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Development of Website-Based Accounting Information Systems of Comprehensive Income Reports for Citizen Water Management

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ABSTRACT

Community water businesses are still managed manually or with a traditional system. The conventional system that occurs is that the officer manually records the use of water made in a recap, and then the financial section has no accounting information system, so it still uses Google Spreadsheets and accounting processes that refer to the accounting standards designed. Based on existing problems, a website-based accounting information system for comprehensive income reports for citizen water management is needed. The research objective is to build a website-based Citizen Water Management Comprehensive Income Report Accounting Information System. The research method used was descriptive survey research, in which the author describes a situation or phenomenon systematically in a clear and detailed manner, including processes and components that occur, to find solutions to the problems found. The population in the study is the financial details of the water fund in 2022, and the sample is the financial details of the water report for October 2020. Three different means of gathering data include observation, library research, and interviews. In research, A design that is descriptive is used analysis according to facts. One of the system methods is the waterfall. The outcome of his research was development of a comprehensive income reporting accounting information system for web-based community water management so that it facilitates the process of recording transactions and producing accurate financial reports for citizen water management.

Keywords: Development, Accounting Information Systems, Comprehensive Income Report, Water Management, Website-Based

Introduction

Technology is increasingly developing, particularly in the field of information and communication, and automatically with the increase in accounting processes in companies. The development of the accounting process in the company is characterized by the existence of an accounting information system that has been used. Manual presentation of financial statements takes time to complete compared to financial reports that already use an accounting information system, so if it is not handled immediately, there will be an impact that occurs, including errors in recording and calculating data. An information system for accounting is made up of a number of integrated physical and non-physical components that process financial data and provide financial information that managers and other stakeholders need to make decisions [1]. As a result of the era of globalization, information technology is developing at a rapid pace. This allows a variety of commercial entities to increase their business by integrating data structures into their regular commercial operations, which reach nearly each and every societal group globally [2]. A collection is called a system. of components or subsystems that interact with each other to achieve a goal [3].

Especially in the field of financial information, which has been transformed entering financial data that can be used to make decisions, is known as accounting information [4]. The company's performance will be seen in its financial management activities, especially in producing comprehensive income financial statements, which are reports showing data containing

information related to income and expenses carried out by an entity. Accounting information is financial data that has been transformed into financial information that can be used to make decisions, particularly in the field of financial data that has been transformed into financial information that can be used to make decisions. to make decisions, is known as accounting information. A non-profit organization is an organization whose purpose is to make a large profit, in contrast to a non-profit organization whose purpose is not commercial and not focused on profit. [5]. This statement of comprehensive income presents data related to income and expenses recorded over a period. Which, in the end, is to assess the surplus or deficit over a certain period. [6].

PT Saranamas Dinamikatama is a property and construction company that also acts as a developer in Bukit Nata Endah housing located at Komplek Bukit Nata Endah No. 12A RT.04 RW.10, Sindang Panon Village, Subdistrict of Banjaran, Bandung Regency. As a developer, in a residence, special facilities are required, including the availability of clean water for each house. The company makes a profit from selling houses, but in water management, PT Saranamas Dinamikatama does not take financial advantage. The revenue generated from water management is not included in the company's financial statements because it is separate from the company's financial statements and residents' water management. Revenue from water management will be returned to residents in the form of services.

Management is the implementation, or a series of steps, that support the development of an organization's goals [7]. The availability of clean water is important in a residence therefore, the developer must manage it properly, from calculations to making financial reports. Reports in the company only document revenue and expenditure reports; there are no financial reports according to the accounting process, and recording and reporting are processed using Google Sheets, so there is no accounting information system designed. Manual recording will raise how many problems result in inefficiency and effectiveness [8].

This research goes beyond introducing a conventional accounting information system for community water management but represents a significant transformation in the approach to local finance. The researchers utilized website technology to provide unprecedented transparency and accessibility. In addition to recording transactions and generating reports, the system facilitates citizen participation in water monitoring and management. Not only must the accounting process be followed, but so must the accounting standard, which in this case is ISAK 35 for non-profit organizations. By complying with this standard, the accounting information system developed not only meets transactional needs but also ensures financial accountability and transparency through applicable accounting principles. Thus, this research not only creates a technological tool but also illustrates a commitment to good financial governance and the fulfillment of relevant accounting standards in the context of non-profit companies.

This study brings excellence by adopting the accounting standard ISAK 35 as the main framework, which is then contextually adjusted to the specific needs of the company. This approach paves the way for a more in-depth and contextual analysis of the implementation of the standard, beyond the limitations of previous studies that focused only on general accounting information systems. Create a deeper understanding of the impact of the entire management policy of the company. Through the application of the comprehensive income statement, the study seeks to identify and evaluate external and internal implications, including social responsibility and environmental impacts, that previously might have been overlooked in research focused solely on accounting information systems.

Based on the research that has been described, the authors are interested in designing a web-based system using PHP and PostgreSQL to manage data more optimally, entitled "Development of Website-Based Accounting Information Systems of Comprehensive Income Reports for Citizen Water Management."

Method

Application development uses descriptive research and surveys as a system development method, namely the waterfall method. The development approach follows a sequence starting at the first stage of system development until the final stage. The next stage will not be run before it is completed, and there is no repetition of stages [9].

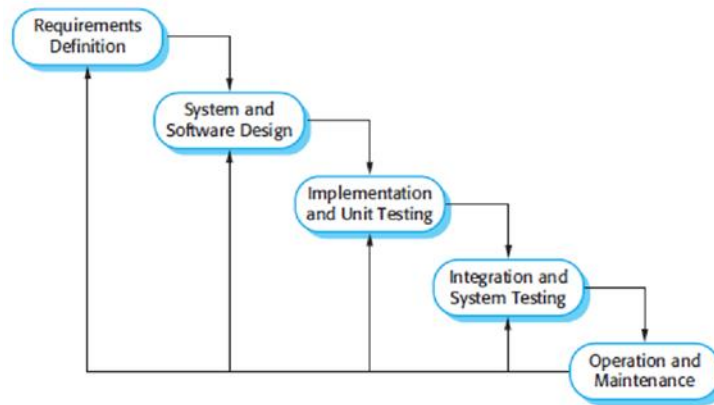


Figure 1. Waterfall Method

The reason for choosing a system development method using a waterfall is because the stages are described in detail and systematically so that, in making applications, the process is described clearly. In the waterfall model, the basic steps are organized in a separate process, starting from specification to maintenance [10].

Results and Discussion

This design is an accounting information system for comprehensive income reports on citizen water management. The output of this application is a comprehensive income statement accounting information system that will be used by leaders as decision-making information. Considering the findings of the interviews and system analysis, a system requirements will be explained as follows:

Table 1. Application Requirements Analysis

No	Description	Requirements
1	Hardware	Minimum 2 GB RAM , 5 GB Hard disk spaces.
2	Software	Browser: Mozilla. Google Chrome; XAMPP: Version 3.2.4
3	Procedure	<ol style="list-style-type: none"> 1. The finance department will make monthly water payment bills to residents, and then consumers will pay their bills. 2. After payment of the water bill, the finance department will check the usage data with certain conditions to provide proof of transactions. 3. After checking, the finance department will make a receipt for the water payment. 4. The proof of transaction will be recorded in the financial statements and water bill recap.

Based on the analysis, in designing the accounting information system application for citizen water management, the design uses Hypertext preprocessors, PostgreSQL, and the waterfall method in system development. Creating reports in this application with ISAK 35 regarding the preparation of financial reports on nonprofit organizations [11]. Flowchart, Data Flow Diagram,

Program Menu Structure, and Mockup of the Comprehensive Income Statement Accounting Information System display as follows:

1. Flowchart

A flowchart is a diagram with a description of the steps to solve a problem that occurs [12]. Explain the stages of problem-solving by representing certain symbols that are easy to understand, easy to use, and standard. The author has designed the flowchart of the Comprehensive Income Statement Accounting System as follows:

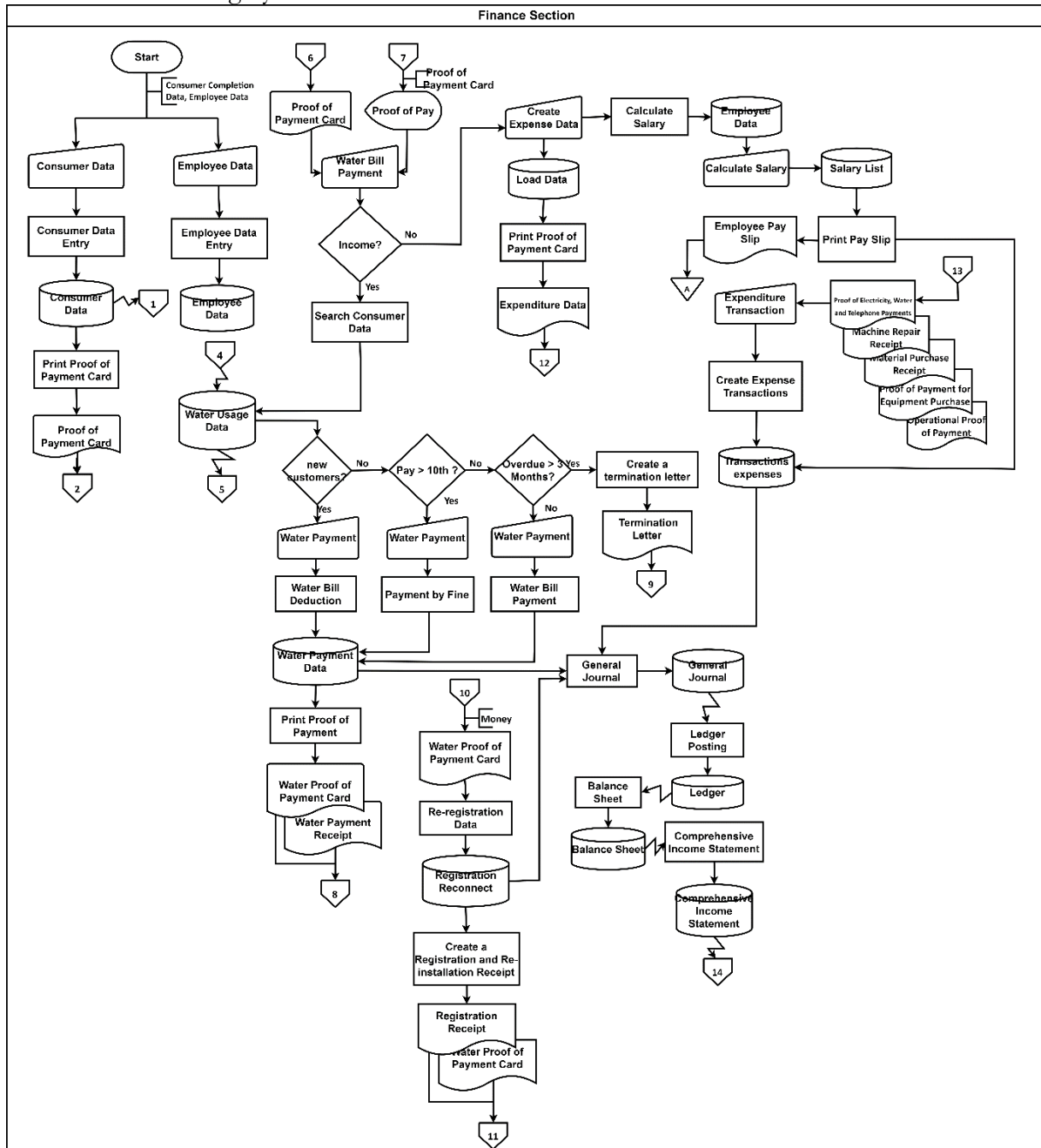


Figure 2. Proposed Flowchart

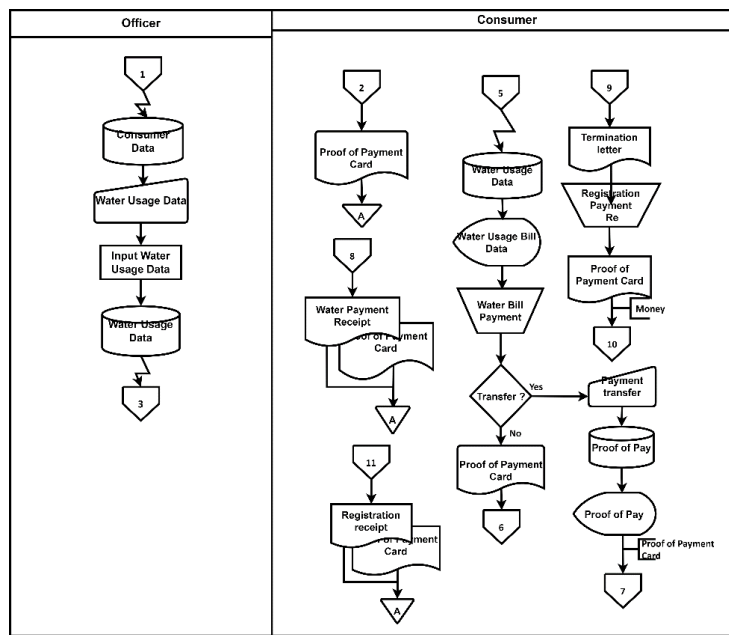


Figure 3 Proposed Flowchart

Figure 2 and Figure 3 are flowcharts that have been designed in the Comprehensive Income Statement Accounting Information System application, where there are 5 entities, namely the finance department, the officer section, consumers, and leaders.

2. Data Flow Diagram (DFD)

Data flow diagrams are processes in data created by illustrating the beginning and end of data as it flows to the next process of the system, storage, and interconnected data stored[13]. Tools used for drawing an existing system or a new system that will be developed logically[14]. The author has designed the DFD as follows:

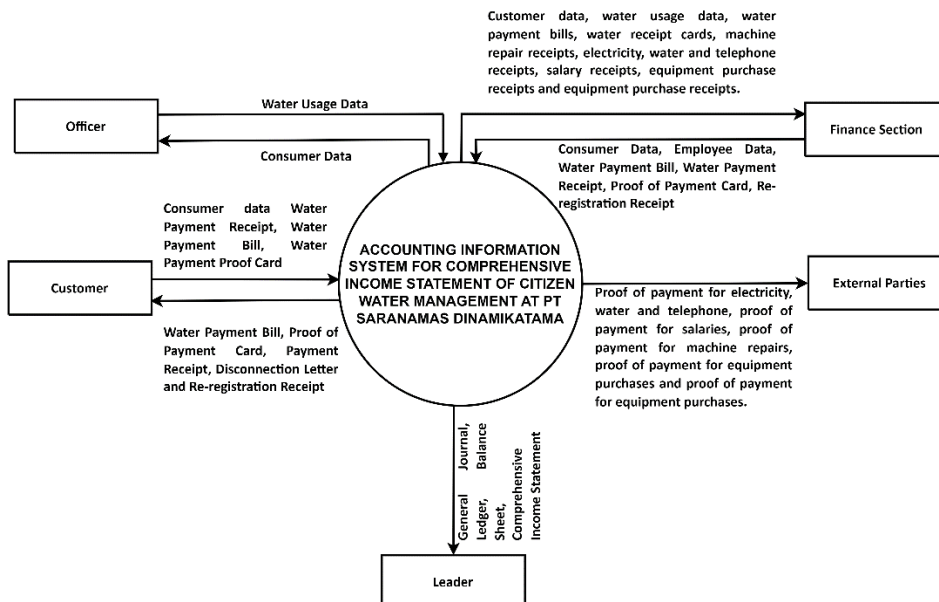


Figure 4. Context diagram

Figure 4 illustrates level 0 which describes the process as it occurs, above there are 5 processes described by 5 entities.

3. Entity Relationship Diagram (ERD)

ERD describes the relationship in the database from one entity to another with storage [15]. That emphasizes structure and relationship [16]. Designing applications using ERD makes it easy to create tables in the database. The following figure 5 explains the ERD in the design of the Comprehensive Earnings Report Accounting Information System.

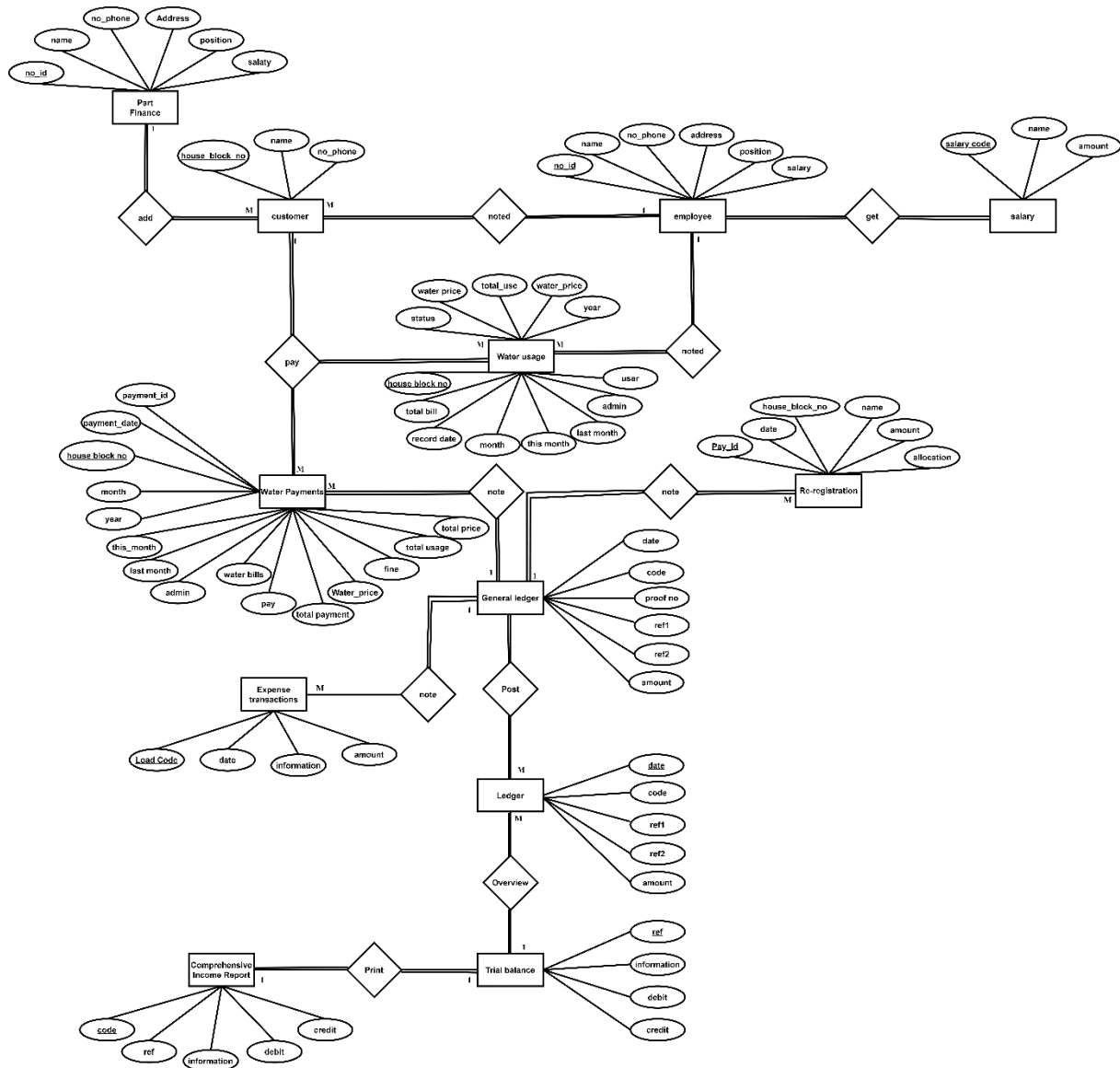


Figure 5. Entity Relationship Diagram

4. Menu Display Structure

The menu display structure is the arrangement that will appear in the application display based on its access rights. Figure 6 is the designed menu display.

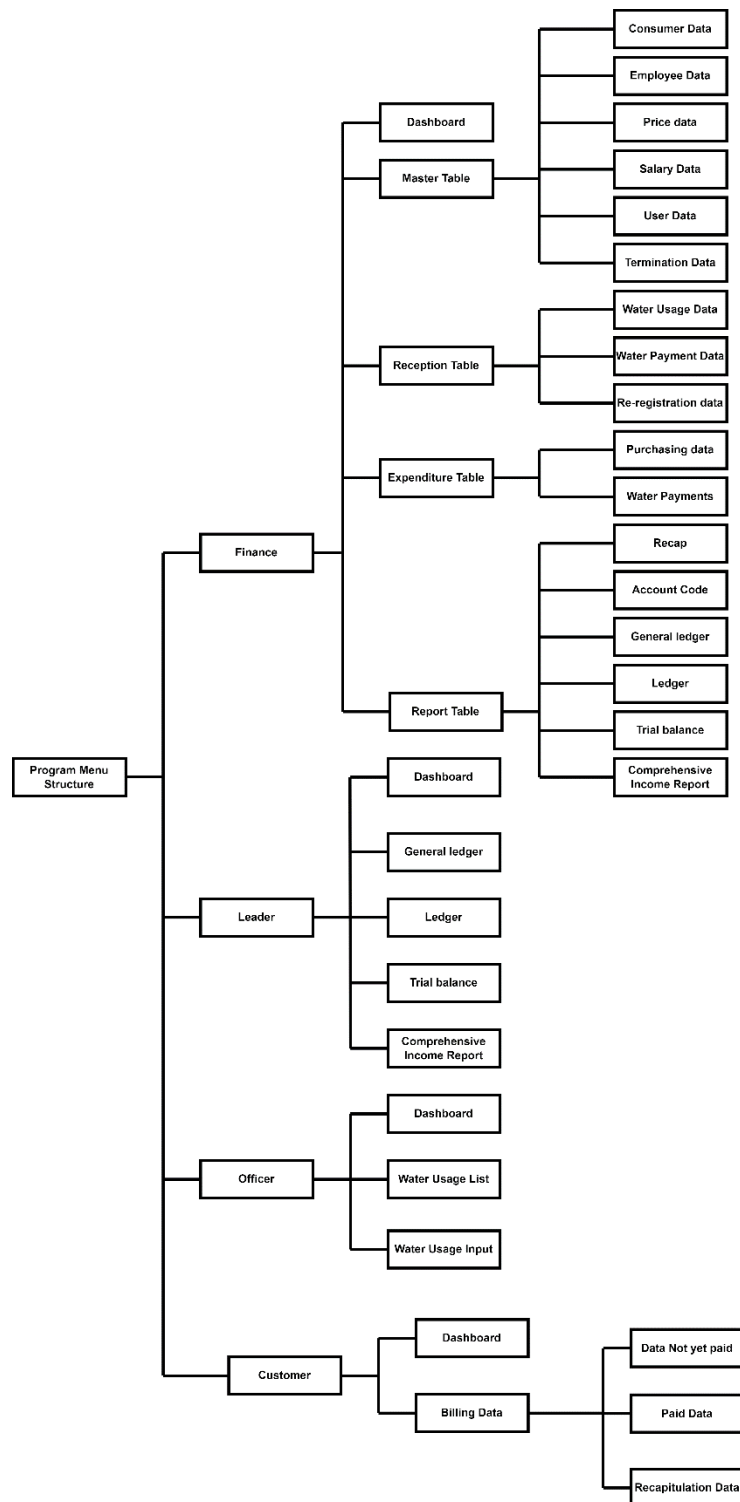


Figure 6. Program Menu Structure

5. User Interface Design

Figure 7 displays the login display on the Comprehensive Income Statement Accounting Information System application by using a username and password in its access rights. Access rights include the finance department, officers, consumers, and leaders.

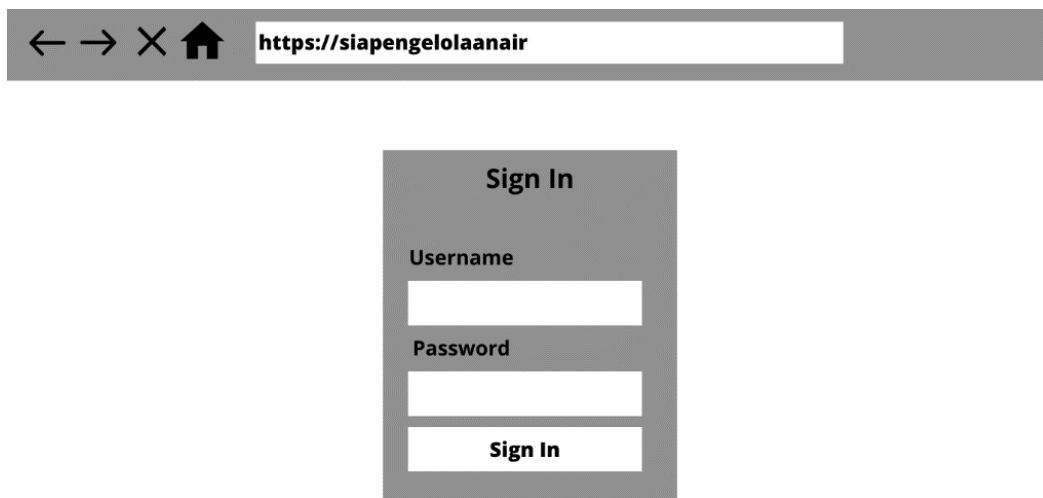


Figure 7. Login View

Figure 8 shows the dashboard view of the finance section. In the finance section, there is a master data menu, revenue transactions, and expenditure transactions.



Figure 8 Dashboard View on Finance Section

Figure 9 shows the display of recording water meter data every month, which is inputted by the officer.

← → × 🏠 **https://siapengelolaanair**

- Dashboard
- Pemakaian Air**
- Daftar Pemakaian
- Input Pemakaian

Daftar Pemakaian

Tanggal Pencatatan **25 Juli 2023**

Bulan **Pilih Bulan**

Simpan

Figure 9. Officer's Water Usage Input Display

6. Application Display

Application Display describes the application that has been designed by the flow described above. Figure 10 shows the login menu display using username and password.

Login

localhost/siapengelolaanair/login.php

Sign In

Masukan username dan password anda!

Username

Password

Sign In

Figure 10 Login View

Figure 11 shows the display of water usage input done by officers. There is a selection of months and house block numbers for each resident.

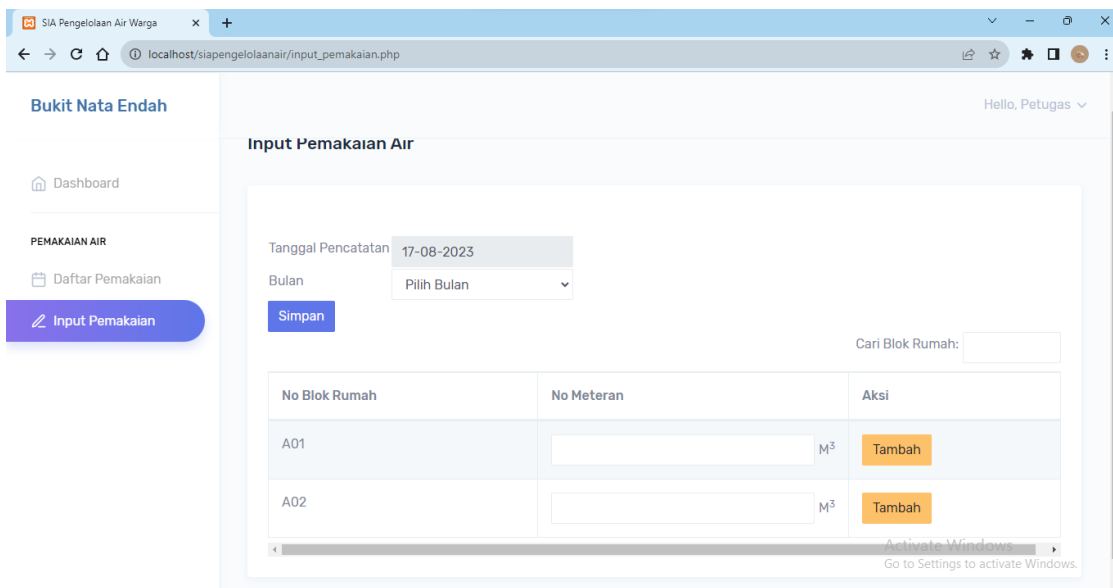


Figure 11. Display of Officer's Water Usage Input Application

Figure 12 shows the display of the water usage table in the finance section. After the officer inputs the water meter usage number, the data is also stored in the water usage table in the customer section with details of the total bill for consumers.

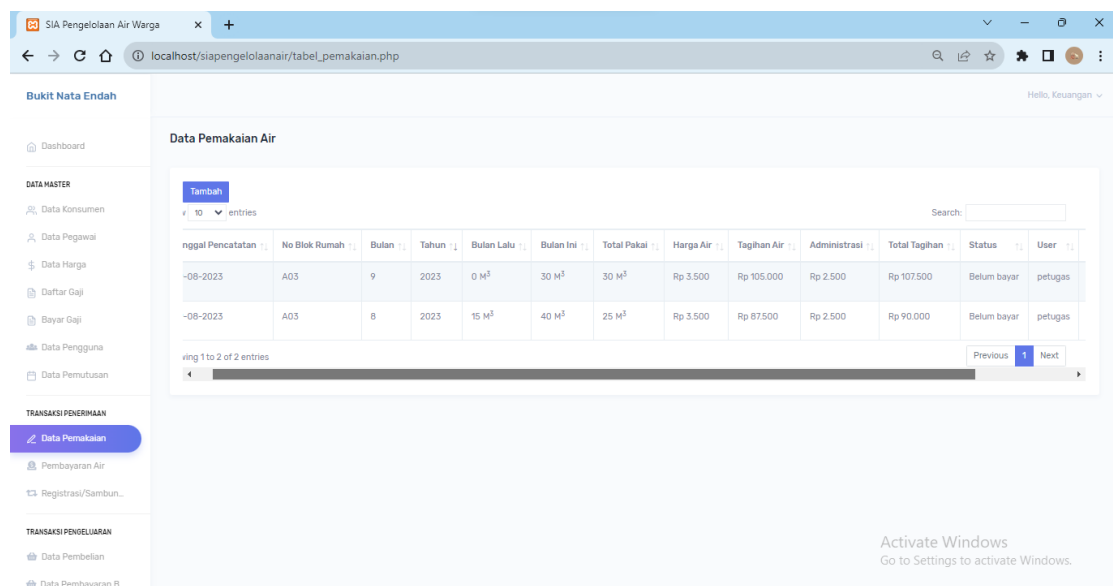


Figure 12. Financial Water Usage Table Application View

Figure 13 shows the display of the water payment form from the water usage table. There is information on the date up to the nominal bill that must be paid by consumers.

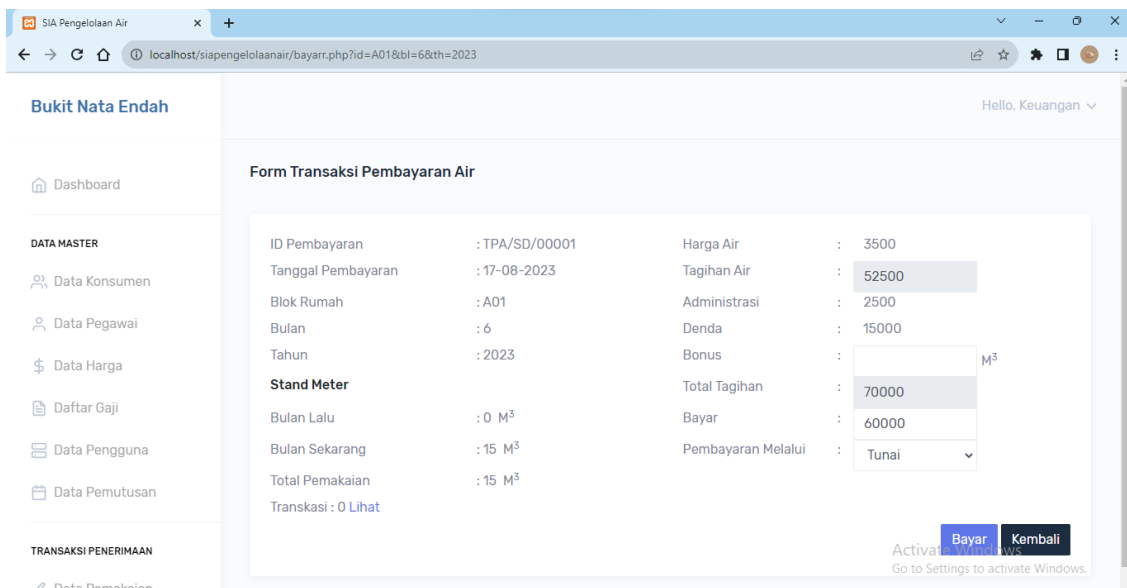


Figure 13. Application View of Water Payment Form

Figure 14 shows the water payment table, where water bill transactions will be recapped. This table contains user information on water usage.

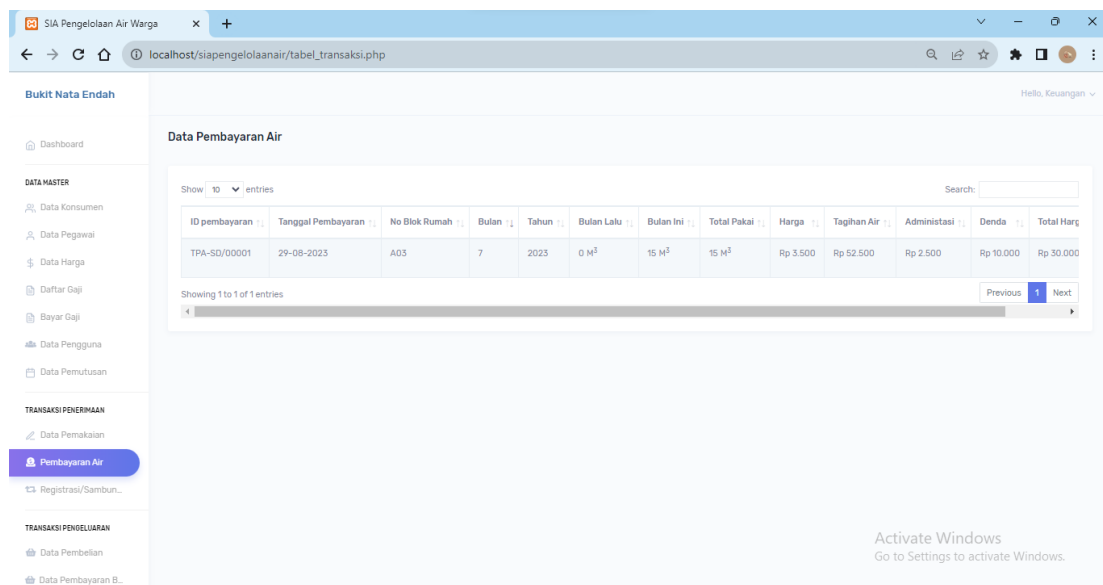


Figure 14. Application View of Water Payment Table

Figure 15 shows the display of expense data, all expense transactions will be inputted and stored in this table. The expense table is a recap of expenses that will be entered into the general journal.

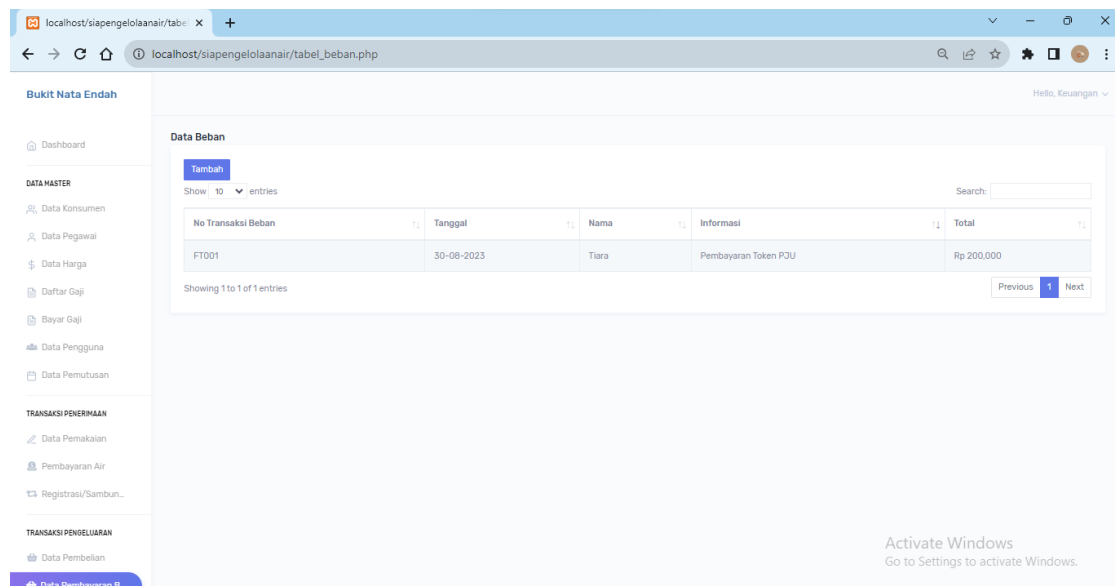


Figure 15. Load Data App View

Figure 16 shows the general journal view of the water payment transaction. There are receipt and expenditure transactions in the general journal. The general journal is a recording form related to all transactions that occur.

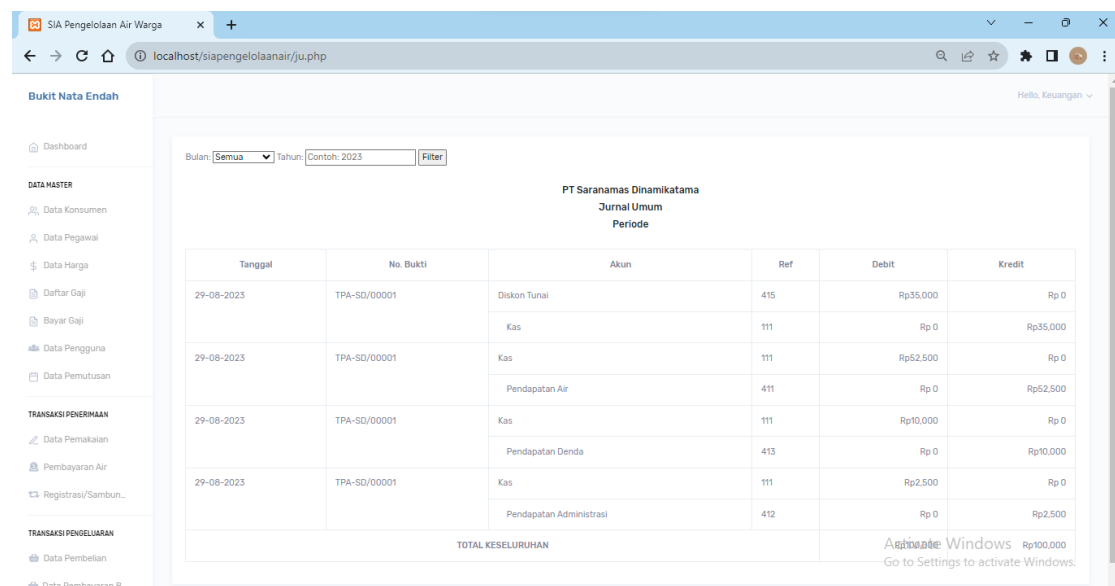


Figure 16. General Journal View

Figure 17 shows the general ledger view. There is a filter to select the account names to be displayed. The general ledger is a transfer from the general journal that classifies the same accounts.

Figure 17. General Ledger View

Figure 18 shows the balance sheet view, to find out the amount of each account from the ledger.

Figure 18. Balance Sheet Application View

Figure 19 shows the comprehensive income statement for the income and expenses that have occurred during the transaction. The comprehensive income statement will record related income and expenses, which will determine the surplus or deficit of a company. The uniqueness of this application is designed with the aim that financial statements can be presented in a way that is easy for users to understand, and the application can be tailored to individual needs. In addition, this application also considers the application of ISAK 35.

PT Saranamas Dinamikatama Laporan Penghasilan Komprehensif		
PENDAPATAN		
Pendapatan Air	Rp 52.500	Rp 0
Pendapatan Administrasi	Rp 2.500	Rp 0
Pendapatan Denda	Rp 10.000	Rp 0
Diskon Tunai	Rp 0	Rp 35.000
Total Pendapatan:	Rp 30.000	
BEBAN		
Total Beban:	Rp 0	
Surplus (Defisit) Rp 30.000		

Figure 19. Comprehensive Income Statement View

The design of this application aims to facilitate users in their business processes to achieve effective and optimal application goals. The application applied to the research site received a positive and encouraging response, so this application could be more optimal when applied.

Conclusion

The importance of financial statements in a business cannot be underestimated. The accuracy of the data contained in the financial statements is very important for making the right decisions. Errors in the presentation of financial statements often occur due to the absence of clear and consistently applied accounting standards. The digitalization of information technology is a must in the modern business era. However, digital transformation must be accompanied by changes in the way companies record and report financial transactions. Financial reporting will be more efficient and effective when a system is designed. In this case, PT Saranamas Dinamikatama, in the process of presenting financial reports, has no system designed so that it is prone to errors, so the authors provide a solution by creating an accounting information system for comprehensive income statements for citizen water management that meets the needs of these reports. This research produces an accounting information system for comprehensive income statements for citizen water management where business processes are carried out digitally, starting from recording citizen usage to financial reports that make it easier for users to manage data so that one application covers many functions and renewable systems. Suggestions for further research are that the title can be developed more broadly so that the application has additional features regarding accounting information systems and the accounting process will be more optimal.

Acknowledgment

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