Development of Desktop-Based Employee Payroll: A Case Study on PT. Bio Pilar Utama

Bayu Dwiki Alfia[1]*, Asroni[2], Slamet Riyadi[3], Mosiur Rahaman[4]

[1,2,3]*Universitas Muhammadiyah Yogyakarta, Jln.Brawijaya, Tamantirto Kasihan Bantul, Yogyakarta 55183, Indonesiamail*
[4]*Departement of Computer Science and Information Engineering, Asia University, Taiwan*

*Corresponding author: bayu.dwiki.2016@ft.umy.ac.id

Abstract

As a result of periodic shifts, technological advancements are becoming more varied. The payroll system for employees is one of them. Payroll must follow the company's standard operating procedures (SOP) to determine several issues. Thus, the system can be customized to match the company's specific needs and SOP. The administration and finance departments encounter difficulty processing employee payroll due to frequent errors in employee data entry, including position, department, income, and deductions. The absence of a payroll information system that can reliably and rapidly calculate employee salaries and provide timely reports has become the primary source of the difficulty. The designed employee payroll information system only processed PT. Bio Pilar Utama's payroll data. Facilitating the administration and finance departments to input data, calculate salaries, store data, and generate reports on employee payroll could be achieved through the newly developed employee payroll information system.

Keywords: Report, Employee, Payroll, Information System, Visual Basic

1. Introduction

Technology and knowledge are soaring unprecedentedly, benefiting all, including PT. Bio Pilar Utama a supplier in the industrial wastewater sector. A rising number of data processing operations are required to keep up with the ever-increasing demands of PT. Bio Pilar Utama for accurate and timely information. An information system for processing data allows for the computerization of every aspect of an organization, which in turn helps the organization achieve its goals. Many businesses require a payroll system that can process employee payroll data reliably and swiftly due to the fast evolution of information technology.

A more efficient employee payroll system is urgently required due to the existing state of affairs, where data storage is still in books, and the company's salary calculations are performed using Microsoft Excel. Selecting employee data in Microsoft Excel is tough, and it cannot go straight to the required data. The reason behind this issue is that Microsoft Excel still utilizes spreadsheets. Unfortunately, this method still introduces many inefficiencies in the pay calculation process, including mistakes in employee master data input, position master, department master, revenue master, and salary deduction master, among many others. Problems with processing payroll data are common and can lead to delays in several areas, including payroll reports, pay stubs, and other related processes.

On top of that, the lack of a database for payroll data storage means that management receives payroll report data late, and employees obtain subpar service. Hence, visual basic was employed to build the design of this information system. A visual basic for Windows serves as both a compiler and an interface designer. Before visual basic emerged, programs were usually run text-based and from seven command prompts on a system with specific characteristics. Components, boundaries, environment, component linkages, input, processing, suggestions, and goals are the characteristics of this system [1].

A system is an interconnected set of processes designed to complete a common objective [2]. When parts of a system are interdependent and cooperate to complete tasks, the system functions as intended. A database is an appropriate collection of linked datasets created to gather the data required by an organization. A database management system, often known as a dataset administration framework, collects data and programs to manage datasets [3]. One type of application is the work area application, which can function freely on its own without any external program or internet connection on an independent PC [4].

Programs built using Microsoft Windows and the component object model (COM) can be easily created with the help of the visual integrated development environment (IDE) provided by the programming language known as Microsoft Visual Basic, or simply VB. VB is a derivative of the basic programming language and offers fast and graphic-based computer software development [4]. As a relational database management system (RDMS), SQL server is a complete platform with comprehensive coverage for enterprise applications thanks to its client-server architecture and the many components and services it accompanies [5]. Techniques such as the object modeling technique (OMT), also known as object-oriented software engineering (OOSE), and the Booch method are all part of the unified modeling language (UML). Analysts and developers typically employ UML, which adapts object-oriented programming (OOP) languages, to analyze and place systems with process objects [6].

2. Method

The data collected suggested that the lack of a dedicated payroll application or the continued use of Microsoft Excel as the primary tool for processing employee payroll was the primary source of frustration at PT. Bio Pilar Utama. The following are some of the issues identified as affecting the inefficiencies of the payroll process at PT. Bio Pilar Utama.
1. Salary calculations utilizing a formula
2. File size limitations
3. Incomplete employee data
4. Income tax calculation

A use case diagram is a picture of the functionality of a system, so that users understand and understand the usefulness of the system that will be built for the company. The following is a use case for an employee payroll information system designed at PT. Bio Pilar Utama.
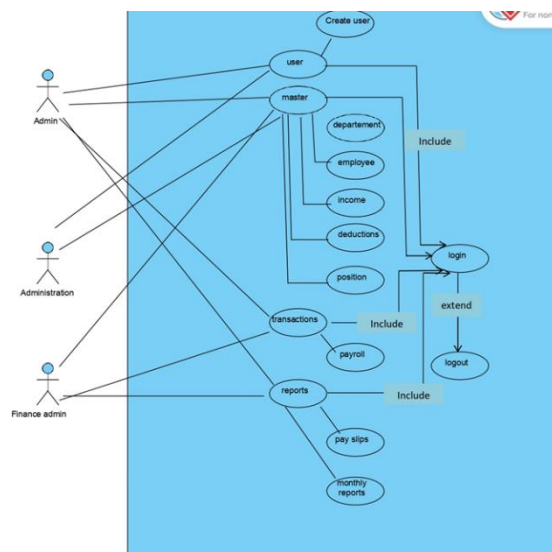

Figure 1 Use case diagram

The class diagram in Figure 1 is a category or classification of a collection of objects or objects. Meanwhile, domain class is a class that describes objects from the problem domain. The following is a class diagram for the PT Bio Pilar Utama.
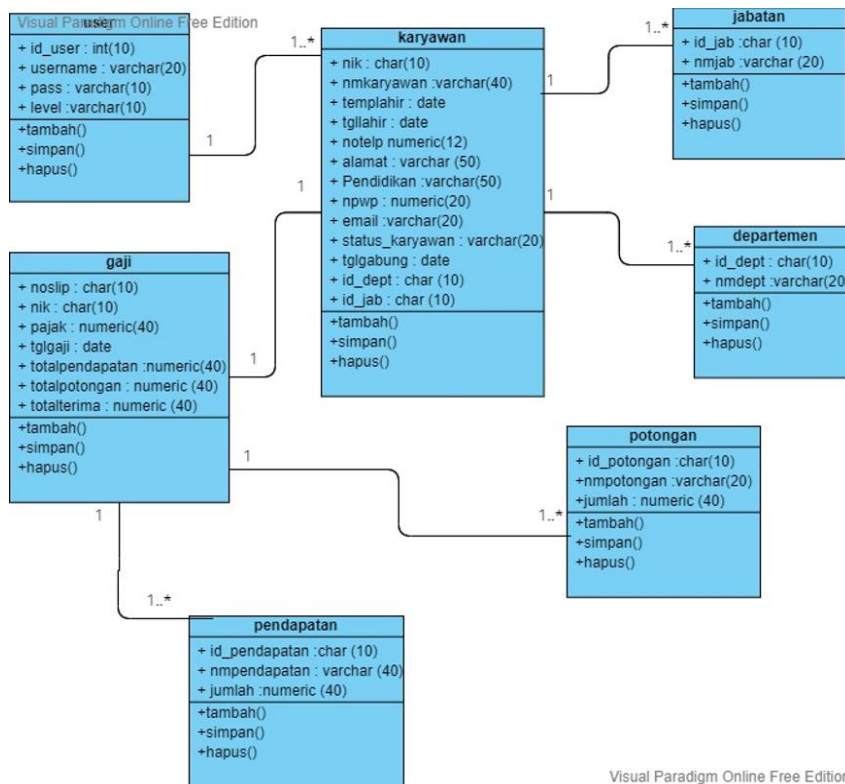

Figure 2 Class Diagram

3. Results and Discussion

The following is a display of the payroll information system at PT. Bio Pilar Utama which includes the display of the login form, main menu, user file form, employee master form, position master form, department master form, deduction master form, income master form, payroll transaction form, and report form. Figure 3 functions to log into the employee payroll information system. In Figure 4, after successful login, the system will display the main menu which contains the user file menu, master menu, transaction menu, report menu and logout.
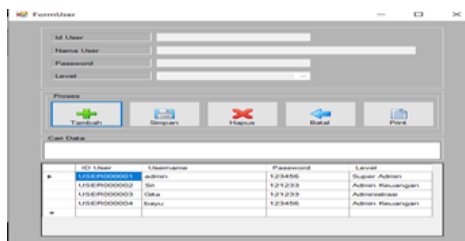
Figure 3 User Interface of User Menu

Figure 4 Main Menu User Interface

Figure 5 Login User Interface
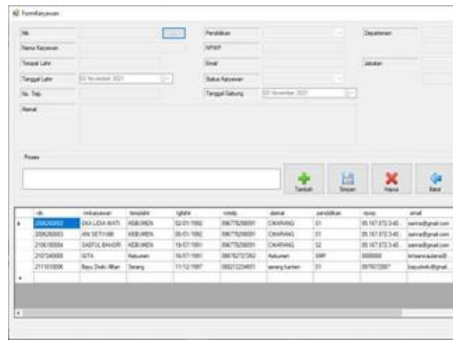
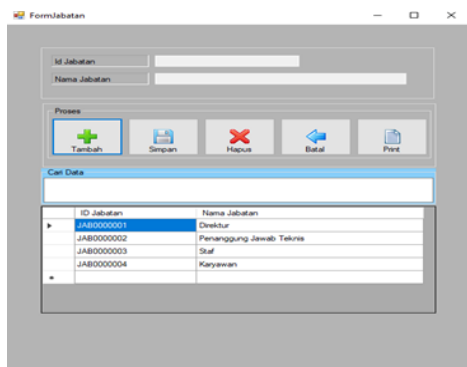Figure 6 User Interface of Employee Master Form

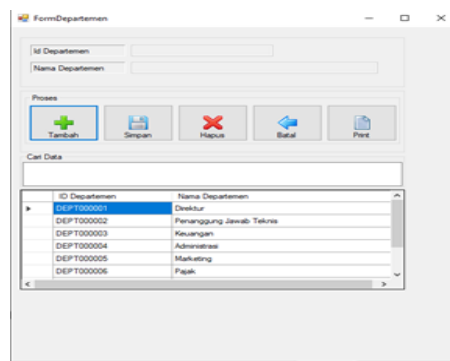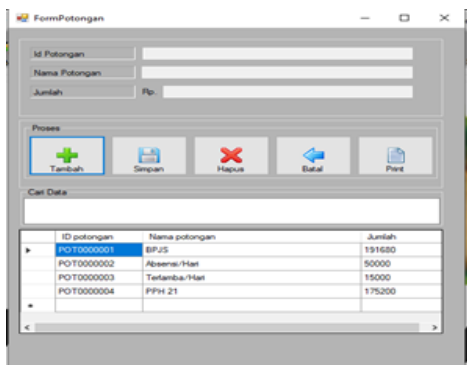
Figure 7 User Interface of Position Master Form

Figure 8 User Interface of Department Master Menu

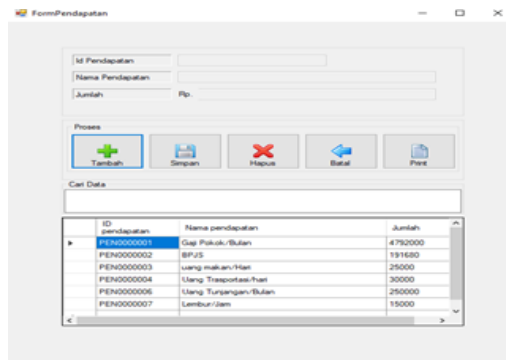9 User Interface of Master Menu of Employee Salary Deductions

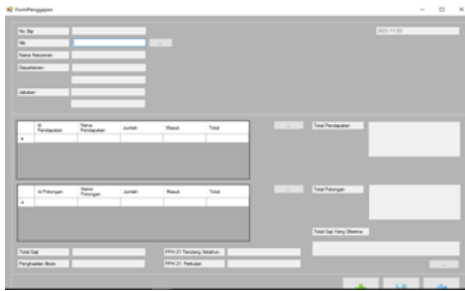Figure 10 User Interface of Salary Master Menu Figure

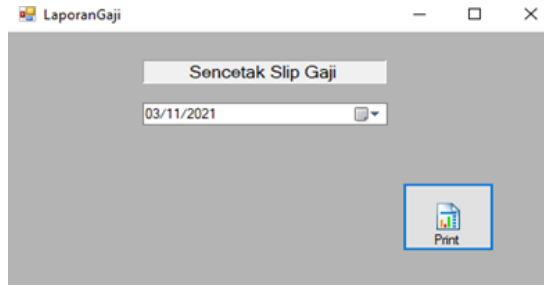Figure 11 User Interface of Payroll Transaction Menu

Figure 12 Example of Printout of a Pay Slip Report
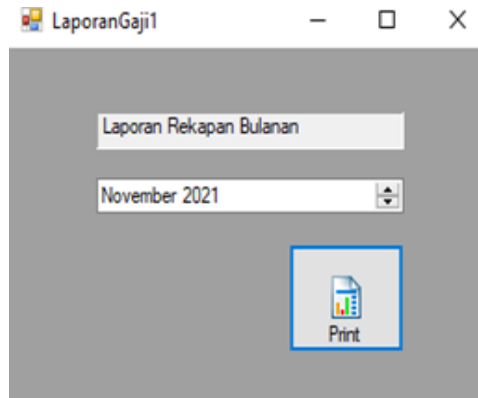

Figure 13 Printing Salary Slip

Figure 14 User Interface of Report Menu

Figure 15 Printed Monthly Salary Report

4. Conclusion

The newly implemented employee payroll information system at PT. Bio Pilar Utama facilitated the administration and finance department's ability to input data, calculate salaries, store data, and generate reports on employee payroll data promptly and efficiently. Using the application's automatic calculation feature

eliminated the need to manually calculate income tax, and helped store comprehensive employee data.

References

[1] Agus Mulyanto. 2009. "Information Systems Concepts and Applications" (In Indonesian) Student Library. Yogyakarta.

[2] Pratama, I. P. A. E. 2014. "Information Systems and Their Implementation" (In Indonesian). Bandung: Informatika.

[3] Sutanta, Edhy. 2014. "Database System Analysis" (In Indonesian). Yogyakarta: Andi Publisher.

[4] Rahmawati, M. S., & Purnamasari, A. R. 2018. "Desktop Based Lodging Information System Design at A2Hay Lodging Journal of Information and Security Engineering" (In Indonesian), 4(2), 38–50.

[5] Kusumo. 2016. "Administration SQL Server 2014" (In Indonesian). Jakarta. PT. Elex Media Komputindo.

[6] Nugroho, Adi. 2009. "Software Engineering Using UML & Java" (In Indonesian). Andi Offset : Yogyakarta.