based system.

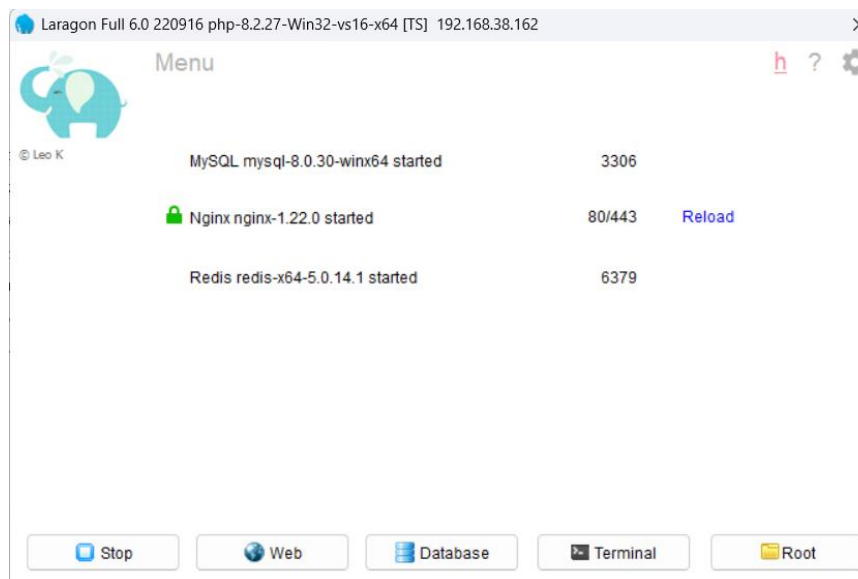


Figure 4.2 Laragon Home Page

4.2.1.3 Microsoft Edge

The proposed system for this project is a web-based application. Therefore, a browser device is required. I choose Microsoft Edge over Google Chrome because it has an overall better performance than Chrome as it often uses fewer system resources (like RAM and CPU) which leads to smoother performance.

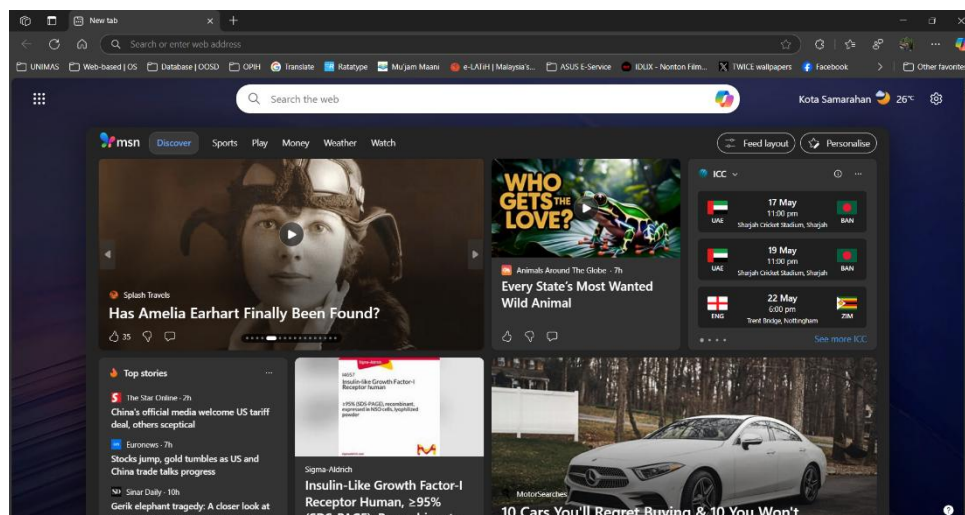


Figure 4.3 Microsoft Edge Home Page

4.2.2 Introduction of user roles

This system comprises three types of users namely the applicant, Employer and the higher administration of the system.

The applicant can do the following tasks in the system:

- 1) View job post
- 2) Search job
- 3) Fill in job application form
- 4) Download filled-in job application details in PDF
- 5) View interview details if accepted

The company employers can perform the following tasks:

- 1) Login to the system
- 2) Update their user profile
- 3) Add users into the system
- 4) Create, update and post Job details
- 5) View application details
- 6) Set interview for selected application
- 7) Create and update company information

The system administrator will be able to perform the tasks below:

- 1) Manage user details
- 2) Approve job postings

4.2.2.1 System interface

This is the system user homepage. User can review this homepage without any sign in process into the system as this system is for public viewing. Here are few contents to a user that may review. Company profile is the details of the company who are looking for new hire. Form section is for the job application form, where user can click on that section to apply for their desired job. Login button is only for employers and administrators. There is also search job section, where user can search the keyword of their desired job.

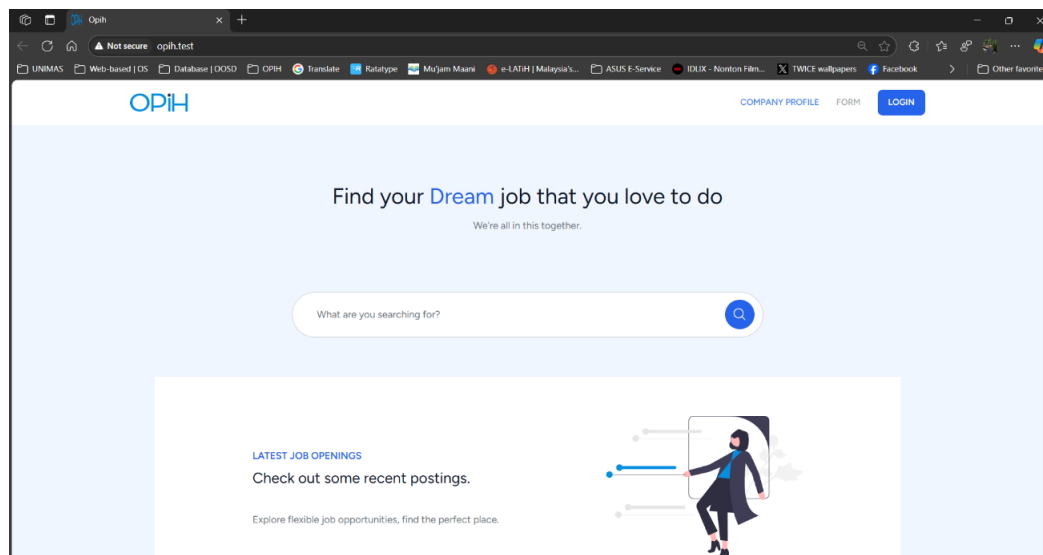


Figure 4.4 System home page

4.2.2.2 View Job Post

This is the view job post section. This section is located in the home page. User can view the details of the occupation. If applicant want to apply for their desired job, they need to click apply button to fill in the job application form.

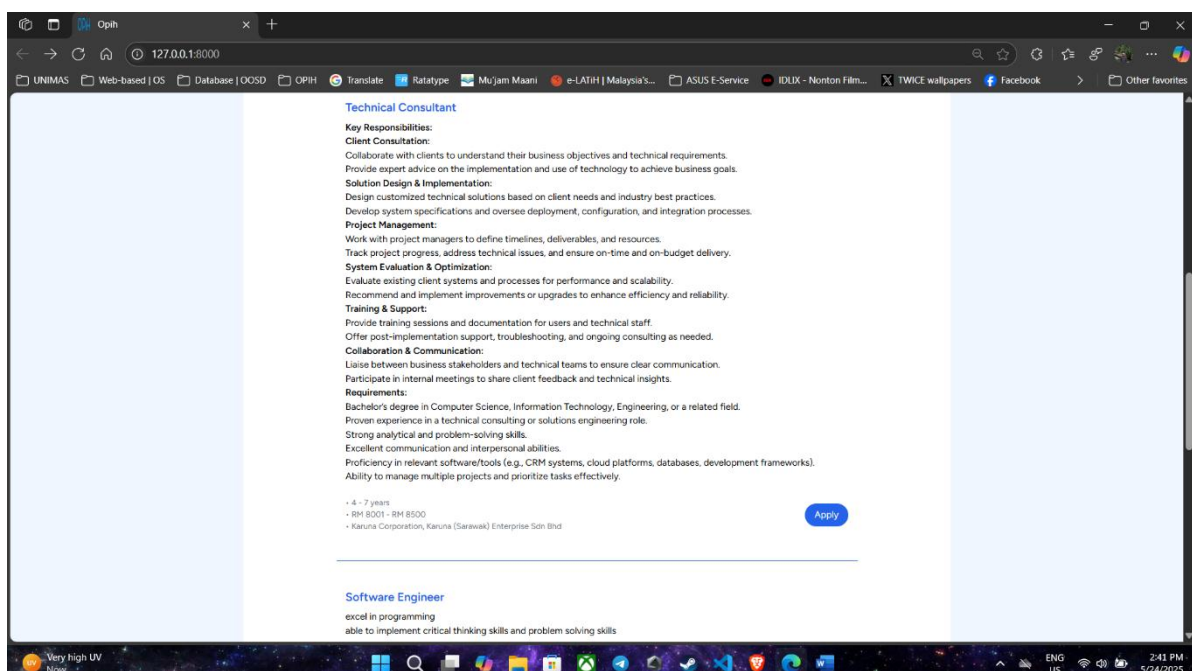


Figure 4.5 Job Post Details

4.2.2.3 Job Application Form

Applicants wishing to apply for the position must complete this application form. The document contains 7 sections. These sections have been thoughtfully designed to enable the company to evaluate the applicant's honesty and commitment to the advertised position.

4.2.2.3.1 Personal Information Section

According to this section of the form, applicants must provide their personal details. Applicants must upload their profile photo. Additionally, candidates must submit their personal information including full name, ID card number, email address, mailing address, and additional details. This segment has been designed to evaluate the seriousness of a candidate in pursuing a job opportunity.

The screenshot shows the 'APPLICATION FOR:' section with radio buttons for 'Employment' and 'Internship'. Below this are four dropdown menus: 'Specialized Area', 'Position', 'Company', and 'Preferred Centre', all set to 'Please select'. A sidebar on the left lists seven sections: 1 | PERSONAL INFORMATION, 2 | EXPERIENCE, 3 | EDUCATION, 4 | PROFESSIONAL CERTIFICATION, 5 | EMERGENCY CONTACT INFORMATION, 6 | DOCUMENTS, and 7 | APPLICANT DECLARATION. The main content area is titled 'Personal Information' and features a profile picture upload section with a placeholder image and an 'Upload' button. Below this are input fields for 'Full Name (as per IC)', 'Nationality', 'Type of Identity Card', 'NRIC / Passport Number', 'Date of Birth', 'Age', and 'Place of Birth'.

Figure 4.6 Personal Information section [Part 1]

The screenshot shows the continuation of the 'Personal Information' section. It includes input fields for 'Date of Birth' (format dd/mm/yyyy), 'Age', and 'Place of Birth'. Below these are dropdown menus for 'Gender', 'Religion', and 'Race'. Further down are dropdown menus for 'Marital Status' and 'Mobile Phone Number', followed by an 'E-mail' input field. The 'Correspondence Address' section includes input fields for 'street name 1' and 'street name 2', and dropdown menus for 'Country', 'State', 'City', and 'Postcode'. A checkbox option is provided: 'Please mark if the permanent address is the same as correspondence address.' The 'Permanent Address' section includes an input field for 'street name 1'.

Figure 4.7 Personal Information section [Part 2]

Country *
Please select

State *
Please select

City *
Please select

Postcode *
Please select

☐ Please mark if the permanent address is the same as correspondence address. *

Permanent Address *

street name 1

street name 2

Country *
Please select

State *
Please select

City *
Please select

Postcode *
Please select

EXPERIENCE →

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Figure 4.8 Personal Information section [Part 3]

4.2.2.3.2 Experience section

This section covers experience. This part is designed for applicants to complete if they possess prior work experience at their former company. The HR team can review the applicant's most recent salary and the rationale for leaving their last job, allowing them to determine whether to move forward with an interview or reject the application.

APPLICATION FOR: ☒ Employment ☐ Internship

Specialized Area *
Please select

Position *
Please select

Company *
Please select

Preferred Centre
Please select

1 | PERSONAL INFORMATION

2 | EXPERIENCE

3 | EDUCATION

4 | PROFESSIONAL CERTIFICATION

5 | EMERGENCY CONTACT INFORMATION

6 | DOCUMENTS

7 | APPLICANT DECLARATION

Work Experience

Please provide up to three of your work experience (if any).

ADD EXPERIENCE

No.	Name of Company	Position	Last Salary (RM)	Start Date	End Date	Reason for Leaving	Action
No data found							

← PERSONAL INFORMATION

EDUCATION →

Figure 4.9 Experience section

4.2.2.3.3 Education section

This section pertains to education. Applicants must complete this section to assist the employer in reviewing the applicant's educational background. The employer can assess the applicant's job performance by considering their prior educational grades. If an applicant possesses multiple qualifications that exceed Diploma or Foundation levels and has achieved a degree level, then that applicant is more likely to be employed by the company.

The screenshot shows the 'Education' section of an application form. At the top, there are tabs for 'APPLICATION FOR: Employment' (selected) and 'Internship'. Below this are four dropdown menus: 'Specialized Area', 'Position', 'Company', and 'Preferred Centre', all with 'Please select' as the current value. On the left, a sidebar lists seven sections: 1 | PERSONAL INFORMATION, 2 | EXPERIENCE, 3 | EDUCATION (highlighted in blue), 4 | PROFESSIONAL CERTIFICATION, 5 | EMERGENCY CONTACT INFORMATION, 6 | DOCUMENTS, and 7 | APPLICANT DECLARATION. The main content area is titled 'Education' and includes the instruction: 'Please provide up to two of your educational qualification alongside with your Sijil Pelajaran Malaysia (SPM) certificate (Mandatory)'. There is a blue 'ADD EDUCATION' button. Below this is a table with the following headers: 'No.', 'University/College/Secondary School', 'CGPA/Grade', 'Start Date', 'End Date', 'Qualification', 'Qualification Name', and 'Action'. The table currently shows 'No data found'. Navigation arrows point to 'EXPERIENCE' on the left and 'PROFESSIONAL CERTIFICATION' on the right.

Figure 4.10 Education section

4.2.2.3.4 Professional Certification section

This is the section for professional certification. Applicants do not need to complete this section; only those with specific certifications may fill it in and upload their credentials in this professional certification area. Applicants have the option to upload their professional credentials, including the Certified Professional for Requirements Engineering (CPRE) and Project Management Professional (PMP) certifications. Although it's not mandatory, obtaining these certifications could increase your chances of being hired, as they are valued by some companies.

The screenshot shows the 'Professional Certification' section of the application form. The top navigation and dropdown menus are identical to the previous section. The sidebar highlights '4 | PROFESSIONAL CERTIFICATION' in blue. The main content area is titled 'Professional Certification' and includes the instruction: 'Please state your professional certifications, if any, eg: Certified Professional for Requirements Engineering (CPRE), Project Management Professional (PMP), etc.'. There is a blue 'ADD CERTIFICATION' button. Below this is a table with the following headers: 'No.', 'Professional Certification', 'Issue Date', 'Expired Date', 'Issuing Organization', 'Certificate', and 'Action'. The table currently shows 'No data found'. Navigation arrows point to 'EDUCATION' on the left and 'EMERGENCY CONTACT INFORMATION' on the right.

Figure 4.11 Professional Certification section

4.2.2.3.5 Emergency contact information section

This section contains emergency contact details. For the applicant, it ensures that a reliable individual can be contacted promptly during emergencies or unforeseen circumstances while working. For the organization, it provides a reliable method to promptly contact an individual in emergencies, enhancing workplace safety and fostering a sense of preparedness and care for employees.

The screenshot shows the 'APPLICATION FOR:' section with 'Employment' selected. Below this, there are four dropdown menus for 'Specialized Area', 'Position', 'Company', and 'Preferred Centre', all with 'Please select' as the current value. A sidebar on the left lists seven sections: 1 | PERSONAL INFORMATION, 2 | EXPERIENCE, 3 | EDUCATION, 4 | PROFESSIONAL CERTIFICATION, 5 | EMERGENCY CONTACT INFORMATION (highlighted in blue), 6 | DOCUMENTS, and 7 | APPLICANT DECLARATION. The main content area is titled 'Emergency Contact Information' and includes a statement: 'I authorise MZR Group to contact this individual in the case of an emergency.' Below this statement are several input fields: 'Name' (text), 'Relation' (dropdown), 'Contact No.' (text), 'Address' (two lines for 'street name 1' and 'street name 2'), 'Country' (dropdown), and 'State' (dropdown). The browser's address bar shows '127.0.0.1:8000/application-form'.

Figure 4.12 Emergency Contact Information section [Part 1]

This screenshot shows the same 'Emergency Contact Information' section as Figure 4.12, but with the 'EDUCATION' section highlighted in the sidebar. The input fields for 'Name', 'Relation', 'Contact No.', 'Address', 'Country', and 'State' are visible. Additionally, 'City' and 'Postcode' dropdown menus are shown at the bottom of the form. Navigation links '← PROFESSIONAL CERTIFICATION' and 'DOCUMENTS →' are located at the bottom of the form area. The footer of the page displays the 'OPiH' logo and the text '© 2024 All rights reserved.' The browser's address bar remains the same.

Figure 4.13 Emergency Contact Information section [Part 2]

4.2.2.3.6 Documents section

The documents section is a designated part of the job application form where applicants are required to upload essential documents, such as their resume and cover letter. This section enables candidates to provide in-depth information about their skills, experiences, and motivations for seeking the role. By including these documents, the recruitment team can effectively evaluate the suitability of candidates and make informed decisions during the hiring process. Comprehensive guidance is provided to help applicants in submitting their documents in the correct format and complying with the specified size limits.

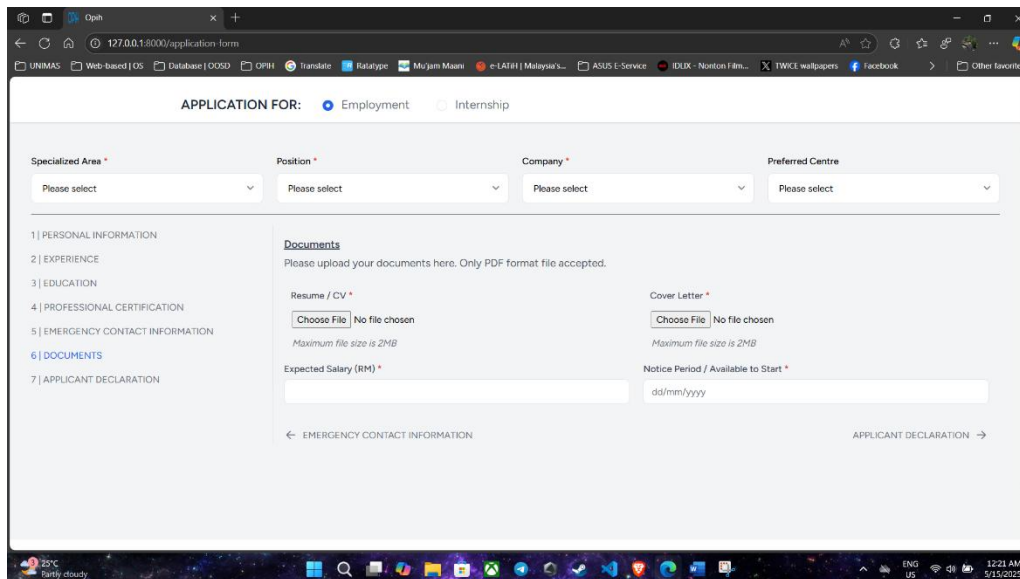
The screenshot shows a web browser window displaying the 'Documents' section of a job application form. The browser's address bar shows '127.0.0.1:8000/application-form'. The page has a navigation bar with 'UNIMAS', 'Web-based | OS', 'Database | OOSD', 'OPH', 'Translate', 'Ratatype', 'Mu'jam Maani', 'e-LATIH | Malaysia's...', 'ASUS E-Service', 'IDEX - Norton Film...', 'TWICE wallpapers', 'Facebook', and 'Other favorites'. The main heading is 'APPLICATION FOR:' with radio buttons for 'Employment' (selected) and 'Internship'. Below this are four dropdown menus: 'Specialized Area *', 'Position *', 'Company *', and 'Preferred Centre', all with 'Please select' as the placeholder. A left sidebar lists seven sections: 1) PERSONAL INFORMATION, 2) EXPERIENCE, 3) EDUCATION, 4) PROFESSIONAL CERTIFICATION, 5) EMERGENCY CONTACT INFORMATION, 6) DOCUMENTS (highlighted), and 7) APPLICANT DECLARATION. The 'Documents' section contains the text 'Please upload your documents here. Only PDF format file accepted.' and two upload areas: 'Resume / CV *' and 'Cover Letter *'. Each area has a 'Choose File' button, 'No file chosen' text, and a note 'Maximum file size is 2MB'. Below these are input fields for 'Expected Salary (RM) *' and 'Notice Period / Available to Start *' with a date format 'dd/mm/yyyy'. Navigation arrows point to 'EMERGENCY CONTACT INFORMATION' and 'APPLICANT DECLARATION'.

Figure 4.14 Documents section

4.2.2.3.7 Applicant Declaration section

The Applicant Declaration section is the final step in the job application form, where applicants affirm the accuracy and truthfulness of the information they have provided. By signing or acknowledging this section, the applicant allows the company to verify the information submitted and understands the potential consequences of providing false or misleading information, which could result in job termination if discovered later. This section is vital for the candidate as it highlights their integrity, accountability, and commitment to transparency, which are important traits valued by employers.

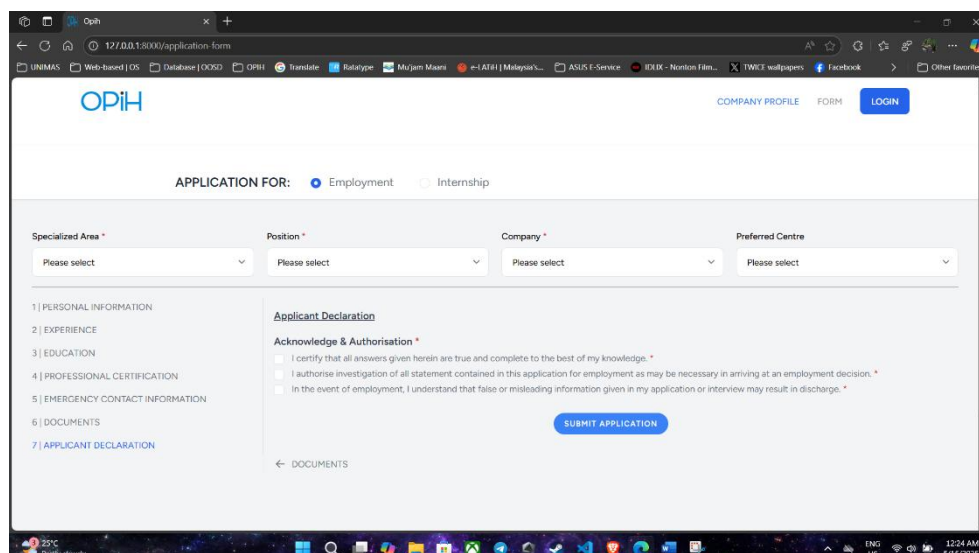
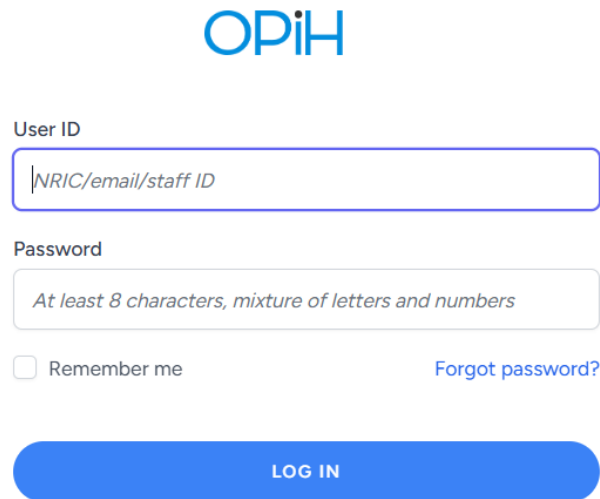
The screenshot shows the 'Applicant Declaration' section of the job application form. The browser window is the same as in Figure 4.14. The 'Documents' section is now behind the 'Applicant Declaration' section. The 'Applicant Declaration' section has a heading 'Applicant Declaration' and a sub-heading 'Acknowledge & Authorisation *'. It contains three checkboxes with associated text: 'I certify that all answers given herein are true and complete to the best of my knowledge. *', 'I authorise investigation of all statement contained in this application for employment as may be necessary in arriving at an employment decision. *', and 'In the event of employment, I understand that false or misleading information given in my application or interview may result in discharge. *'. A blue 'SUBMIT APPLICATION' button is at the bottom. A navigation arrow points back to 'DOCUMENTS'.

Figure 4.15 Applicant Declaration section

4.2.2.4 User sign-in page

This sign-in page allows users to securely access the system using their provided credentials. Registration functionality is not available on this page, as all user accounts are pre-registered by the administrator. Users are only required to log in with the credentials assigned to them.

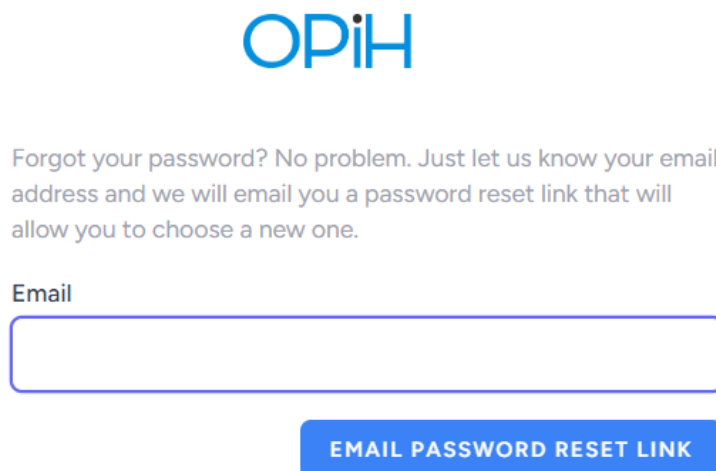


The sign-in page features the OPIH logo at the top. Below it, there are two input fields: 'User ID' with a placeholder 'NRIC/email/staff ID' and 'Password' with a placeholder 'At least 8 characters, mixture of letters and numbers'. A 'Remember me' checkbox is located below the password field, and a 'Forgot password?' link is to its right. At the bottom, there is a blue 'LOG IN' button.

Figure 4.16 Sign-in page

4.2.2.5 Forgot password

Once the user clicks on the forgot password, another tab will start and ask for an existing email address to reset the user password. If the email exists, the system sends a temporary password to email. Users will use the temporary password to sign in and after that, they may change the password with their preferred password.



The forgot password page features the OPIH logo at the top. Below it, there is a message: 'Forgot your password? No problem. Just let us know your email address and we will email you a password reset link that will allow you to choose a new one.' Below this message is an 'Email' input field. At the bottom, there is a blue button labeled 'EMAIL PASSWORD RESET LINK'.

Figure 4.17 Forgot password

4.2.2.6 Update the user profile

Users can update the user details and can change the password. In the following figure are the update profile and change password page.

The screenshot shows a web browser window displaying the 'Update user details [Part 1]' page. The page has a dark blue sidebar on the left with the 'OPIH' logo and a list of navigation items: Dashboard, Jobs, Application, Interview, Calendar, and a 'SETTING' section containing User Management, Company, Campus, Postcode, and Code. The main content area is white and contains two sections. The first section, 'Profile Information', has the subtitle 'Update your account's profile information and email address.' and contains two input fields: 'Name' (with the text 'Super Admin') and 'Email' (with the text 'admin@mzr.my'). Below these fields is a blue 'SAVE' button. The second section, 'Update Password', has the subtitle 'Ensure your account is using a long, random password to stay secure.' and contains two input fields: 'Current Password' and 'New Password'. Below these fields is another blue 'SAVE' button. The browser's address bar shows '127.0.0.1:8000/profile'. The Windows taskbar at the bottom shows the date and time as 1:15 AM on 5/15/2025.

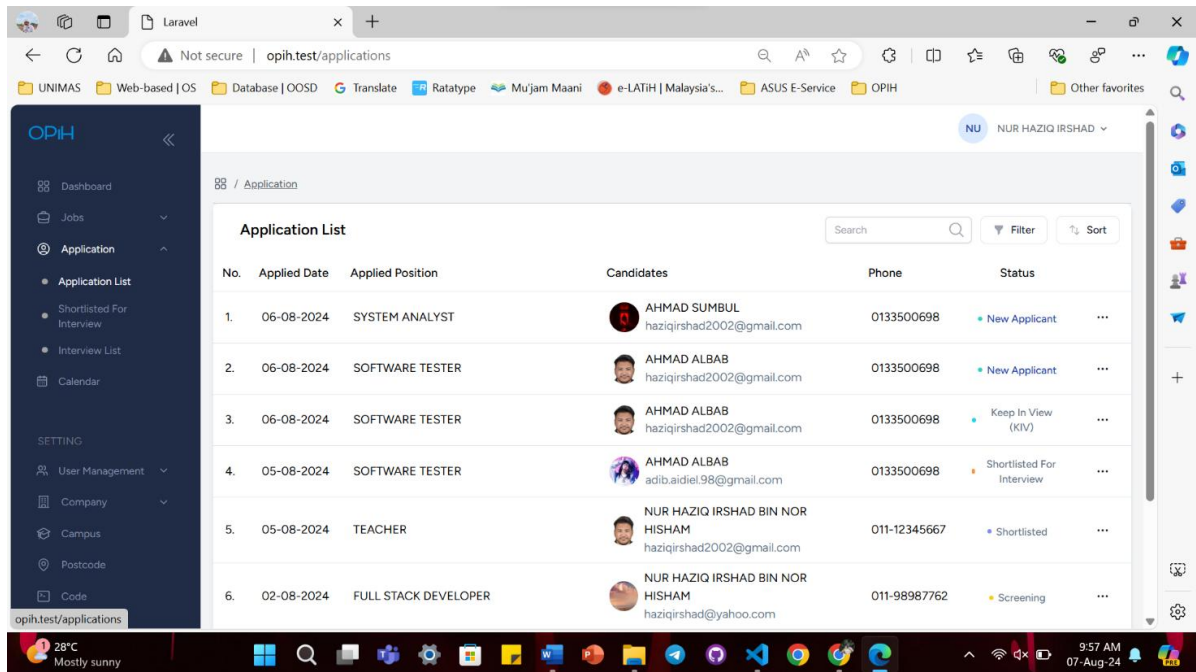
Figure 4.18 Update user details [Part 1]

The screenshot shows the 'Update user details [Part 2]' page. The sidebar is identical to the previous screenshot. The main content area is white and contains two sections. The first section, 'Update Password', has the subtitle 'Ensure your account is using a long, random password to stay secure.' and contains three input fields: 'Current Password', 'New Password', and 'Confirm Password'. Below these fields is a blue 'SAVE' button. The second section, 'Delete Account', has the subtitle 'Delete Account' and a warning message: 'Once your account is deleted, all of its resources and data will be permanently deleted. Before deleting your account, please download any data or information that you wish to retain.' Below the warning message is a red 'DELETE ACCOUNT' button. The browser's address bar shows '127.0.0.1:8000/profile'. The Windows taskbar at the bottom shows the date and time as 1:18 AM on 5/15/2025.

Figure 4.19 Update user details [Part 2]

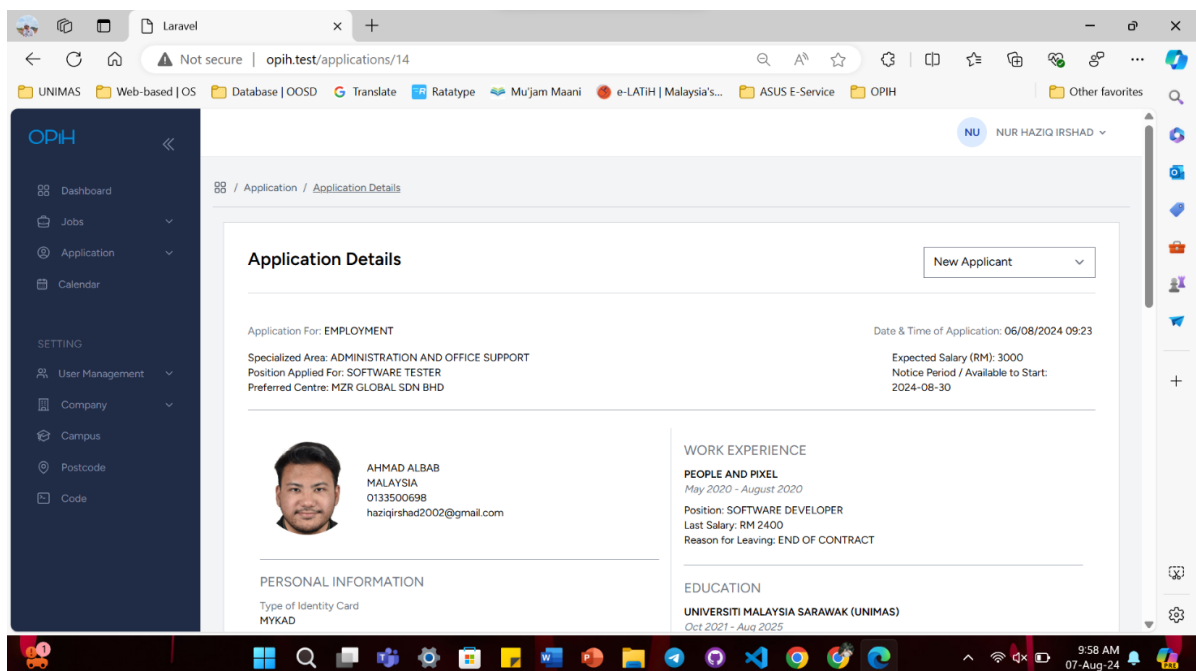
4.2.2.8 View application details

This is the page where employers can see the details of each job application. This page contains all data of each application, including their personal details, preferred position and professional certifications.



No.	Applied Date	Applied Position	Candidates	Phone	Status
1.	06-08-2024	SYSTEM ANALYST	AHMAD SUMBUL haziqirshad2002@gmail.com	0133500698	New Applicant
2.	06-08-2024	SOFTWARE TESTER	AHMAD ALBAB haziqirshad2002@gmail.com	0133500698	New Applicant
3.	06-08-2024	SOFTWARE TESTER	AHMAD ALBAB haziqirshad2002@gmail.com	0133500698	Keep In View (KIV)
4.	05-08-2024	SOFTWARE TESTER	AHMAD ALBAB adibaidiel.98@gmail.com	0133500698	Shortlisted For Interview
5.	05-08-2024	TEACHER	NUR HAZIQ IRSHAD BIN NOR HISHAM haziqirshad2002@gmail.com	011-12345667	Shortlisted
6.	02-08-2024	FULL STACK DEVELOPER	NUR HAZIQ IRSHAD BIN NOR HISHAM haziqirshad@yahoo.com	011-98987762	Screening

Figure 4.20 Application List page



Application Details

Application For: EMPLOYMENT
Specialized Area: ADMINISTRATION AND OFFICE SUPPORT
Position Applied For: SOFTWARE TESTER
Preferred Centre: MZR GLOBAL SDN BHD

Date & Time of Application: 06/08/2024 09:23
Expected Salary (RM): 3000
Notice Period / Available to Start: 2024-08-30

PERSONAL INFORMATION
Type of Identity Card: MYKAD
AHMAD ALBAB
MALAYSIA
0133500698
haziqirshad2002@gmail.com

WORK EXPERIENCE
PEOPLE AND PIXEL
May 2020 - August 2020
Position: SOFTWARE DEVELOPER
Last Salary: RM 2400
Reason for Leaving: END OF CONTRACT

EDUCATION
UNIVERSITI MALAYSIA SARAWAK (UNIMAS)
Oct 2021 - Aug 2025

Figure 4.21 Application Details page [Part 1]

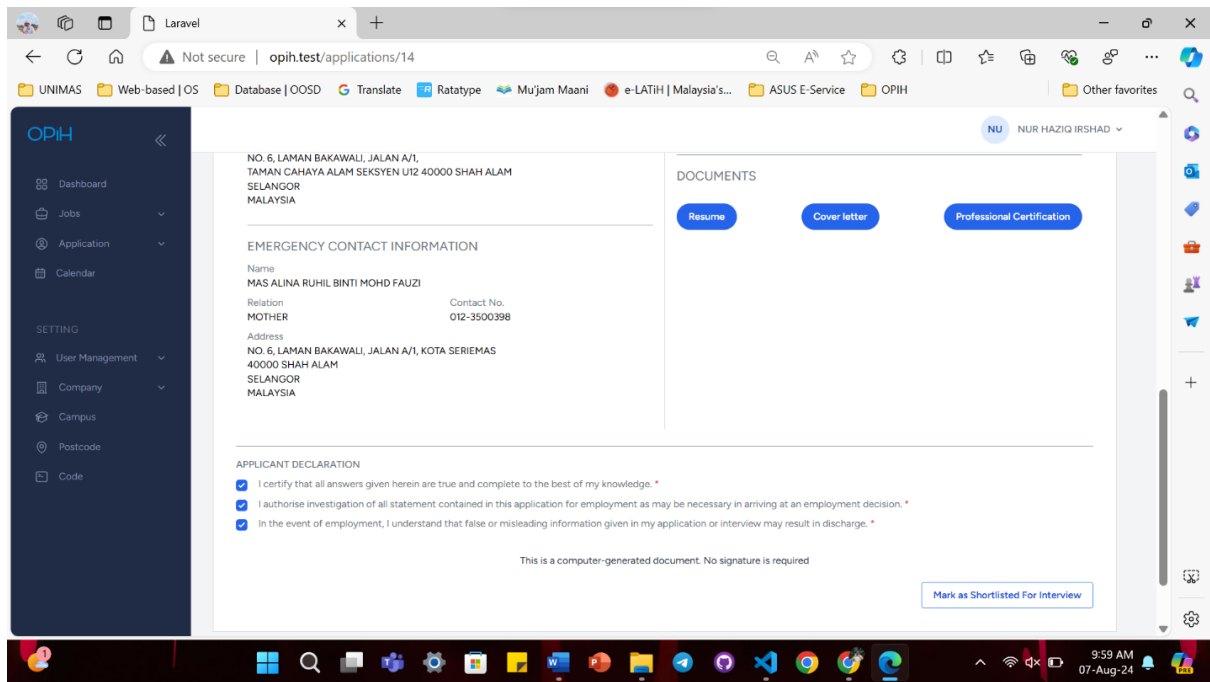


Figure 4.22 Application Details page [Part 2]

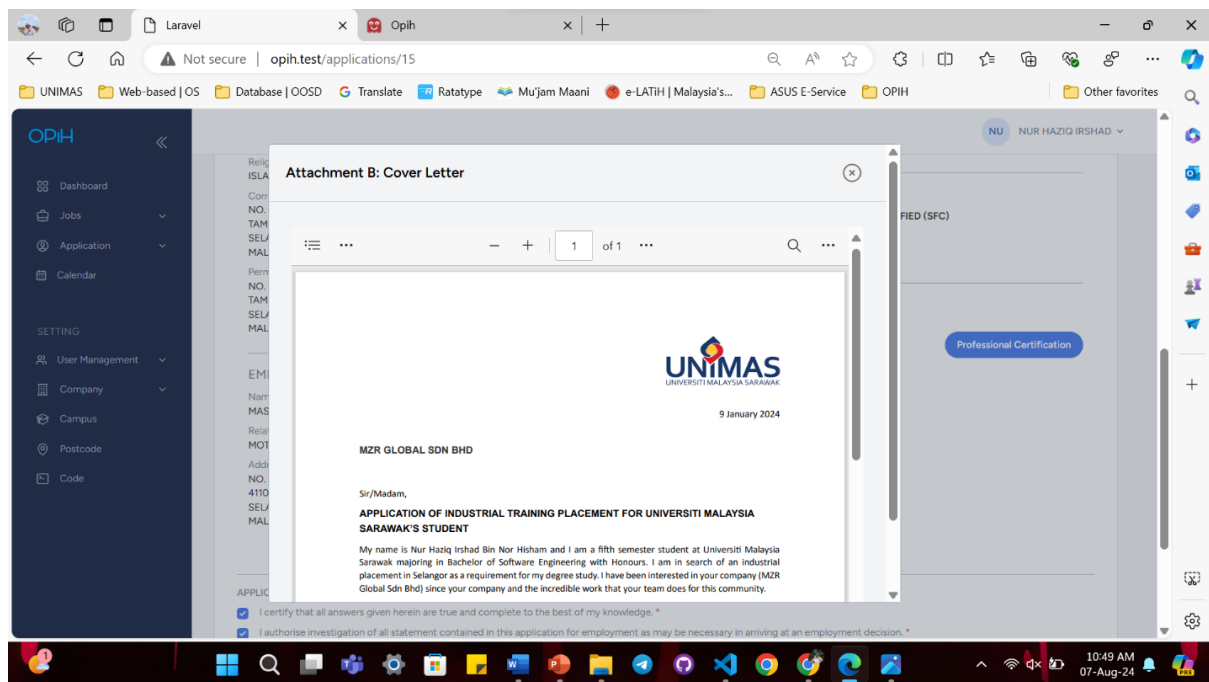


Figure 4.23 View documents from Application Details page

4.2.2.9 Set interview

To set an interview, company will need to use shortlisted for interview page and interview list page. Shortlisted for interview page will outlines the applicants that passed the screening process and succeed to proceed for interview. In this page, the company also can set interview by selecting the dates, venue and mode of interview. After done set the interview, the applicant details will be passed to

interview list page, as they are succeeding in set the interview, thus wait for applicants to accept or reject the interview offer through their respective email.

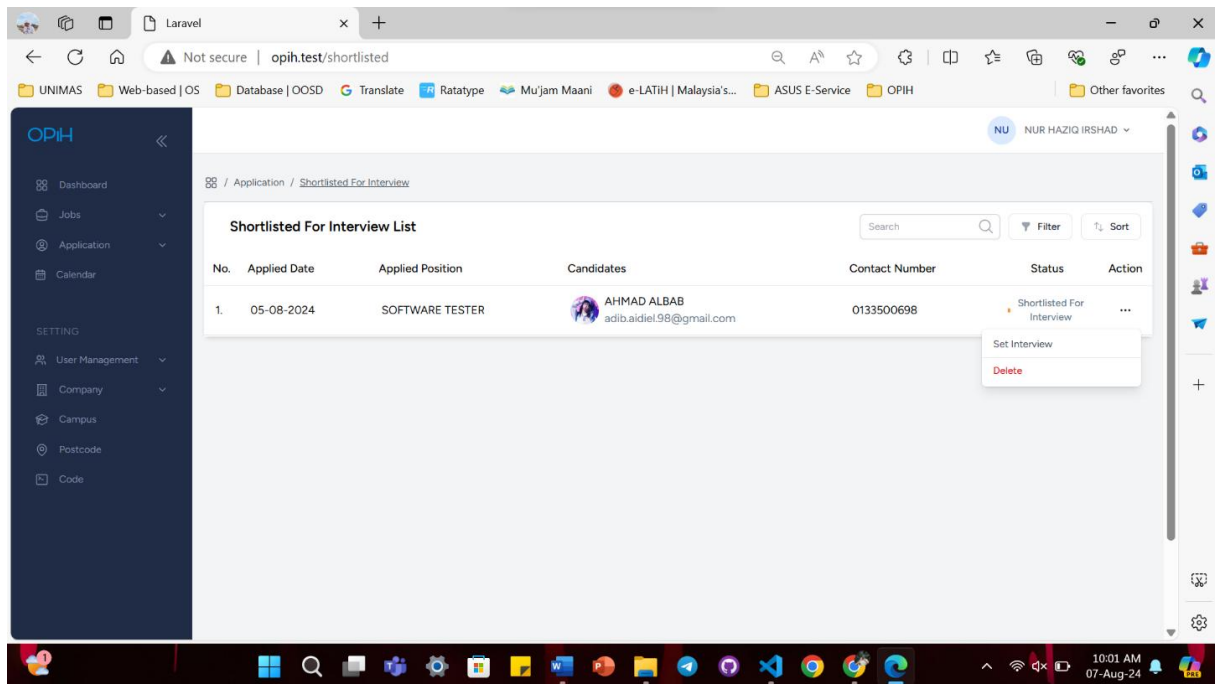


Figure 4.24 Shortlisted for Interview page

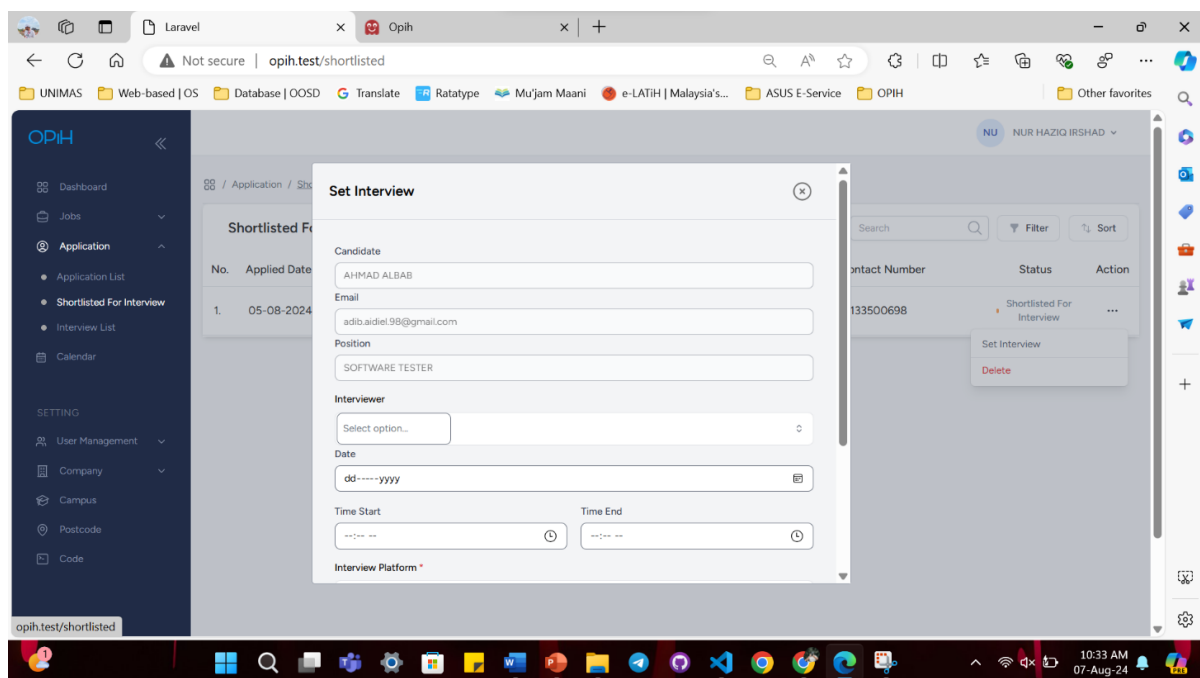


Figure 4.25 Set interview section

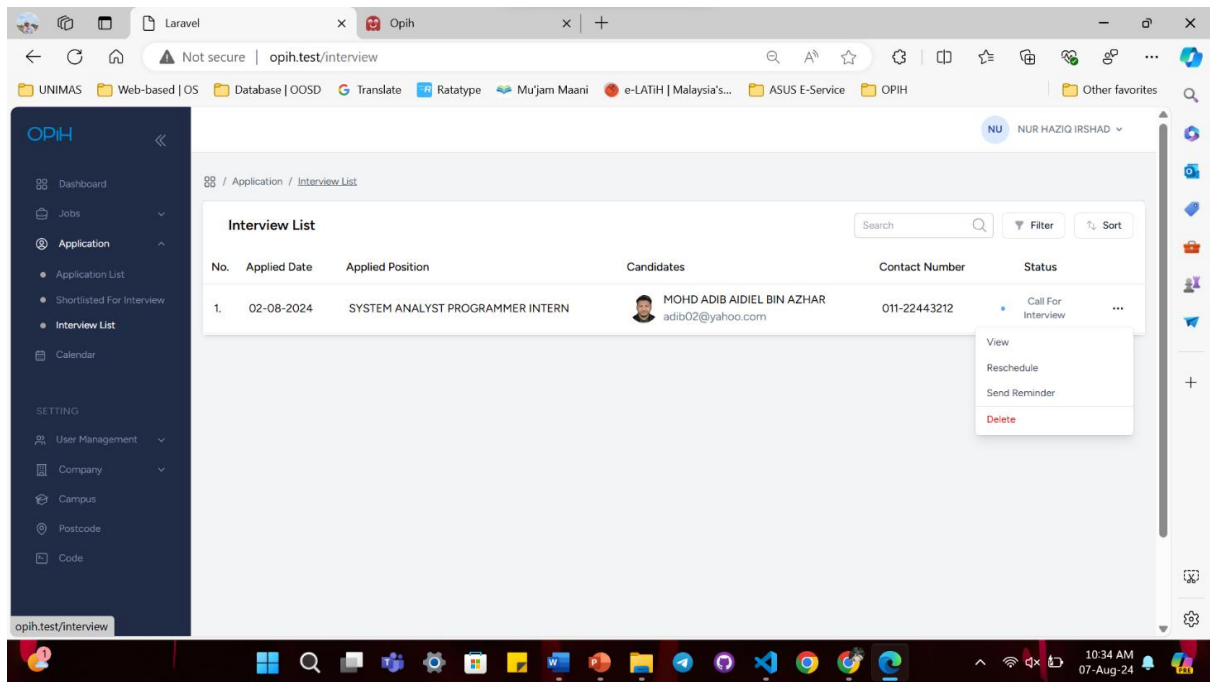


Figure 4.26 Interview List page

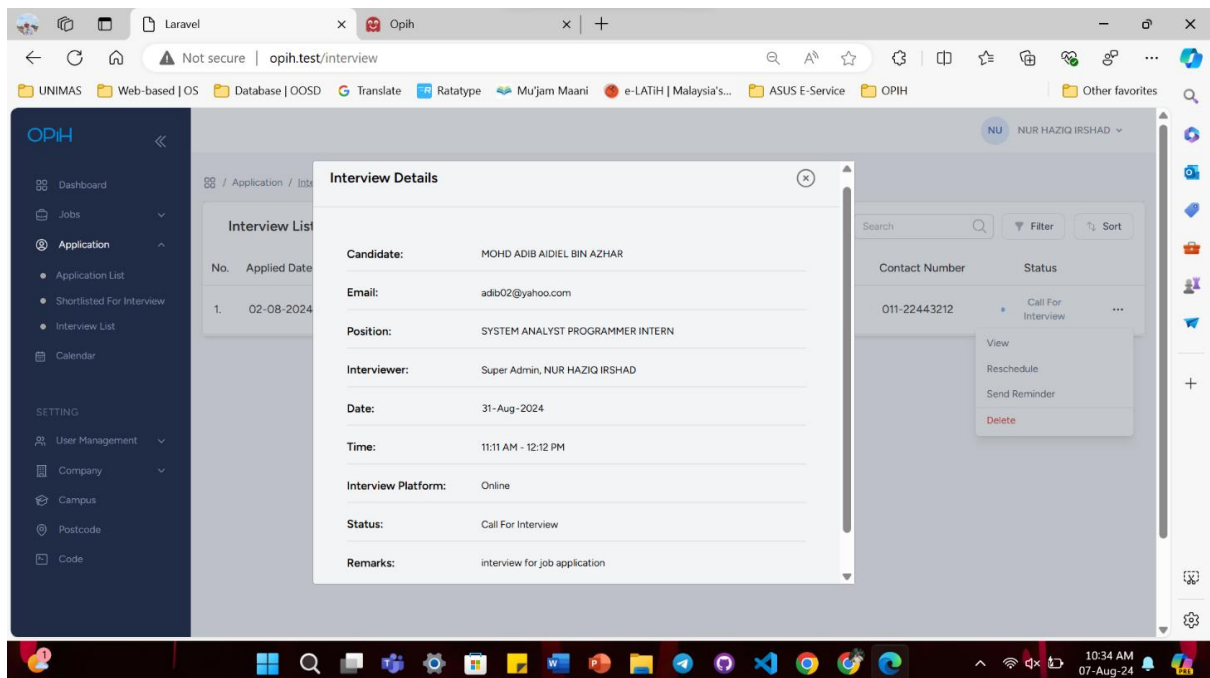


Figure 4.27 View interview details

4.2.2.10 Manage user details

Admin can manage the permissions, roles and users in this system. This page is located in User Management section, where it consists of permissions page, roles page and users list page. For permissions, they can create, view, update and delete the permissions. All these four functions are also applicable to roles and users list section.

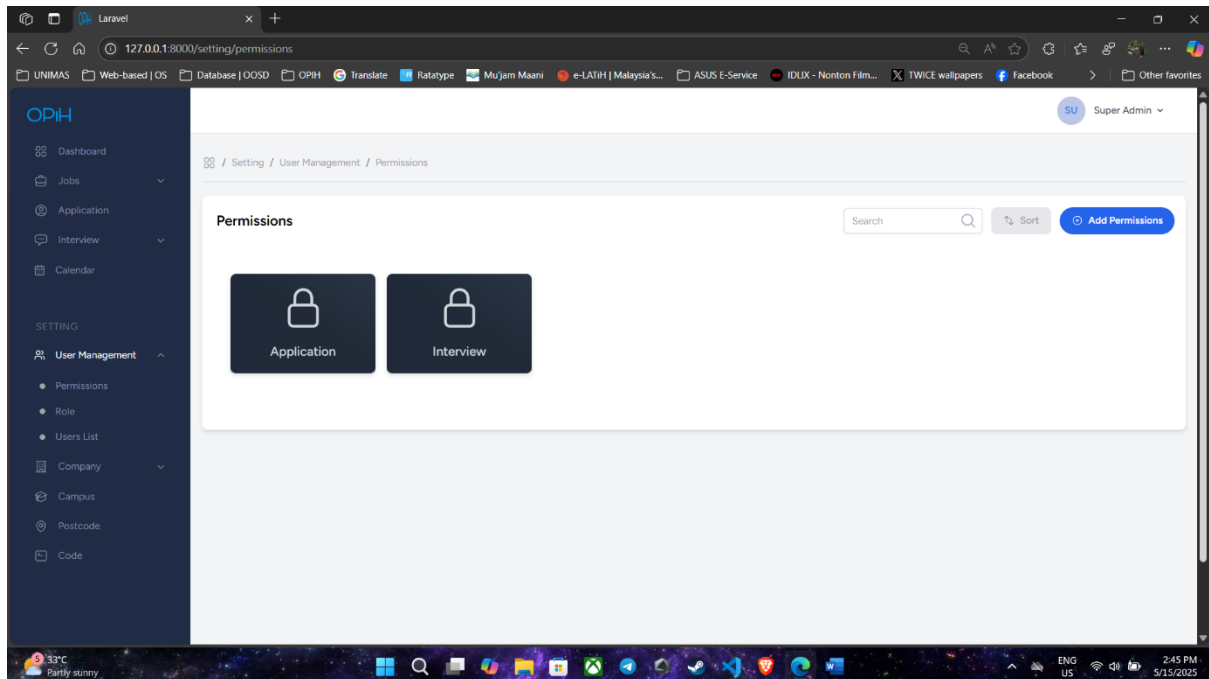


Figure 4.28 Permissions page

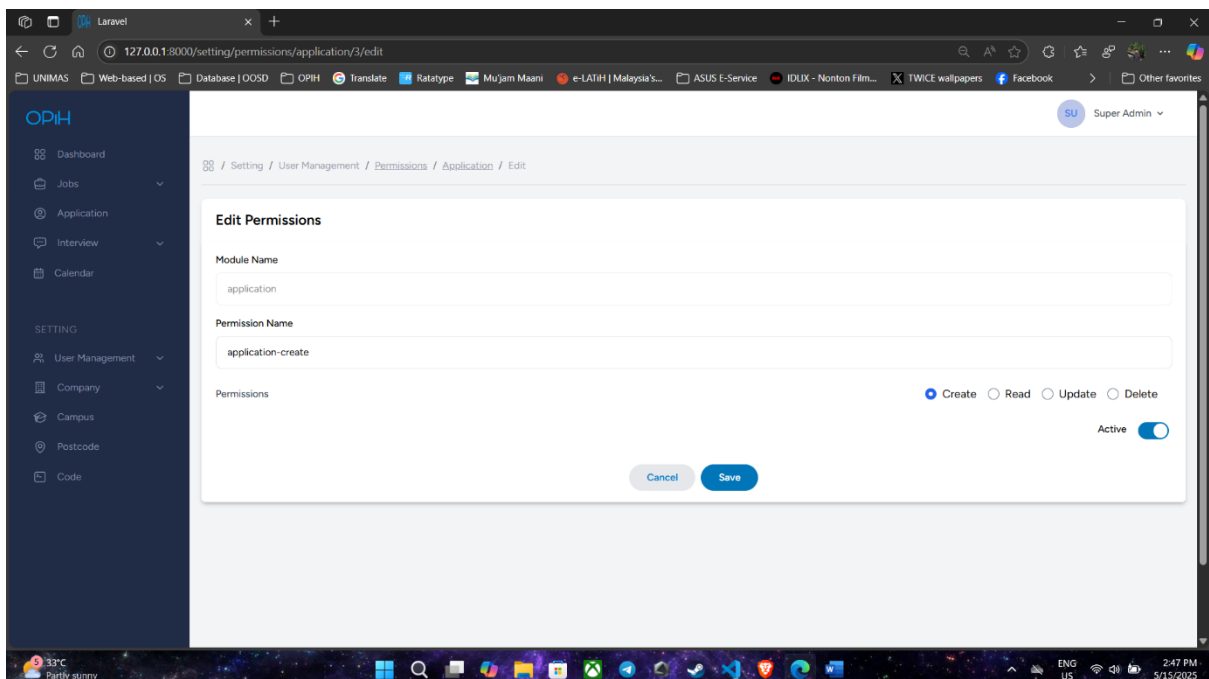


Figure 4.29 Edit permissions

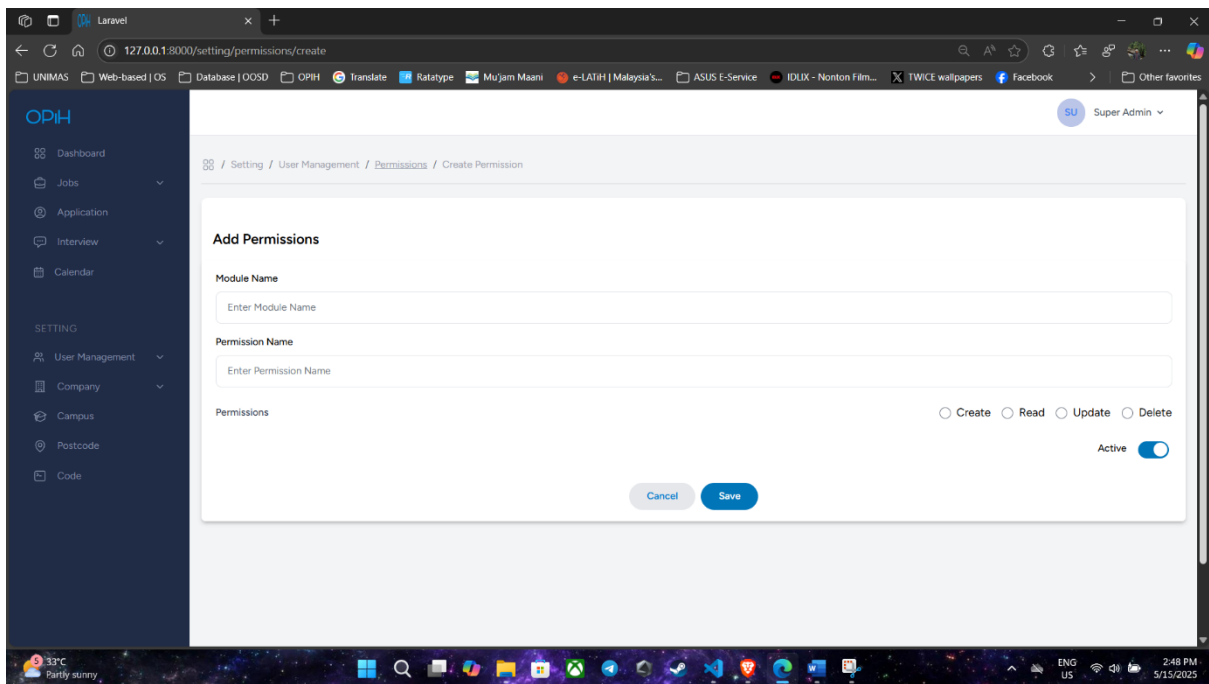


Figure 4.30 Create permission

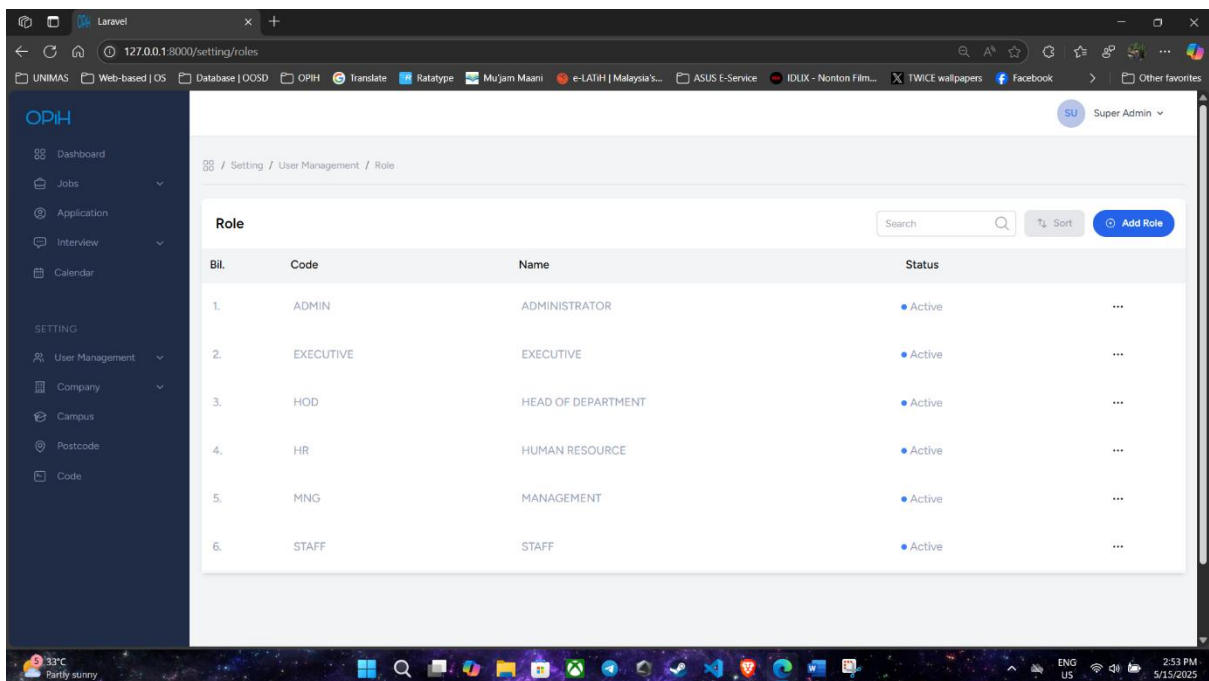


Figure 4.31 List of roles

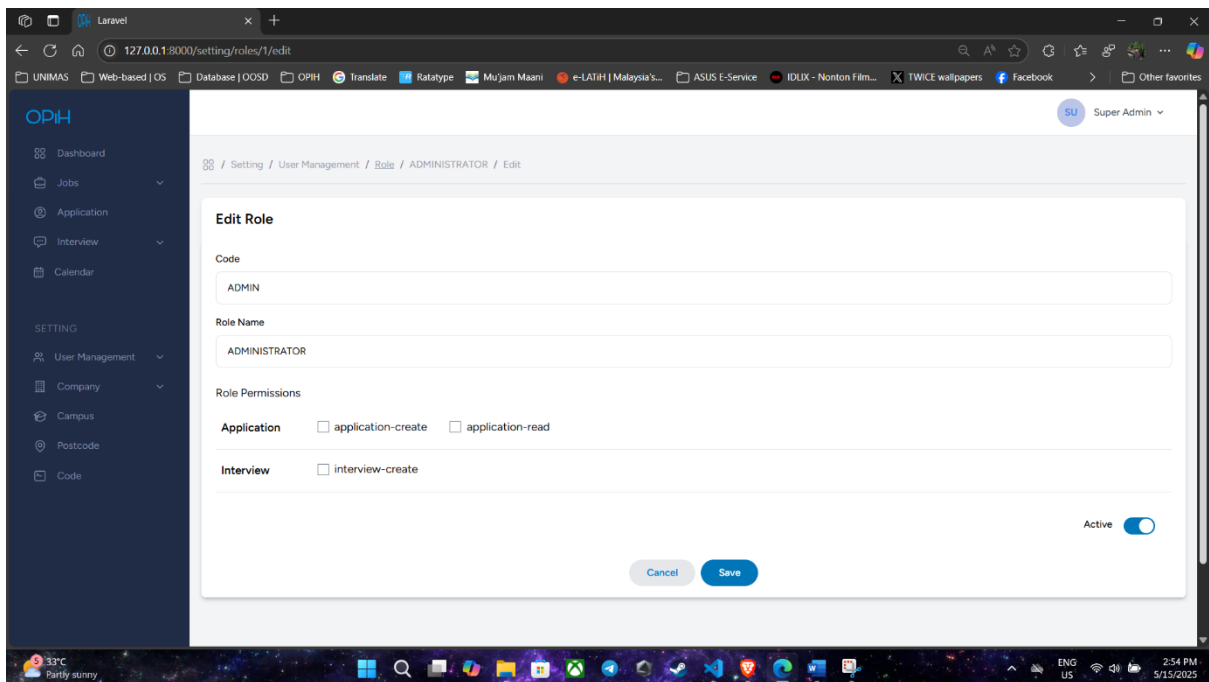


Figure 4.32 Edit role

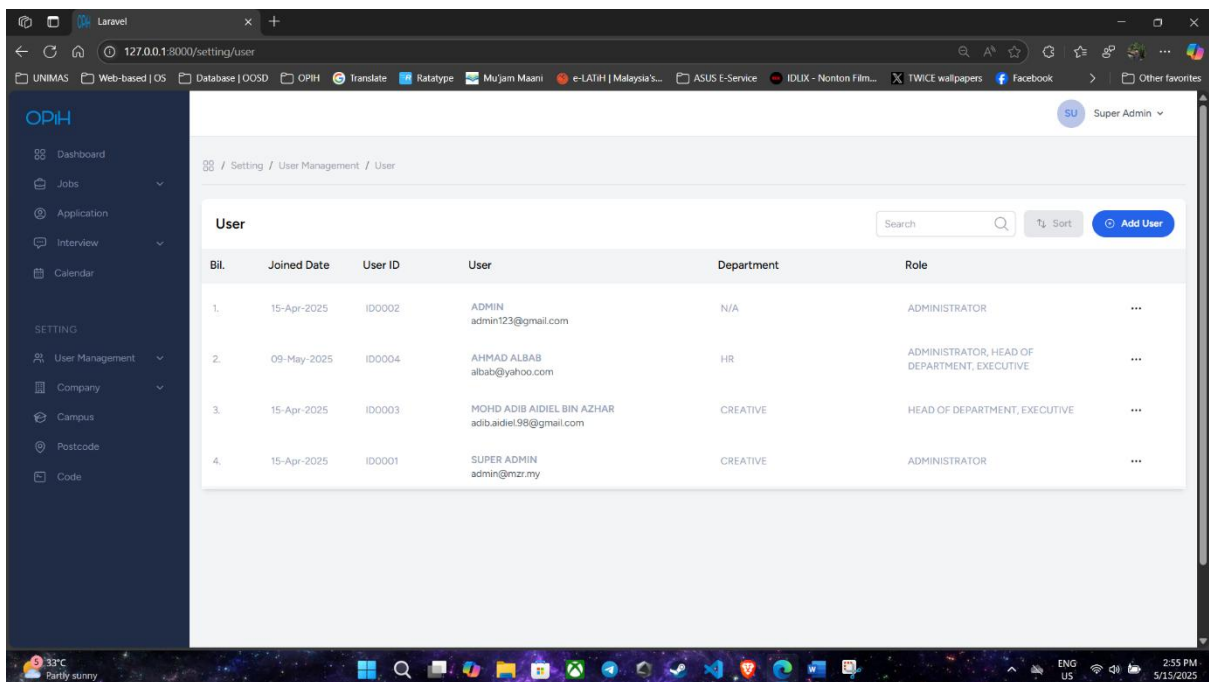


Figure 4.33 Users List page

Edit User

User ID
ID0002

Full Name
admin

Email
admin123@gmail.com

Department
Choose

Password

Password Verification

Figure 4.34 Edit user details [Part 1]

Password Verification

Role

☒ ADMINISTRATOR

☐ EXECUTIVE

☐ HEAD OF DEPARTMENT

☐ HUMAN RESOURCE

☐ MANAGEMENT

☐ STAFF

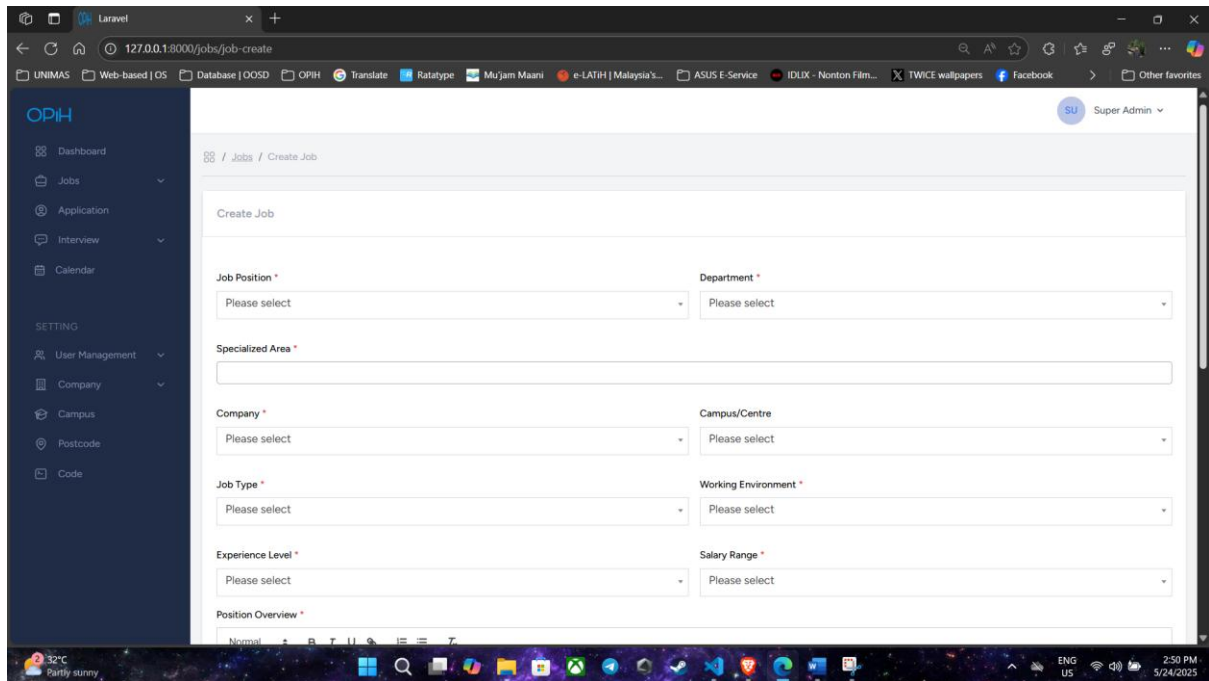
Cancel Save

OPIH © 2024 All rights reserved.

Figure 4.35 Edit user details [Part 2]

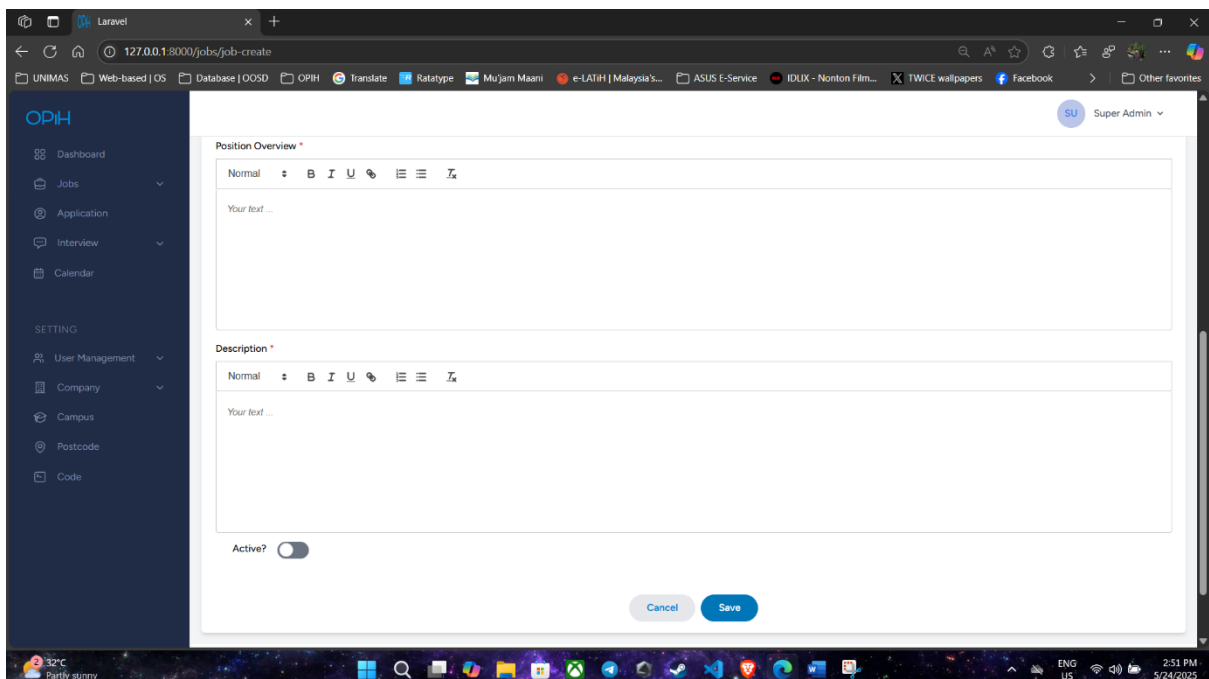
4.2.2.11 Post Job

This section conducts to post a job in the ONLINE-BASED PORTAL FOR INTEGRATED HIRING IN HR RECRUITMENT. The employer will post the vacancy of the company on this page. They will need to input the position title, job type, experience level, expected salary range and many more.



The screenshot shows the 'Create Job' page in the OPIH system. The page is titled 'Jobs / Create Job' and features a sidebar with navigation options: Dashboard, Jobs, Application, Interview, Calendar, and a 'SETTING' section with User Management, Company, Campus, Postcode, and Code. The main content area contains several form fields: 'Job Position *' and 'Department *' (both dropdown menus), 'Specialized Area *' (text input), 'Company *' and 'Campus/Centre' (both dropdown menus), 'Job Type *' and 'Working Environment *' (both dropdown menus), 'Experience Level *' and 'Salary Range *' (both dropdown menus), and 'Position Overview *' (text input). The user is logged in as 'Super Admin'.

Figure 4.36 Post job page [Part 1]



The screenshot shows the 'Position Overview' page in the OPIH system. The page is titled 'Position Overview *' and features a sidebar with navigation options: Dashboard, Jobs, Application, Interview, Calendar, and a 'SETTING' section with User Management, Company, Campus, Postcode, and Code. The main content area contains two text input fields: 'Your text ...' and 'Description *'. Both fields have a rich text editor toolbar above them. At the bottom of the page, there is an 'Active?' toggle switch and 'Cancel' and 'Save' buttons. The user is logged in as 'Super Admin'.

Figure 4.37 Post job page [Part 2]

4.2.2.12 Admin approve, edit, delete the post

This section will conduct admin performs to the employer posts, while post job is done by the employer to the system. It will not automatically visible to the job seeker timeline. There is a required action that need to be done by admin. Admins needs to approve the post. If the admin reviews the posts is not suitable or violate the system terms and conditions, then the admin may delete the post, and also may to edit the post.

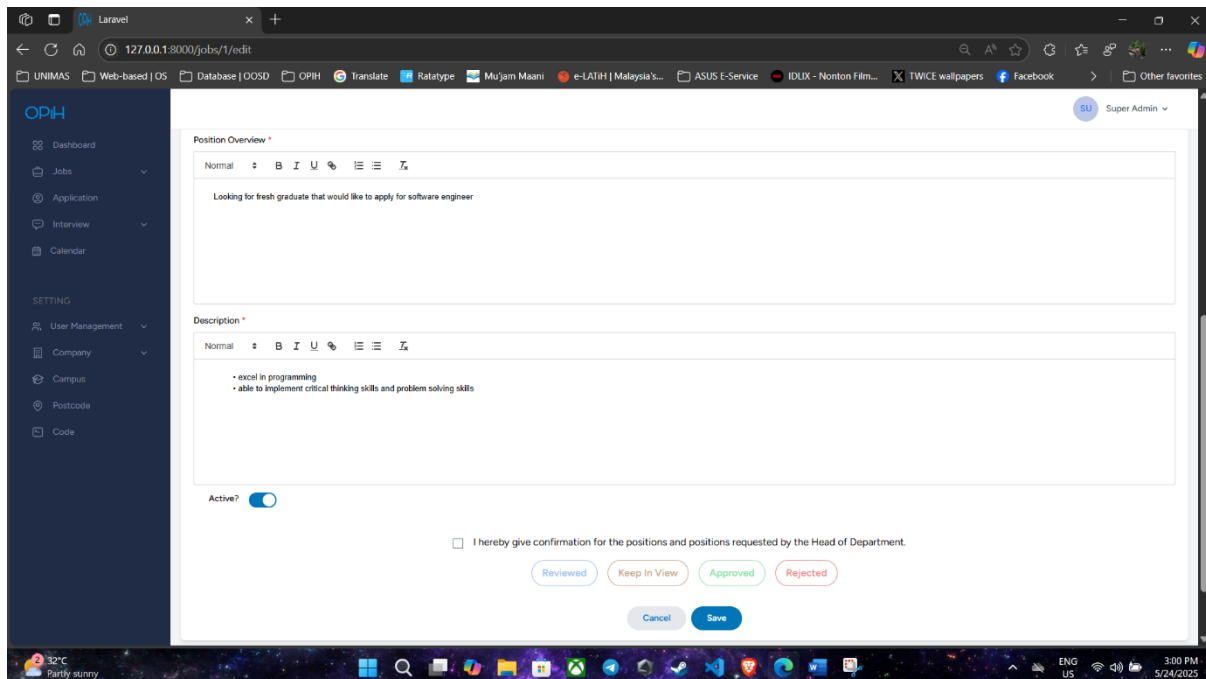


Figure 4.38 Manage job post by admin

4.3 Summary

This chapter has outlined the implementation of the proposed system, ONLINE-BASED PORTAL FOR INTEGRATED HIRING IN HR RECRUITMENT. The proposed system is developed based on requirement analysis. In order to enable users to have a better view of the developed proposed system, screenshots for the functions in the system are provided. Furthermore, the required software for the development of the system is listed and explained in this chapter.

CHAPTER 5: TESTING

5.1 Introduction

In this chapter, several testing on the system was done to ensure that the system meets its operational requirements and to optimize user experience and performance. Testing helps deliver a software application of quality. The primary goal of testing is to ensure the system with minimal error and that the system has fulfilled the objectives stated in the first chapter. The testing of the proposed system comprises of two major parts, which are functional testing and non-functional testing.

5.2 Functional testing

Functional testing is performed to test how does a system performs, relating to the users and the rest of the system. This test assesses the functional aspect of the system, primarily based on a logical workflow of the system. Functional testing verifies that each feature or function of the application operates in accordance with the requirement specification. The functionality of the system is tested by providing appropriate input and verifying whether the actual result matches the expected result. For this system, test cases were performed under functional testing.

5.2.1 Test Cases

Testing is done in the development phase while the developer finishes the specific unit advancement. The object of this testing is to check the accuracy of the module. An experiment is a rundown of the state of what the client needs to test. This section will investigate the test cases that were created in connection with this system. The security personnel took part in the test cases and provided feedback on the system.

5.2.1.1 Test Case 1

Table 5.1 Search Job Test Case

Module Name: Job Application Test Case Description: Verify that a user can search for jobs using keywords from the public job listing page Testing Objective: To ensure that the search functionality returns relevant job listings based on user input and improves usability for job seekers Remarks:								
Test Case ID	Test Scenario	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail/Not Executed/Suspended)	Severity Failure (Low/Medium/High/Critical)	Notes
TC-JOB-01	Search job	1. Navigate to the public job portal homepage 2. Locate the job search input field 3. Enter a keyword (e.g., “developer”) 4. Press Enter or click the search icon 5. Observe the list of returned job postings	> Keyword: Developer	The job appeared on search list	The job appeared on search list	Pass	High	No issue found

5.2.1.2 Test Case 2

Table 5.2: Valid Application Submission Test Case

Module Name: Job Application Test Case Description: Ensure a public applicant can successfully submit a job application with all required fields filled in correctly and the documents uploaded. Testing Objective: To validate that the job application form accepts valid input, saves the data to the database, and sends confirmation (via email) Remarks:								
Test Case ID	Test Scenario	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail/Not Executed/Suspended)	Severity Failure (Low/Medium/High/Critical)	Notes
TC-JOB-02	Valid application submission	1. Navigate to the public job listings page 2. Click on the “Apply” button for a specific job 3. Fill in all required fields that have been marked with red asterisk marks 4. Upload a valid resume file (e.g., PDF or DOCX) 5. Submit the application form	> Full Name: Ahmad Albab > Email: albab@yahoo.com > Phone Number: 0123456789 > Resume file: resume_ahmad_albab.pdf	Application submitted successfully	Application submitted successfully	Pass	Critical	Issue has been resolved

5.2.1.3 Test Case 3

Table 5.3: Create Job Details Test Case

Module Name: Job Management Test Case Description: Ensure that an admin user can successfully create a new job posting by filling in all required job details Testing Objective: To verify that job creation works correctly with valid input data, and the job is saved and displayed in the job list Remarks:								
Test Case ID	Test Scenario	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail/Not Executed/Suspended)	Severity Failure (Low/Medium/High/Critical)	Notes
TC-JOB-03	Create job details	1. Login to the admin dashboard using valid admin credentials 2. Navigate to the “Jobs” section 3. Click on the “Create Job” segment below the dropdown from “Jobs” section 4. Fill in all required fields in the form: ➤ Job Position ➤ Department ➤ Specialized Area ➤ Company ➤ Job Type ➤ Working Environment	> Job Position: Software Tester > Department: Software > Specialized Area: Computer Science / IT > Company: Karuna (Sarawak) Enterprise Sdn Bhd > Job Type: Full-time > Working Environment: Hybrid	Job created successfully	Job created successfully	Pass	High	

		➤ Experience Level ➤ Salary Range ➤ Position Overview ➤ Description 5. Click the “Save” button 6. Verify that the new job appears in the job list	> Experience Level: 4 – 7 years > Salary Range: RM2501 – RM 3000 > Position Overview: This role involves designing and executing test plans, identifying and reporting bugs. > Description: We are seeking a detail-oriented software tester to join our team.					
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5.2.1.4 Test Case 4

Table 5.4: Edit Job Details Test Case

Module Name: Job Management Test Case Description: Ensure that an admin user can successfully edit and update existing job posting details Testing Objective: To verify that the system allows authorized users to update job information and reflect the changes both in the admin panel and on the public job portal Remarks:								
Test Case ID	Test Scenario	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail/Not Executed/Suspended)	Severity Failure (Low/Medium/High/Critical)	Notes
TC-JOB-04	Edit job details	1. Login to the admin dashboard using valid admin credentials 2. Navigate to the “Action List” section from “Job” dropdown section 3. Locate an existing job from the job list 4. Click on the “Edit” button for that job 5. Update one or more job fields (e.g., job position, working type, salary range)	> Job Position: Software Tester <changed to> Software Engineer > Working type: Hybrid <changed to> Remote > Salary Range: RM2501-RM3000 <changed to> RM3000 – RM3501	Job successfully updated with correct details	Job successfully updated with correct details	Pass	Medium	No issue found

		6. Click the “Save Changes” button 7. Return to the job list and verify the updated data is shown						
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5.2.1.5 Test Case 5

Table 5.5: Post Job Test Case

Module Name: Job Management Test Case Description: Ensure that an admin can change a job’s visibility/status to “posted” or “public” so that it appears on the public job portal Testing Objective: To verify that changing a job’s status to “Active” Remarks:								
Test Case ID	Test Scenario	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail/Not Executed/Suspended)	Severity Failure (Low/Medium/High/Critical)	Notes
TC-JOB-05	Post job	1. Login to the admin dashboard with valid credentials 2. Navigate to the "Action List" page from "Job" dropdown section 3. Locate an existing job that is currently inactive	> Job Title: UI/UX Designer > Status: Active (Posted/Public) > Posting Toggle: Enabled	Job is posted in public page	Job is successfully post in public page	Pass	High	

		4. Click the “Edit” button for the job 5. Change the status field from “Inactive” to “Active” 6. Click the “Save” button 7. Navigate to the public job listing page 8. Verify that the updated job now appears in the public list							
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5.2.1.6 Test Case 6

Table 5.6: View Application Details Test Case

Module Name: Application Management Test Case Description: Ensure that an admin can view full details of a submitted job application, including applicant information, resume and application status Testing Objective: To verify that the system correctly retrieves and displays all application-related data for administrative review Remarks:								
Test Case ID	Test Scenario	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail/Not Executed/Suspended)	Severity Failure (Low/Medium/High /Critical)	Notes
TC-JOB-06	View application details	1. Login to the admin dashboard using valid credentials 2. Navigate to the “Applications” section 3. Locate a submitted application from the list 4. Click the “View” button next to the application 5. Verify that the application details page displays such as below: ○ Applicant’s full name ○ Email and phone number ○ Position applied for	> Applicant Name: Aisyah Binti Ahmad > Email: Aisyah.ahmad@gmail.com > Phone number: 01199887766 > Position applied for: Software analyst > Resume file: Aisyah_resume.pdf > Date submitted: 01/05/2025	Able to view application details	Able to view application details	Pass	Critical	Issue has been resolved

		○ Resume download / view documents ○ Date submitted						
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5.2.1.7 Test Case 7

Table 5.7: Admin Login Test Case

Module Name: Authentication & Access Control Test Case Description: Ensure that an administrator can log in to the system using valid credentials and is redirected to the admin dashboard. Testing Objective: To validate that the login functionality correctly authenticates admin users, grants appropriate access, and prevents unauthorized access. Remarks:								
Test Case ID	Test Scenario	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail/Not Executed/Suspended)	Severity Failure (Low/Medium/High/Critical)	Notes
TC-JOB-07	Admin login	1. Navigate to the admin login page 2. Enter a valid admin email address and password 3. Click “Login” button 4. Observe the result: ➤ Successful login should redirect to the admin dashboard	>Email: admin@example.com >Password: Admin123!	Login successful	Login successful	Pass	Medium	No issue found

		➤ Role-based access should be verified						
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5.2.1.8 Test Case 8

Table 5.8: Schedule Interview for Applicant Test Case

Module Name: Interview Management Test Case Description: Ensure that an administrator can successfully schedule an interview for a selected applicant by providing the necessary details such as date, time , and assigned interviewer. Testing Objective: To verify that the system allows proper scheduling of interviews, stores the data accurately and optionally sends a notification to the candidate. Remarks:								
Test Case ID	Test Scenario	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail/Not Executed/Suspended)	Severity Failure (Low/Medium/High/Critical)	Notes
TC-JOB-08	Schedule interview for applicant	1. Login to the admin dashboard with valid credentials. 2. Navigate to the “Shortlisted For Interview” section. 3. Click the “Set interview” button.	>Interview date: 2025-07-18 >Interview start time: 10:00 AM >Interview end time: 12:30 PM >Mode: Online >Interview link: https://meet.example.com/interview123	The scheduled interview is linked to the correct application	The scheduled interview is linked to the correct application	Pass	Low	

		4. Fill in the interview details. 5. Click “Save” button. 6. Verify that the interview is added to the schedule and visible in the calendar.						
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5.2.1.9 Test Case 9

Table 5.9 Create A New Admin User Test Case

Module Name: User Management Test Case Description: Create a new admin user Testing Objective: Remarks:								
Test Case ID	Test Scenario	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail/Not Executed/Suspended)	Severity Failure (Low/Medium/High/Critical)	Notes
TC-JOB-09	Create a new admin user	1. Login to the system using a valid super admin account.	>Full Name: Nurazlin binti Mohamad >Email: azlin.mohamad@gmail.com >Password: AdminPass123	The new admin user appears in	The new admin user appears in	Pass	Medium	

		2. Navigate to the “User Management” section. 3. Click the “Create New User” button. 4. Fill in all required fields. 5. Click “save” button. 6. Check if the new user appears in the user list.	>Role: Admin	the user list	the user list			
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5.2.1.10 Test Case 10

Table 5.10: Create Job Details Test Case

Module Name: Company Management Test Case Description: Ensure that an admin user can successfully create a new company profile by filling in all required company details Testing Objective: To verify that the system allows admins to input and store valid company information, which can be used for associating job postings with the correct organization. Remarks:								
Test Case ID	Test Scenario	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail/Not Executed/Suspended)	Severity Failure (Low/Medium/High/Critical)	Notes
TC-JOB-10	Create company details	1. Login to the admin dashboard using valid admin credentials 2. Navigate to the “Company Management” section 3. Click on the “Create Company” button. 4. Fill in all required fields in the form	> Company Name: TechNova Solutions Sdn Bhd > Company Email: contact@technova.com.my > Phone Number: 082-456789 > Address: Lot 123, Jalan Setia Jaya > Postcode: 94300 > City: Kota Samarahan > State: Sarawak	Company created successfully	Company created successfully	Pass	Medium	

		5. Click the “Save” button 6. Verify that the new company appears in the company list						
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5.2.1.11 Test Case 11

Table 5.11 Edit Company Details Test Case

Module Name: Company Management Test Case Description: Ensure that an admin user can successfully edit and update existing company information Testing Objective: To verify that the system allows modifications to company profiles, save changes correctly, and reflects them accurately in the company list and related job data Remarks:								
Test Case ID	Test Scenario	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail/Not Executed/Suspended)	Severity Failure (Low/Medium/High/Critical)	Notes
TC-JOB-11	Edit company details	1. Login to the admin dashboard using valid admin credentials 2. Navigate to the “Company Management” section	> Company Name: TechNova Solutions Sdn Bhd <changed to> Technova Digital Sdn Bhd > Phone Number: 082-456789 <changed to> 011-5566845	Company details updated successfully	Company details updated successfully	Pass	Medium	

		3. Locate an existing company from the list. 4. Click on the “Edit” button. 5. Update one or more fields (e.g., company name, phone number) 6. Click the “Save” button 7. Verify that the updated details are displayed in the company list						
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5.2.2 Non-functional testing

5.2.2.1 Usability testing

In usability testing, the web-based application is tested on users. The user gives feedback based on their satisfactory level after using the system. The test conducted by involving 10 respondents consisting of public user and one company.

5.2.2.2 Ease of use

To evaluate the ease of use of functions, a questionnaire is designed and distributed to 10 respondents. The questionnaire is attached to Appendix B. Below are the results of the feedback which are tabulated and turned into charts.

Evaluation for the ease of use of ONLINE-BASED PORTAL FOR INTEGRATED HIRING IN HR RECRUITMENT

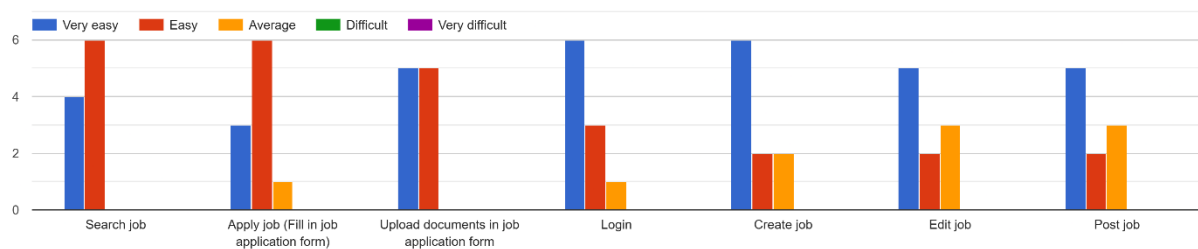


Figure 5.1 Ease of use questionnaire

Table 5.12 Evaluation results for the ease of use of functions

Functionality	Very Easy	Easy	Average	Difficult	Very Difficult
Search job	4	6	0	0	0
Apply job (Fill in job application form)	3	6	1	0	0
Upload documents in job application form	5	5	0	0	0
Login	6	3	1	0	0
Create job details	6	2	2	0	0
Edit job details	5	2	3	0	0
Post job details to job portal public page	5	2	3	0	0

Based on Table 5.12, we took a survey of usability testing, and the form was created in the google form to record feedback from the users. Users consist of 9 public users who would interact with the system as potential applicants, and 1 company (Syarikat Sabry) which their HR employer is being interviewed for employer testing of the system. Based on table above, we can conclude that almost every functionality can perform within the parameter of very easy to average.

5.2.2.3 Questionnaire for software testing

Gender

10 responses

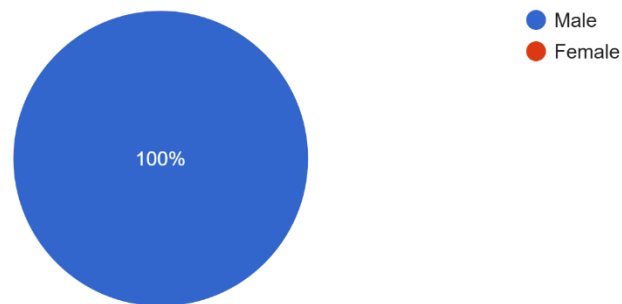


Figure 5.2 Usability questionnaire 1

Your role during this testing

10 responses

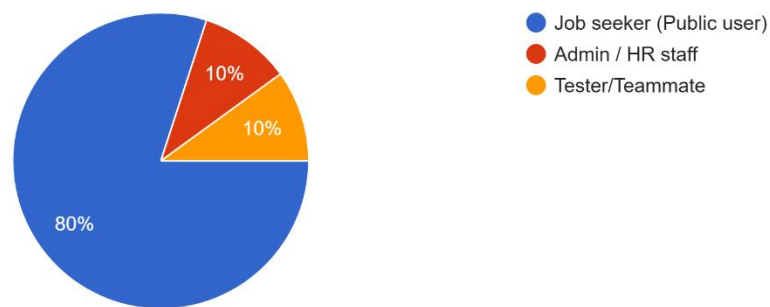


Figure 5.3 Usability questionnaire 2

Do you understand the concept of this recruitment system?

10 responses

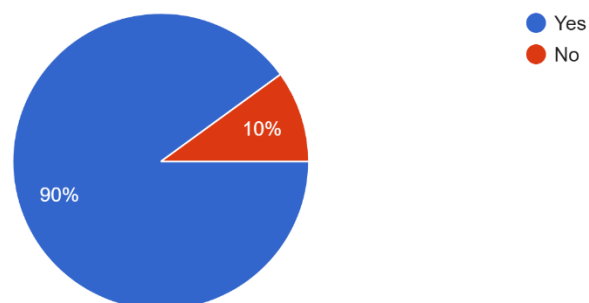


Figure 5.4 Usability questionnaire 3

Do you agree ONLINE-BASED PORTAL FOR INTEGRATED HIRING IN HR RECRUITMENT can reduce the complexity to find the desired job?

10 responses

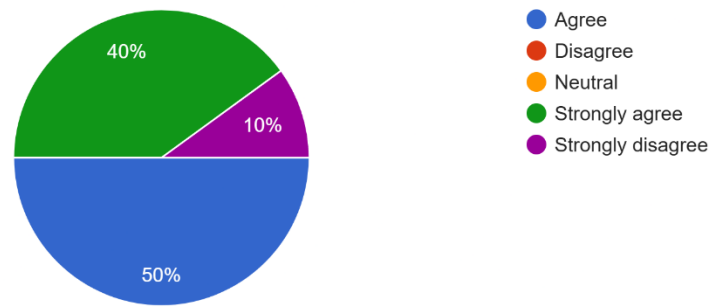


Figure 5.5 Usability questionnaire 4

Do you encounter any difficulty while using the system?

10 responses

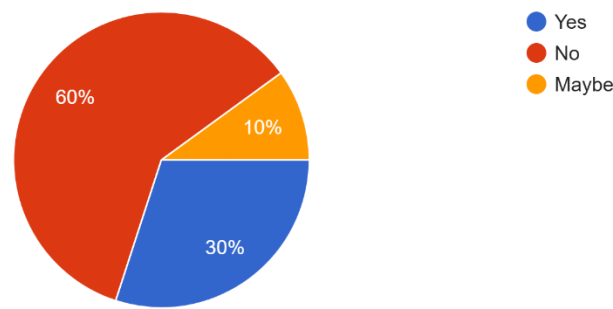


Figure 5.6 Usability questionnaire 5

Please tick the best option for the following questions?

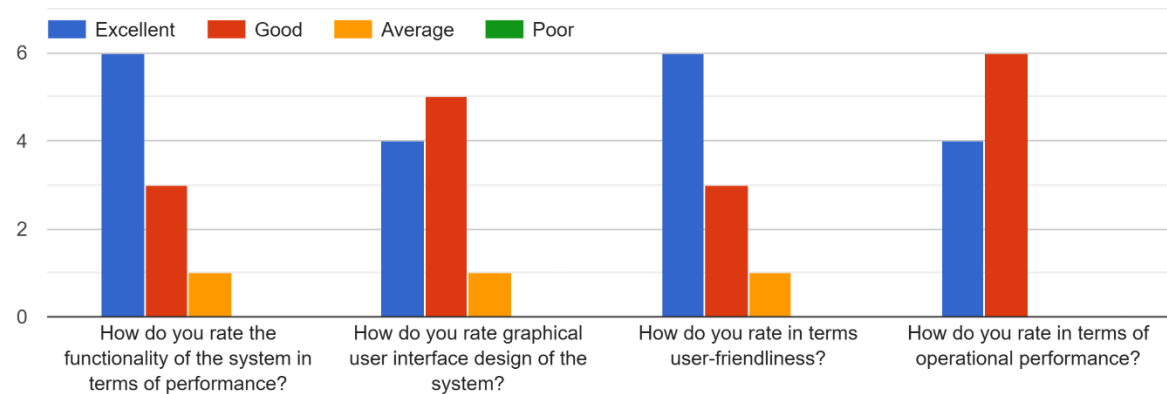


Figure 5.7 Usability questionnaire 6

What feature did you find most useful or user-friendly?

8 responses

Generate pdf
Job searching
View resume
Can excess the system by public
The Job Application feature, as the process of submitting a job application is rather smooth.
Upload document section in job application form
We didn't not to make an account to log in
Able to search

Figure 5.8 Usability questionnaire 7

Based on the charts above, we have found that users are satisfied with this system and no problems were encountered while using this ONLINE-BASED PORTAL FOR INTEGRATED HIRING IN HR RECRUITMENT.

5.2.3 User Acceptance Testing

User Acceptance Testing (UAT) was conducted to ensure the system meets user expectations and business requirements in a real-world context. A group of **10 end-user** consisting of **9 public users acting as job seekers** and **1 HR employer from a partnering company** interacted with the system and were asked to perform key tasks such as job searching, application submission, account login, and job posting. After completing the tasks, participants provided feedback through a structured questionnaire. The results showed that the system meets the intended use cases and was well-received by users which indicates readiness for deployment.

5.3 Summary

This chapter depicts the testing executed on the ONLINE BASED PORTAL FOR INTEGRATED HIRING IN HR RECRUITMENT. Two types of testing were conducted namely the functional and non-functional testing. The functional testing covered the test cases and the non-functional testing covered usability testing. User Acceptance Testing (UAT) also have been conducted which aligns with both functional and non-functional testing.

CHAPTER 6: FUTURE WORKS

6.1 Introduction

This chapter reviews in depth the development of ONLINE BASED PORTAL FOR INTEGRATED HIRING IN HR RECRUITMENT. Other than that, the limitations of this developed system are briefly discussed here. Hence, based on the test results in the previous chapter, recommendations or suggestions for possible enhancements in the future have been given. Subsequently, the conclusion for the ONLINE BASED PORTAL FOR INTEGRATED HIRING IN HR RECRUITMENT will be presented.

6.2 Objective achievement

The objectives of the ONLINE BASED PORTAL FOR INTEGRATED HIRING IN HR RECRUITMENT, which were stated at the beginning of the project development, have been successfully achieved. Table 6.1 below shows the achievements of the system.

Table 6.1: Summary of Objective and Achievements

Objective	Achievements
To identify the requirements for the integration of online hiring system.	The requirements for integrating the online hiring system were successfully identified through thorough analysis of user needs and system specifications.
To develop the integrated portal for managing hiring process.	An integrated portal for managing the hiring process was successfully developed, incorporating key modules such as job posting, application tracking, and user management.
To evaluate the functionalities and reliability of the proposed system using User Acceptance Testing (UAT).	The functionalities and reliability of the proposed system were successfully evaluated through User Acceptance Testing (UAT), with feedback confirming the system meets user expectations and performs reliably.

6.3 Project limitations

The limitations of the system refer to what the system is unable to perform. Currently, there are too many input fields in job application form page. The navigation gesture inside the job application form page is also unclear which may lead to confusion among applicants during filling in the form. Beside that, there is a duplicate data entry when employer done creating a new job posting. This will cause fallacy and error in the future, hence need to be fix. This is the limitation of the system and it will be done in future work.

6.4 Future works

As a future enhancement, the system should have fewer input fields in job application form page and minimizing non-essential input fields to avoid user fatigue and increased drop-off rate. Beside that, duplicate data entry during create job posting also need to be fix as soon as possible to ensure there is no data redundancy in database.

6.5 Conclusion

The development of ONLINE BASED PORTAL FOR INTEGRATED HIRING IN HR RECRUITMENT is proposed to offer an online platform to get a job for public applicants while enabling HR personnel to efficiently manage job postings, applications, and interviews in a centralized system. Despite having some limitations, the system is designed and develop in a way where it can overcome these limitations and provide a better-using experience to its users in the future. As a conclusion, ONLINE BASED PORTAL FOR INTEGRATED HIRING IN HR RECRUITMENT has met its goals and shows that it can be used in real situations to make the hiring process easier for companies while giving applicants a smooth and easy way to find jobs.

REFERENCES

- The PHP framework for web artisans*. Laravel. (n.d.).
- Stone, R. J. (2021). The role of HR management systems in strategic decision making. *Journal of Human Resource Management*, 18(4), 205-220.
- Society for Human Resource Management. (2023). HR technology and systems.
- Glassdoor for Employers. (2024). Best practices for recruitment and hiring.
- FORTUNE BUSINESS INSIGHTS. (n.d.). *Applicant Tracking System market size, share, trends [2030]*. Applicant Tracking System Market Size, Share, Trends [2030].
- Vorecol Editorial Team. (2024, August 28). The Role of Cloud Computing in Modern HR Process Automation. The role of cloud computing in modern HR process automation.
- Mrs. R. Jayashree, Sneha S, & Ishwariya K. (2024, June 6). Leveraging Artificial Intelligence for Talent Acquisition: Insights from a Neurobiological Perspective. Department of Management Studies, Easwari Engineering College, Ramapuram, Chennai-89; African Journey of Biological Sciences.
- Agile methodology. Interquality lean six sigma and scrum agile training. (2024).
- Al-Otaibi, S. T. (2012). Job Recommendation Systems for Enhancing E-recruitment Process. Riyadh, KSA; College of Computer and Information Sciences, Princess Nora Bint Abdulrahman University .
- JobStreet. (n.d.). About JobStreet.
- LinkedIn. (n.d.). About LinkedIn.

Suruhanjaya Perkhidmatan Awam Malaysia. (n.d.). Official Portal of the Public Service Commission of Malaysia.

Glassdoor. (n.d.). About Glassdoor.

PERKESO. (n.d.). MYFutureJobs Portal.

Dainis, B. (2023, February 15). Why choose the Laravel Framework For Your Development Project?. Curotec.

Lever, T. (2024, December 2). 15 integrated recruiting tools & how to choose them.

Copymate. (2024, April 1). HR department – introduction to the functions and tasks of the Human Resources Department.

Sojdie, M. (2023, August 8). The Recruitment Process Flowchart: From start to finish. StaffingSoft.

Laoyan, S. (2024, February 2). What is agile methodology? (a beginner's guide) [2024] • asana. Asana.

Appendix A – Gantt Chart

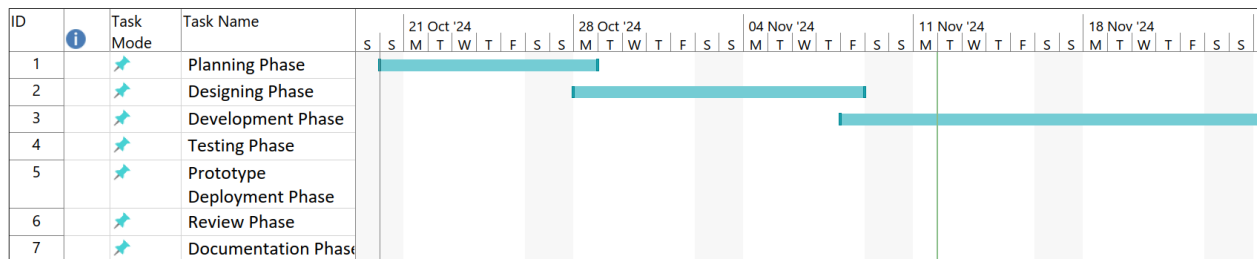
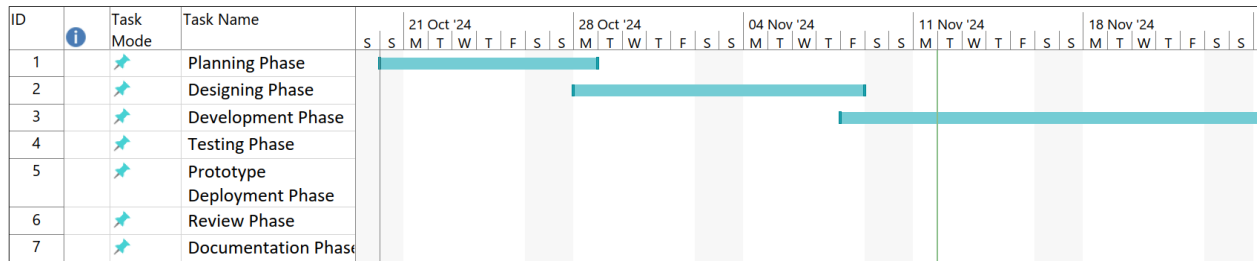


Figure Appendix: Gantt Chart (Project Schedule)

Appendix B – Questionnaire of usability testing

User evaluation from for the ONLINE BASED PORTAL FOR INTEGRATED HIRING IN HR RECRUITMENT (OPIH). The aim of this evaluation form is to identify and analyse the system. We will evaluate functionalities on users' reviews, feedbacks and experience of using this web-based application.

Section 1 of 3

Usability Testing Feedback : Online-based Portal for Integrated Hiring in HR Recruitment

B *I* U ↔ ~~X~~

Dear Participant,

Thank you for agreeing to participate in the usability testing of our Final Year Project:
Online-based Portal for Integrated Hiring in HR Recruitment.

This system is designed to facilitate a smoother hiring process by allowing job seekers to apply for positions online while enabling administrators to manage jobs, applications, and interviews through a dedicated interface.

Your honest feedback will help us evaluate the usability of the system based on real user experiences. The testing will focus on areas such as ease of use, navigation, satisfaction, interface clarity, and overall experience. This form will take approximately 5–10 minutes to complete.

All responses are anonymous and used strictly for academic purposes.
Thank you for your time and participation.

1. Full Name *

Short answer text

Gender *

☐ Male

☐ Female

Age Range *

☐ Under 18

☐ 18 - 24

☐ 25 - 34

☐ 35 - 44

Your role during this testing *

- ☐ Job seeker (Public user)
- ☐ Admin / HR staff
- ☐ Other...

Do you understand the concept of this recruitment system? *

- ☐ Yes
- ☐ No

Do you agree **ONLINE-BASED PORTAL FOR INTEGRATED HIRING IN HR RECRUITMENT** can reduce the complexity to find the desired job? *

- ☐ Agree
- ☐ Disagree

Do you encounter any difficulty while using the system? *

- ☐ Yes
- ☐ No
- ☐ Maybe

Please tick the best option for the following questions? *

	Excellent	Good	Average	Poor
How do you rate th...	☐	☐	☐	☐
How do you rate gr...	☐	☐	☐	☐
How do you rate in...	☐	☐	☐	☐
How do you rate in...	☐	☐	☐	☐

Evaluation for the ease of use of **ONLINE-BASED PORTAL FOR INTEGRATED HIRING IN HR RECRUITMENT** *

	Very easy	Easy	Average	Difficult	Very difficult
Search job	☐	☐	☐	☐	☐
Apply job (Fill i...	☐	☐	☐	☐	☐
Upload docum...	☐	☐	☐	☐	☐
Login	☐	☐	☐	☐	☐
Create job	☐	☐	☐	☐	☐
Edit job	☐	☐	☐	☐	☐
Post job	☐	☐	☐	☐	☐

Section 2 of 3

Section 2: Open-Ended Feedback



Description (optional)

What feature did you find most useful or user-friendly?

Long answer text

What difficulties or confusing areas did you encounter during usage?

Long answer text

Do you have any suggestions to improve the usability of the system?

Long answer text