Article

Sistem informasi BUMDes Mukti Bersama

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A B S T R A C T

Village is the smallest form of government in the Republic of Indonesia, whose growth is very important in supporting the growth of the country evenly. Village-Owned Enterprises (BUMDes) play an important role in the development of a village and as a forum for encouraging community economic growth. Utilization of information technology is needed so that transaction recording is carried out quickly and produces accurate reports so that the management of BUMDes is better. This study uses a prototyping development method to help BUMDes Mukti Bersama management understand the system needed. The result of this study is a BUMDes information system that integrates data from three business units at BUMDes Mukti Bersama and is able to produce fast and accurate financial reports.

INTRODUCTION

Village is the smallest form of government in the Republic of Indonesia. In Law No. 6 of 2014 concerning Villages states that villages have the authority to regulate and manage government affairs and the interests of their own communities. Just as the central government and local governments need funds to be able to provide services to the community, village governments also need funds to finance their activities.

In accordance with article 72 of Law no. 6 of 2014 concerning Villages, the funds used by the village can be sourced from village original income, APBN allocation, revenue sharing for regional taxes and levies, village fund allocations, financial assistance from the APBD, grants and donations, and other income. One of the village's original income is income from business results obtained by Village-Owned Enterprises (BUMDes).

BUMDes Mukti Bersama is a village-owned enterprise established by the government of Kandangrejo Village, Lamongan Regency. BUMDes Mukti Bersama has several business units, including: a capital loan business unit, a fertilizer sales business unit, and a clean water management business unit. Each type of business has different characteristics that require different recording and reporting. The capital loan business unit provides capital loans to community groups who need additional funds on the principle of joint

responsibility. This business unit benefits from profit sharing from managed capital loans. The fertilizer sales business unit runs a non-subsidized fertilizer sales business by offering the option of delaying payments until the harvest period. This business unit benefits from the fertilizer sales margin that it operates. The clean water management business unit is a business unit that provides clean water supply to the people of Kandangrejo Village, Lamongan Regency. This business unit benefits from the cost of using clean water used by each customer. The difference in the characteristics of these business units is one of the challenges for the management of BUMDes Mukti Bersama in compiling an accountability report.

In Article 58 of Government Regulation Number 11 of 2021 concerning Village-Owned Enterprises it is explained that BUMDes Operational Implementers are required to submit periodic reports to advisors. In preparing the report, the BUMDes Mukti Bersama Management still relies on manual recording. Receipts for receipts and disbursements of each business unit are made manually by the officer and then recorded in the transaction book. This recording is then recapitulated using the Microsoft Excel application and then converted into the required report form. Reports from each of these business units also still need to be consolidated into one report to see the overall condition of BUMDes. This repeated recording of one transaction, in addition to taking a long time, also causes frequent recording errors, resulting in invalid data and reports that do not match the actual situation.

Technological developments have provided many conveniences. The merging of computer technology with telecommunications has resulted in a revolution in the field of information systems. Data or information that in the past had to take days to process before being sent to the other side of the world, can now be done in seconds [1] The application of information systems in the BUMDes Mukti Bersama business processes is expected to help facilitate the implementation of BUMDes Mukti Bersama business processes, reduce manual work and speed up and improve the accuracy of the reports required. This is expected to improve the performance of BUMDes in increasing local revenue and community welfare.

I. LITERATURES REVIEW.

Prototyping is a system development method that uses a prototype to describe the system so that users or system owners have an overview of the system development that will be carried out. This technique is often used when the owner of the system is not very familiar with the system he is developing. With prototyping techniques, developers can make prototypes first before developing the actual system. In the development of information systems, prototypes are often realized in the form of an application program user interface and the resulting reporting examples, so that system users will have an idea of the system that will be used later.

The prototyping method has the following advantages: saving development time, saving development costs, using or the system owner is involved in development, so as to reduce the possibility of misunderstandings in the system, implementation will be easy, the quality of the resulting system is good, allows the system development team to predict and predict future system developments [2].

While the weakness of the prototyping method is that the user or system owner can continuously add to the complexity of the system until the system becomes very complex and can cause developers to leave their work so that the system they are working on is never completed.

There are two types of prototypes that can be used in system development [3]:
a. Evolutionary Prototype. Evolutionary Prototype is a prototype that is developed continuously until the prototype fulfills all the functions and procedures required by the system.
b. Prototype Requirements. Requirements prototype is a prototype created by defining

system functions and procedures where users or system owners cannot define the system.

Several previous researchers have conducted relevant research:

Fauziah Yulianti's research [4] discusses the same thing as this research, namely the BUMDes Information System. The difference between this research and that of Fauziah Yulianti is the scope of the business unit being discussed. This study discusses three business units owned by BUMDes Mukti Bersama, while Fauziah Yulianti's research only discusses one business unit. In addition, Fauziah Yulianti's research uses the waterfall development method, while in this study the method used is the prototyping method. Hermanda Ihut Tua Simamora's research [5] uses the same method as this development, namely the prototyping method. The difference with this research is that Hermanda's research focuses on the process of selling goods at CV Mitra Tani, while in this study the author focuses more on the establishment of an integrated BUMDes information system with three types of business units. The research of I Made Dwi Putra Asana and I Nyoman Widhi Adnyana [6] discusses the trading business unit at BUMDes Kukuh Winangun which has the same type of business as one of the BUMDes Mukti Bersama business units. The difference between this research and this research is that BUMDes Mukti Bersama has more types of business units. In addition, this research uses the waterfall development method, while this study uses the prototyping development method. Siswidiyanto's research [7] uses the same development method as this research. The difference between this research and this research is that it discusses the information system for renting houses, while this study discusses the information system for BUMDes. Solehudin's research [8] discusses the same thing, namely the BUMDes information system and uses a client-server approach. The difference between this research and this research lies in the development method used, the study used the waterfall method while this study used the prototyping method.

Elis Mawati's research [9] discusses the same thing as this research, namely an information system for BUMDes financial records and report generation. The difference between this research and this research is that this research focuses on managing funds in general and does not look at the running business units, while this study looks at the recording of the business processes of each business unit up to . In addition, this research uses the waterfall development method, while this study uses the prototyping development method. Eri Sasmita's research [10] has the same subject as this research, namely the BUMDes information system. The difference between this research and this research lies in the development method used, the study used the waterfall method while this study used the prototyping method. In addition, this research only focuses on one line of business, while this study discusses three business fields. Jen Putra Efendi's research [11] has the same subject as this research, namely the BUMDes information system. The difference between this research and this research is that it only focuses on one business unit, while this study discusses three business units. In addition, this research uses the SDLC development method, while this study uses the prototyping development method.

From the explanation above, it can be seen that the average research that discusses information systems at BUMDes only focuses on one of the business units owned by the BUMDes. This study aims to form a consolidated BUMDes report, so it is not possible to focus on only one business unit. To be able to form a consolidated report, data is needed from all business units owned by one BUMDes.

Most of the previous research used the waterfall development method. The waterfall method is suitable when the user or system owner can clearly convey the system requirements. Several other studies used the prototype method because the user or system owner could not describe the system requirements needed. The management of BUMDes Mukti Bersama in this study could not clearly describe the system requirements

needed, so the authors used the prototype development method. The use of the prototype method can help BUMDes Mukti Bersama administrators get an overview of the system designed.

II. FRAMEWORK

A systematic framework and clear stages are needed to facilitate the preparation of research, as well as describe the systematic logic of the research carried out. The framework in this research is depicted in Figure 1
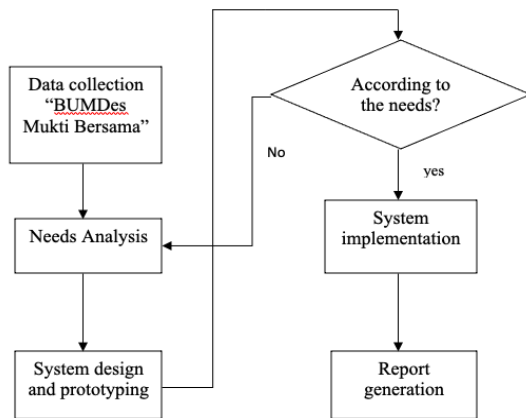

Fig 1: Framework

III.   METHODS

This study uses a prototyping development method with a requirements prototype approach. The prototype with the requirements prototype approach will be developed until all system requirements are met and continued with system development. The reason for using the Prototyping method in this study is because BUMDes administrators are people who are accustomed to manual management and it is difficult to explain clear system requirements at the planning stage. To help BUMDes management understand the system requirements needed, a prototyping method is used in the development of information systems. This method will involve the management of BUMDes Mukti Bersama directly in the design of the system. System

requirements will be updated regularly at each prototype testing process. That way, all the system requirements needed by BUMDes Mukti Bersama will be obtained in the last prototype.

The stages in the prototyping development method with the requirements prototype approach.
1. Analyze user needs. To analyze user needs, in this study data was obtained by direct observation of business processes carried out by BUMDes Mukti Bersama and interviews with management to obtain an overview of the system needed.
2. Make prototypes. The prototype is made based on the system requirements obtained from the results of observations and interviews
3. Adjusting the prototype to the needs of the user. The prototype that has been made will be asked again to the BUMDes Mukti Bersama management, is it in accordance with the system requirements?
4. System Implementation. Prototypes that meet user needs will be implemented in a system.

IV. RESULT

In this BumDes information system, there are 4 actors related to the system, namely the administrator, the Operator of the Capital Loan Unit, the Operator of the Clean Water Unit and the Operator of the Sales Unit. Below is a description and responsibilities of each actor.
1. Management is the person who is responsible for preparing the Consolidated report. Responsibilities: prepare consolidated reports and record other cash transactions that are not related to the business unit.
2. The Capital Loan Unit Operator is the officer in the capital loan unit in charge of recording the capital loan. Responsibilities: record loan transactions, record bill payment transactions, record other cash transactions and print reports on capital loan units.
3. Clean Water Unit Operators are officers at the clean water unit in charge of recording transactions related to clean water.

Responsibilities: recording customer data, calculating and making bills, recording bill payment transactions, recording other cash transactions and printing clean water unit reports.

4. Sales Unit Operator is an officer in the sales unit in charge of recording sales transactions. Responsibilities: record purchase transactions, record sales transactions, record loan transactions, record other cash transactions and print sales unit reports
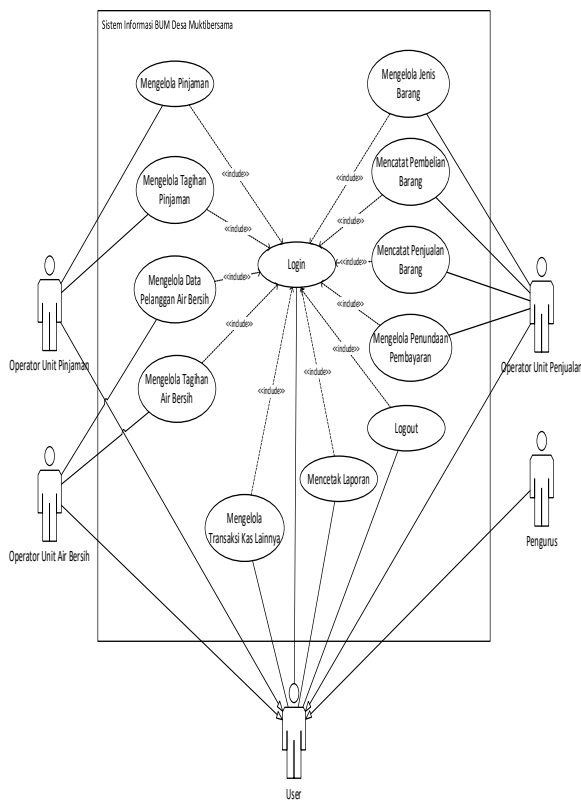
The use case system diagram is as follows:

Fig 2: Use Case Diagram of BUMDes Information System

Entity Relationship Diagram (ERD)

Fig 3: ERD

V. DISCUSSION

The web-based information system integrates data from each BUMDes Mukti Bersama business unit. With data integration, it is no longer necessary to produce and send reports by business units to BUMDes management, because management can directly print reports for each business unit as well as consolidated reports. Integration also eliminates repetitive recording, because one record made by an officer can be used for related documents and reports.

The BUMDes information system contains loan management, clean water management, and fertilizer management, as shown in the fig 4.
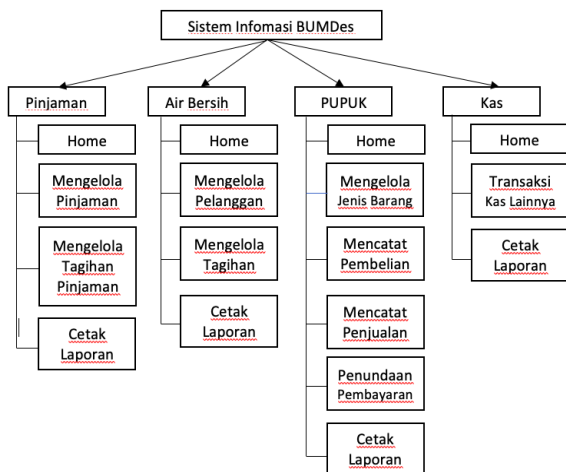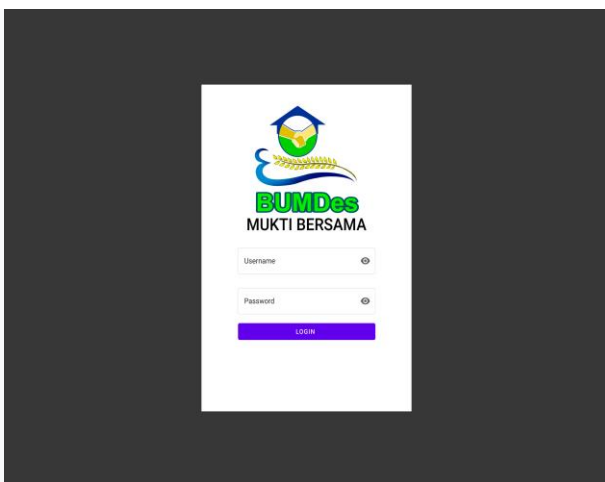

Fig 4: BUMDes Information System

Fig 5: Login Interface Prototype

On the Loans menu, there are several sub menus in it, namely home, managing loans, managing loan bills, and printing reports. In the loan management sub menu there is a process of adding, changing, and also deleting capital loan data. And in the sub menu for managing loan bills, there is a process of calculating and recording loan bill payments. (fig 6, fig 7).
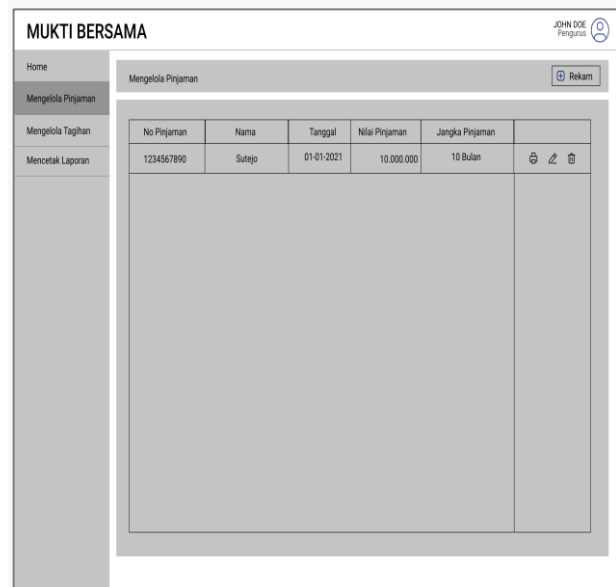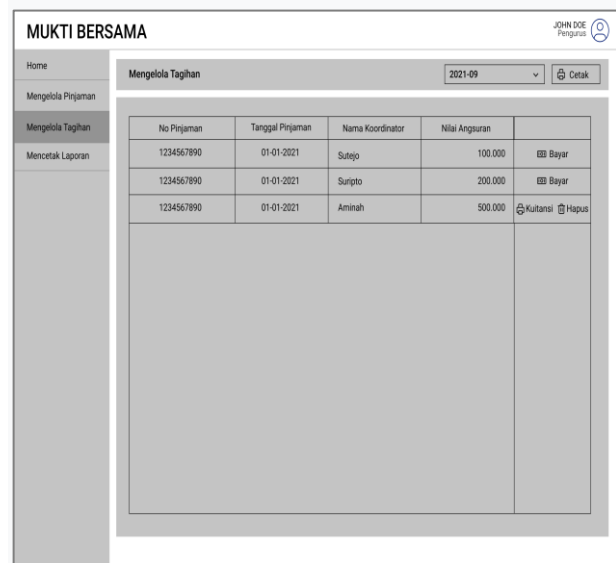

Fig 6: interface prototype Manage loans

Fig 7: interface prototype for managing loan bills

On the Manage clean water menu, there are several sub menus in it, namely home, managing customers, managing bills, and printing reports. In the sub menu for managing customer data, there is a process of adding, changing, and deleting clean water customer data, as well as in the sub menu for managing clean water bills, there is a process for calculating and recording clean water bills (fig 8, fig 9)
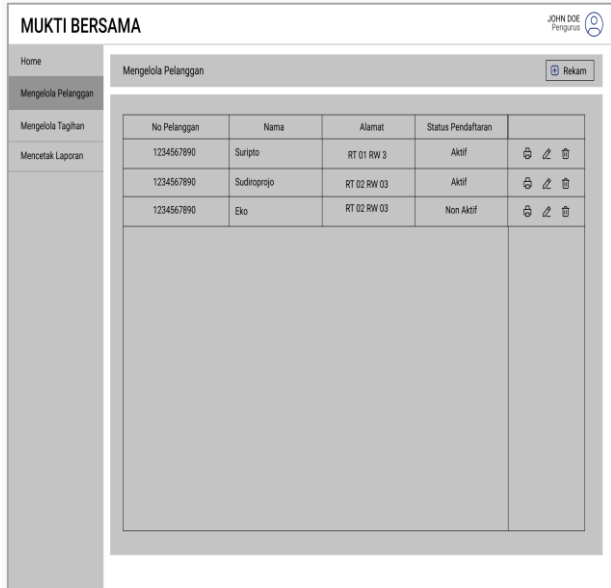
In the menu for managing fertilizer, there is a home sub menu, managing types of goods, recording purchases, recording sales, delaying payments, as well as printing reports. In the sub menu managing the types of goods there is a process of adding, changing, deleting the types of goods sold. The sub menu recording the purchase of goods is the process of recording the purchase of merchandise at the sales unit. Sub menu sales of goods is the process of recording the sale of goods in the sales unit. Meanwhile, managing payment delays is the process of managing payments for the sale of goods that are paid for at harvest (fig. 10, fig. 11)
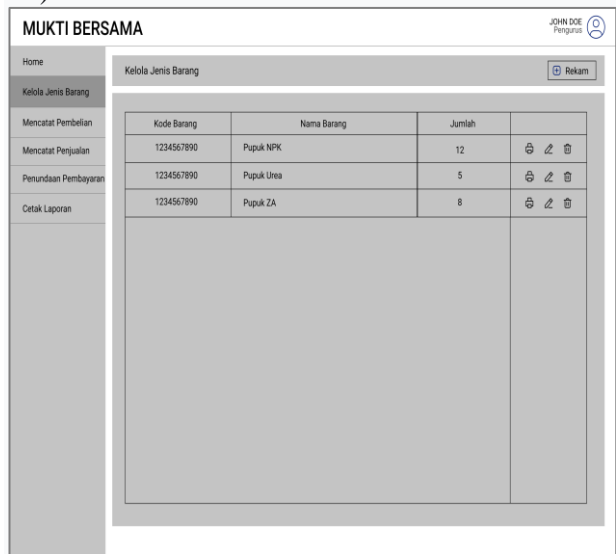

Fig 8:. interface prototype for managing clean water customers

Fig 10: prototype interface manage item types

Fig 9:. clean water bill payment interface prototype

Fig 11: prototype of goods sales record interface with Delay

The report printing submenu is the process of printing reports for each unit as well as a consolidated report (fig 12).
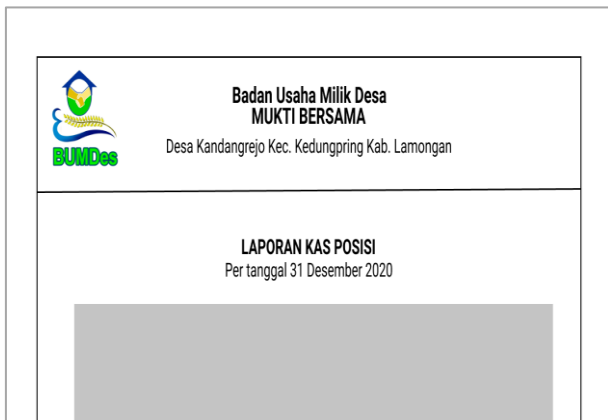

Fig 12: cash position report prototype

VI. CONCLUSION

The conclusions obtained from the research on the "Mukti Bersama Village-Owned Enterprise Information System (BUMDes) Using the Prototyping Method" are:
1. This design produces a web-based BUMDes information system that is able to speed up business records run by BUMDes Mukti Bersama by reducing manual and repeated recording of the same data.

2. With electronic recording, the formation of reports such as statements of financial position and income statements can be automatically generated by the system without manual calculation processes, so as to increase the speed of report generation and the accuracy of the reports formed.
3. With integrated data from all business units, BUMDes management can print reports quickly and in real time knowing the overall financial condition of BUMDes.

Based on research on "Mukti Bersama Village-Owned Enterprise Information System (BUMDes) Using the Prototyping Method", there are several suggestions, including:
1. For further development, inventory and asset management features can be added.
2. The development of this system in the future can be developed based on a mobile app to make it easier for operators of each unit to record transactions.

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