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Implementation of the Website on the Raudhatul Mukhlisin Mosque Fund, Sako District Using the Waterfal Method

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ABSTRACT

Mosques play a central role in Muslim community life, not only as places of worship but also as centers for social and financial activities, such as donations, alms management, and dissemination of mosque-related information. However, in the current era of rapid technological development, many mosques still rely on manual systems for financial management and information delivery, which are prone to recording errors, calculation inaccuracies, data loss, and limited transparency. This condition can reduce public trust and hinder effective mosque management. Therefore, technological innovation is needed to support transparent, accurate, and efficient mosque administration. This research aims to assist the management of Raudhatul Mukhlisin Mosque in improving the efficiency and accuracy of mosque financial data management through the development of a website-based information system. The system was developed using the Waterfall method, which includes requirement analysis, system design, implementation, testing, and maintenance. This study applies qualitative research methods with data collection techniques including observation and literature review. The developed system utilizes PHP, HTML, and MySQL, and system testing was conducted using the Black Box method. The results show that the proposed system facilitates data recording, financial reporting, and information access, while enhancing transparency and accountability for mosque administrators and worshippers.

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1. Introduction

Technology is something that helps make life easier such as phones, mobile phones, the internet and laptops. Not only does it make human life easier, but it also provides a lot of benefits for humans in meeting their life needs. The development of information technology can improve performance and allow various activities to be carried out quickly, precisely and accurately, so that it will ultimately increase productivity. The development of information technology shows the emergence of various types of activities based on this

technology, such as e-government, e-commerce, e-education, e-medicine, e-e-laboratory, and others, all of which are based on electronics[1].

Information Technology is a technology used to process data, including processing, obtaining, compiling, storing, in various ways to produce quality information, namely relevant, accurate and timely information, which is used for personal, business, and government purposes and is strategic information for decision-making. This technology uses a set of computers to process data, a network system to connect one computer to another as needed, and telecommunication technology is used so that data can be distributed and accessed globally[2].

Information systems are a combination of computer hardware and software along with human interaction that is used to process data using those hardware and software. In simpler terms, an Information System can be described as a computer-based system that provides information to a group of users who have similar needs[3].

Technological advances that continue to develop force humans to continue to follow their developments, especially in an effort to make work easier. In the past, a lot of work was done manually, but with today's technological advancements, a lot of work can be done more efficiently and practically thanks to the help of the latest technology. The importance of administrative and financial systems related to data management should not be ignored by any institution, including agencies, health institutions, government entities, and also religious institutions such as mosques. The origin of the word "mosque" is from Arabic, where the word "sajada" is used to refer to a place where people prostrate and worship Allah SWT. In addition to functioning as a place of worship, the mosque can also be used to carry out religious activities such as reciting, isra' miraj, the prophet's birthday and many more[4],[5].

The mosque in terms of language is a place to prostrate or worship Allah SWT which is taken from the Arabic language sajada. In addition to carrying out prayers, mosques also function as a place to develop Islamic insights, a center for social activities, and a center for the development of Muslims. This must be managed properly so that the benefits for the community around the mosque are felt[6].

Financial management must be carried out carefully and precisely and transparent, meaning that the congregation must know the conditions and circumstances of the Funder for the mosque. If the management is still done manually, this can cause errors in recording and calculation and can cause data loss at the time of reporting. As well as for mosque information, it is possible to still use broadcasts through the mosque's TOA or distribute invitations to the homes of local residents, so that sometimes a lot of information is not known and also information related to the mosque construction funds is sometimes considered wrong because the data collection carried out by the authorities on the mosque funds is still manual so that the community has a lot of problems with the budget, the processing of infaq data here is carried out by the Mosque Treasurer[7].

Based on the above problems, the author took the initiative to record and make reports. The ongoing system, namely managing data in and out of mosque infaq and the information system for processing infaq data, is a system that can make it easier to collect data, either in reports or produce outputs in the form of information. With this website, it is hoped that it will make it easier for the community, especially in the new school area, to recap the mosque expenditure data report automatically[8],[9].

2. Research Methods

The researchers and authors used qualitative research methods. The qualitative research method is a method that focuses on in-depth observation. Research conducted using qualitative methods has advantages, including a broader and more detailed view of the research subject being studied, extensive communication of research results to users, and sensitivity to recognize every symptom that occurs in the research object[10][11].

2.1 Data Collection Methods

In the discussion of the methodology of this research, there are several data collection techniques that will be changed in this study, namely:

1. Observation is a data collection technique carried out by researchers directly observing the research area to closely observe the activities that are being carried out.direct observation of the raudhatul mukhlisin mosque to find out the existing problems.
2. Literature study is a data collection technique that is carried out by studying and collecting information from reference sources of books, journals and other sources that are directly related to the discussion of this research.

2.2 System Development Methods

System Development Life Cycle or known as SDLC is a common methodology used to develop information systems. SDLC consists of several phases starting from the planning, analysis, design, implementation to system maintenance phases. The concept of System Development Life Cycle (SDLC) is the basis for various information system developments in forming a framework for planning and controlling information systems. Models of SDLC that are often used include Waterfall and Prototype Model Waterfall is one of the SDLC models that are often used in the development of information systems or software. This model uses a systematic and sequential approach. The stages in this model start from the planning stage to the maintenance stage and are carried out in stages. Developers need to know more about how the system development process is if they use the waterfall model and also the characteristics of the waterfall model[12],[13].

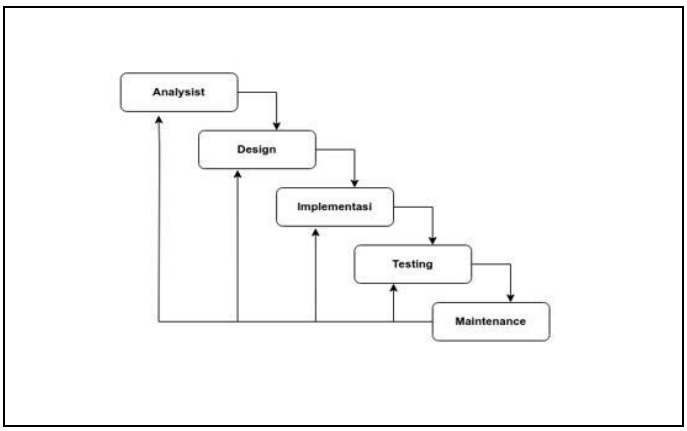


Figure 1 *Waterfall*

1. Analysis

The process of collecting needs is carried out intensively to specify the needs of the software so that the software can be understood as needed by the user.in this needs analysis aims to analyze the needs needed in the design both in the form of documents and other sources that can help in determining the solution to existing changes[14],[15].

2. Design

Software design is a multi-step design that focuses on the design of software program creation including data structures, interface architectures, and coding procedures, in addition to design as well as the flow of a detailed software and algorithm.

Implementation

At this stage, the system is first developed in a small program called a unit, which is integrated in later stages. Each unit is developed and tested for functionality referred to as unit testing.

3. Testing

Testing or testing focuses on software in terms of logic and functionality to ensure that all parts have been tested.this is done to minimize errors and ensure that the output produced is as desired.program testing is carried out using blackbox testing in the hope that the design that has been made can run as desired.

4. Maintenance

This is the final stage of the waterfall method. The finished software is run and maintained Maintenance is included in fixing errors not found in the previous step[16],[27].

2.3 Design

The research designed a research as a form of illustration that will be used in the research and is useful for the treasurer of the raudhatul mukhlisin mosque.The work is done using a unified modeling langue (UML) consisting of use cases, activity diagrams and class diagrams. Unified Modeling Language is a visual modeling method used in designing and creating object-oriented software. UML is a software modeling language that has been standardized as a media for writing software blueprints (pressman). UML is a writing standard or a kind of blue print which includes a business process, writing classes in a specific language. There are several UML diagrams that are often used in the development of a system[18].

2.4 Implementation

At this stage, this is the last stage to create a system or application that will be carried out in accordance with the design that has been made[19],[20].

2.5 Research Time and Place

The research period was carried out for 4 (four) months from September to December. The location of the research is the Raudhatul Mukhlisin Sako Baru Mosque, Palembang City, South Sumatra

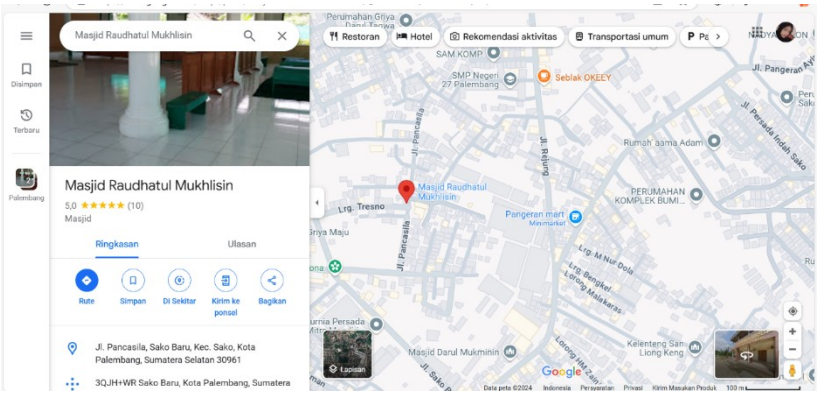


Figure 2 Research Sites

3. Results and Discussion

The results of the data collection stage with observation and interviews are summarized in the following figure.

3.1 Running system

Figure 3. Running system

Figure 2 above explains the process of mosque administrators broadcasting activities and recording incoming and outgoing cash.

1. An overview of the running system is:
2. Overview of the management system in the mosque profile
3. There is only 1 admin

3.2 Proposed System

The description of the system that was promulgated is an overview of the system where the admin can access the mosque's website profile. Admins can see activities and cash coming in and out. If you want to add activities and cash in and out, you can enter the admin page by logging in first by entering your username and password. On the admin page, the mosque management can add activities and cash in and out. The

following is an overview of the system proposed in the Profile Mosque application which explains the system workflow, as follows:

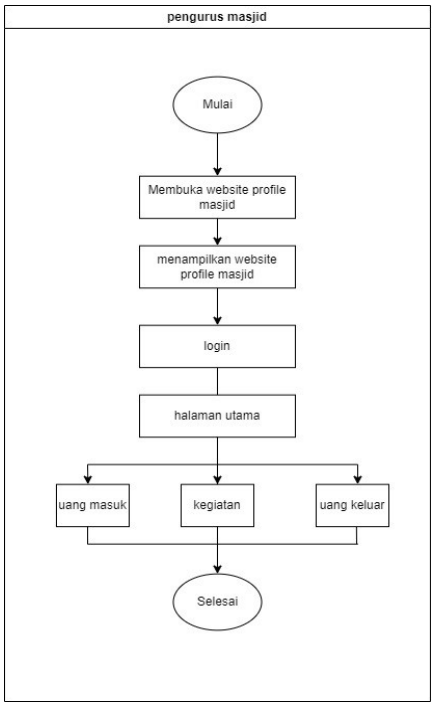


Figure 4 Proposed system

3.3 System Planning

System design is the steps to create or improve a system to make it better, so that it can work more effectively and efficiently. In this case, the website design uses the Unified Modeling Language (UML). UML is a visual aid that makes it easier for us to model and explain systems using various diagrams and supporting text. Here is a further explanation of the design of this system.[21],[22]

3.3.1 Use Case Diagram

A use case is a description of the function of a system from the perspective or point of view of the system users. Use cases to define what the system and its components will process. Use case work by using a scenario that is a description of a sequence or steps that describes what the user is doing to the system and vice versa. The use case identifies the functionality that the system has, the interaction of the user with the system and the connection between the user and the functionality of the system[23],[24].

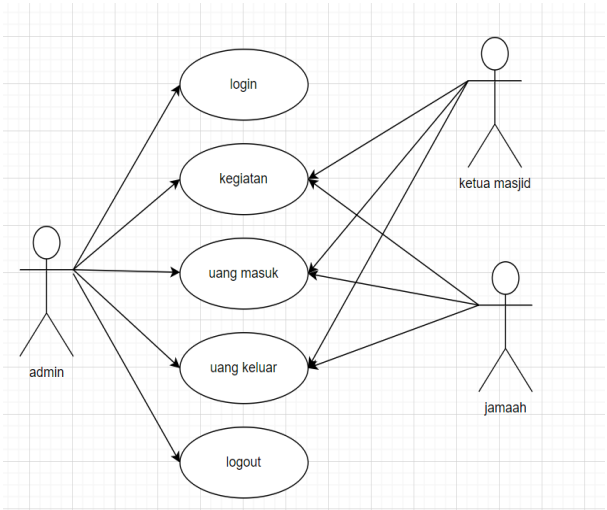


Figure 5 Use Cases

Use Case Diagram on the design of the created system. There is 1 actor, namely the admin, the admin here can log in to enter the admin page, record activities and cash in and out.

3.3.2 Activity Diagram

Activity Diagram: A flow diagram of the activities in the running system[25]**.**

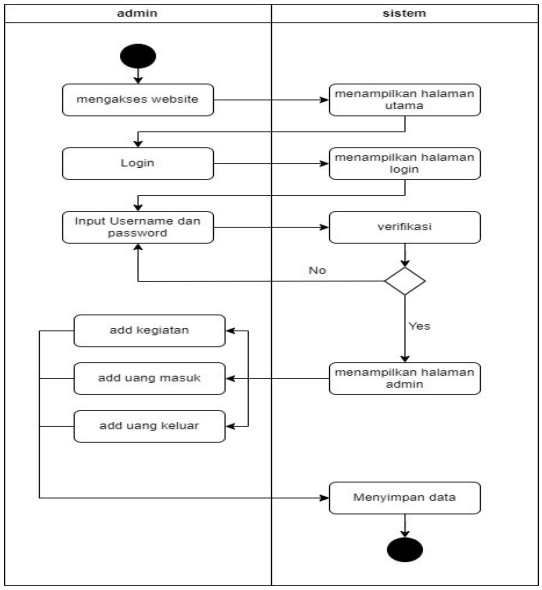


Figure 6 Activity Diagram

The Activity Diagram that is planned when the admin opens the website will display the main page, the main page that displays a brief profile of the new sako mosque, the activity page for what activities are carried out by the mosque administrator. And the cash and login page for financial records. To input all of that, the admin must first log in by entering a username and password. When you have entered the dashboard page, the admin can enter what activities you want to add and enter cash in and out.

3.3.3 Class Diagram

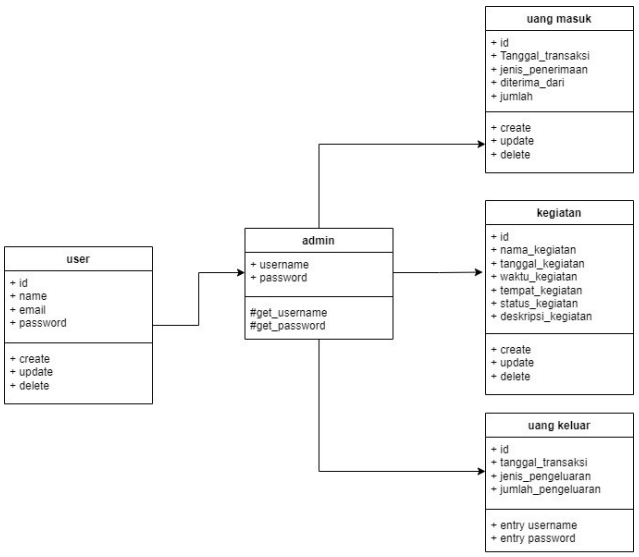


Figure 7 Class Diagram

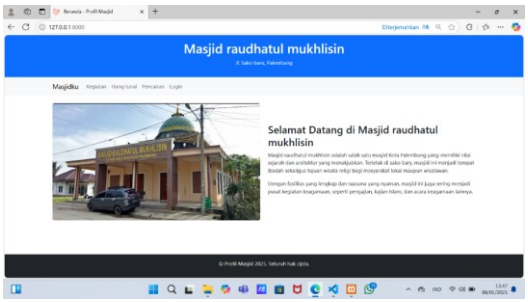
Class diagram of the mosque profile. In this class diagram there are user entities, admins, activities, money and money out. Each entity in this diagram class has a specific relationship that reflects the interaction between the various components in the system.

1. Main Interface Design

The main page of this application is designed to be easy to use by anyone, both mosque administrators and worshippers. There are five main menus that can be accessed directly from this page.

2. My Mosque Courtyard

This my mosque page serves to see complete information about mosques, for example, mosque profiles and others.



Picture 8 of the Courtyard of My Mosque

3. Activity Page

This activity page serves to record all activities that will be carried out by the Raudhatul Mukhlisin Mosque

Figure 9 Activity Page

4. Cashin Page

The cashin page serves to make it easier for mosque administrators to record all income, such as donations from worshippers, special donations, or other funds

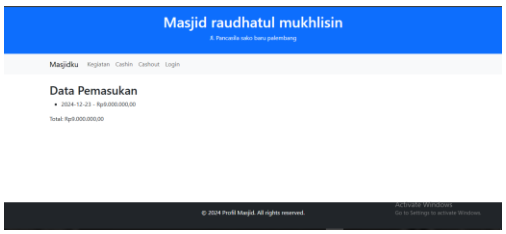


Figure 10 Cashin Pages

5. Cashout Page

The cashout page serves to record all mosque expenses, such as maintenance, operational, or social activity costs.

Figure 11 Cashout Page

6. Admin Login Page

The admin login page serves as the login form input to enter the main admin page.

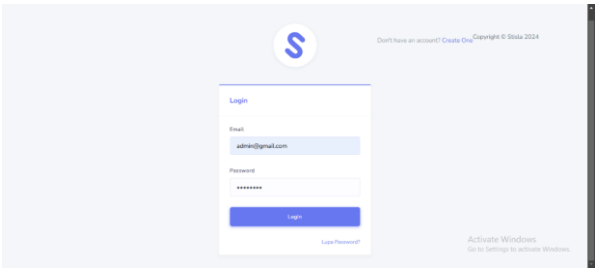


Figure 12 Admin Login Page

7. Admin Dashboard Page

The main admin page consists of 3 menus that have each function.

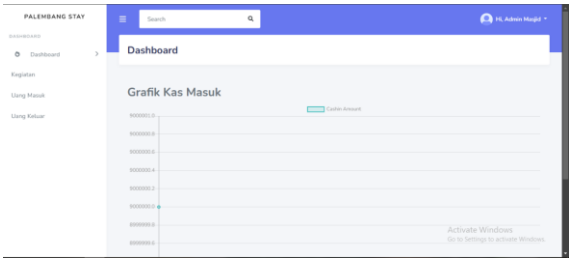


Figure 13 Admin Dashboard Page

8. Admin Activity Page

The activity page has a function to input activities to the activity page

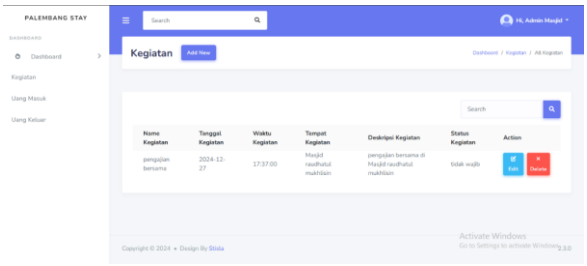


Figure 14 Admin Activity Page

9. Cashin Admin Page

The Cashin page has a function to input money into the Cashin page

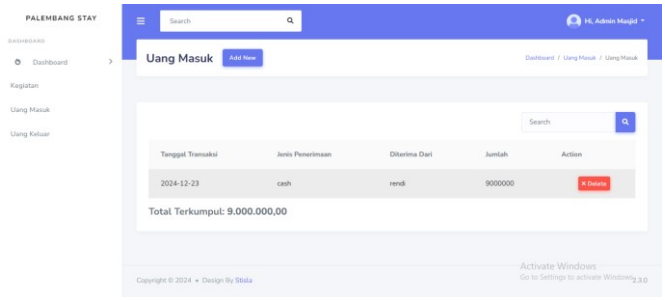


Figure 15 Cashin Admin Page

10. Admin Cashout Page

The Cashout page has a function to input money out to the Cashout page

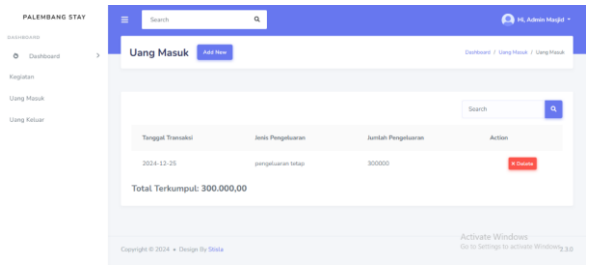


Figure 16 Admin Cashout Page

4. Black Box Test Results

Before this application can be used, testing must be carried out first. The testing of the mosque fund website was carried out using the black box testing approach. Black Box Testing is a software testing method that focuses on testing the functionality of an application based on specified specifications, without checking the source code. (Hanifah & dkk, 2016)

Objectives:

1. Ensure all software functions run according to specifications.
2. Identify bugs or errors in the software.
3. Guarantee the software meets the needs of the user.

Stages:

1. **Planning**: Identify the features and functionality of the application to be tested.
2. **Test Case Design**: Create a test scenario with expected inputs and outputs.
3. **Test Execution**: Perform tests by providing inputs as per the scenario.
4. **Evaluation of Results**: Comparing actual output with expected output

Table 2 Black box test results

Not	Features tested	Test scenarios	Test data	Expected results	Actual results	condition
1.	Admin login page	Enter a valid username and password	Username Admin Password 12345	Successfully log in and log in to the admin dashboard page	Successfully login and sign in	succeed
2.	Admin login page	Enter an invalid username or password	Username admin Password Wrong	Displays an error message. "Username with incorrect password"	Error message displayed	Results3
3.	Cashin page	Input data on mosque income	Name: budi,nominal :500000	The data is successfully saved and appears in the cashin table	Data is successfully saved and displayed	succeed
4.	Cashin page	Data input without filling in any of the columns	Name:- Nominal:-	Displays error message." required fields must be filled"	Error message displayed	Succeed
5.	Cashout page	Input data on the expenditure of mosque money	Description :renovation,nominal:300000	The data was successfully saved and appeared in the cashout table	Data is successfully saved and displayed	Succeed
6.	Admin activity page	Add data on mosque activities	Activity name:isra'miraj	Activity data was successfully saved and appeared on the activity page	Activity data is successfully saved	succeed
7.	Data	Search for	Keywords.reno	Display relevant	Search results	succeed

	search page	activity data or specific transaction data	vation	search results	displayed	
8.	Exit admin	Press the logout button on the dashboard	-	The system successfully logs out and returns to the login page	System successfully logout	succeed
9.	Nominal input validation	Input nominal data in invalid format	-	Displays error message." must be a number"	Error message displayed	Succeed
10.	Admin dashboar page	Access the dashboard after logging in	-	Displays a summary, activities, income, and expenditure of the mosque	Summary show	succeed

The method we use to test employee payroll applications is the black box testing method. Black box testing is a software test that without the need to show detailed results of the software. Black box testing simply looks at the output value based on the input value itself (Febrian, 2020)

This Black Box test shows that the information system application for the Raudhatul Mukhlisin Mosque has met the main functionality required according to the specifications. (Supriyono, , 2020)

4. Conclusion

The website-based Raudhatul Mukhlisin Mosque fund data collection information system project aims to improve efficiency and accuracy in the management of mosque financial data which was previously carried out conventionally. Using qualitative research methods and data collection techniques such as observation and literature studies, the authors managed to design a system that utilizes modern technologies, including the use of PHP, HTML, and MySQL. This system is expected to make it easier for mosque administrators to collect data and report finances, as well as provide transparency to worshippers.

Suggestion

From the above conclusion, the author provides suggestions, including:

1. **User Training:** It is recommended that mosque administrators and related staff be trained on the use of the new information system so that they can make optimal use of all existing features.
2. **System Maintenance:** It is important to perform regular maintenance and updates of the system to ensure that the system remains running properly and can adapt to changing needs.
3. **User Feedback:** Collecting feedback from system users on a regular basis can help in identifying issues and areas that need improvement, so that the system can continue to evolve according to user needs.
4. **Clear Documentation:** Providing clear and easy-to-understand documentation regarding the use of the system will greatly assist users in understanding how the system works and resolving any problems that may arise.

By implementing these suggestions, it is hoped that this information system can function properly and provide maximum benefits for the Raudhatul Mukhlisin Mosque and its worshippers.

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