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Design and Development a Web Platform Portal for Mosque Financial Management

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ABSTRACT

Transparency and accountability in the financial management of mosques is an area that requires significant attention because it builds the initial trust of the mosque in collecting funds through infaq and waqf. Currently, many mosques still use whiteboards as a tool to present their financial reports. This poses a problem for mosques when delivering financial reports to donors who live far away. Therefore, a tool that can serve as a medium for financial reporting is needed. Based on this need, the research aims to create a web-based mosque financial portal to record income (donations, alms), qurban records, and expenses. In other applications, each mosque uses an application designed for each mosque. This software has been developed to accommodate the needs of each mosque and is integrated into a single application portal. The development of this application uses the Waterfall method, which involves various stages such as user requirements, system design, implementation, and testing. This financial portal was successfully implemented in 11 mosques and prayer rooms across 5 provinces. This application features recording income (donations and alms), qurban records, and expenditure records. The test results show that many mosques can use this financial management portal to record income and expenses. Finally, we can conclude that this web-based mosque financial portal would be a viable solution to enhance the accountability services of mosques in managing their finances.

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1. Introduction

Managing mosque finances often involves various challenges that can hinder transparency and efficiency. Many mosques still use bulletin boards to record financial transactions, which can limit the delivery of reports to the congregation [1]. Additionally, limited resources and a lack of information technology knowledge add to this situation's problems. As cited in articles [2] and [3], the use of traditional approaches in managing mosque finances affects the level of trust the congregation has in the mosque. This also impacts the congregation's participation in mosque activities, such as donations.

This research was conducted in response to these challenges by developing a web-based application that handles multi-mosque accounts in a single integrated application mode. This application is built with modern web technology for accessibility and ease of use by various users from multiple mosques [4]. The web model allows each mosque to enter and manage their accounts through the internet anytime, anywhere. Based on research findings that state the application of web-based technology is appropriate for financial organizations, efficient and transparent financial management can be achieved for religious organizations [5].

The benefits of utilizing this application are more valuable for mosque financial management. In addition to providing additional benefits in terms of accuracy and efficiency of financial recording, the application also offers a transparent reporting mechanism readily available to relevant parties [5]. Furthermore, this application supports mosque management and reduces the possibility of human error in managing financial flows. Previous research on the application of web-based financial applications

in Islamic religious institutions found that these applications can improve the quality of financial management and accountability [6].

2. Methods

The research was conducted step by step, starting from the analysis of user needs, followed by design and planning, and the final stage was system implementation and testing [7].

Figure 1. Research Stages [7]

2.1. User Requirement and Analysis

The requirements analysis stage in the system development process aims to identify the user and requirement system [8]. The detailed steps carried out in the user requirements and analysis stage are explained as follows:

a. Identification of Stakeholders: Identifying all parties involved in the project, including mosque administrators, congregants, and system developers.
b. Analysis of Current Business Processes: Analyzing the workflow and processes of recording income (donations and alms), qurban records, and expenditure records in the mosque.
c. Identification of Functional Requirements: Defining the key features that must be included in the financial portal, such as recording income (donations and alms), qurban records, and expenditure records.

2.2. Design

In this design stage, the Waterfall model is applied. The stages are explained in detail in Figure 2; the Waterfall model is a systematic approach in the software development cycle, where each stage can proceed only after the previous stage has been completed [9], [10].

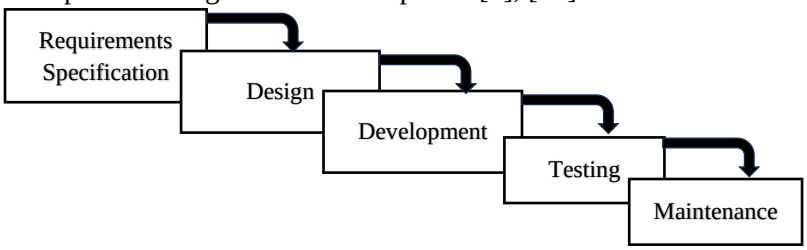

Figure 2. Model Waterfall [4]

a. User Requirements Specification
   At this stage, the analysis process will be carried out on the functional and non-functional requirements of the system being developed.
b. Design
   The design process of the system being developed uses UML Use Case Diagram modeling.
c. Implementation
   The implementation of this web-based system is developed using the PHP programming language with the Laravel framework, while the database used is MySQL [11].
d. Testing
   After the application implementation stage is completed, the next step is to test the system. The system testing process is carried out using the blackbox testing method.
e. Maintenance
   The maintenance stage is the upkeep of the application that has been deployed in the production environment to ensure the system continues to function properly

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2.3. Testing and Implementation System

This stage involves coding the application using the MySQL DBMS and the Laravel framework. Mosque officials (takmir) are granted access rights to manage activities in the mosque. To ensure that every feature in the application works properly according to the needs, each feature will be tested using black box testing. This involves testing the features by providing input and ensuring that the output matches the given scenario [9], [12] .

3. Results and Discussions

After implementing the system, the next step will be to discuss the results of the system implementation. The main problem faced in this research, based on the requirements analysis, is that the activities of recording income (donations and alms), qurban records, and expenditure records are still done manually on paper. Therefore, a tool is needed to solve this problem [13].

3.1. Functional Requirements Analysis

This analysis includes the processes that users will need to run their business processes, which are implemented into the application [14], [15]. The functional requirements of this software are detailed in Table 1.

Table 1. Functional Requirement Financial of Management Mosque

No	Functional Requirement System
1	The system has the feature to login and logout according to the specified role.
2	The system displays a dashboard and menu tailored to the user role
3	The system can configure each mosque account addition
4	The system can add, edit, delete, and search for mosque income data (donations, alms, etc.).
5	The system can add, edit, delete, and search for mosque income data (qurban).
6	The system can add, edit, delete, and search for mosque expenditure data
7	The system can send a receipt notification from the mosque income process to congregants.
8	The system can send announcements to congregants.

3.2. Diagram Use Case System

In this research, modeling is done using a use case system diagram. This model presents the interaction between users and the system [16]. The use case system depicts the system functions from the user's perspective. The detailed use case system diagram for the mosque financial portal is illustrated in Figure 3.

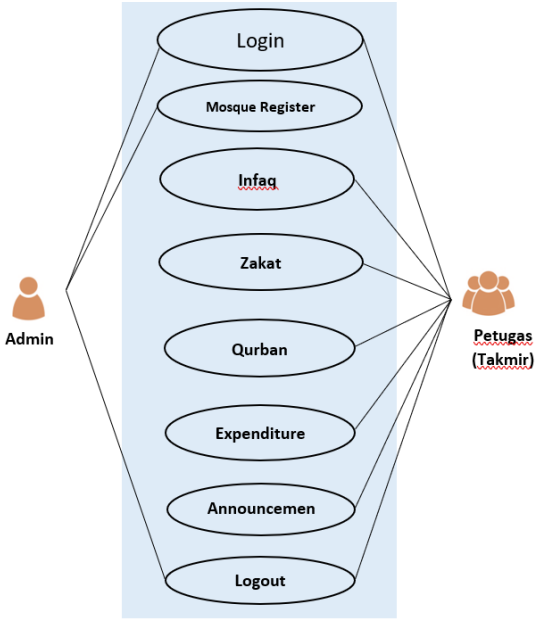

Figure 3. Use Case Diagram Financial of Management Mosque System

3.3. Implementation System

The implementation of the mosque financial portal application resulted in nine (9) menu features. The following section will discuss each menu in detail.

3.4. Login

To access the application, users must log in using the WhatsApp number/email and password that have been provided.

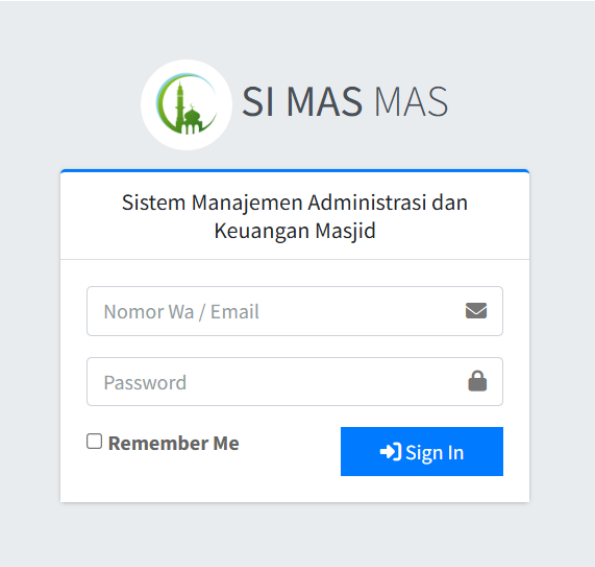

Figure 4. Login Page

3.5. Dashboard

The Dashboard displays information such as the total receipts of zakat, donations, and qurban in real-time.

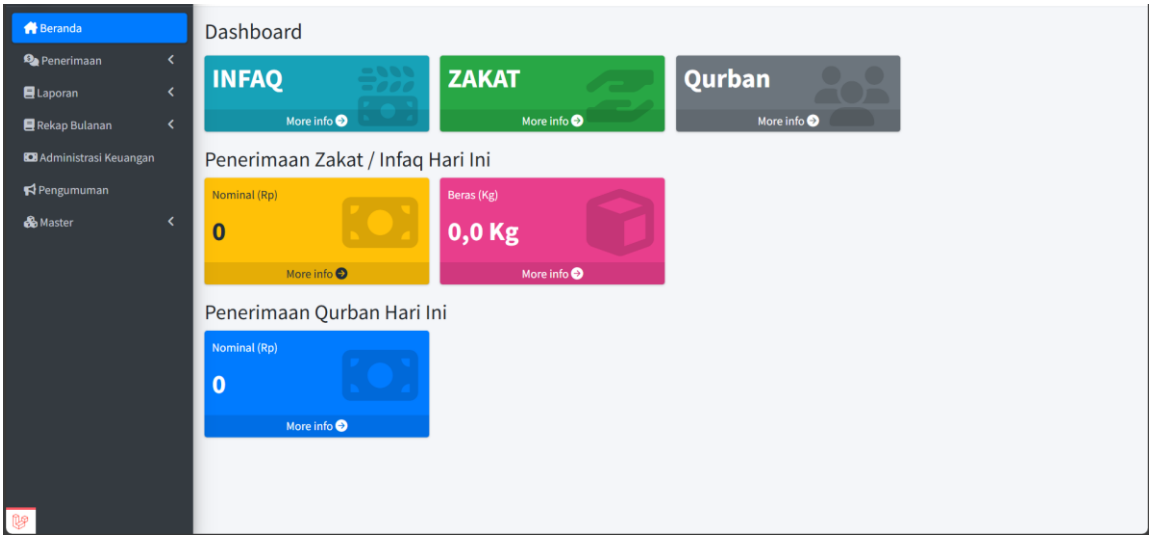

Figure 5. Dashboard

3.6. Configuration

The mosque configuration page is used to manage the mosque profile and the data of the officials (takmir) who will use the application. When a mosque account is first added, the first step that must be taken is to configure the mosque account data. This data includes the takmir information, mosque contact WhatsApp number, header photo, or mosque address. This information will be used by the system to send notifications to congregants when making donations or zakat payments.

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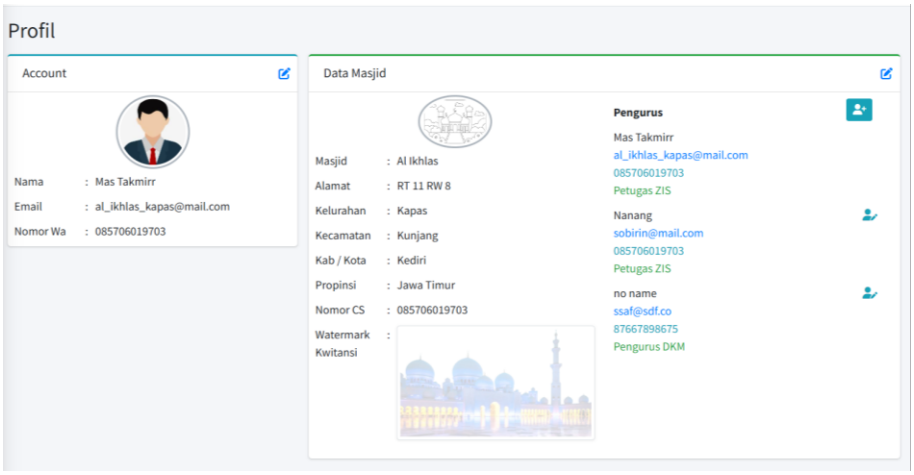

Figure 6. Configuration Mosque

3.7. Donation

The donation data page is used to manage the donation receipts from congregants/donors. On this page, users can add, edit, and delete donation data.

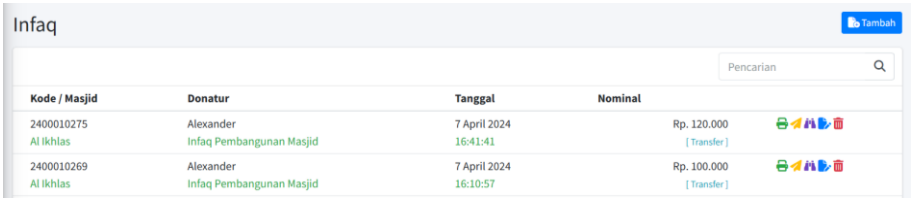

Figure 7. Donation

3.8. Zakat

The zakat data page is used to manage zakat receipts from donors. On this page, users can add, edit, and delete zakat data.

Figure 8. Zakat

Next, users can also input zakat data by filling out the form below.

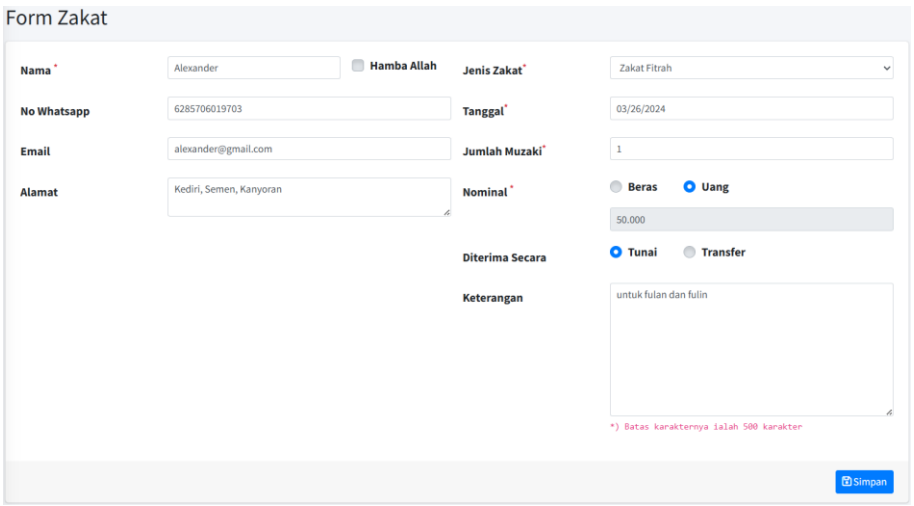

Figure 9. Form Zakat

3.9. Qurban

The qurban data page is used to manage qurban receipts from congregants or donors. On this page, users can add, edit, and delete qurban data.

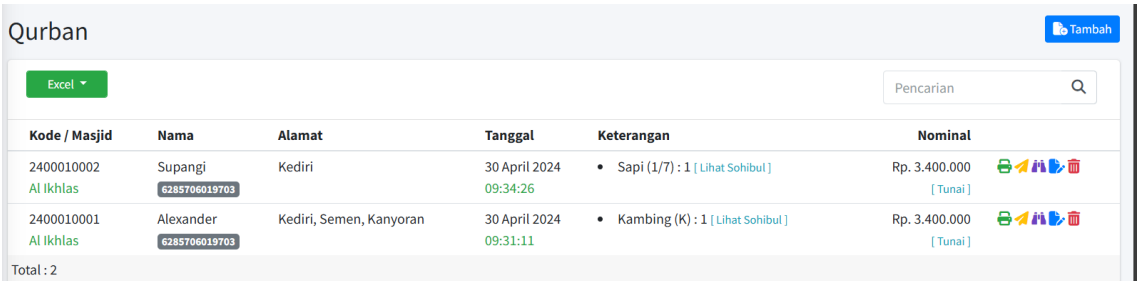

Figure 10. Qurban Process

3.10. Expenditure

The expenditure data page is used to manage the mosque's expenditure data. On this page, users can add, edit, and delete expenditure data.

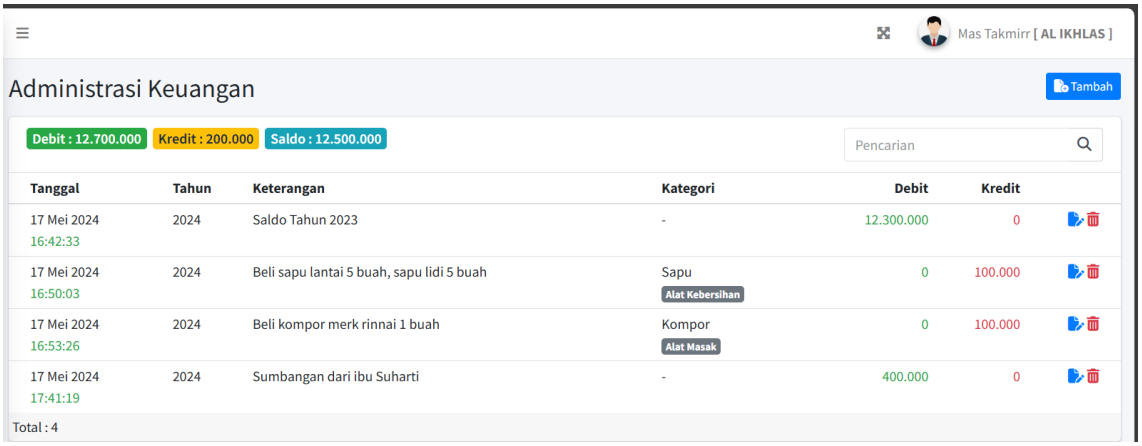

Figure 11. Qurban Data and Receipts to Congregants

3.11. Announcement

The announcement page is used to send WhatsApp notifications. On this page, users can select the recipients of the announcement to be sent. The target numbers can be grouped into administrators, donors, and congregants.

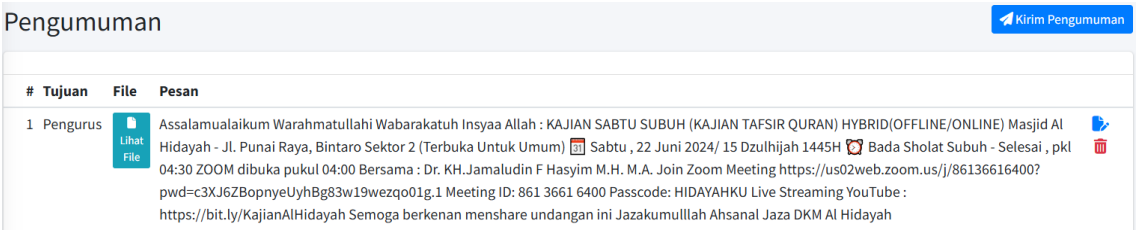

Figure 12. Announcement

Next, users can proceed with sending the announcement by filling out the form below. In this form, users can attach a file in PDF or image format and write the message that will be sent to the recipients.

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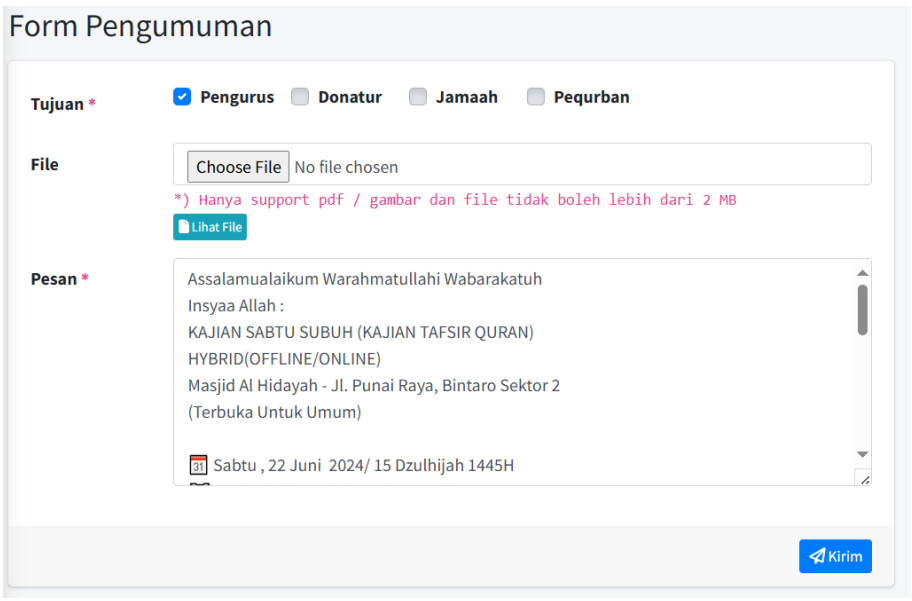

Figure 13. Form Create Announcement

3.12. Discussion

All features have been implemented, and the next step is to test each feature. Testing is conducted using predetermined scenarios. After testing the system's functionality, the next step is to train the mosque administrators to use the application.

The mosque financial portal application began to be used around February 2024. Currently, 11 mosques across 5 provinces are using the application. The response from the jamaah to the management of the mosque has been very positive. This is evident from the increased participation of the congregation in mosque activities such as qurban, infaq, or almsgiving. On average, participation has increased by about 2-5% compared to before using the application. list of mosques using the application is presented in Table 2.

Table 2. List name of mosque using portal application

No.	Name	Address
1	At Taqwaa	Dusun Bungkul, Kapas, Kunjang, Kediri, Jawa Timur
2	Al Ikhlas	RT 11 RW 8, Kapas, Kunjang, Kediri, Jawa Timur
3	Al Hidayah Bintaro	Jl. Punai Raya, Bintaro Jaya Sektor 2, Rengas, Ciputat Timur, Tangerang Sclatan, Banten
4	Roudhotul Jannah	Jl. Timbul III B RT 08 RW 04, Cipedak, Jagakarsa, Jakarta Selatan, DKI Jakarta
5	Al Karim	Dsn Bungkul, Kapas, Kunjang, Kediri, Jawa Timur
6	Baitussalam	Perumahan Kalibaru Permai RT.004/RW.07 No.99, Kalibaru, Cilodong, Depok, Jawa Barat
7	Al Muldjirin	Perumahan Pondok Pucung 1, Pondok Pucung, Pondok Aren, Tangerang Selatan, Banten
8	AL 'ASHR	Taman Kenari Jagorawi, Puspasari, Citeureup, Kab. Bogor, Jawa Barat
9	Muawanah Semarang	Jalan Mangga V Nomor 17,Lamper Kidul, Semarang Selatan, Kota Semarang, Jawa Tengah
10	Qotyatussalam	Perum Qoryatussalam Sani Jl. KSU Tirtajaya, Sukmajaya, Sukmajaya, Depok, Jawa Barat
11	Al Anwar Gondang	Rt 1 C RW1, Gondang, Watumalang, Wonosobo, Jawa Tengah

In addition to the positive impact, there are also challenges in implementing this application, such as users who are not all accustomed to using the application. Therefore, further assistance is needed to help mosque administrators become familiar with using the application. Additionally, there is feedback regarding the ease of checking transactions in account mutations, which can be integrated with wallet payment systems. This integration would reduce the steps needed for staff to verify incoming transactions to the account.

4. Conclusion

This research provides a solution for mosques in recording financial management, both income and expenses. The solution offered is a web-based financial management information system to facilitate the management of financial income and expenditures. Additionally, this application is equipped with receipts and notifications connected to the congregants' WhatsApp numbers, reducing the use of paper in record-keeping. Future development of this application includes integrating a digital wallet payment model, allowing transaction mutations to be recorded automatically.

Acknowledgment

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