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Design and Development of LeleQue : A Web-Based Financial Management Application for Catfish Farming MSME

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Abstract. *The rapid development of information technology has significantly impacted the business world, including Micro, Small, and Medium Enterprises (MSMEs). However, business actors, particularly in the catfish farming sector, often face challenges in accessing broader markets and improving operational efficiency. This study aims to develop LeleQue, a web-based information system designed to efficiently support the management of catfish farming businesses. By implementing the SDLC (Software Development Life Cycle) method, this research outlines the system development process, from needs analysis to system evaluation The LeleQue application is equipped with key features such as financial bookkeeping, inventory management, debt tracking, financial reports, and discussion forums. The findings indicate that LeleQue provides an integrated platform to meet the operational management needs of catfish farming businesses. Additionally, the application facilitates collaboration among farmers through its community forum. This study contributes to supporting MSME digitalization, particularly in the catfish farming sector, to enhance efficiency, productivity, and business competitiveness.*

Keywords *Catfish Farming, MSMEs, Digitalization, Web-Based System, SDLC.*

1. INTRODUCTION

The development of information technology today is so rapid and has a big impact on business. The role of internet technology today has proven to be one of the effective and efficient information media in the dissemination of information that can be accessed by anyone, anytime and anywhere so that it can facilitate small industry business actors such as MSMEs to develop their businesses (Zachy et al., 2022). Micro, Small and Medium Enterprises (MSMEs) are one form of community business today that is an important part of the country's economy. MSMEs provide job opportunities for the community to empower the surrounding economy so that it can provide benefits to the community area (Arrohman et al., n.d.). West Java Province (Jabar) is a region that has an important role in the nation's economy. This is because based on a survey conducted in 2016, it was stated that around 98.5% of the drivers of the West Java economy are Micro, Small and Medium Enterprises (Muchtar & Munir, 2019). One of them is the catfish farming business, which is a leading sector in several areas in West Java, considering that market demand for catfish continues to increase. The catfish farming business has been proven to have a good impact on the community's economy in the form of absorbing labor or reducing unemployment, increasing the income of fish farmers themselves,

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as well as people or groups involved in the business such as fish eradication traders, restaurants, fishing businesses, manure and artificial fertilizer supply businesses, transportation, and other service providers involved in the fish farming business (Mega Faradilla & Julianto Hutasuhut, 2022).

However, amidst increasingly tight competition, business actors including in the catfish farming sector, often experience obstacles in accessing wider markets and increasing operational efficiency. The use of information and communication technology, especially websites, can be an effective solution to face this challenge (Meriana et al., 2024). Through digitalization, business actors can reach consumers more widely, not only locally but also nationally (Saputra & Malabay, 2022).

This study specifically focuses on the development of a website-based information system LeleQue designed to support catfish farming business actors. As the core of business digitalization efforts, LeleQue is expected to help improve operational efficiency and competitiveness of MSMEs. By implementing the SDLC (Software Development Life Cycle) method as a development approach, this study aims to evaluate the design process to system implementation. The formulation of the problem raised is: How can the LeleQue website help facilitate the management of catfish farming businesses efficiently? In addition, this study seeks to assess the effectiveness of key features such as bookkeeping, stock, debt, financial reports, and forums in supporting the needs of business actors. This study also aims to provide recommendations for improvement based on the evaluation results, especially if deficiencies or inconsistencies are found in the system. Thus, this study is expected to contribute to developing applications that are more reliable, efficient, and in accordance with the operational needs of catfish farming businesses.

2. METHODS

This study uses a descriptive qualitative approach to explain the process of developing the Leleque application, from planning, design, to implementation and evaluation. This approach focuses on describing the phenomena and decisions taken during the process, without using numerical analysis, to provide an understanding of the development stages that suit the needs of users in the catfish farming business.

a. Data Collection Techniques

1) Observation / Observation

Observation is a data collection technique carried out through observation, accompanied by recording the condition or behavior of the target object.

Observation is carried out to identify and record what will be processed by the system so that the business website can present useful information for MSMEs and their users.

2) Literature Study

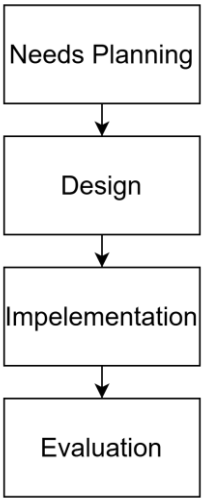
This method is needed as a reference material by collecting data through literature and published scientific works. The data functions as a supporter of theories that are relevant to the activities carried out.

3) SDLC (Software Development Life Cycle) Method

The SDLC method is an effective approach to growing and improving a business, especially in developing systems or software. This method involves the stages of needs analysis, design, development, testing, implementation, and system maintenance. SDLC is the stages of work carried out by system analysts and programmers in building information systems and methods in developing these systems.

b. System Design Process

In website design research, there are 4 research stages, including the following:



Gambar 1. Perancangan Website

1) Requirements Design

At the needs planning stage, researchers collect information from partners, plan website preparation, and choose the domain and hosting to be used. In addition, researchers also determine the features that will be implemented on the website. At this stage, researchers need to meet with partners to understand the purpose of the website and focus on solutions to overcome business problems.

2) Design

At this stage, the appearance and concept of the website are designed, including elements such as fonts, colors, themes, and images. The layout of the information is structured and according to user needs. Web design must be easy to use, aesthetic, and responsive and adaptive, where responsive adjusts content to screen size, and adaptive ensures content fits common screen sizes.

3) Implementation

At this stage, the main focus is on website development and implementation. Partners must continue to be involved and can provide input or suggestions for improvement in report development. The tasks carried out are developing the website, writing code, and testing the system.

4) Evaluation

Evaluation is done to ensure that the website that has been created is reliable, attractive, and has good credibility. The evaluation process involves checking the accuracy, authority, objectivity, and scope of the website.

c. Implementation Stages

1) Preparation Stage

The activity begins with research on the needs and objectives of developing the LeleQue website. In the first week of September 2024, observations and interviews were conducted with internal parties to explore matters related to the website, including development potential and required features. This activity aims to map website needs and define the functional objectives to be achieved.

2) Development Stage

In September-November 2024, data was collected related to the development of the LeleQue website, both through direct observation. The data obtained includes technical information regarding website development and the desired design. At this stage, the implementation of the website-based information system design for LeleQue began to be implemented, with a focus on relevant features and appropriate design planning.

3) Assessment Stage

On November 17, 2024, the website that had been developed was submitted for testing. After receiving positive feedback, an online socialization and training session was conducted to ensure that the website could be operated properly and optimally.

3. RESULTS

LeleQue is a web-based application specifically designed to facilitate the management of catfish farming businesses more easily and efficiently. This application is equipped with various key features, such as debt recording, expense and income tracking, inventory management, and well-organized financial reports. Additionally, there is a discussion forum that allows catfish farmers to share experiences, tips, and solutions related to farming issues. Below is the display of the LeleQue application.

a. Login Page

The Login Page serves as a system authentication point. On this page, users are required to enter a previously registered username and password. Once successfully logged in, users will be directed to the dashboard page to access various available features or services, as shown in **Figure 2.**

Figure 2. Login Page

b. Dashboard Page

The Dashboard Page is the main page displayed after the user successfully logs in. This page presents a summary of monthly transactions in the form of graphs, as well as the latest expense and income information, as shown in Figure 3.

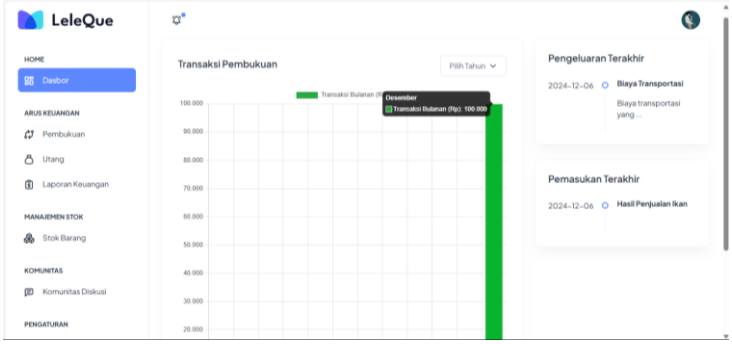


Figure 3. Dashboard Page

c. Bookkeeping Page (Expenses and Income)

This page displays a list of previously recorded transactions. Users can also easily and conveniently add new expense and income entries, as shown in **Figure 4.**

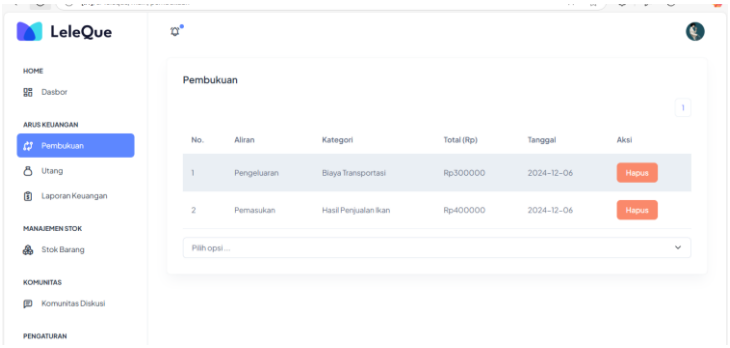


Figure 4. Bookkeeping Page (Expenses and Income)

d. Inventory Page

This page displays a list of inventory items, including the item name, current stock, and unit of measurement. Additionally, users can add new items to ensure efficient and organized stock management, as shown in Figure 5.

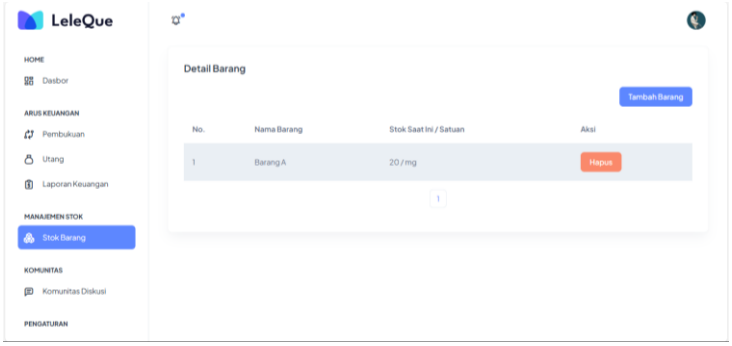


Figure 5. Inventory Page

e. Debt Page

This page displays a list of customer debts and personal debts. Customer debts refer to the debts we extend to other parties, while personal debts are the debts or funds we receive from other parties. In addition to displaying the list of debts, users can also add new debt records through this page, as shown in **Figure 6.**

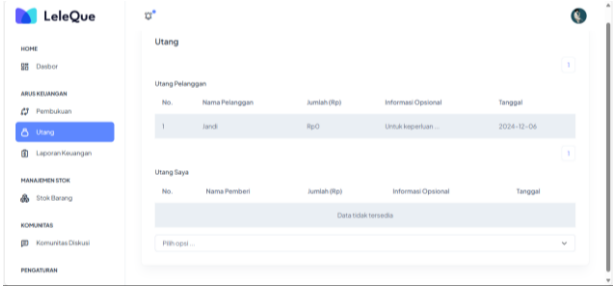


Figure 6. Debt Page

f. Financial Report Page

The Financial Report Page provides detailed information on financial transactions, including income and expenses based on the selected month and year. This feature is equipped with a filter to help users easily view specific data as needed. There is also an action column with a "Detail" button that allows users to view more information about transactions within a specific period, as shown in **Figure 7.**

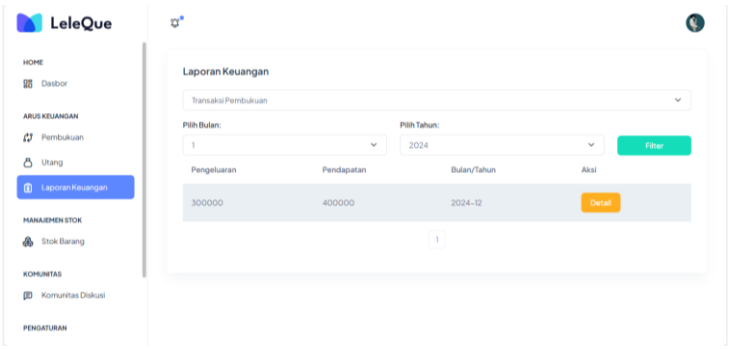


Figure 7. Financial Report Page

g. Discussion Community Page (Forum)

On this page, users can communicate with other catfish farmers through direct messages within the application. This page provides a space for farmers to share experiences, tips, and solutions related to catfish farming issues. Users can also access various relevant discussions to explore specific topics in greater depth, as shown in **Figure 8.**

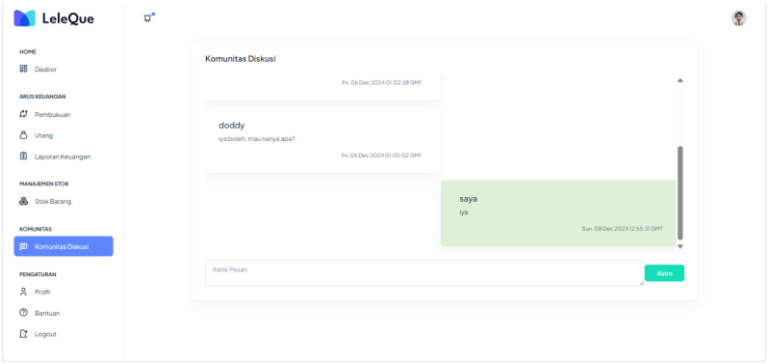


Figure 8. Discussion Community Page (Forum)

4. CONCLUSION

In conclusion, the LeleQue application is designed to simplify the management of catfish farming businesses in an efficient and organized manner. With key features such as the login page, dashboard, bookkeeping, inventory, debt, financial reports, and discussion community, the application provides users with easy access and full control. Each page plays a vital role in supporting business management, from financial recording to collaboration with other farmers.

With the presence of LeleQue, it is expected that the process of managing catfish farming businesses will become more efficient, productive, and centralized within a single integrated platform.

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