

## Web-Based Employee Payment Information System (Case Study at KH.A. Wahab Hasbullah University)

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### **ABSTRACT**

*The application of information technology makes it easier for agencies to carry out data processing activities, including processing employee salary data. The results of observations made at the University of KH. A. Wahab Hasbullah pointed out that employee salary processing is still done manually. Therefore, it is necessary to develop a web-based payroll information system to make it easier for financial admins while preventing data loss. The research was carried out from April to August 2022 using the Waterfall method at KH. A. Wahab Hasbullah University, Jombang. The test results show that the developed employee payroll information system works according to its function and makes it easier for financial admins to make payroll reports.*

**Keywords:** *Information Systems; employee; wages; web*

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### **INTRODUCTION**

The rapid development of technology in the era of globalization has made almost all aspects of life unavoidable from the use of computer devices (Mulyadi, et. al., 2019). The speed and ease of applying information technology also influences the behavior of individuals and institutions (Moenir & Yuliyanto, 2017). The application of information technology makes it easy for agencies to carry out employee data management activities, attendance data management, and payroll data management (Jimmie, et al., 2021). Data is an important part in an agency because data from one part relates to other parts including payroll data at universities (Gustiawan & Tristanto, 2022). Salary is an important factor in increasing work motivation. Agencies are required to carry out proper salary planning and have justice in accordance with duties, responsibilities, and work difficulties to improve employee welfare (Jimmie, et al., 2022).

KH. A. Wahab Hasbullah University (Unwaha) is one of the private tertiary institutions in Jombang. The results of observations and interviews with Unwaha employees show that the processing of employee payroll data is still manual. This allows for errors in processing salary data, loss of salary data, and data security is not guaranteed. Research by Mualim, et al (2023), shows that the web-based lecturer payroll system makes it easier for admins to make payroll reports. Apart from facilitating admin work, the results of research by Farhatuaini, et al. (2018), shows that the salary management information system presents employee and lecturer profile data, employee and lecturer salary data, salary slip reports, annual salary reports, recap of annual and monthly salary report data.

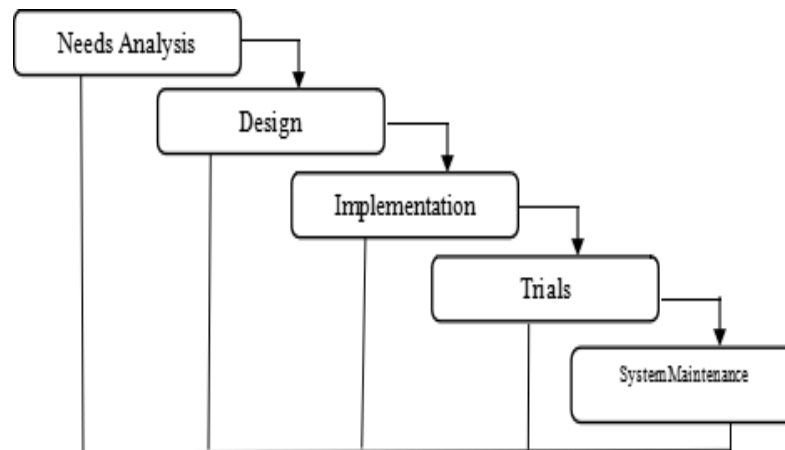
Based on this description, it is necessary to create a payroll information system at Unwaha to make admin work easier as well as prevent data loss. The method used in the development of information systems is the waterfall method. This method is a systematic and sequential method, where each stage that is passed must wait for the completion of the previous stage and run sequentially (Mualim, et al., 2023).

### **METHOD**

- **Research Methodhods**

The research was conducted from April to August 2022 at KH. A. Wahab Hasbullah University, Jombang. The activity began with observations and interviews with Unwaha employees to find out the problems faced by Unwaha employees. After that, the activity continued with a literature study to gather information related to employee payroll problems at Unwaha. After gathering information, then proceed

with the design and development of a payroll system. Employee payroll system development is carried out using the waterfall method. The waterfall method is a sequential software development process that goes through several phases, namely planning, modeling, implementation and testing (Dinka, et al., 2022). In its development, the waterfall method goes through several stages, namely requirements, system design, implementation, and maintenance (Habibi & Karnovi, 2020). The flow of developing a payroll information system in this study can be seen in Figure 1.



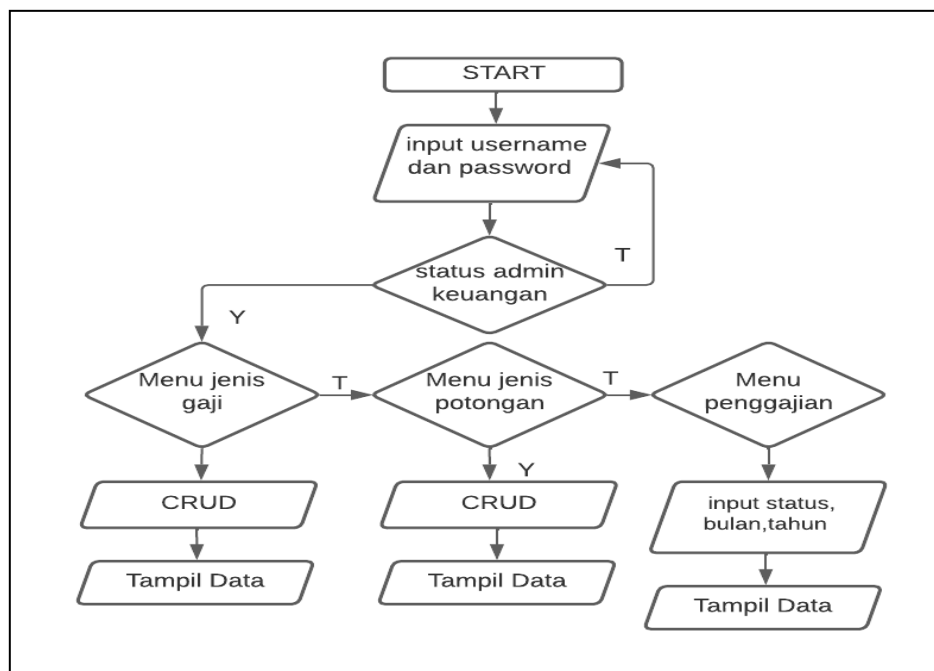
**Figure1.** Waterfall diagram

The description of the information system development that will be carried out based on Figure 1 is as follows.

1. Needs analysis  
At this stage it begins with observations, interviews with KH.A.Wahab Hasbullah University employees to find out the problems they face.
2. Design  
This design stage provides an overview for designing the appearance of the application created. In this study, researchers designed a display design that would be used in the web-based Payroll Information System application for Unwaha employees.
3. Application  
The implementation phase begins with the coding process from start to finish in preparing the application. In this study, researchers used codeigniter and PHP MySQL to design a web-based Unwaha Payroll Information System application.
4. Test  
The trial stage is the application testing stage that has been made after the coding process has been carried out. In applications made by researchers
5. System repair  
The maintenance stage is the final stage where researchers can later make improvements if deficiencies are found in the application that has been designed.

- **Data Flow Diagram (DFD)**

This stage is carried out to design the system so that it does the work effectively and efficiently. The design of this payroll information system in this study was made using a flowchart diagram as shown in Figure 2.



**Figure 2.** Flowchart Diagram

Figure 2 describes the flow of using the employee payroll information system. If the admin already has a username and password, the admin can log in and see the menu in the information system. The payroll system has several menus, namely the payroll type menu, the deduction type menu and the payroll menu.

## RESULT AND DISCUSSION

### Result

The results of a predetermined system design, so as to produce an application that can work properly. At this stage the programmer translates the design into application form using certain *software* and programming languages and unites everything into a unit.

- Login Page

The Login page is the page where the user verifies in order to enter the menu page. The login page can be seen in Figure 3.

- Main menu display

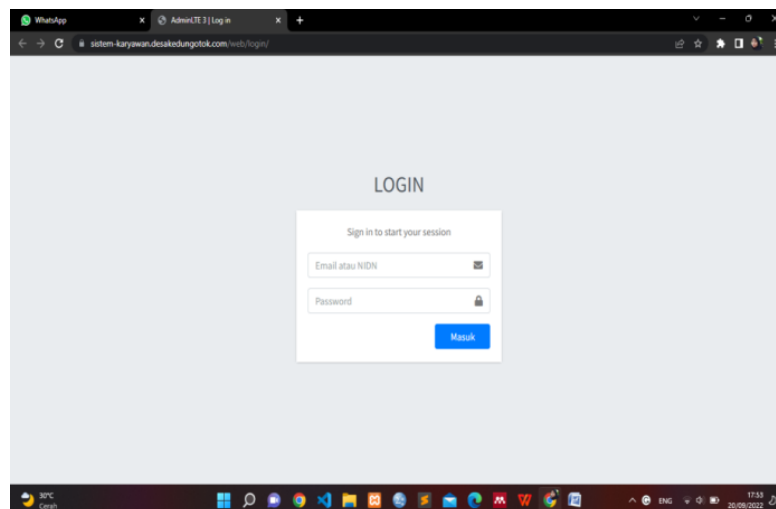
On the main menu display there is a payroll menu which includes employee payroll, salary type, payroll reports. The main menu page can be seen in Figure 4. Next are the main menus.

- Employee payroll display

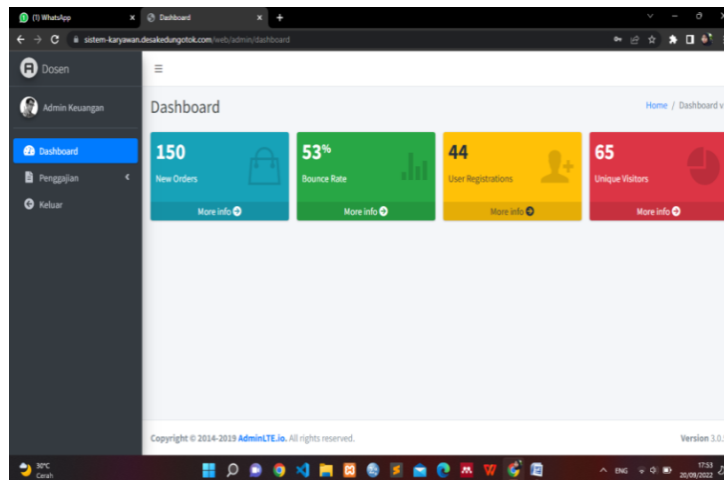
On the employee payroll page, the finance section admin can input employee payroll data including payroll month, employee name, type of salary, and employee salary nominal. The payroll menu display can be seen in Figure 5.

- Salary type page display

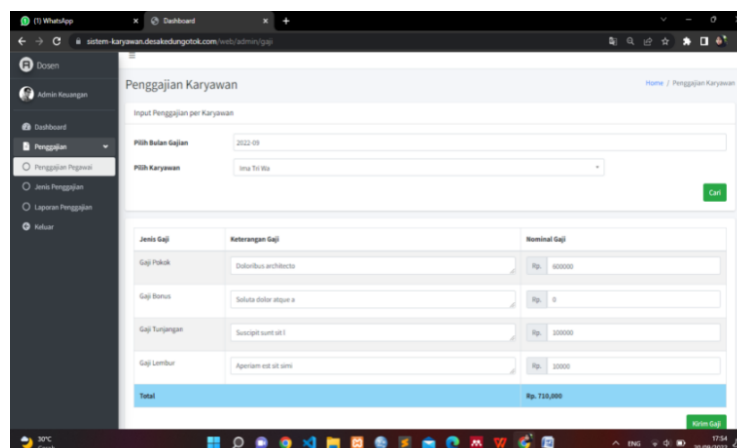
On the salary type menu there are several types of salary that will be received by employees, and the finance department can also input, change and delete these types of salary. The salary type menu can be seen in Figure 6.



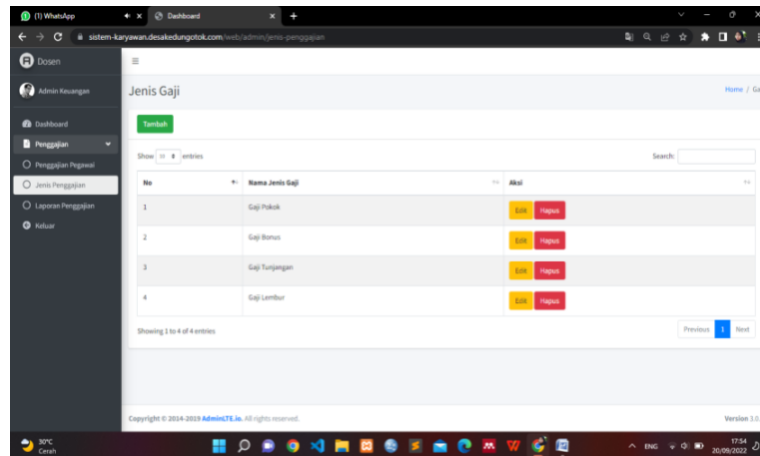
**Figure 3. Login page**



**Figure 4. Main page**

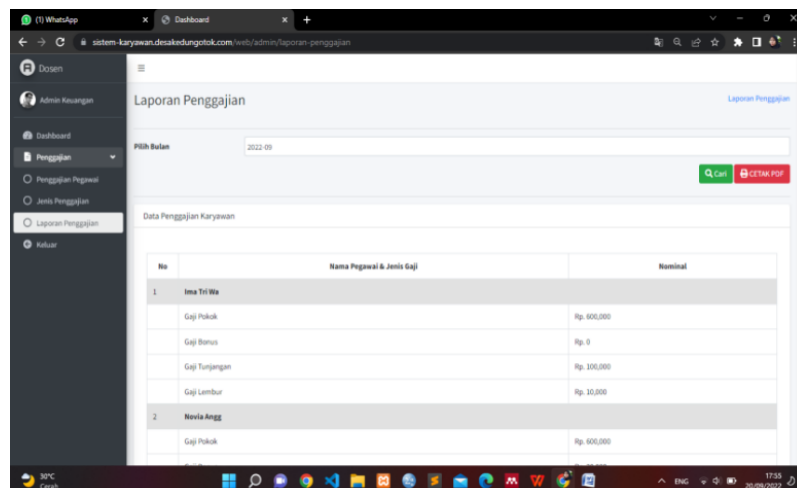


**Figure 5. Payroll menu page**



**Figure 6.** Payroll report page

- Payroll report page display  
 The payroll report menu is the result page of the input on the payroll page that has been added and can be printed. The payroll report page can be seen in Figure 7.



**Figure 7.** Payroll report

**Discussion**

Application performance testing is carried out to determine the effectiveness of the application being developed. Testing is carried out using blackbox testing which focuses on the functionality side, especially on the input and output system. The results of the application effectiveness test can be seen in Table 1.

**Table 1.** Feasibility of Employee Payroll Information System

No.	Form	Testing	Testing Method	Expected results
1.	Login Page	Function testing Application login	Enter Users Name and pass word user.	1. The system must be able to thwart the login process if the username and password do not match. 2. The system must be able to open the main application form according to access rights if the login process is successful.

No.	Form	Testing	Testing Method	Expected results
2.	Payroll forms	Function testing input payroll data	Select the month of salary and Click input salary type and nominal inputs wages	<ol style="list-style-type: none"> <li>1. The system can store employee data and then enter it into the salary table database.</li> <li>2. The system must be able to display employee data from the payroll information system database.</li> </ol>
3.	Salary type form	Testing add type wages	Select data from data table click button Edit, delete, add, for Changing data the type of salary appears on textbox. Then choose button SAVE.	<ol style="list-style-type: none"> <li>1. The system can change, delete what is already in the job table database and then save it back into the salary type table database.</li> <li>2. The system must be able to display salary type data from the payroll information system database.</li> </ol>
4.	Salary slip form	Testing print payslips	Select salary data then click button print payslips.	The system must be capable print payslips according to the data The selected employee.

Table 1 shows that all the criteria tested are in accordance with the expected results, in other words the application is feasible to use. These results are in accordance with the research of Yazidinni'am & Harino (2019), which shows that testing uses blackbox texting with the results of the menu page as expected, meaning it is ready to use. The test results also show that the developed application has good functional compatibility and runs correctly. This is in accordance with Dinni & Sifaunajah's research (2022), which shows that the development of certain applications or information systems can simplify, speed up, and save time on admitting new students.

## CONCLUSION

The payroll information system is an important point needed in an institution including universities. Based on the results of the analysis and discussion it is known that the payroll information development system plays a role in;

- Making an employee payroll information system can make it easier for the admin of the finance section to complete their duties.
- The payroll information system runs well according to its function.
- The payroll information system can make it easier for admins to make payroll reports.

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