

## Design and Build a Web-Based Employee Payroll Application to Increase Efficiency at KACE Stores

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### ABSTRACT

Toko KaCe is an SME that still uses a manual payroll system that causes errors, delays, and non-transparency. This research aims to develop a web-based payroll application to improve efficiency and accuracy. This research uses system development methods, including requirements analysis, design, development, and evaluation of PHP and MySQL-based applications. Data was collected through interviews with HR managers, manual system observations, and employee surveys after the system implementation. This research fills the gap by developing a payroll application for SMEs, which previously focused more on large companies. The results show that web-based applications can reduce errors, speed up payroll, and increase transparency with easily accessible reports. This application has proven to be effective in increasing payroll efficiency and transparency at Toko KaCe.

## **INTRODUCTION**

The payroll system is one of the important components in human resource management in every organization. In the context of small and medium enterprises (SMEs), an effective payroll system not only helps in ensuring employee satisfaction, but also plays a role in improving the company's operational efficiency. In Indonesia, many SMEs still rely on the manual payroll system which has several weaknesses, including the risk of miscalculations, delayed salary payments, and wasted time in the administrative process. KACE stores, as SMEs, also face similar challenges, where manual payroll processes not only interfere with productivity, but also potentially reduce employee motivation due to inaccuracies or late payments. Therefore, a payroll system is needed that can overcome this problem, one of which is by developing a web-based payroll application that is more efficient, fast, and can be flexibly accessed by all related parties.

The use of web-based apps to manage employee payroll has been shown to be effective in various studies. This technology offers several advantages, including the ease of automatic salary calculations, more structured data management, and the ability to reduce human error that often occurs in manual systems. In addition, the web-based application also allows for more flexible access, for both business owners and HRD, to monitor the payroll process in real-time. Thus, the implementation of a web-based payroll application can help KACE Stores to improve operational efficiency, reduce administrative costs, and accelerate a more transparent and accurate payroll process (Arifin & Agustian, 2020).

The use of web-based systems in payroll can speed up the salary payment process and reduce the risk of human error in calculations. This has a positive impact on employee satisfaction and loyalty, which in turn also increases work productivity. The implementation of web-based payroll applications in SME companies can reduce administrative burdens that previously burdened HRD, while providing convenience in managing attendance and payroll data more accurately and efficiently (Fitria et al., 2024; Hermawan et al., 2021).

In addition, the web-based payroll application also allows companies to better monitor and evaluate the payroll system. With complete reporting features, business owners or HRDs can access financial data more transparently and make more informed decisions in planning and managing the company's budget. This is especially important for SMEs like the KACE Store that need to manage resources effectively and efficiently. The implementation of this web-based payroll information system can also increase accountability and transparency in the company's financial management, as well as help ensure that employees are paid in accordance with their rights and contributions (Mamluah & Nurdiawan, 2023; Suprpto & Wulandari, 2025).

With this background, this research aims to design and build a web-based payroll application that can improve efficiency and transparency in KACE Stores. This research is expected to make a significant contribution to the development of web-based information systems, especially in the context of payroll management in SMEs.

## **LITERATURE REVIEW**

### **Employee Payroll System**

Payroll systems are a part of human resource management that deals with rewarding employees for the work they have done. An efficient payroll process is very important for companies because it is directly related to employee motivation and satisfaction. A good payroll system must be able to ensure timely and accurate payments in accordance with applicable regulations in the company as well as calculate salary components such as allowances, deductions, and bonuses (Tehuayo, 2021). In the context of SMEs, proper payroll management will increase operational efficiency and reduce administrative burdens. Web-based payroll systems provide a more efficient solution, allowing for automated and integrated management of employee and payroll data.

### **Web Technologies for Payroll Applications**

The use of web-based technology in payroll applications is increasingly popular along with the development of information technology. Web-based applications allow for flexible and secure access from a variety of internet-connected devices, such as computers, tablets, and smartphones. The main advantage of a web-based app is its ability to provide services that are easily accessible to business owners and HRD without being tied to a specific physical location. By using this technology, the payroll process can be automated, reducing human error, and speeding up the data flow (Keivin & Shadiq, 2020).

### **Web-Based Application Development Framework**

In developing web-based applications, various frameworks can be used to improve development efficiency. One of the most frequently used frameworks is CodeIgniter, which allows the development of applications with an MVC (Model-View-Controller) structure. CodeIgniter offers a wide range of conveniences, including speed in development, flexibility in URL settings, and easy integration with databases like MySQL. The use of this framework will accelerate the process of creating a structured and tested payroll application (Audria et al., 2024).

### **Advantages of Using Web-Based Payroll Applications in SMEs**

For SMEs, the application of technology such as a web-based payroll system can reduce operational costs and increase efficiency. The web-based application also allows for better management of employees, from personal data to attendance, as well as integration with payroll systems that can calculate salaries based on working hours and applicable deductions. That way, small companies like Toko KACE can improve the administrative flow and speed up the payroll process without having to spend a lot of money.

## METHODOLOGY

This research uses a system design and development approach to design and develop a web-based payroll application that will improve operational efficiency in KACE Stores. This approach involves designing systems, developing software, and evaluating them to ensure the application can provide an effective and efficient solution.

This study uses qualitative and quantitative research methods that are combined to achieve research objectives. Qualitative methods are used to collect data on the needs and problems that exist in the KACE Store related to the payroll system currently used, while quantitative methods are used to measure the impact of using web-based payroll applications in terms of efficiency and accuracy.

The type of research used is Development Research which focuses on the design and development of web-based payroll applications. This method allows researchers to not only design applications but also implement them and evaluate the results in a real-world context.

The stages carried out in this study can be seen in figure 1.



Figure 1. Research Stages

The data collected in this study used the following techniques:

**Interviews:** In-depth interviews with HRD managers and some KaCe Store employees to identify problems faced with the current payroll system and determine the need for the new system.

**Observation:** Observe the current payroll process to analyze the workflow and points that need improvement.

**Surveys:** Survey employees to gauge their satisfaction with the new payroll system after the web-based application is implemented.

**Documentation:** Collects data related to payroll flows and applicable regulations in the KACE Store.

## RESEARCH RESULT

This research was conducted to analyze and develop a web-based payroll system at Toko KaCe which has been using manual methods in managing employee payroll. Toko KaCe, located in Pulang Pisau Regency, Central Kalimantan, is a business that provides various services, such as the sale of stationery, credit, as well as water refill and printing services. The store is led by Mr. Toto Gutomo, with Dhea as the cashier and several other employees who are responsible for the operation and distribution of goods. Although this business is quite developed, the existing payroll system is still inefficient and has minimal record-keeping which leads to non-transparency in terms of payroll.

The payroll system at Toko KaCe is carried out manually with the leader who is fully responsible for calculating and paying employee salaries every month. The leadership also does not provide employees with payslips or formal payroll reports, which creates potential uncertainty regarding salary calculation and distribution. This lack of recording exacerbates the situation, as there is no documentation that can be used as a reference in the event of errors or claims related to the salary given. The running payroll system can be seen in figure 2.

Through this research, the author tries to build a web-based payroll application using PHP and MySQL that can manage employee payroll more systematically. This application is designed to simplify the payroll process with features such as employee attendance recap, automatic salary calculation, and more accurate recording through a database that can be accessed at any time by the authorities. In addition, the app also provides payroll reports and payslips for each employee allowing transparency in the payroll process.

In the development of this system, the author also found several main problems that occurred at Toko KaCe, such as the management of employee data that has not been properly organized and the use of a system that is still completely dependent on the leadership. The use of a web-based payroll system is expected to reduce the burden on leaders in financial management and improve the efficiency of employee payroll administration.

## DISCUSSION

Based on the results of the research conducted, the implementation of the web-based payroll system at Toko KaCe aims to overcome various problems that exist in the manual payroll system that has been used so far. The payroll process carried out manually by the leadership of Toko KaCe causes several main problems, including the absence of clear documentation related to payroll, lack of transparency in salary calculations, and errors that can occur due to management carried out without an organized system.

Through the development of web-based applications, it is hoped that a more efficient and accurate system can be created. This system has advantages in terms of automating salary calculations based on attendance data, benefits, deductions, and other data. This will certainly minimize errors that often occur in manual systems. In addition, the app also provides structured payroll reports and payslips, providing employees with clearer transparency regarding their salary calculations. Thus, this web-based application is expected to improve financial governance and increase employee confidence in the payroll system at Toko KaCe.

This recommended system uses PHP as a programming language and MySQL as a database to store employee data, attendance, and salary calculations. The use of the CodeIgniter framework makes it easy to develop applications faster, as well as ensuring a flexible payroll system that is accessible to various parties involved. The implementation of a web-based system also allows for safer and more efficient data management. Employee data security is a priority, using encryption to protect personal data and payroll information. In figure 2 you can see the front page of the application.

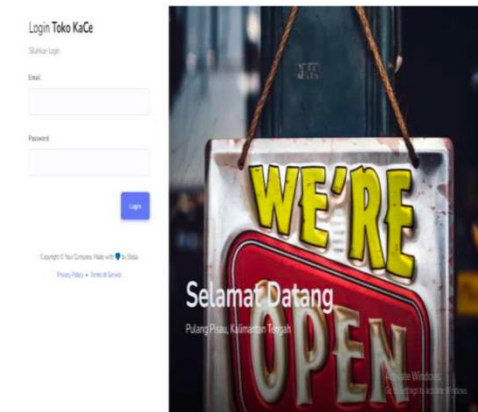


Figure 2. The Front Page of the Application

In terms of efficiency, the use of web-based payroll applications clearly provides advantages. The payroll process, which was previously done manually with time and effort, can now be completed in a much shorter time. This system will automatically calculate and manage payroll data, reduce the risk of human error, and speed up the process of creating reports that previously had to be done manually. In addition, the reports produced are also easier to understand, both by management and employees, which in turn can increase employee satisfaction and trust in the company.

However, the implementation of this web-based system is not separated from challenges. One of the main challenges was the adaptation from a manual system to a web-based system that required training time for employees and store owners. Therefore, a good understanding of how to use this system is essential for smooth operations after the application is implemented. Additionally, while web-based applications offer many conveniences, their success depends heavily on the quality of the human resources who can manage and maintain the system.

Overall, the implementation of a web-based payroll system at Toko KaCe can make a positive contribution to efficiency and transparency in employee salary management. This will also help reduce the administrative burden that has been borne by the leadership, as well as increase employee satisfaction with a more structured and accountable system.

## CONCLUSIONS AND RECOMMENDATIONS

This research has successfully designed and developed a web-based payroll application as a solution to increase efficiency and transparency in payroll management at Toko KaCe. Prior to the implementation of this application, the payroll process was done manually, which resulted in inaccuracies, delays, and non-transparency in providing salaries to employees. After the development and implementation of web-based applications, the payroll process becomes faster, more accurate, and more transparent. This application also facilitates the management of attendance data and automatic salary calculation, as well as providing payroll reports that can be accessed at any time by management and employees. The implementation of the web-based

payroll application at Toko KaCe has had a positive impact in terms of operational efficiency and accuracy of payroll calculations. In addition, the transparency resulting from the use of this system can increase employee trust in the company. Despite the challenges in the transition from a manual system to a web-based system, the app offers an effective solution to improve payroll management at Toko KaCe.

For a web-based payroll application to be used optimally, good training is needed for business owners and employees who will operate this system. This training is important to ensure that all parties involved understand how to use the system correctly and effectively.

#### **ADVANCED RESEARCH**

In the next research, it is expected to complement several other features, one of which is the security feature, because this application has not been equipped with security features, it is important to continue to improve the security system, especially related to the protection of employee personal data. The use of more advanced encryption protocols and regular updates to security systems can protect data from security threats.

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