



Web-Based Employee Recruitment Application at PT Parastar Group Utilizing the Rapid Application Development (RAD) Method

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Abstract: The research designs a web-based employee recruitment information system developed for PT. Parastar Group, by utilizing PHP and MySQL. This system offers a solution for companies to manage applicant data archiving by HRD staff more efficiently and effectively. Applicant data is stored in a MySQL database server, reducing dependence on physical filing cabinets. In addition, applicants can complete application forms and access company information and job descriptions more efficiently. This research focuses on designing an employee recruitment information system for PT. Parastar Group, using the waterfall model as a development methodology. This system is built using the PHP programming language. The result of this research is a functional web-based employee recruitment information system. This system is expected to assist the HRD division in processing data for employee archiving and orientation.

Keywords: Employee Recruitment; Information System; Web-Based; Waterfall.

1. Introduction

Recruitment of workers plays a crucial role in a company's human resource (HR) management, considering that accurate information on the quality and quantity of employee needs has a direct impact on company performance [1]. Recruitment strategies that integrate green actions and environmentally conscious employee behavior are becoming increasingly relevant, especially for companies that are committed to sustainable development goals. This approach encourages companies to recruit, select, train, and engage workers who are not only technically competent, but also accept and internalize environmental protection values [2]. In addition, effective HR planning has also been shown to have a significant impact on organizational performance, as shown in a case study of the telecommunications industry in Delta State [3]. Thus, the recruitment of the right workforce, which takes into account green and sustainability aspects, and is supported by effective HR planning, is an important factor in improving overall company performance. The employee recruitment process is a strategic stage in identifying candidates who best suit the needs of the organization. As expressed by several researchers, the recruitment process of new employees also plays a role in organizational policy making. The main objective of this process is to get the right individuals in the right positions, so that they are in line with the conditions and needs of the organization or company [4].

A superior company will always try to attract individuals who have a good work ethic. When a strong work ethic has become part of the organizational culture, the company will be better able to survive and thrive in the midst of intense competition and rapid change. Effective HR management is a crucial factor in maintaining a company's competitiveness. One strategy that can be implemented is to utilize a web-based information system to replace manual HR management. This web-based information system can help overcome various efficiency problems in the employee recruitment process, such as an ineffective job posting process, a time-consuming selection process, and a buildup of job application archives [5]. The implementation of a web-based employee recruitment information system is a strategic step that can increase efficiency and effectiveness in HR management in a company. In the context of increasingly tight business competition, good HR management is the key to survival and growth. A web-based information system can replace manual methods that are often inefficient, especially in the process of job posting and candidate selection. Research shows that a web-based recruitment system can significantly speed up the recruitment process and reduce the buildup of job application archives, which often occurs in manual systems [6][7].

A web-based recruitment information system not only simplifies the process of publishing vacancies, but also allows companies to reach more candidates at a lower cost. In a study conducted by Malki and Atlam, an e-recruitment system allows job seekers to upload applications and search for jobs easily, which in turn increases accessibility and efficiency in the recruitment process [6]. In addition, the use of information technology in HR management can also increase organizational productivity and flexibility [8]. By utilizing technology, companies can monitor and evaluate employee performance systematically and objectively, thereby providing better feedback to employees. A web-based recruitment information system can also be integrated with tools such as ChatGPT to provide initial information to prospective employees, thereby speeding up the selection process and reducing the administrative burden on HR managers [9]. This is in line with findings that show that web-based systems can increase employee interaction and involvement in the recruitment process [10]. The implementation of a web-based employee recruitment information system not only increases efficiency, but can also improve the user experience for prospective employees and HR managers.

The recruitment process of workers at PT. Parastar Group has been identified as facing several challenges that hinder the achievement of optimal efficiency and effectiveness. This study focuses on several key issues that need to be investigated in depth. This study aims to understand how the implementation of a web-based recruitment application can expand the scope of job vacancy publications, so that it is able to comprehensively recruit candidates from various backgrounds. This study also explores how the application can accelerate the recruitment cycle by providing relevant and efficient information, and minimizing waiting times at each stage of the process. An analysis will be conducted on how this application can facilitate access and management of applicant data in a centralized and organized manner, including data on new applicants, applicants who have previously registered, and data on applicants who have been accepted. An investigation will also be conducted to understand how this application can overcome the problem of archiving job application documents which often take up physical space and are difficult to access, especially with the increasing volume of file data every year. An evaluation will also be conducted on how the employee recruitment information system can present complete, accurate, and structured information about the company profile and specifications of the job vacancies that are opened, so that they are easily understood by prospective employees.

There are several limitations that need to be considered to maintain the focus and depth of the analysis. This study limits itself to the use of information technology in the recruitment process, with an emphasis on the development of web-based applications as a solution. This study also emphasizes the design and implementation of an integrated online information system, with the aim of increasing efficiency and flexibility in managing applicant file data. In addition, this study aims to create a means that can reach applicants widely and inclusively, not limited to internal company sources, through the employee recruitment system website application. The scope of this study is also limited to an employee recruitment information system that can be accessed flexibly, anytime and anywhere, making it easier to search for applicant data without requiring physical access to the file storage space.

The study has several main objectives to be achieved through systematic and structured investigations. The purpose of this study is to design and implement a web-based recruitment information system that can expand the reach of job vacancy publications, so that companies can recruit the best candidates from various backgrounds and qualifications. This study also aims to develop and test the effectiveness of the employee recruitment information system website application in accelerating the recruitment process, by minimizing the time and resources required. In addition, this study aims to provide an effective solution for HRD in managing applicant data flexibly and centrally, including data on new applicants, applicants who have registered, and data on employees who have worked in the company. This study also aims to overcome the problem of archiving job application documents which are often inefficient, through the development of an employee recruitment information system website application that can store data digitally and in a structured manner. Furthermore, this study aims to present complete, accurate, and easy-to-understand information about the company profile and specifications of job vacancies that are opened, through the employee recruitment information system website application, so that it can attract interest and provide a clear understanding for prospective employees.

2. Research Method

This study adopts a research and development (R&D) approach to develop a web-based employee recruitment information system application at PT. Parastar Group. This application is built using the PHP programming language and the MySQL database management system. This research was conducted from April to June 2023 at PT. Parastar Group, North Jakarta. The system development method applied is Rapid Application Development (RAD), chosen because of its iterative and incremental approach [11]. The system development process involves several main stages. The first stage is needs analysis, which is carried out through data collection and interviews [12][13], with related parties at PT. Parastar Group. Furthermore, a system design is carried out using the Unified Modeling Language (UML) diagram. System implementation is carried out with PHP and MySQL code in Visual Studio Code. After that, a comprehensive system test is carried out, as well as evaluation and implementation of the system in the company. The RAD approach allows flexibility in development [14][15], so that the resulting system is expected to meet the needs of PT. Parastar Group optimally. In system design, the Unified Modeling Language (UML) is used to model the system. Use case diagrams are used to describe the interaction between actors and systems. There are two main use case diagrams, namely the applicant use case diagram and the admin/HRD use case diagram. The applicant use case diagram, as shown in Figure 1, illustrates that applicants can view the job vacancy website, select vacancies, fill in data, send CVs and supporting files, and wait for a call. Meanwhile, the admin/HRD use case diagram, which can be seen in Figure 2, illustrates that the admin/HRD can promote the website, log in, manage job categories, manage job vacancies, manage recruitment, and view recruitment history and print reports.

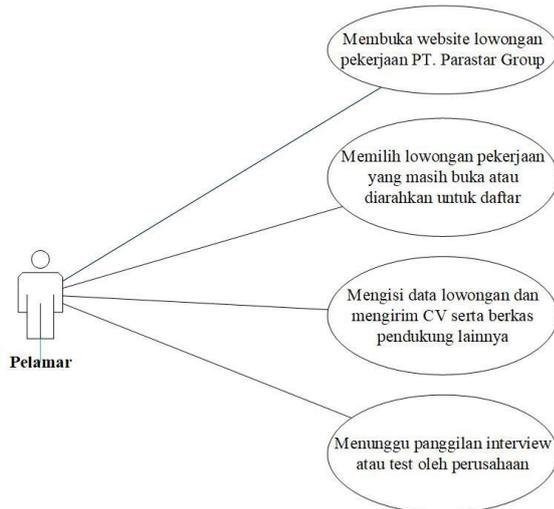


Figure 1. Applicant Use Case Diagram

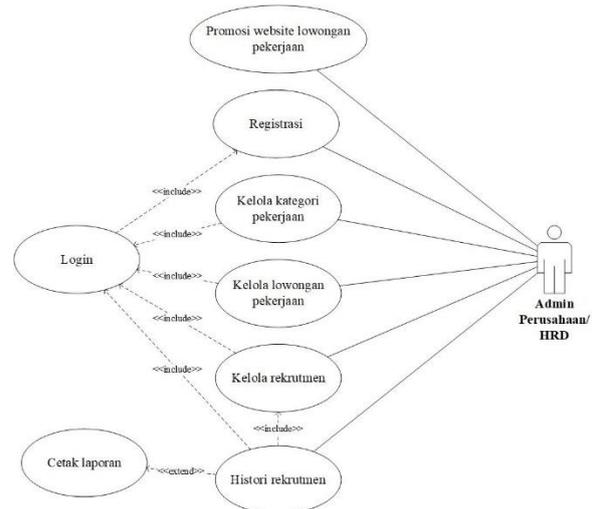


Figure 2. Company Admin/HRD Use Case Diagram

In addition to use case diagrams, activity diagrams are also used to describe the system workflow. The login activity diagram describes the login process that involves validating usernames and passwords. The job category data activity diagram describes the admin/HRD workflow in managing job category data, including adding, editing, and deleting data. Furthermore, the job vacancy data activity diagram describes the admin/HRD workflow in managing job vacancy data. The employee recruitment data activity diagram describes the admin/HRD workflow in managing applicant recruitment data, including printing reports. Finally, the applicant sending data activity diagram describes the applicant's workflow in sending application data through the system.

3. Result and Discussion

3.1 Results

The research results successfully designed a web-based employee recruitment information system application that has been developed for PT. Parastar Group. The interface is divided into two main parts: the display for applicants and the display for admin/HRD.



Figure 3. Interface View for Applicants

The applicant's homepage, as shown in Figure 3, is the landing page that applicants first access when visiting the PT. Parastar Group website. This page presents general information about the company, including job vacancies that are currently open, will be opened, or have been closed, as well as available job categories. The purpose of this page is to provide applicants with an initial overview of the company profile and available career opportunities. The "About Us" page provides in-depth information about the PT. Parastar Group profile, including the company's vision, mission, values, and history. Applicants can access this information to better

understand the company's context and goals. In addition, the "Contact Us" page displays the company's contact information, such as office address, email address, telephone number, and location map integrated with Google Maps, making it easy for applicants to contact the company if needed. The "Job Categories" page presents a list of available job categories, complete with information on the number of vacancies in each category, so that applicants can focus on searches that match their interests and skills.

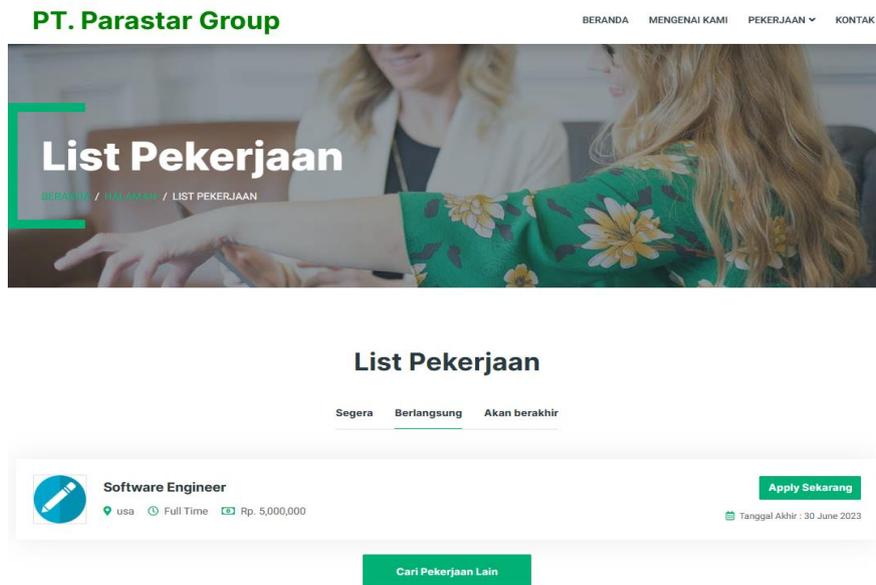


Figure 4. Job List Applicant Page

Figure 4 shows a page that displays a list of available job vacancies at PT. Parastar Group. Each vacancy is equipped with information about the placement location, estimated salary, and a brief description of the job. This page allows applicants to view all available vacancies and choose the one that best suits their qualifications. Next, the "Job Description" page will display detailed information about the selected vacancy, including the job description, responsibilities, required qualifications, and the application form that must be filled out by the applicant.

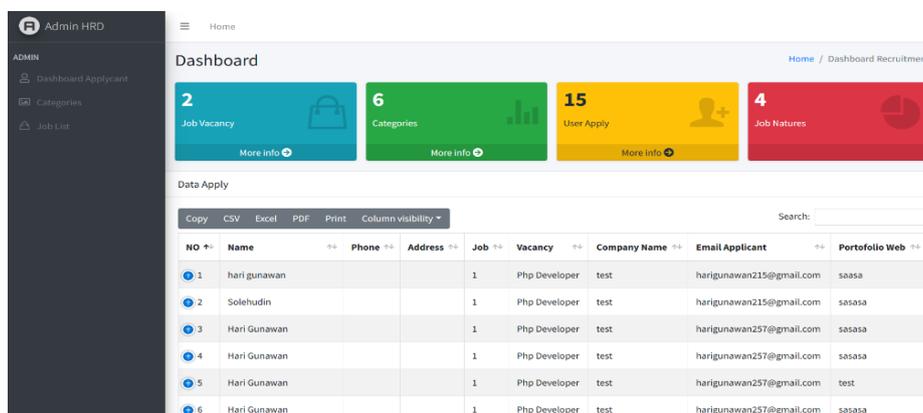


Figure 5. Interface Display for Admin/HRD

The admin/HRD login page functions as the gateway to access the information system. This page contains a form that must be filled in with a valid username and password. After successfully logging in, the admin/HRD is directed to the dashboard page (Figure 5), which displays a summary of important data, such as the number of applicants who have submitted applications, the number of available job vacancies, and job categories. Several navigation menus such as "Dashboard", "Applicant", "Categories", and "Job List" are also available on this page. The "Category Data" page allows the admin/HRD to view and manage job categories that have been created, with the ability to perform CRUD (Create, Read, Update, Delete) operations. Likewise, the "Job List" page displays a list of job vacancies that have been created, where the admin/HRD can perform the same

operations. The "Edit/Input Category Data" page is used to add or change job categories, while the "Input List Job" page is used to add new job vacancies with a form that must be filled in with detailed information. The "Edit List Job" page allows the admin/HRD to change existing job vacancy information. In addition, the "Job Qualification Data" page displays a list of qualifications required for each vacancy, with input and edit pages to add or change required qualifications. The "Responsibility Data" page presents a list of job responsibilities for each vacancy, with the option to add or change existing responsibilities. Finally, the "Edit Application Data" page allows admin/HRD to change application data that has been sent by applicants, ensuring that all existing information remains accurate and up to date. This recruitment information system application is designed to facilitate both applicants and admin/HRD in the recruitment process, increasing efficiency and effectiveness in human resource management at PT. Parastar Group.

3.2 Discussion

The development of a web-based employee recruitment information system application at PT. Parastar Group, which uses the Rapid Application Development (RAD) methodology supported by Visual Studio Code and MySQL, has produced a system that shows a high level of feasibility. The results of the overall system functionality, refinement, and capability testing reached 91% [16], indicating that this application has met most of the set requirements. However, the results of external testing provide important insights into the effectiveness of the application in the context of company operations. This application has proven effective in expanding the reach of applicants, allowing PT. Parastar Group to publish job vacancies widely through a web platform. This feature is in accordance with the initial purpose of developing the system, namely, to increase the visibility of job vacancies and attract more potential candidates. In addition, this system also facilitates the management of applicant data, both new applicants and previously registered applicants, as well as data on accepted applicants. This shows that the system can manage recruitment information in a structured and centralized manner. Another advantage of this system is its ability to overcome data archiving problems. With a structured data storage system, this application ensures that recruitment data can be accessed easily and securely, even as the volume of data continues to increase every year. The information presented by the application, such as company profiles and job vacancy descriptions, was also considered comprehensive and informative, helping prospective employees better understand the company and job requirements.

However, external testing revealed that this application is not yet fully optimized in accelerating the employee recruitment process [17]. This finding indicates that although the system has met the functional and data management aspects, there is still room for improvement in terms of the efficiency of the overall recruitment process. This can include aspects such as simplifying the application flow, improving candidate search and filtering features, or integrating with communication tools to speed up the selection process. The selection of the RAD method in developing this application has proven effective in accelerating the development process and providing flexibility in accommodating changing needs. Support from Visual Studio Code and MySQL also facilitates faster and more responsive development. However, it should be noted that the RAD method, although fast, still requires continuous evaluation and iteration to ensure that the resulting system truly meets user needs and business goals. To improve the effectiveness and efficiency of the application, several recommendations can be considered based on related literature and research. Research by Fikri *et al.* (2024), on the design of a web-based employee recruitment information system can provide additional insight into the implementation of effective e-recruitment [18]. In addition, research by Setiawan & Indrawan (2023) regarding the application of the TOPSIS method in recruitment can provide perspective on the use of more objective and efficient assessment methods [19]. Evaluation of the effectiveness of the recruitment information system can also be enriched by research by Sari (2024) which discusses the assessment of the effectiveness of the recruitment and selection system in improving employee performance [20].

Based on the discussion above, it can be concluded that the web-based employee recruitment information system application developed for PT. Parastar Group has achieved a high level of feasibility in terms of functionality and data management. However, there is still room for improvement in terms of the efficiency of the overall recruitment process. Therefore, an in-depth evaluation based on external test findings and relevant literature studies is needed to improve the effectiveness and efficiency of the application. Further development can be focused on improving features that can speed up the recruitment process, such as more sophisticated candidate search features, integration with communication tools, and the implementation of more objective assessment methods. Thus, this application is expected to provide a more significant contribution in supporting the employee recruitment process at PT. Parastar Group.

4. Related Work

Web-based Recruitment Information System implementation has taken its place as an important subject in the field of Human Resource Management both in terms of theory and components. As companies gradually try to improve their recruitment process and efficient selection, a study has been conducted to find solutions to address the challenges in the existing process. Some of these challenges include being time-consuming, relatively expensive, and challenging to reach qualified candidates [22][23]. With the ability of organizations to publish job openings to a wide audience, receive applications online, and store and manage applicant information in a centralized database, a web-based recruitment information system has the potential to provide significant solutions. It not only speeds up the recruitment process but also reduces operational costs and increases the efficiency of the HRD team [24]. According to Maryani *et al.*, (2020), recruitment with web technology can improve the recruitment process and enable access to new applicants [25]. This brings us to the next important aspect; User Interface in recruitment information systems. An intuitive and easy-to-use interface design can improve the user experience for both applicants and HRD employees [21]. For example, job search functions based on keywords, job categories, and locations are being optimized so that applicants can more easily find job openings that match their interests and qualifications [22]. According to research, a good interface increases user satisfaction levels and speeds up the application process [16].

Data security and privacy are crucial aspects in developing a recruitment information system. The system must be able to protect applicants' personal data and ensure that only authorized parties can access the information. Implementing strong security protocols and data encryption is essential to maintain data integrity and confidentiality [26][27]. Several studies have shown that implementing appropriate security technology can reduce the risk of data breaches and increase applicants' trust in the system [28]. In data management, a recruitment information system must be able to manage large volumes of data, including applicant data, job vacancy data, and selection result data. The use of a structured database and optimal search algorithms are important to ensure good system performance. More objective assessment and selection methods have also been explored in recruitment information systems. Methods such as scoring, ranking, and TOPSIS have been implemented to assist HRD teams in selecting candidates who best match the established criteria [19]. Integrating these methods into a recruitment information system can improve the effectiveness of the selection process and reduce bias in decision making.

One of the growing recruitment trends is integrated social media and recruiting information systems. Social media can also be used by companies to increase the visibility of their job openings among a broader population of potential job seekers. This integration also enables organizations to screen applicants via their social media pages. According to research, the use of social media in recruitment can improve the visibility of job vacancies and widen the pool of potential candidates [25]. A web-based employee recruitment information system continues to be the subject of development. Many studies and implementations have been performed to enhance overall efficiency, efficacy, and security in recruitment processes. Design of a effective recruitment information system is concerned with many elements of UI, data security, data management assessment and integration with other applications. Also, adaptation to the latest technologies and user's necessities is really a decisive point in proceeding to a successful system.

5. Conclusion

From the results of research and testing conducted, it can be concluded that the web-based employee recruitment information system that has been developed is feasible. For functionality, refinement and function fulfilling ability of information component the feasibility level reached 91% during internal testing of the system. This shows that the system is internally decent and satisfies most of what has been prescribed. In contrast, external testing offers multiple significant insights as to how the system could perform in real-world implementation. So up with job vacancies to prospective applicants in general more and more widely spread this work system is truly effective. However, this system has not fully been able to accelerate the process of employee recruitment at PT. Parastar Group. Followed by the establishment of a centralized system for storing and managing applying peoples (0 pers) data recently these data would have to allow to people who to clear specific levels of platforms this system helped in storing newly received applicants (0 pers) data as well. Furthermore, the major problem of data archiving is managed successfully in the simplest manner with absolutely organized data from the database and less use of physical place for file archive. This system can also provide detailed information about the company profile as well as job vacancies, so that prospective

employees get an overview. We can conclude that even if it still has more aspects to improve in order to find the best results to get an optimal performance, this information system is very promising in terms of making the process faster.

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