



Development of Accounting Information System at BUMDES to Enhance Financial Performance of the Village

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ABSTRACT

The issue of record management is the most important aspect of preparing financial reports. The application of information technology to the management of village financial reports is crucial to the production of village financial reports that adhere to the ideals of accountability and openness. The financial management process at BUMDes is only visible at the conclusion of a project or the end of the accounting period, i.e. once a year. Consequently, when the director requests periodic or monthly financial statements, the finance department must recap data manually and cannot print financial reports directly. The solution to the aforementioned issues is the design and construction of a financial report information system. This system is supposed to give financial information to the village in a transparent manner and make it easier to manage financial reports. This system manages user data, project data, account data, general journal data, and mandatory reports. The design method utilized in this study is the waterfall method, which takes a methodical and sequential approach to constructing a system. In this system architecture, nine blackbox tests are used to verify that the financial report information system functions have been executed properly and as planned.

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1. Introduction

Establishing Village-Owned Enterprises (BUMDes) is one of the government's measures to stimulate the economy of villages. Regarding villages, the government has enacted particular legislation governing village governance, namely Law Number 6 Year 2014 (Village Law). With the implementation of Law No. 6/2014 and its accompanying rules, the village government is indirectly required to manage and develop the village with greater autonomy. It is anticipated that BUMDes will serve as a catalyst for the creation of a village economy that may flourish and eliminate rural poverty. In Permendagri No. 39 of 2010 pertaining to Village-Owned Enterprises, a derivative of Law No. 32 of 2004 (Negeri, 39 C.E.), the government has the authority to empower the local economy. In order to stimulate and drive the wheels of the economy in rural areas, it is required to build economic institutions that are administered by the rural communities themselves (Santoso & Halim, 2022). Village-Owned Enterprises is one of the government projects aimed at strengthening the rural economy (BUMDes). According to Regulation No. 39/2010 of the Minister of Home Affairs, BUMDes is a village business formed/established by the village

administration, with capital ownership and management carried out by the village government and the community. BUMDes is a village business founded by the village government, whose capital is owned and managed by the village government and the community. Law No. 6 of 2014 defines BUMDes as (Pramita, 2018): a business entity entirely or partially owned by the Village through direct involvement from separated village assets to manage assets, services, and other enterprises for the greatest community good. Currently, the Information and Communication Technology industry has shifted from a manual data processing system to an online data processing system (Yuliani et al., 2021). It should be possible to use information technology in the maintenance of financial records at BUMDes to facilitate the production of village financial reports.

Financial statements present an entity's financial situation and performance. Financial statements help most users make economic decisions by providing information about an entity's financial situation, performance, and cash flows. Village financial management depends on financial reports. Financial reports are used as decision-making guides, thus they must include qualitative traits to support the value of the information they contain. A computerized information system helps financial statement users make judgments. (Margareta & Siahaan, 2022; Riyadi et al., 2021). Accounting information systems will help the village manage financial reporting and make informed judgments by improving information delivery and transparency. If information users—both internal and external—are satisfied, the financial information system is good. BUMDes' financial information system implies responsibility and openness. Transparency is the government's willingness to share public resource management information (Gaol et al., 2022; Yanti & Musmini, 2020).

BUMDes Damar Lestari has not yet implemented an information system in its operations. This company's financial statements are still recorded in a notebook before being entered into Microsoft Office Excel. First, the finance department inputs transactions from the note into the Microsoft Office Excel sheet. Second, the balance sheet report is prepared. Third, a profit-and-loss statement is compiled. Fourth, a cash flow statement is compiled. Finally, a capital change report is compiled. Therefore, if using Microsoft Office Excel (Oktavianus & Kasmawaru, 2019), an information system that can be utilized to record financial statements is required (Asia & Ali, 2022; Wijaya et al., 2022). The financial statements of each project are only available at the end of the project or the end of the accounting period, i.e. once a year, so that when the director wants to know the financial statements periodically or at the end of each month, the finance department must recap the data manually (Setiawan et al., 2019), cannot print the financial statements directly, and Microsoft Office Excel has several other shortcomings.

The purpose of this research is to design and build a financial report recording information system at BUMDes to make it easier for the financial department to record financial reports and quickly present financial information to the company, based on the primary problem in the data management process leading to a financial report. The system solely manages user information, project information, account information, general journal data, and reports. This system will be web-based, and only the finance department and director will be able to access and print financial reports.

2. Method

2.1. Waterfall Method

This system was developed using the waterfall methodology. The waterfall method is used because it takes a systematic and sequential approach to developing a system; the waterfall method's procedure is that the work on a system is performed sequentially. Waterfall is a classic, systematic, sequential software development approach (Herawati et al., 2021). The true title of this model is "Linear Sequential Model." This model is commonly known as the "traditional life cycle" or waterfall technique. This strategy employs a methodical and sequential methodology (Fagarasan et al., 2021). It is referred to as a waterfall because the phases must wait for the completion of the preceding level before proceeding. The waterfall approach has the following stages:

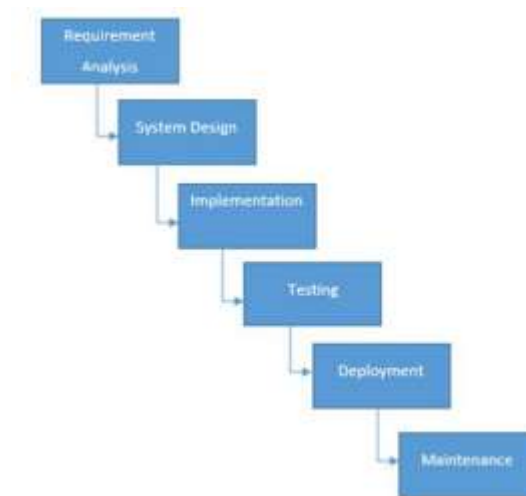


Figure 1. Waterfall method stages (Gurung et al., 2020)

1. **Requirement Analysis:** At this step, the researcher communicates with BUMDes Damar Lestari by conducting interviews, namely by directly asking staff in charge of the finance department how the flow or process of creating financial reports occurs in the organization. Analysis of user requirements, analysis of software and hardware required for system development, and other requirements for database creation. In addition, a hardware and software requirements analysis serves as a design aid for the system.
2. **System design,** The subsequent step is system design, which occurs before the coding phase. This phase is intended to provide an outline of what will be accomplished and how it will seem. This system design stage's documentation comprises the design of Context Diagrams, Data Flow Diagrams (DFD), Conceptual Data Models (CDM), Physical Data Models (PDM), and User Interface Design.
3. **Implementation:** At this level, the system coding stage turns the system design into computer-understandable commands utilizing PHP and MySQL database as the programming language.
4. **Testing,** at this step, testing is performed to check that the created software conforms to the design and that all features may be utilized without error.
5. **Deployment and Maintenance.** This is the final phase of the waterfall approach in which a system can be implemented: Deployment and Maintenance. Maintenance entails the rectification of many errors that were not discovered in earlier phases.

2.2. System Designing

At the stage of system design, it can be clarified that the information system for recording financial reports is intended to provide the finance department with information about the company's income and expenses. In the system that will be built to process project data, manage project transaction data, and process business financial reports, administrators and finance departments will have direct access to enter project data, account data, general journal data, and reports. This technology allows the director to access the company's financial statements directly.

2.3. Context Diagram

In the design process using a structured approach, specifically the Data Flow Diagram (DFD), which begins with the creation of a Context Diagram that describes the processes occurring in the entire system to be designed, the context diagram consists of three entities, namely admin, finance, and director. This system will also generate reports that the director will receive. Figure 1 illustrates the context diagram creation procedure.

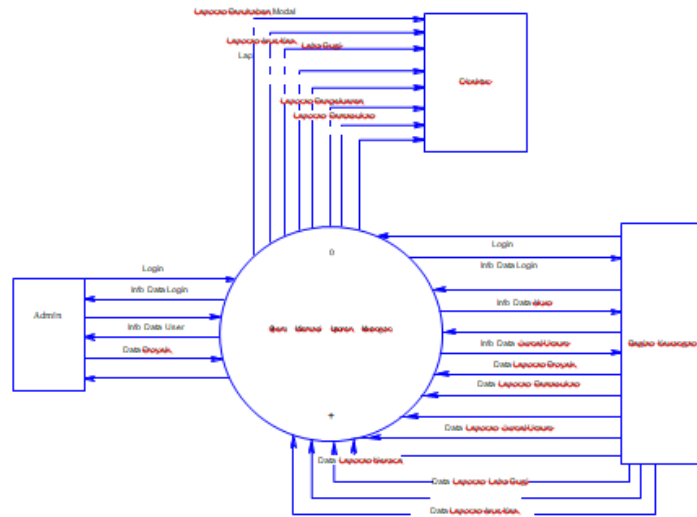


Figure 2. Context diagram of financial report information system

Figure 1 depicts three entities: the finance department, the director, and the administration. Each entity has a data flow within the system for financial reporting. The organization in charge of finances has access to general jurla data information, project data, and reports. The administrator entity manages user data and protocol data, whereas the director entity can generate reports.

3. Results and Discussions

The accounting information system is tweaked during development to include features that aid in the management of village finances based on research into functional needs and user wants. The administration of financial dealings makes use of several features of the financial information system.

Home Interface Page

On the homepage, the administrator has access to two menus, the finance department to three, and the director to one. When it comes to the administration of the data system used to record financial reports, different users have varied levels of access.



Figure 2. Homepage interface page

Based on Figure 2, it can be explained that in this system there are three access rights including admin who can manage user data and project data, finance who can manage account data, general journal data, and reports, and directors can manage financial report data. There are sub menus that can be accessed including:

1. The user data menu is used to manage users who can access the system
2. Account data menu, this menu is used to manage account data in accounting
3. General journal data menu, this menu is used to manage transaction data that occurs every day.
4. The report data menu is used to manage financial reports including project reports, general journals, income, expenses, balance sheets, profit and loss, cash flow, capital changes.

Account Data Interface Page

The account data page is used to add, modify, and search account data in this financial report recording information system. Figure 3 illustrates the account data form's presentation.



Figure 3. Interface page account data

Journal Data Interface Page

This page of the general journal is used to transform transaction data into financial reports. As seen in Figure 4, the general journal will accommodate all existing transaction data.



Figure 4. Journal data interface page

Income and Expense Report Page

This page can display daily income and spending reports for the organization. The user can input the report period from the desired date to the desired date to generate the desired report. The income report is depicted in the figure below.



Figure 5. Income report interface page



Figure 6. Expense report interface page

General Journal Report Page

This general journal report displays daily general journal reports generated by businesses. The user can input the report period from the desired date to the desired date to generate the desired report. The page of the general journal report can be shown in Figure 7.

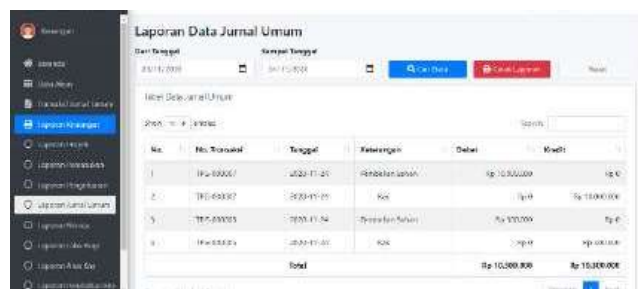


Figure 7. General ledger report interface page

Balance Sheet Report Page

This daily balance sheet report presents the daily balance sheet report that occurs in the company. Display a balance sheet report form. The user can input the report period from the desired date to the desired date to generate the desired report. Figure 8 below illustrates the balance sheet report page.



Figure 8. Balance sheet report interface page

Statement of Income Page

This income statement depicts the daily income statement that occurs within the organization. The user can input the report period from the desired date to the desired date to generate the desired report. Figure 9 below illustrates the income statement page.

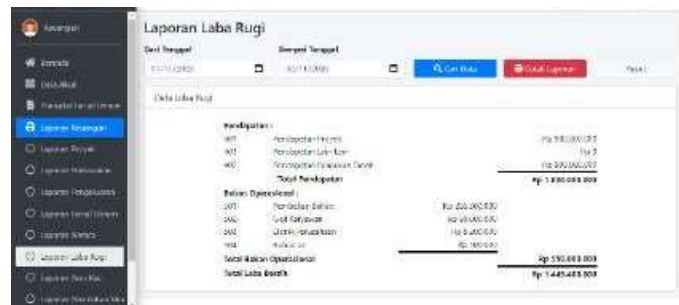


Figure 9. Statement of income interface page

Cash Flow Statement page

This cash flow report shows a daily cash flow report for the business. The user can input the report period from the desired date to the desired date to generate the desired report. Figure 10 demonstrates the page of the cash flow report.



Figure 10. Cash flow statement interface page

System Testing

This system test employs blackbox testing; in this test, the system will be tested by running or executing a unit or module, and then the results of the unit or module will be compared to the expected behavior(Corso et al., 2021; Sugali, 2021). System testing is detailed in Table 1.

Table 1
Blackbox Testing

No	Scenario	System Result	Description
1	Login Page	User login successfully	The system works and as expected
2	Home Page	User can see the home page	The system works and as expected
3	Account Data Page	User can manage account data	The system works and as expected
4	Income Report Page	Users can view and print income reports	The system works and as expected
5	Expenditure Report Page	User can view and print expense reports	The system works and as expected
6	General Journal Report Page	Users can view and print general journal reports	The system works and as expected
7	Balance Sheet Report Page	Users can view and print balance sheet reports	The system works and as expected
8	Income Statement Page	Users can view and print profit and loss statements	The system works and as expected
9	Cash Flow Statement Page	User can view and print cash flow statement	The system works and as expected

4. Conclusion

The research findings from the design and development of a financial report recording information system at BUMDes are the design of this financial report information system using Data Flow Diagram (DFD), database using Conceptual Data Model (CDM) and Physical Data Model (PDM), followed by the development of the user interface and system development. At the time of system development, sublime text was used as the application, mySQL as the database management system, and PHP as the

programming language. Based on the study objectives, the financial section planned and developed an information system for recording financial reports that can read and print financial reports, making it easier for the financial section to convey financial information to the company in a timely manner. All system features are successful and in compliance with business process requirements, as demonstrated by the results of black box testing of nine scenarios.

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