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Web-Based Employee Payroll Information System at Bank Perkreditan Rakyat Ingertad Bangun Utama Ltd.

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***Abstract*—** This research is motivated by salaries that have not been maximized at the company Bank Perkreditan Rakyat Ingertad Bangun Utama Ltd because it still keeps documents in hard file form. With this web-based employee payroll information system, it is easier for admins to access salary data by accessing the web. The tool used to describe the system model is an Entity Relationship Diagram (ERD). To implement this payroll information system, supporting components are needed in order to work properly. These components use Laravel programming framework and store database in MySQL and use Talwind CSS design to make design easier. The results of research and applications can overcome the problems that exist in companies that do not yet have a payroll application and can be used to process salaries in the company.

***Keywords*—** Information, System, Payroll, Web, Laravel

I. INTRODUCTION

In the era of advanced and rapidly advancing technology, companies need information systems to store important data. The impact of the rapid development of technology at this time, especially in the field of information. Information systems can be easily accessed anywhere with an information system making it easier to find information or data needed. Web information systems make work easier without having to be in the actual place, just sitting in front of the monitor screen, getting or accessing the information needed. The expanded web information system enters all aspects of life, for example in the business world, offices, companies in the field of services and transportation. Companies need a web-based information system in order to easily record and store company data.

According to Julianto & Setiawan (2019) information system is a system within an organization that brings together the daily transaction processing needs that support the managerial functions of the organization's operations with the strategic activities of an organization to be able to provide certain outside parties with the necessary reports. Information systems can be analogous to a demand (demand) from the industrial community, when the need for data processing and communication facilities is fast and cheap.

Bank Perkreditan Rakyat Ingertad Bangun Utama Ltd, better known as "BPR IBU" was founded in 1990 under the name BPR Ingertad. Ingertad itself stands for INDONESIA GERMANY TRANSMIGRATION AREA DEVELOPMENT, which is a collaborative project between the Government of Indonesia and the Government of Germany in the development of hybrid coconut plantations in the Rimba Ayu transmigration area, Kota Bangun District, Kutai Kartanegara, East Borneo. This bank is a credit bank that does not yet have much information system development that is used because it still uses a lot of manual creation, which is recorded. So, the author makes an application for the company, namely, a payroll application.

Salaries at the company are very important so that employees can get payslips easily and there are already calculations of what employees get and salary deductions from employees. This research was conducted to create an employee payroll information system entitled "Web-Based Employee Payroll Information System at Bank Perkreditan Rakyat Ingertad Bangun Utama Ltd". Payroll Application is a web-based application system intended for admins to make work easier. The Payroll application is expected to be used by company admins in order to store data, record salaries, and pay slips for employees.

Based on the problems expressed in the background, the formulation of the problem in this study is, how to design an employee payroll information system at Bank Perkreditan Rakyat Ingertad Bangun Utama Ltd, And what features are provided in a web-based payroll information system.

A web-based payroll information system is closely related to other information systems. Therefore, the authors limit the research only to.
The employee payroll information system is made web-based and the employee payroll information system.

Based on the formulation of the problem, it can be seen that the research objectives are as follows. The

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purpose of this research is to create an employee payroll information system in a web-based company to facilitate the admin's work.

Based on the formulation of the problem, it is known that the expected results are as follows. The expected results can make it easier for company admins to process employee payroll.

II. LITERATURE REVIEW

A. Study of literature

1. In research by Hamizan (2020), the development of technology today has shown tremendous progress. Many things from the life sector have used the existence of technology itself. Its presence has had a considerable impact on human life in various aspects and dimensions. Information and Communication Technology (ICT) has become a trend in all aspects of life that follows the current development of contemporary information technology, ranging from business practitioners, education and even government. The employee payroll process is also included in the company's management information system. Employee payroll is not possible in a manual way, given the number of employees in the company.
2. Research conducted by Fardian Anshori and Mulyawan (2021), the payroll data processing information system application is a system used by admins and HRD heads so that the process of making and delivering payroll data information becomes faster and more accurate, this system is also used by admins to be able to assist in managing employee data, employee attendance, and employee overtime data.
3. Research conducted by Kurniawan, T. Bayu, S. (2020), Development technology information is increasingly widespread, this is in line with the rapid development of computers. Technology and information are two things that cannot be separated from one another. Rapid technological developments in the development of hardware and software as well as technology communication is an alternative for companies to support good data processing.

B. System

According to SIHOTANG, H. T. (2019), the system is a network of procedures that are interconnected, gathered together to carry out activities or to carry out certain goals.The system is basically a group of elements that are closely related to others, which function together to achieve certain goals.

C. Information

Information is data that has been processed and has meaning for users in making decisions. Each Information must be checked for validity, accuracy, and relevance, so that it can provide positive feedback for its users.

According to Ramdhan, N. A, & Nufriana, D. A. (2019), information is data that has been clarified or processed or interpreted for use in the decision-making process.

D. Information System

According to Sitinjak Daniel Dido Jantce TJ, M & Suwita, J. (2020), an information system is a system that consists of collecting, entering, processing data, storing, processing, controlling and reporting so that information can be achieved. Which support decision making within an organization to be able to achieve its goals and objectives.

E. Payroll

According to Kurniawan, H, Apriliah, W, Kurnia, I, & Firmansyah, D (2021), payroll is one of the important activities for the smooth operation of the company, in the welfare of its employees. The payroll system is one of the things related to the management of the welfare of the workforce so it must be given special attention by the company in order to achieve its goals.

F. Employee

The notion of employees is equated with the notion of labor, labor/workers or also termed as human resources (HR). In a macro sense, HR includes all humans as residents or citizens of a country or within certain territorial limits who have entered the age of the labor force, both those who have entered the age of the labor force, and those who have been able to get a job. Besides that, Human Resources on a macro basis also means people who are in productive age, although for various reasons and problems there are still those who are not yet productive because they have not entered the employment opportunities in the community.

G. Web

According to Riyadli, H, Arliyana, A, & Saputra, F. E. (2020), the World Wide Web or often known as the web is an information presentation service that uses the concept of a hyperlink (link), which makes it easier for surfers (the term for computer users who browse or search information via the internet). This feature has made the web the fastest growing service. The Web allows highlighting (highlighting or underlining) words or images in a document to link or point to other media such as documents, phrases, movie clips, or sound files.

H. Laravel Framework

According to Mediana, D., & Nurhidayat, A. I. (2018), Understanding the framework is a basic conceptual structure used to solve or handle a complex problem. In short, the framework is a container or framework of a website to be built. By using this framework, the time used in making the website is shorter and makes it easier to make improvements. One of the frameworks that is widely used by programmers is the Laravel framework. Laravel is a PHP-based

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framework that is open source, and uses the concept of model-view- controller. Laravel is licensed under the MIT License by using Github as a place to share code to run it.

III. RESEARCH METHOD

A. *Tools and Materials*

The tools used are hardware and software or applications as follows.

1. Laptop Acer Predator (Ram 8 gb, Intel Core i5)
2. Printer
3. Xampp
4. Visual Studio Code
5. Git
6. Browser
7. Composer
8. NodeJS
9. Balsamiq
10. Draw.io
11. Mendeley

B. *Research Procedures*

In the development of employee payroll information systems at Bank Perkreditan Rakyat Ingertad Bangun Utama Ltd there are stages to be carried out, in accordance with research procedures.

1. Literature study is an activity in collecting library data, reading and recording the same data used by the author. With the literature study the author can be used as a reference and can compare the weaknesses and strengths of the application to be made.
2. Retrieval of data to be collected and recorded that will be used by the author and which is needed so that it can be processed properly. Retrieval of data from the company is needed so that it can be realized in the design of information systems.
3. After data collection, the data will be analyzed to be used as samples from the application. Data analysis is the process of processing data into information that will be easily understood.
4. The data is processed properly, then the author prepares a system design so that it is easy to make the system, such as designing a database and designing the interface.
5. The system design is complete, then to the next stage, namely the creation of an information system. This stage is very important because the author will implement the system design into an application.
6. Testing the system so that the application can be used properly, checks the system whether it is running well or not.
7. After testing, namely the implementation stage. Implementation of an action or implementation of a plan that has been prepared carefully and in detail and can be used properly. Implementation is carried out after the planning and manufacture are considered perfect.

C. *Research Data Collection Method*

1. Study Literature

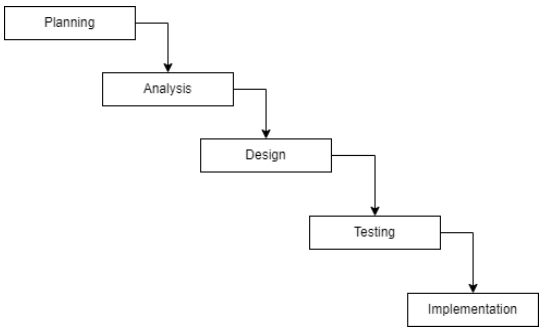
   Literature study is used for comparison and reference in order to facilitate research.
2. Interview

   The interview is the author asks the research that will be made for the company that will be the object of research. With the interview the author can find out what data is needed from the company
3. Observation

   Observation is data collection through observations in the field accompanied by data from the field.

D. *System Development Plan*

The system development method used in the study, namely the waterfall method. The waterfall method is used to simplify information systems that have been created in stages, can be seen in the picture 1.



Picture 1. Waterfall Method

1. Planning is anything that is needed by the company so that it can be implemented as desired and as needed so that it can be understood.
2. Analysis is needed so that the data can be processed appropriately in planning if it has been managed properly the new design stage can be carried out.
3. Designing information systems to be implemented.
4. Test the entire system to be used.
5. The implementation of the system can be used and the system is complete

E. *System Plan*

1. Entity Relationship Diagram (ERD)

   ERD for a web-based payroll information system this ERD makes it easy to create a database and the flow can be easily understood, it can be seen in the picture 2.

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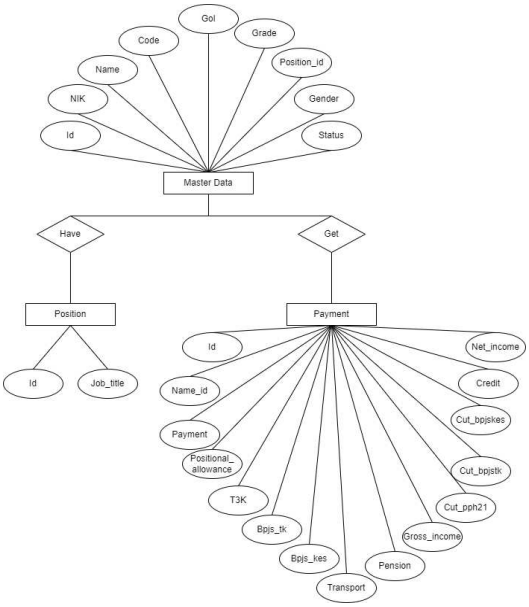
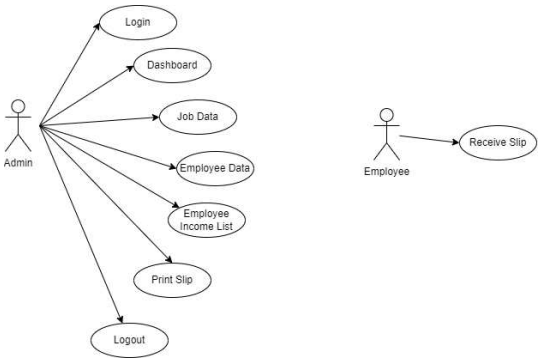


Picture 2. Entity Relationship Diagram

2. Use Case

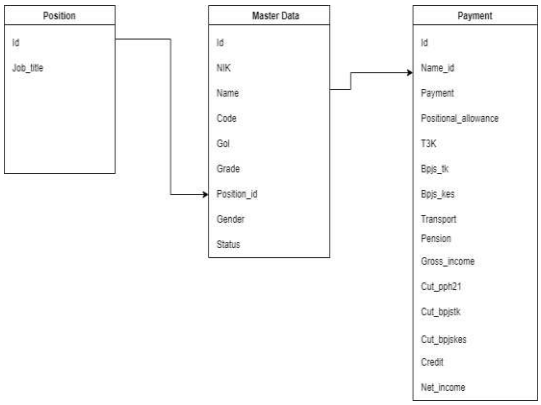
The use case used for a web-based payroll information system can be seen in picture 3.



Picture 3. Use Case

3. Class Diagram

The class diagram used to create a payroll information system can be seen in the picture 4.



Picture 4. Class Diagram

IV. Result and Discussion

The results and discussion of the application of a web-based employee payroll information system at Bank Perkreditan Rakyat Ingertad Bangun Utama Ltd which has been done by the author.

A. *Main Page*

The main interface page is the main page leading to the login on the payroll information system on the web such can be seen in the picture 5.

Picture 5. Main Page

The main page of the payroll which is used to enter the next page so the admin can click login to be able to enter the payroll data page.

B. *Login Page*

The login page is the page used by the admin to enter the next menu. So, admin must login first. The login page it can be seen in the picture 6.

Picture 6. Login Page

C. *Dashboard*

The dashboard page is a page for total data and salary graphs. Admins who have logged in will go to the dashboard page. Dashboard it can be seen in the picture 7.

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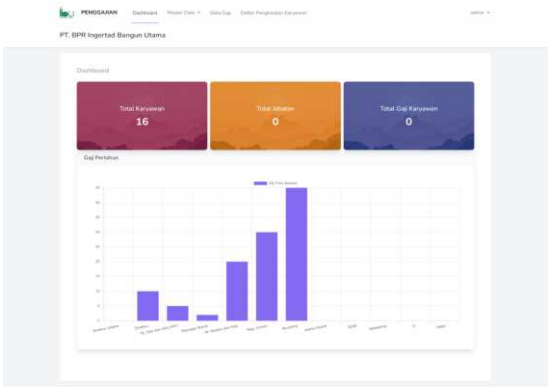
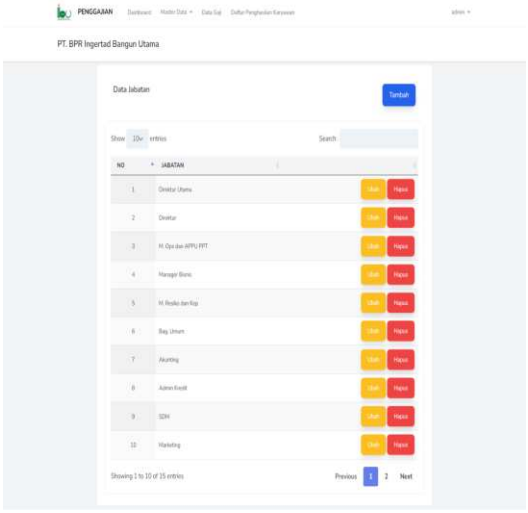


Picture 7. Dashboard

D. Position Data

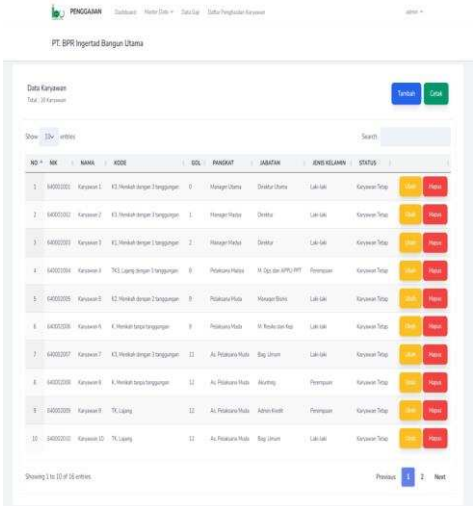
Job data is a page that enters employee position data. Position data can be seen in the picture 8.



Picture 8. Position Data

E. Employee Data

Employee data is the identity of employees who have been entered into employee data. Employee data can be seen in the picture 9.



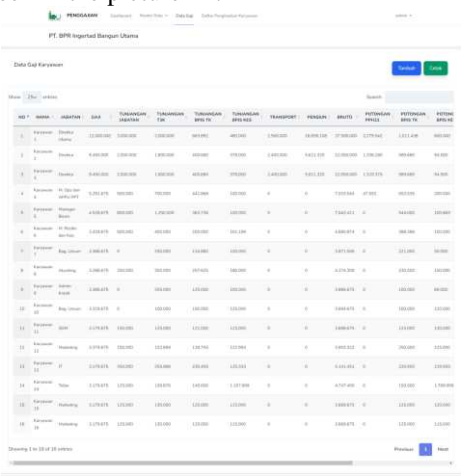
Picture 9. Employee Data

. Employee data can be printed using the print data feature on the payroll information system. The print on the employee is in the picture as follows 10.

Picture 10. Print Data

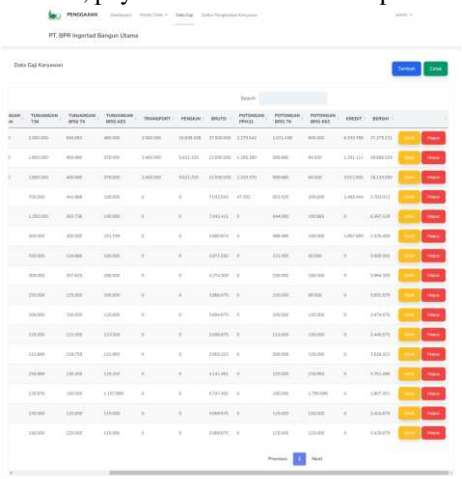
F. Payroll Data

Salary data is to enter data, change data, and delete salary data for employees. Salary is a form of periodic payment from the company to its employees which is stated in an employment contract. The salary data page can be seen in the picture 11.



Picture 11. Payroll Data

Other payroll records have payroll deductions. Furthermore, payroll data can be seen in picture 12.



Picture 12. Further Payroll Data

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Payroll information system has a print data feature. Print salary data is usually needed by managers to see all employee salary data. The print on the payroll is can be seen in the picture 13.


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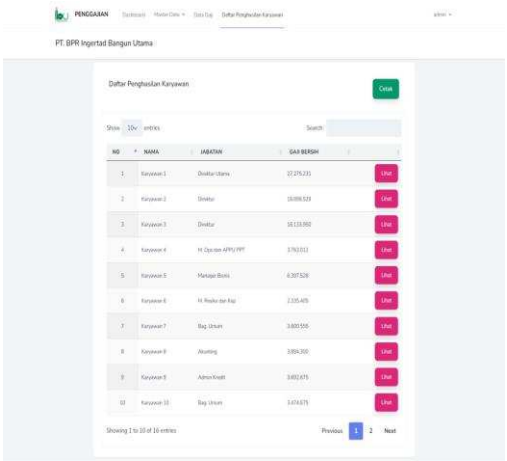
INGERTAD BANGUN UTAMA

DATA GAJI KARYAWAN

Picture 13. Print Data

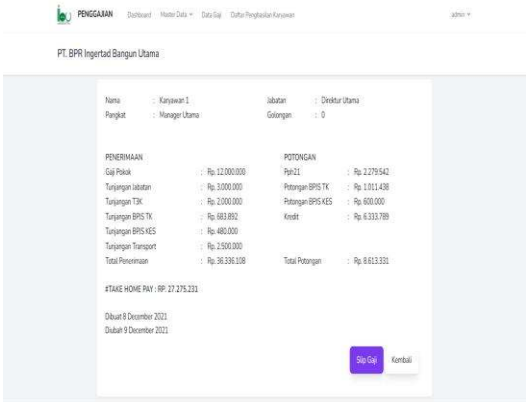
G. *Employee Income List*

Employee income list is a page used to view employee net income. The employee income list page can be seen in the picture 14.



Picture 14. Employee Income List

Furthermore, there is a payslip page which can be seen in the picture 15.



Picture 15. Slip

Furthermore, the salary can be printed as a pdf. Printed payslips can be seen in the picture 16.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INGERTAD BANGUN UTAMA

Slip Gaji

#Take Home Pay : Rp. 27.275.231

Dibuat Oleh — Muhammad Riduwan, Direktur Utama
Diterima Oleh — Karyawan 1, Direktur Utama

Picture 16. Print Data

H. *System Testing*

Testing a web-based payroll information system application at Bank Perkreditan Rakyat Ingertad Bangun Utama Ltd uses the black box method. According to Purnia, D. S, Rifai, A, & Rahmatullah, S. (2019), black box testing focuses on functional specifications of the software. The tester can define a set of input conditions and perform tests on functional program specifications. Testing is done by running all the existing functions one by one. Then see if the results are in accordance with what was designed and expected by the application. Application testing is done by the admin IT. The results of testing web-based payroll applications can be seen in the table 1.

Table 1. System Test

#	Test Scenario	Results	Trial Date
1	Entering and filling in the login data, then clicking the LOGIN button	Succeed	30/12/2021
2	Show Dashboard	Succeed	30/12/2021
3	Input employee data and save employee data by clicking the SAVE button	Succeed	30/12/2021
	Entering and saving job data, then clicking the SAVE button		
4	Entering and saving salary data, then clicking the SAVE button	Succeed	30/12/2021
5	Change the data by clicking the change button, then there is an alert that tells you that the data has been changed	Succeed	30/12/2021
6	Delete data by clicking DELETE, then there is an alert telling you that the data has been deleted	Succeed	30/12/2021
7	View employee income list data	Succeed	30/12/2021
8	Print data on PRINT button	Succed	30/12/2021

V. CONCLUSIONS

Based on the Web-Based Payroll Information System at Bank Pekrekditan Rakyat Ingertad Bangun Utama Ltd the work carried out by the author is from data collection, data analysis, database design, display design (mockup), and web creation, namely, a web-based employee payroll information system using the laravel framework which will help the admin work of Ltd Bank Perkreditan Rakyat Ingertad Bangun Utama in inputting data and processing employee salary data and the features used in the web-based employee information system using add, edit, delete and print data.

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