

Hajj Service User Feedback Information System at The Office of The Ministry of Religion of The Deli Serdang District Based on Web

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ABSTRACT

Quality Hajj services are essential to the pilgrims' experience, and feedback management is one way to improve that quality. This research was conducted at the Hajj Section of the Office of the Ministry of Religious Affairs of Deli Serdang Regency, which faces obstacles in monitoring and evaluating services due to the absence of a structured system for managing pilgrims' feedback. The purpose of this research is to design a web-based information system that is effective in collecting, processing, and analyzing pilgrims' feedback to improve Hajj services. The technologies used include PHP as the application development platform and MySQL as the database. Data were obtained through surveys and interviews with service users, then tested on 50 users. The results showed that the system increased user satisfaction by 30% based on pre- and post-implementation indicators. The information system provides real-time analytical reports, makes it easier for staff to identify problems, and improves service responsiveness and transparency. Initial implementation at the Deli Serdang District Office of the Ministry of Religious Affairs demonstrated the system's effectiveness in supporting the evaluation and improvement of Hajj services. This study concludes that the implementation of a feedback information system can significantly improve the quality of Hajj services and has the potential to be implemented in other Ministry of Religious Affairs offices to support the improvement of service quality nationally.

Keywords: Hajj Service Feedback, Information System, Service Quality Improvement, Web Application

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1. INTRODUCTION

Indonesia has the largest number of Hajj and Umrah pilgrims in the world. Every year, hundreds of thousands of Indonesians travel to the Holy Land to perform Hajj and Umrah. With the increasing number of pilgrims, the challenges in providing effective and efficient guidance and services are getting bigger. In Deli Serdang Regency, especially in the Hajj Section of the Ministry of Religious Affairs Office, the Hajj service process still faces significant obstacles, such as manual data management, limited integration between work units, and lack of information transparency to pilgrims. These problems lead to slow service delivery, increased risk of administrative errors, and lower levels of pilgrim satisfaction (Rustiman et al., 2024).

Various studies have shown that the application of technology-based information systems can be a solution to improve the quality of public services. The importance of an integrated information system in facilitating the management of pilgrim data. The use of digital platforms can increase transparency and responsiveness in religious services. These two studies provide the basis that the development of an integrated Hajj service information system can help overcome obstacles at the research site.

This research aims to design a web-based Hajj service information system that supports registration, document management, tracking pilgrims' status, and providing real-time information. This system is expected to increase the efficiency of internal processes, facilitate coordination, and provide transparency in services to pilgrims. With a user needs-based system development approach, this research is expected to contribute significantly to improving the quality of Hajj services in Deli Serdang Regency.

2. LITERATURE REVIEW

Hajj and Umrah are similar but not the same in Islam. In other words, there are many similarities between the two, but also many differences. Hajj is the fifth pillar of Islam, and it is obligatory for those who are able to perform it. In language, the word Hajj means *al-qashdu*, which means to deliberate to do something great. Hajj is a very special act of worship in Islam. Hajj is the spiritual congress of Muslims around the world. It is the fifth pillar of Islam, but in terms of its attractiveness to the Muslim community, Hajj ranks first. There is no district or province in Indonesia where the waiting list for Hajj candidates is only one year; all of them are above five years. Therefore, for some people who have registered for Hajj but cannot wait for departure, they will perform Umrah first. This has caused Umrah to become one of the sunnah acts of worship that is no less in demand by Muslims than Hajj (Rahma et al., 2023). Web-based information systems are a combination of information technology based on a site on the internet network that is equipped with features and designed in such a way as needed for inputting certain data aims to simplify and speed up the processed data even though the user is a beginner (Rifki et al., 2022).

The purpose of organizing the Hajj as stated in Law No. 13 of 2008 concerning the implementation of the Hajj states that the implementation of the Hajj aims to provide the best possible guidance and protection through a good implementation system and management so that the implementation of the Hajj can run safely, orderly, smoothly, and comfortably in accordance with religious guidance and the Hajj pilgrims can carry out the Hajj independently so as to obtain Mamburur Hajj. In Hajj activities, there are two sides that must be considered in its implementation, namely, in the implementation while still in the country, many important aspects must be considered in its guidance, such as services (payment of ONH6 deposits to the bank, processing of Hajj documents, medical examinations for prospective pilgrims), manasik guidance (guidance material, methods, and guidance time), provision of equipment, and religious consultation. While Hajj services in the holy land are accommodation, transportation, consumption, and health (protection) services. In order for the purpose of implementing the Hajj to run successfully, those related to the service system are needed so that the Hajj pilgrims can feel satisfied in carrying out worship in the holy land. Good service can provide satisfaction to pilgrims by having professional employees, good facilities and infrastructure available, available all the desired products, responsible for each pilgrim to completion, able to serve

quickly and precisely, able to communicate clearly, have other knowledge and be able to give trust to the congregation (Ramadhani et al., 2023).

Customer response theory provides guidance in understanding the relationship between expectations and customer service experience. Customers are satisfied when the service received meets or exceeds their expectations. In the context of Hajj services, the application of this theory helps identify pilgrims' needs and measure the effectiveness of information systems used in supporting the service process. Customer needs-based services not only increase satisfaction but also strengthen customer loyalty to service institutions (Wirawan Priyanto et al., 2022). Feedback management in public services states that information technology plays an important role in improving service responsiveness. According to him, collecting and processing feedback data through information systems enables service providers to respond to problems quickly and accurately. This is relevant in Hajj services, where efficient feedback management can help the Office of the Ministry of Religious Affairs improve service quality (Mardiah Hasibuan et al., 2023). Wireless communication systems provide an option for users to be able to carry out the communication process flexibly. The random movement of communication network users provides its own advantages for users without having to be constrained by the cable connection of the communication device used (Rifki et al., 2024).

Unified Modeling Language is a tool used to visualize and document system requirements. Use case and activity diagrams help to understand user interactions with the system, as well as the workflows that occur in the service process. In the development of the Hajj service information system, UML is used to ensure that user needs are well accommodated in the system design. This approach can minimize the risk of errors at the implementation stage (Senoaji et al., 2020). UML (Unified Modeling Language) modeling, particularly use case diagrams, allows system designers to clearly understand how users interact with the system. These diagrams also help identify the most important features, such as congregation data management, status tracking, and feedback collection. Thus, UML becomes an important tool in user requirements-based system design (Siregar & Kholil, 2024).

The important role in providing feedback refers to the point of user feedback (congregation satisfaction). User feedback is a feeling of pleasure or disappointment resulting from comparing perceived product or service performance with expectations. If the performance is far from expectations, then the congregation is not satisfied. If it is as expected, the congregation is satisfied. If it exceeds expectations, the congregation is very satisfied or happy. To determine the level of service satisfaction, there are five main factors that must be considered by the institution, namely product quality, service quality, emotional, price, and cost. Consumer satisfaction is predicted to significantly or meaningfully lead to repurchase behavior in the future (Prihastomo Anwar et al., 2024). The congregation's trust in an agency or service provider is based on the quality and good reputation it has, known as congregational trust. Congregation trust can be defined as a good emotion or feeling of security that pilgrims have as a result of their interactions with companies or a deep understanding of them. It is based on the pilgrims' perception that the company or brand is reliable and responsible for their interests and safety. Therefore, this trust is an important cornerstone in establishing sustainable relationships (Lesmana et al., 2024).

The relationship between Islamic service quality and the image of the travel agency (travel) on the pilgrims' decision to use the Hajj and Umrah travel agency (travel) both partially and simultaneously. So it is concluded that partially the Islamic service quality variable does not have a significant relationship to the pilgrims' decision to use the Hajj and Umrah travel agency (travel), while the travel agency image variable partially has a significant relationship to the pilgrims' decision to use

the Hajj and Umrah travel agency (travel). In addition, simultaneously or together, the Islamic service quality variables and the image of the travel agency (travel) have a significant relationship to the pilgrims' decision to use the Hajj and Umrah travel agencies (travel) (Suhada et al., 2020). The Hajj travel service business has good prospects at this time; the more mushrooming the Hajj travel business in Indonesia, companies must be able to determine the right marketing strategy in order to compete. With intense competition, there are more choices for consumers to choose travel that suits their needs. Ministry of Religion data related to the number of Umrah pilgrims each year shows that Indonesian pilgrims are never less than 500 thousand per year. In 2016, there were a total of 677,509 pilgrims. In 2017, the number increased to 858,933 pilgrims. In 2018, the number of Umrah pilgrims continued to increase to 1,005,802 people. For 2019, there is no definite calculation regarding the number of Umrah pilgrims from Indonesia, but as of April 2019, the number of Indonesian Umrah pilgrims has reached 849,000 pilgrims. Based on this, it can be ascertained that the number of Umrah pilgrims in 2019 continues to increase compared to 2018 (Effendi, 2020).

From this, it can be seen that the service must implement a strategy. Strategy is taken from Greek (*strategos*), which means strategy is a long-term planning that involves a series of actions directed towards a specific goal, usually in the form of achieving victory. Strategy can also be interpreted as a planning instrument used by the highest leader, which is focused on realizing long goals. implies preparation and design is a form of method or effort to achieve these goals. Strategy was first proposed by Chandler in 1962. In order to meet customer needs and expectations, the company must provide the best service. Service is a crucial factor in creating attractiveness in services so that customers feel comfortable asking for information about a product or service offered. Providing good service must implement a service strategy because service quality is a determining factor in the success of the strategic plan with the services that will be used (Ubaidillah, 2023).

In the context of Hajj services, to deal with intense competition and the diversity of pilgrims' needs and opinions, Hajj organizers need to proactively collect meaningful feedback from pilgrims on the services provided. Upon completion of the Hajj, organizers take a series of steps to motivate pilgrims to provide feedback on their experience. This feedback is then analyzed through a rigorous process and used as a basis for improving the quality of future services. Integrating the specific needs of pilgrims from different regions and taking into account existing limitations are key innovations in providing more personalized and efficient services through adjustments to relevant procedures and service features (Mourtzis et al., 2020). The importance of websites in this feedback was also felt in the travel sector, especially during the pandemic that restricted access to travel. In addition to vacations, Umrah and Hajj pilgrimages were also affected, with many canceling their travel intentions due to the widespread COVID-19 outbreak. With the relaxation of overseas travel regulations and the improvement of conditions in early 2022, people's interest in performing Umrah and Hajj has returned. In looking for a travel agent or travel agency, this feedback website is the main channel to get information and services (Febrieni et al., 2023). Black box testing is a software testing method that focuses on outputs based on specific inputs without looking at internal processes. This method is very suitable for ensuring that the main functions in the system work according to specifications. In this study, black box testing is used to evaluate the Hajj service information system, especially in ensuring that the validation of pilgrim data and reporting functions are running properly (Chatrina Siregar et al., 2020). This technique also helps detect errors at the user interface level, which is often a major obstacle in web-based systems. The application of black box testing to public service systems has

improved accuracy and reduced errors in the administrative process. Thus, this method is an important part of developing a reliable system that meets user needs (Nur Farida & Administrasi Negara, 2024).

3. METHODS

This research method uses a web-based information systems engineering approach to develop a Hajj service feedback system at the Office of the Ministry of Religious Affairs of Deli Serdang Regency. The research steps included needs analysis through surveys and interviews with service users to identify key problems, such as manual data management and lack of transparency. System design was conducted using the Unified Modeling Language (UML) to visualize interactions and process flows, and database design with MySQL. Application development was carried out using PHP and the CodeIgniter framework, including key features such as online feedback forms, data management modules, and automatic notification systems. The system was tested using the black box testing method to ensure each function runs according to specifications, and implemented in a working environment to be evaluated based on service satisfaction and efficiency. The evaluation results were used to refine the system, with the aim of significantly improving the quality of Hajj services.

3.1 Research Approach

The approach used is a waterfall model-based software engineering approach, which consists of the stages of analysis, design, development, testing, and implementation. This approach was chosen because it is suitable for the development of information systems that require clear documentation at each stage (Badrul, 2021). The waterfall method is one type of application development model and belongs to the *classic life cycle*. The Waterfall method is a method that provides a sequential or ordered software lifecycle approach (Arvita, 2021). The process follows the flow of the waterfall method from analysis, design, code, testing, to maintenance. As found in the following figure:

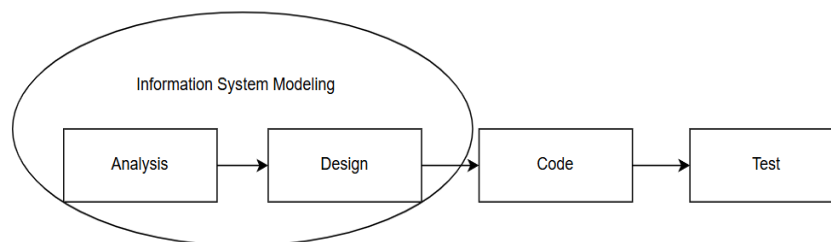


Figure 1. Stages of the Waterfall Method

1. Software Requirements Analysis: This stage is the collection of software requirements, where the developer must understand what is needed by the user. The purpose of this stage is to summarize the user's wishes.
2. Design: Once the analysis is complete, the developer's focus turns to the design stage, which includes data structures, software architecture, interfaces, and coding procedures.
3. Implementation (Code Generation): This stage involves mechanically generating code. The end result of this implementation is an information system that matches the previous wishes.
4. Testing: The last stage is testing, which is done to assess the conformity of the final result with the previous stages.

3.2 *Research Subject*

Research subjects include:

1. System users: Hajj service officers at the Office of the Ministry of Religious Affairs of Deli Serdang Regency.
2. Respondents: Hajj pilgrims who have used the service. These subjects were chosen because they have direct experience related to Hajj services which form the basis of the system requirements.

3.3 *Research Procedure*

The research procedure was conducted through the following steps:

1. Preliminary Study: Conduct surveys and interviews with service users to identify needs.
2. System Analysis: Examine the current Hajj service process, including feedback management.
3. System Design: Designing the interface, database, and system flow using tools such as the Unified Modeling Language (UML).
4. System Development: Building the system using PHP programming language and MySQL database.
5. System Testing: Testing the system to ensure the functions run as needed.
6. Evaluation and Implementation: Implementing the system in the work environment and measuring the effectiveness of the system through surveys and re-interviews.

3.4 *Research Materials and Instruments*

1. Materials: Documentation of Hajj service procedures, technical specifications of the system, and input data from respondents.
2. Instruments: Survey questionnaire, interview guide, design software (such as MySQL Workbench), and code editor for system development (such as Visual Studio Code).

3.5 *Data Collection*

Data collection was done through:

1. Survey: Using a questionnaire to measure pilgrims' satisfaction with the service.
2. Interview: Exploring the needs and constraints faced by Hajj service officers.
3. Document Study: Reviewing archives and reports related to previous Hajj services.

3.6 *Data Analysis Techniques*

The analysis techniques used include three main approaches. Descriptive analysis is applied to process survey results from pilgrims, so as to evaluate the level of satisfaction and needs for Hajj services. Business process analysis was conducted to map the existing service workflow and design a new, more efficient system. Furthermore, black box testing is applied to test the system, ensuring all functions run according to specifications without checking the internal code. This approach is used in an integrated manner to ensure the developed system is valid, functional, and relevant to user needs.

3.7 *Research Flowchart*

The research flow chart illustrates the research process from start to finish, with each stage interconnected to ensure structured and relevant results. The following is a detailed explanation of each stage:

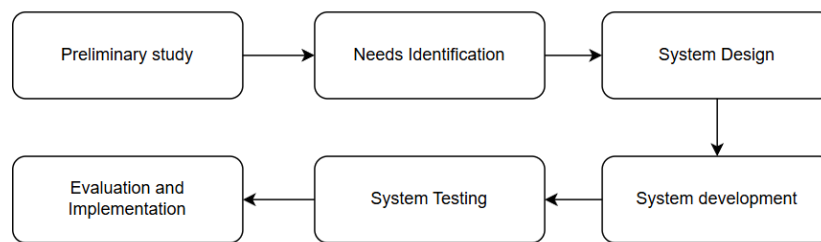


Figure 2. Research Flow Chart

1. Preliminary Study

This initial stage aims to understand the main problems faced by users of Hajj services. Data was collected through a survey of pilgrims and interviews with service officers at the Office of the Ministry of Religious Affairs of Deli Serdang Regency. The information obtained becomes the basis for formulating system requirements.

2. Identification of Needs

At this stage, the results of the preliminary study are analyzed to identify system requirements. Input from pilgrims and officers is mapped into the required system features, such as feedback data management, user interface, and service quality reports.

3. System Design

This stage involves creating the technical design of the system using tools such as UML. Use case diagrams are created to illustrate user interaction with the system, while activity diagrams show the workflow of the system. The database structure and user interface are also designed at this stage to ensure compliance with operational requirements.

4. System Development

The system began to be built based on the design that had been designed. PHP technology was used for backend development, and MySQL was chosen for database management. Features such as collection, analysis, and reporting of congregational feedback data were implemented in the web-based system.

5. System Testing

The system is tested using the black box testing method, which focuses on testing functions without looking at the internal code. Testing is done with real case scenarios to ensure each system feature runs according to user needs and predetermined specifications.

6. Evaluation and Implementation

The system was implemented in a real work environment at the Office of the Ministry of Religious Affairs of Deli Serdang Regency to test its effectiveness in improving the quality of Hajj services. The evaluation process was conducted through two main methods: black box testing and user survey. Black box testing was used to test the main functions of the system, such as feedback form filling, data management by officers, and report output. This test ensures that each feature runs according to the designed specifications without examining the internal details of the program code.

In addition, a user satisfaction survey was conducted involving prospective pilgrims and officers as respondents. This survey aims to measure aspects of ease of use (usability), speed of access to information, and the contribution of the system in increasing service transparency. The test and survey

results were analyzed to identify shortcomings and potential system improvements. This evaluation data became the basis for feature enhancements prior to full implementation of the system at the Deli Serdang District Office of the Ministry of Religious Affairs. These steps ensure that the developed system not only meets technical needs but also provides real benefits to service users.

4. RESULTS AND DISCUSSION

4.1 Activity Diagram

Activity Diagram is one of the diagrams in the Unified Modeling Language (UML) which is used to model the workflow or process in a system. For the Hajj Service User Feedback Information System at the Deli Serdang Regency Ministry of Religion Office, the activity diagram will describe the flow of activities from collecting to managing feedback from users. As found in the flowchart image below:

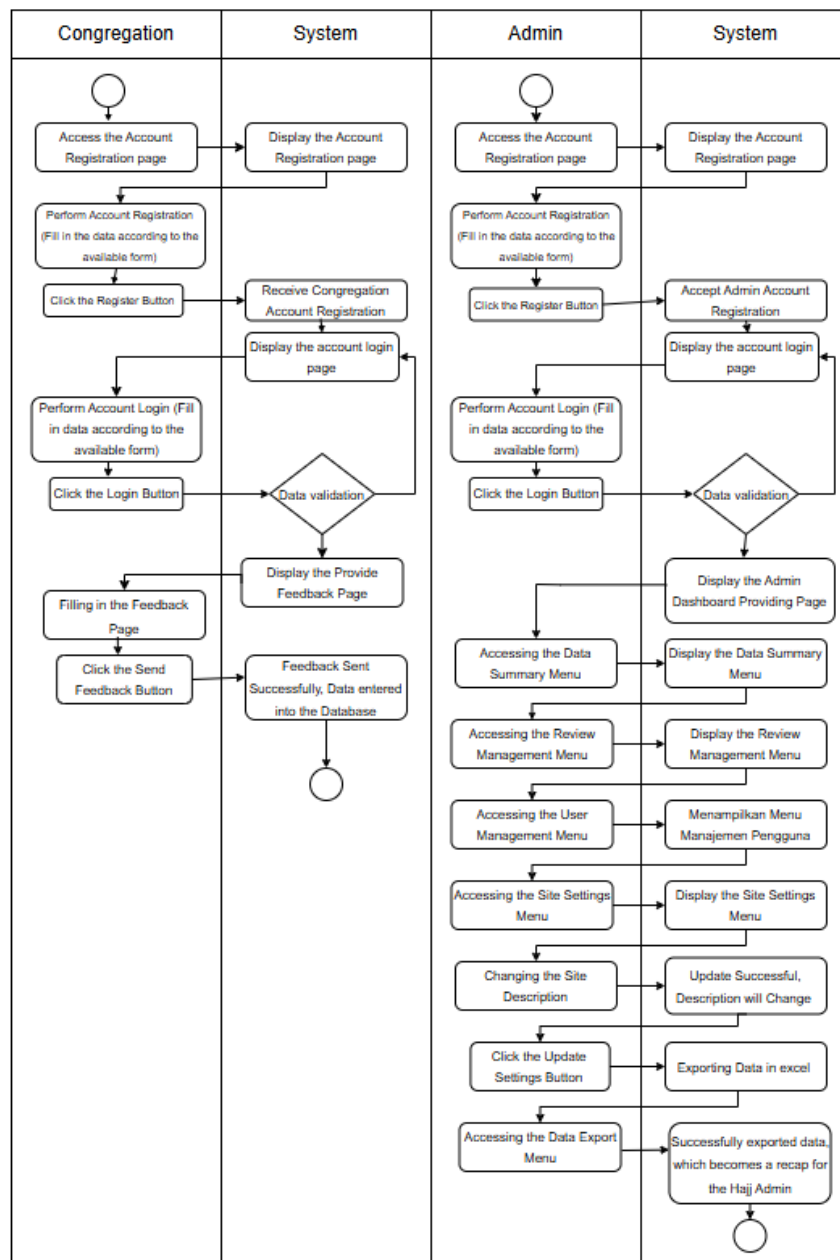


Figure 3. Activity Diagram of Congregation and Admin

This diagram shows the flow of the Hajj service feedback system by pilgrims and admins. Pilgrims register, login, and send feedback which is validated and stored by the system. Admins login to access the dashboard and manage feedback data, users, and settings. Admins can also update site descriptions and export data to Excel format. This process supports efficient management and evaluation of Hajj services.

4.2 Usecase Diagram

Activity diagram for Hajj Service User Feedback Information System at the Office of the Ministry of Religious Affairs of Deli Serdang Regency illustrates the workflow that manages the process of collecting, validating, and processing feedback from pilgrims. This diagram involves two main actors, namely Pilgrims and Admins, with activities that involve interaction with the system.

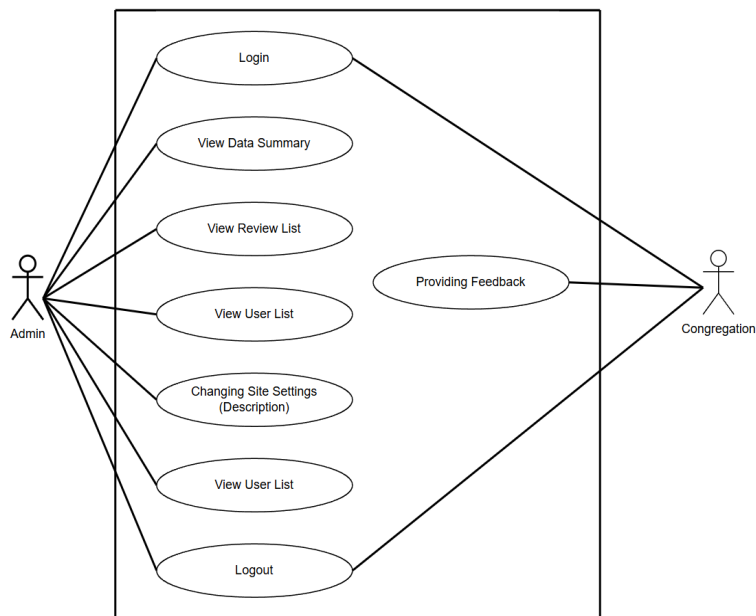


Figure 4. UseCase Diagram of Congregation and Admin

This use case diagram illustrates the interaction between two main actors, namely Admin and Congregation, in the Hajj service feedback information system. Pilgrims have one main use case, namely *Providing Feedback*, to *provide feedback* related to the service. The admin has several use cases, including *Login*, *Logout*, *View Data Summary*, *View Review List*, *View User List*, and *Change Site Settings (Description)*. These use cases reflect the admin's tasks in managing user data, reviews, and site settings, which support effective evaluation and management of feedback. This diagram shows the role of each actor in the system and how they interact with key features.

4.3 Implementation Results

1. Main Page

The main page of the Hajj Service Feedback Information System serves as the main entrance for users, both pilgrims and admins, to access the system. The interface of this page is designed simply with an Islamic theme, displaying a login form consisting of username and password fields. The login process is used by users who already have a registered account in the system. Registered users can enter a valid username and password to access features

appropriate to their role, such as filling in feedback or managing data for admins. For users who do not have an account, there is a “Register here” option that will direct them to the registration page. On the registration page, users are asked to fill in personal data such as name, email address, identity number, and create a username and password. Once the registration process is complete and the account is successfully created, the user can return to the login page to access the system using the credentials that have been registered. This new user data is automatically stored in the system database for authentication and access management purposes. With this mechanism, the system ensures that only verified users can access the platform and provide feedback.

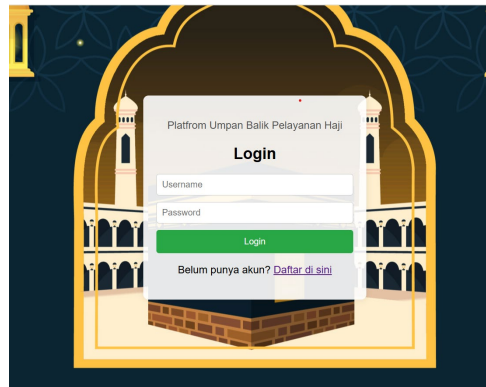


Figure 5. Main Page Display

The Register page on the Hajj Service Feedback Information System functions to allow new users, both Pilgrims and Admins, to create an account in order to access the system. On this page, users are asked to fill in information such as username, password, and other data according to system needs.

2. Register Page Display

The Register page on the Hajj Service Feedback Information System functions to allow new users, both pilgrims and admins, to create an account in order to access the system. On this page, users are asked to fill in information such as username, password, and other data according to system needs.

Register

Username:

Password:

Role:

Sudah punya akun? [Login di sini](#)

Figure 6. Register Page Display

3. Login Page Display

This login page is designed to make it easier for users to enter the system by filling in the username and password fields. Once the data is entered, users can click the "Login" button to verify their credentials. If the user does not have an account, there is a "Register here" link to create a new account.

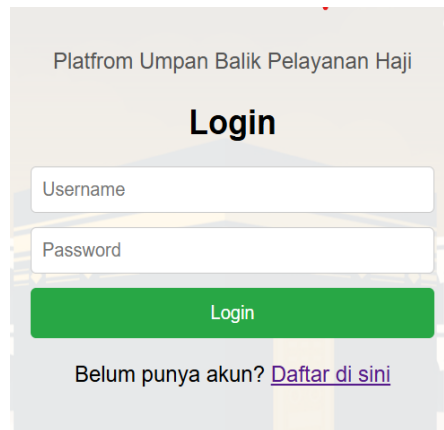


Figure 7. Login Page Display

4. Display Page Giving feedback

The page display for providing feedback by pilgrims is made to facilitate the filling process. The data in this section is used to improve Hajj services.

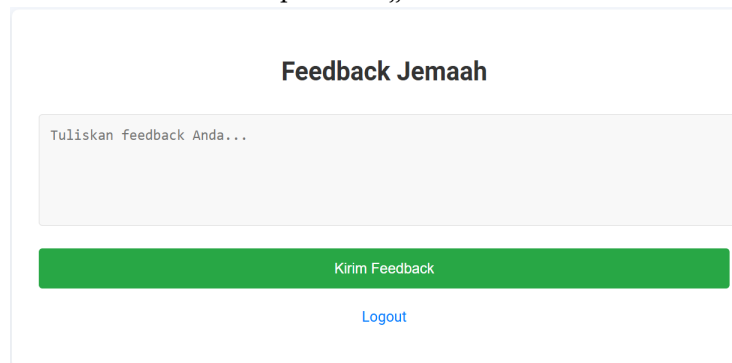


Figure 8. Display of Feedback Page

5. Dashboard Page Display

The admin dashboard has various key features to support system management. The Data Summary feature provides a quick overview of important statistics, such as the number of congregants or recent reviews. Review Management allows admins to read, edit, or delete feedback from congregants, while User Management is used to manage accounts, including adding or removing users. In addition, there are Site Settings to change the configuration of the platform's appearance or functions, Data Export to download reports in various formats, and Logout to safely exit the system.

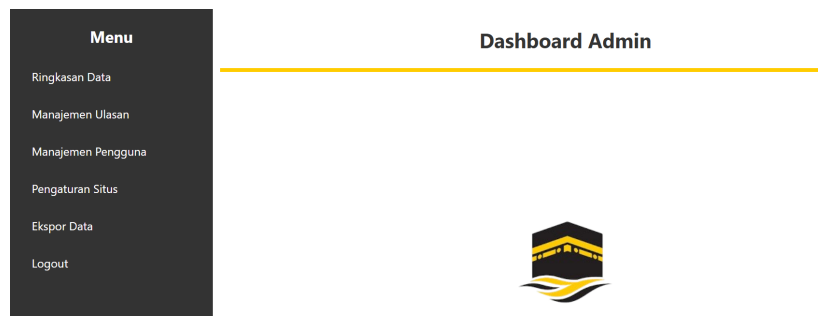


Figure 9. Admin Dashboard Page Display

6. Data Summary Page Display

The page presents a summary of the feedback data in the form of a simple table. The table consists of two columns, namely “Data Type” and “Total”. The two types of data displayed are total feedback.

Ringkasan Data Feedback	
Jenis Data	Jumlah
Total Feedback	8
Pengguna Aktif Pemberi Ulasan	3

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Figure 10. Data Summary Page Display

7. Review Management Page View

This page view shows the *Review Management* table that lists reviews from users. The table has three main columns: ID, Username, and Reviews

Manajemen Ulasan		
ID	Username	Ulasan
1	noni	jjk
2	noni	jjvh
3	Rifdah	Produk sangat bagus!
4	noni	Pelayanan lambat.
5	noni	pelayanannya sudah bagus
6	noni	ramah dan sangat informatif
7	rif	saya menunggu terlalu lama
8	rif	layanan sangat cepat dan informatif

Figure 11. Review Management Page View

8. User Management Page Display

This page view displays a User List and Review Statistics table consisting of four columns: ID, Username, Role, and Number of Reviews. The data in the table includes user information, such as their role (Congregation or Admin) and the number of reviews they have given.

Daftar Pengguna dan Statistik Ulasan			
ID	Username	Role	Jumlah Ulasan
1	Rifdah	Jemaah	1
2	noni	Jemaah	5
8	abdul	Admin	0
22	rifdah	Admin	0
24	rifdah	Jemaah	0
27	qw	Jemaah	0
29	aulia	Admin	0
30	rifdah	Jemaah	0
31	rif	Jemaah	2

Figure 12. User Management Page Display

9. Site Settings Page Display

The Site Settings page is designed to allow admins to manage various important information displayed on the login page, such as the site description. Within this page, there is an input form or text editor that allows admins to update or replace the description as needed.

Pengaturan Situs

Deskripsi Situs:

Platfrom Umpan Balik Pelayanan Haji

[Perbarui Pengaturan](#)

[Logout](#)

Figure 13. Site Settings Page Display

4.4 Testing Results

System testing is carried out using the black box testing method, which is a software testing technique that focuses on validating functionality without looking at the internal structure or program code. The main purpose of this test is to ensure that each function in the system runs according to the specifications that have been designed, so that it can provide an optimal experience for users.

The following is a User Feedback Information System Testing Table using the Black Box Testing Method which includes testing the Login Form, Registration Form and Feedback Giving Form, and site settings:

1. Black Box Testing on Account Registration Form

The login form is designed to ensure that only users with valid accounts can access the system. The testing process on this form aims to validate the authentication function, including checking the suitability of the username and password entered with the data stored in the database. Testing involves scenarios such as correct, incorrect, or empty username and password input, to ensure the system provides an appropriate response, such as an error message or access to the main page for users who successfully login.

Table 1. Black Box Testing on Account Registration Form

No.	Test Scenario	Expected Results	Testing Results	Conclusion
1.	Leave all available fields blank	The system refuses to register an account and an alert appears to fill in the fields.	The system rejects the account registration. And an error message appears instructing the user to fill in all fields.	Valid
2.	Leave one of the username, role or password fields blank.	The system refuses to register an Account and an alert to fill in the fields appears.	The system rejects the account registration when one of the fields is left blank. An error message appears instructing the user to fill in the empty fields.	Valid
3.	Enter the name, role (admin, congregation) password as requested.	The system will accept the Account Registration request, and will enter the Login Page.	The system successfully receives the account registration data. Once the data is verified, the user is successfully redirected to the login page.	Valid

2. Black Box Testing on Account Login Form

The registration test form is used to allow new users to create an account by entering personal data, such as name, email, identity number, and creating a username and password. Testing on this component aims to ensure that the system can validate data input completely and handle error scenarios, such as usernames or emails that are already registered, incorrect data formats, and empty data. In addition, testing ensures that valid user data is correctly stored in the database.

Table 2. Black Box Testing on Account Login Form

No.	Test Scenario	Expected Results	Testing Results	Conclusion
1.	Leave all available fields blank.	The system rejects the Account Login and an alert to fill in the fields appears.	When all the login form fields are empty, the system does not process the login request and displays an error message instructing the user to fill in all the required fields.	Valid
2.	Leave one of the username or password fields blank.	The system rejects Account Login and an Alert appears to fill in the Field.	When one of the fields (username or password) is left blank, the system does not process the login request and displays an error message instructing the user to fill in the blank field.	Valid
3.	Entering the wrong username or password.	The system refuses to Login Account and reads username or password not found.	When a user enters an incorrect username or password, the system does not allow access and displays an error message	Valid

No.	Test Scenario	Expected Results	Testing Results	Conclusion
4.	Enter the username and password according to the Registration for Admin.	The system will accept the Account Login access and will be directed to the Dashboard page.	informing that the username and password combination entered was not found in the system. When the user enters a valid username and password for the admin account, the system successfully verifies the user's identity and directs the user to the dashboard page.	Valid
5.	Entering username and password according to the Registration for Congregation.	The system will accept Account Login access and will be directed to the Feedback Filling page	When the user enters a valid username and password for the congregation account, the system successfully verifies the user's identity and directs the user to the feedback filling page.	Valid

3. Black Box Testing on Congregation Feedback Form

The feedback form is designed to allow users to submit feedback or criticism related to Hajj services. Testing on this component aims to ensure that all inputs, such as feedback category, message content, can be filled correctly and validated by the system. The system is tested to ensure that the entered data is stored in the database correctly and generates an appropriate response, such as a successful confirmation message.

Table 3. Black Box Testing on Congregation Feedback Form

No.	Test Scenario	Expected Results	Testing Results	Conclusion
1.	Leave all available fields blank.	The system refuses to send Feedback and an alert to fill in the field appears.	When a user tries to submit feedback without filling in any of the fields on the form, the system will reject the submission and display an error message informing that all fields must be filled in.	Valid
2.	Fill in the feedback that you want to convey.	The system will receive the Feedback Result and will exit the Feedback reading successfully sent.	When the user fills in all fields on the feedback form with complete information, the system will process the feedback and display a confirmation message that the feedback has been successfully submitted.	Valid

4. Black Box Testing on Site Settings Form

Site settings are features that allow admins to manage various aspects of the system, such as changing site information, which can change the system description. Testing on this component aims to ensure that each administrative function can run properly, including updating information properly.

Table 4. Black Box Testing on Site Settings Form

No.	Test Scenario	Expected Results	Testing Results	Conclusion
1.	Leave all available fields blank.	The system refuses to Update Site and an alert to fill in the fields appears.	When a user tries to update the site information without filling in any of the fields on the form, the system will reject the changes and display an error message informing that all fields must be filled in.	Valid
2.	Fill in the feedback that you want to convey	The system will replace the Site Settings and will change the description of the Site	When the user fills in all the fields on the form with new information, the system will process the changes and update the site information according to the data that has been entered. The user will see the changes on the site display after the update process is complete.	Valid

5. CONCLUSION

This research aims to design and implement a web-based information system to manage user feedback related to Hajj services at the Office of the Ministry of Religious Affairs of Deli Serdang Regency. The main problem found at the research location is the management of pilgrims' feedback data which is still manual, making it less effective, slow, and prone to administrative errors. This condition has the potential to reduce the quality of service and the level of satisfaction of pilgrims. In responding to these problems, this study designed a system based on PHP and MySQL technology with a user needs-based system development approach.

The design process includes requirements analysis, system design using UML diagrams (use case, activity), system development, and testing. The system includes features such as user login, account registration, filling out feedback forms, and managing feedback data by the admin. The results of testing using the black box testing method show that all system functions run according to the specifications that have been designed. For example, the login feature is able to verify user data correctly, the registration form can prevent data duplication, and the feedback form successfully saves data into the database.

The results show that the developed system is able to increase the effectiveness in collecting and analyzing feedback from pilgrims. This has a positive impact on improving service responsiveness and transparency in feedback data management. In addition, this system makes it easier for the administration to evaluate and improve service quality on an ongoing basis. However, this study realizes that the developed system still has room for further development, such as integration with mobile applications, enhancement of data-driven analytics features, and application of artificial intelligence for decision-making recommendations.

This research suggests that similar systems be adapted for service needs in other regions, so as to have a broader positive impact on Hajj services in Indonesia. In addition, long-term evaluation of pilgrims' satisfaction and collaboration with relevant agencies can strengthen an integrated digital-based service ecosystem oriented towards pilgrims' satisfaction.

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