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Web Based Payroll Information System Using CodeIgniter at the Regional Secretariat Tasikmalaya Regency

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Abstract

The problem faced in the payroll system at the Regional Secretariat of Tasikmalaya Regency is that the process is still carried out manually or semi-manually, which causes a lack of efficiency and accuracy in payroll management. So it is necessary to develop and implement a web-based Payroll Information System using the CodeIgniter framework to increase efficiency and accuracy in payroll management at the Regional Secretariat of Tasikmalaya Regency. The method used in this research study is software development which includes requirements analysis, design, implementation and system testing. The CodeIgniter framework was chosen because of its advantages in developing fast and structured web applications. This method enables the design and development of an efficient and effective web-based payroll information system. This system is designed to simplify the employee payroll process with features that include managing employee data, position data, attendance, setting salary deductions, payroll and reporting. With this implementation, it is hoped that it can increase efficiency and accuracy in payroll management at the Regional Secretariat of Tasikmalaya Regency.

Keywords: *Information Systems, Web Based Payroll and CodeIgniter*

1. Introduction

The Regional Secretariat of Tasikmalaya Regency is a government institution that plays an important role in managing administration, coordination, and execution of government tasks at the regency level. One crucial aspect of the operational activities of this institution is the employee payroll system [1]. Currently, the payroll process at the Regional Secretariat of Tasikmalaya Regency is still carried out manually or semi-manually using Microsoft Excel. This often leads to various issues such as payroll delays, calculation errors, and lack of transparency. The manual payroll process requires a lot of time and effort as it involves collecting data from various sources, verifying the data, and manually calculating salaries and deductions [2]. Errors in this process not only reduce work efficiency but can also impact employee satisfaction. Additionally, to meet increasingly stringent standards of accountability and transparency, a system is needed that can provide accurate and timely reports. To improve efficiency, accuracy, and transparency in payroll management, modernizing the payroll system by leveraging information technology is necessary. One solution that can be implemented is to develop a web-based Payroll Information System using the CodeIgniter framework [3]. CodeIgniter is a lightweight and high-performance PHP framework that is well-suited for building reliable and efficient applications. With a web-based payroll information system, it is expected that the entire payroll process can be automated, from data collection and salary calculation to report preparation [4].

Additionally, this system can provide employees with easy and quick access to their salary information, reduce potential errors, and overall enhance employee satisfaction [5]. Through this proposal, the author aims to propose the development and implementation of a Payroll Information System using CodeIgniter. The creation of the Payroll Information System at the Regional Secretariat of Tasikmalaya Regency is expected to provide various benefits for its employees. Here are some of the main benefits that can be obtained [6]:
1. Time Savings: Speed up the entire payroll process, from data input to salary distribution.
2. Clear Reporting: Provide detailed payroll reports that are easily accessible by administrators and employees.
3. Record Keeping: Properly record all payroll transactions, facilitating audits and monitoring.
4. Information Access: Allow employees to easily access their own payroll information through an employee portal.

Although the current payroll process at the Regional Secretariat of Tasikmalaya Regency is still manual, the development of this payroll information system is expected to be an effective solution. This system is designed to improve the accuracy of salary calculations, speed up the payroll process, and facilitate access and tracking of payroll data [7]. Thus, this study will contribute positively to the development of technology in the office environment and provide a useful tool for better payroll management. Additionally, with a centralized system, information related to employee salaries and benefits can be more easily and transparently accessed by interested parties.

In line with the presentation stated above, the purpose of this system is designed to simplify the employee payroll process with features that include employee data management, job position data, attendance, salary deduction settings, payroll, reporting, and pay slip printing.

2. Research Method

This research employs the waterfall method, which includes several important stages to ensure that the developed system meets user needs and performs well. These stages include analysis, design, implementation, and testing [8]. In the analysis stage, the requirements and objectives of the payroll system to be developed are identified, along with the collection of information about user needs, as well as functional and non-functional requirements.

2.1. Identify the problem

To complete this research the author carried out several research methods in collecting reference data including:

1. Conduct interviews and discussions with relevant parties, such as administrators and employees, to gather information about the needs and issues in the current payroll system.
2. Identifying the features required by users, such as employee data management, position data management, attendance, salary deductions, payroll, reporting, and printing pay slips.
3. Compiling a list of functional requirements that include the core functions essential for the system. Determining non-functional requirements such as data security, system reliability, and performance.

2.2. System Development Model

a. System Design
   Determining a web-based system using the CodeIgniter framework, designing the Model-View-Controller (MVC) structure to separate business logic, presentation, and data.
b. Database Design
   Designing a MySQL database schema to store employee data, position data, attendance records, salary deductions, and payroll data.
c. System Testing
   Conducting comprehensive system testing to ensure all functions work correctly and meet user requirements using black-box testing.

3. Result And Discussion

According to the title chosen by the researcher for the study, the results of developing this application demonstrate that the system efficiently handles the entire payroll process. Features like report generation and pay slip printing facilitate administrators in producing documents. Meanwhile, to ensure that all functions work properly and meet user requirements, black-box testing was employed.

3.1. Black box testing

a. Black box testing

Table 1: Black Box Testing for Admin

No	Test Scenario	Test Case	Expected results	Test Results	Status
1	Access localhost/Payroll	Entering URL in Google Chrome	Main Page Display	As Per	Valid
2	Login Admin	Entering Admin Username and Password	Login to Admin Dashboard Page	As Per	Valid
3	Manage All System Data	Editing Employee Data, Adding, Deleting, Setting Salary Deductions, Printing Employee Salary Slips	All Change Processes Can Be Saved in the Database	As Per	Valid
4	*Logout*	Exiting Admin Dashboard	Can Exit from Admin Dashboard Page	As Per	Valid

Table 2: Black Box Testing for User

No	Test Scenario	Test Case	Expected Result	Test Results	Status
1	Access	Entering url in google chrome	Display Main Page	As Per	Valid
2	localhost/Payroll	Entering Employee Username and Password	Login to Employee Dashboard Page	As Per	Valid
3	Employee Login	Printing Employee Pay Slip	Can Generate Employee Pay Slip Print	As Per	Valid
4	Print Pay Slip	Exiting Employee Dashboard	Can Exit Employee Dashboard Page	As Per	Valid

a. Use Case Diagram

1. Use Case Diagram Admin & Worker

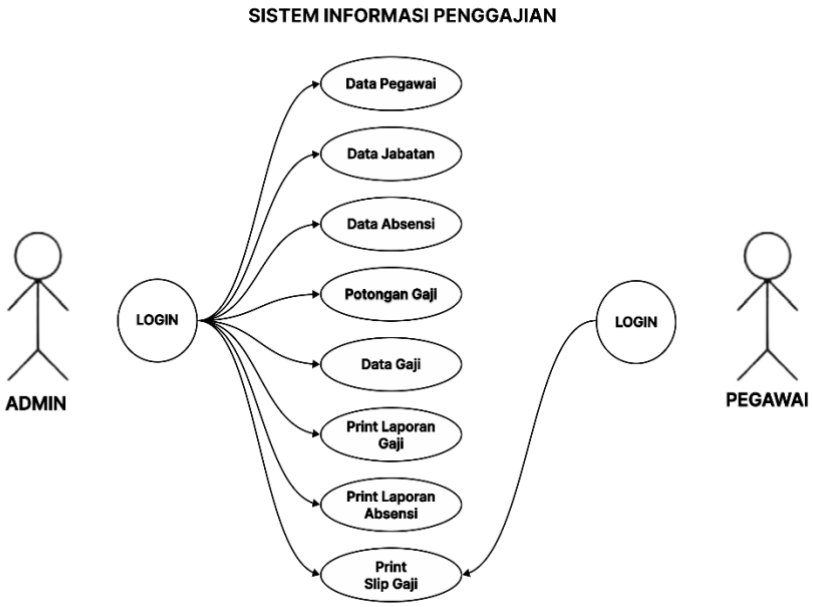


Fig. 1: Use Case

b. Activity Diagrams

1. Activity Diagram Admin

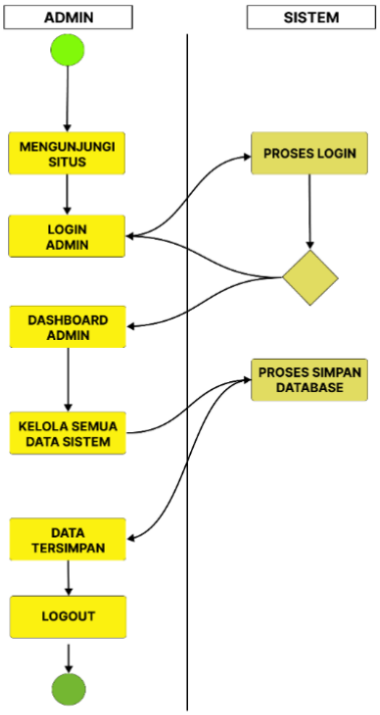
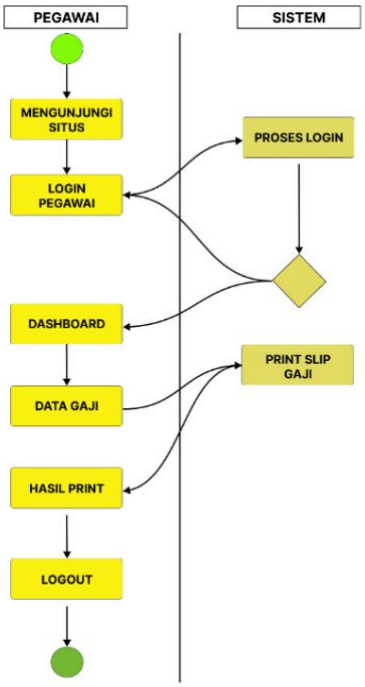


Fig. 2: Activity diagram admin

2. Activity Diagram User



3.1. System implementation

1. Home Page
This is the main page of the website for both administrators and visitors.

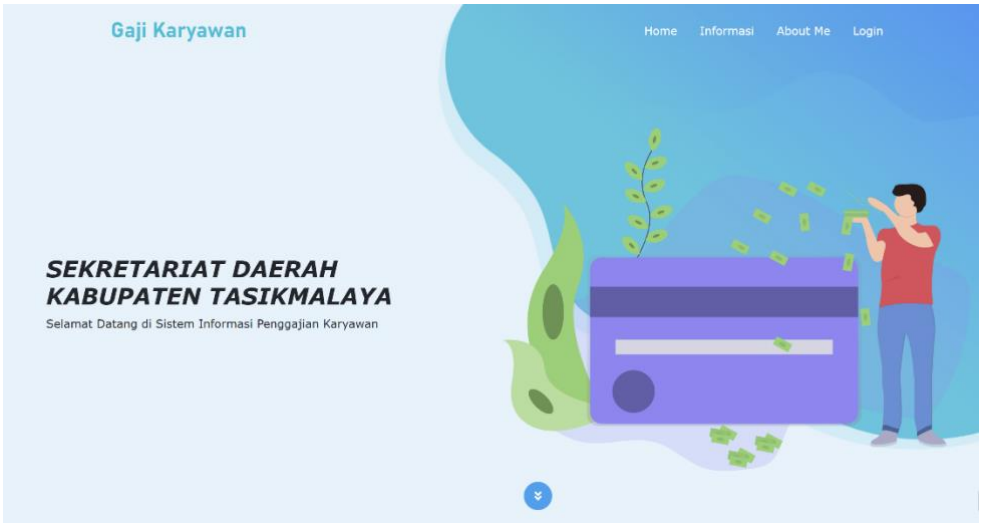


Fig. 4: Website page

2. Form Login Admin and Dashboard
After logging in, the admin is directed to the main dashboard as shown in figure 5. This admin dashboard manages all data within the system, including add, edit, and delete functions for employee data, position data, attendance records, salary deductions, payroll data, payroll reports, attendance reports, and pay slips. The admin is responsible for managing master data, which includes employee and position data.

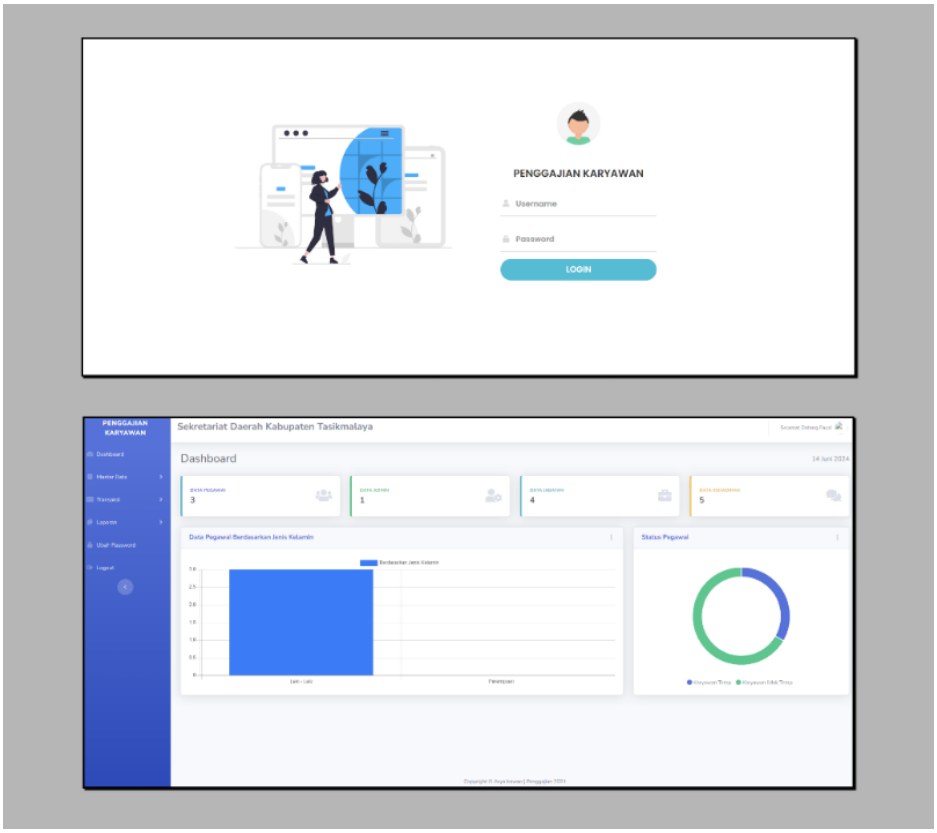


Fig. 5: Form Login Admin and dashboard

3. Form for Inputting Employee and Position Data

The main admin page manages all data within the system, including add, edit, and delete functions. This includes employee data, position data, attendance records, salary deductions, payroll data, payroll reports, attendance reports, and pay slips. The admin is responsible for managing master data, which includes employee and position data.

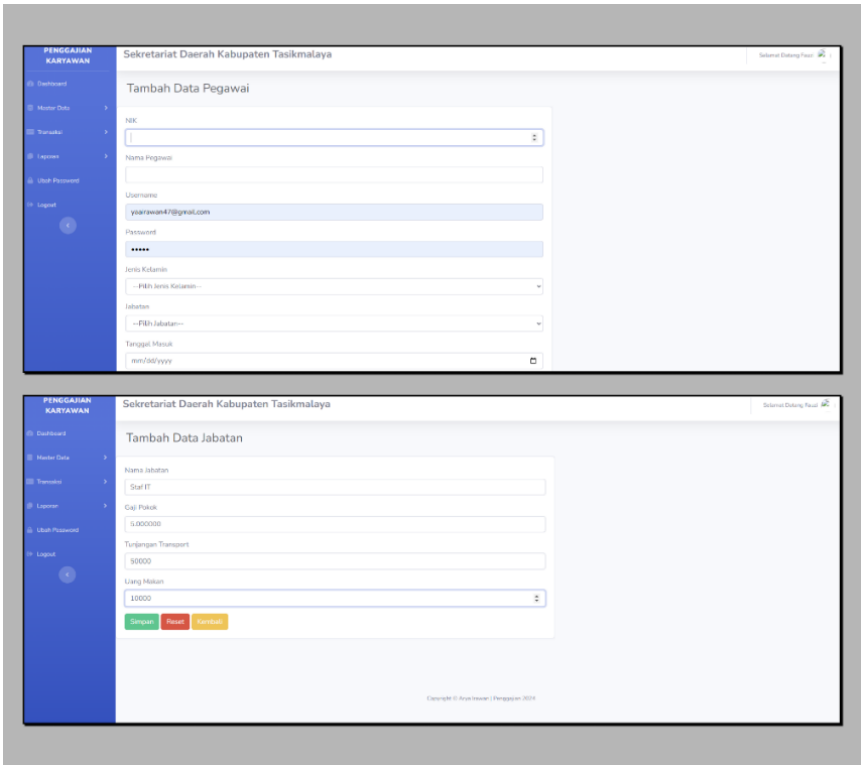


Fig. 6: Form for Inputting Employee and Position Data

4. Dashboard, Salary Data, and Printing Employee Pay Slips
The main page for employees of the Regional Secretariat of Tasikmalaya Regency after logging in displays the dashboard, salary data, and allows printing of pay slips.

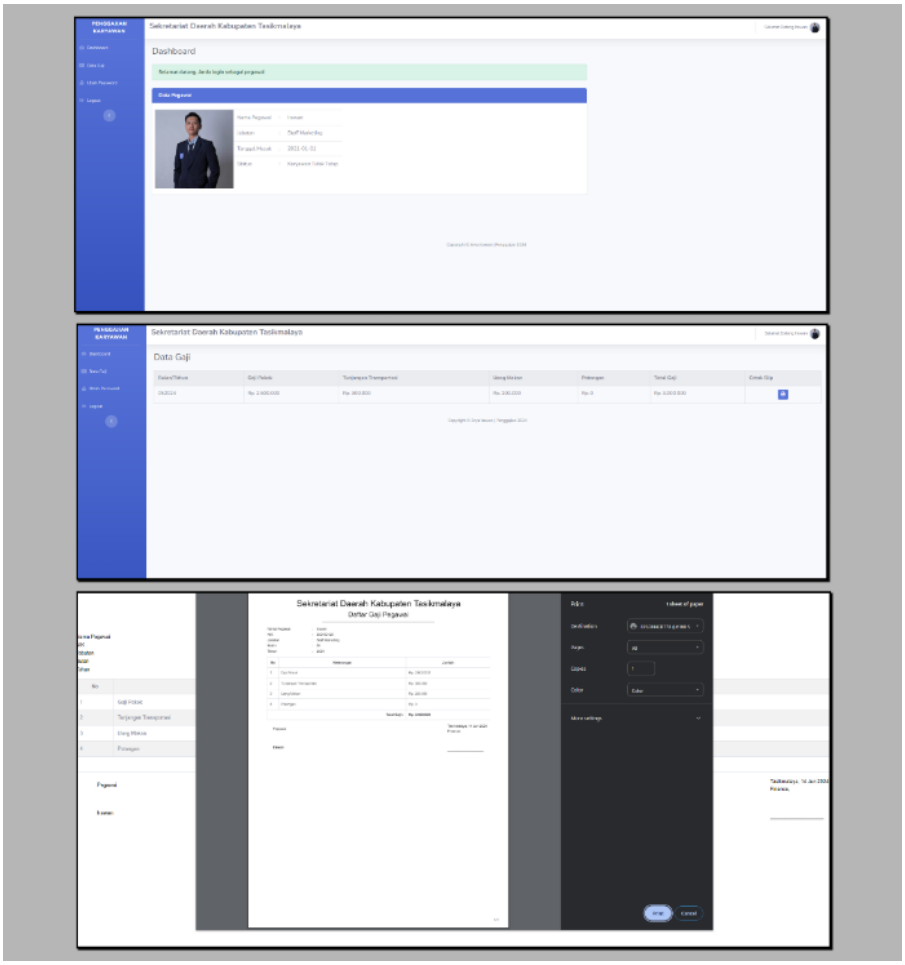


Fig. 7: Dashboard, Salary Data, and Printing Worker Pay Slips

4. Conclusion

Based on the points discussed earlier, the conclusion of this research study is that the Web-based Payroll Information System using CodeIgniter at the Regional Secretariat of Tasikmalaya Regency will enhance the efficiency and accuracy of the payroll process. The use of the CodeIgniter framework enables rapid and structured development. The web application created will streamline the employee payroll process with features including employee data management, position data management, attendance tracking, salary deduction settings, payroll processing, reporting, and pay slip generation.

Acknowledgement

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