

Web-Based Umrah Administration Information System at PT. Nur Haramain Mulia Tour

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Article Info

Article history:

Received March 24, 2026

Revised April 24, 2026

Accepted April 25, 2026

Keywords:

Umrah administration
Web-based information system
Laravel
MySQL
R&D

ABSTRACT

PT. Nur Haramain Mulia Tour still handled several umrah administrative processes manually, including pilgrim registration, data retrieval, and report preparation. This condition reduced efficiency and increased the risk of data loss and service delays. This study aimed to develop a web-based umrah administration information system to improve administrative services, facilitate online registration, and support more structured data management. The system was developed using the Rapid Application Development approach, which consists of requirement planning, system design, and implementation stages. Data were collected through observation, interviews, and literature study, while the application was implemented using the Laravel framework and MySQL database. The resulting system supports major administrative functions, including registration, pilgrim data management, information access, and report generation within a centralized database environment. System evaluation was conducted using black-box testing for internal validation and questionnaire-based external testing involving administrative staff and prospective pilgrims. The external testing results showed a satisfaction score of 94%, indicating that the system was highly acceptable to users. The study concludes that the proposed web-based system improves the effectiveness and efficiency of umrah administrative services and assists both staff and pilgrims in managing registration and information processes more accurately and systematically.

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1. INTRODUCTION

The rapid development of information technology has significantly increased the need for fast, accurate, and accessible information in various sectors. Information systems play an important role in supporting organizational activities because they help manage data, improve service quality, and support effective decision-making [1], [2]. In the travel service sector, especially in umrah administration, the use of a web-based information system is increasingly important because administrative activities involve registration, pilgrim data management, information delivery, document handling, payment records, and report generation. At PT. Nur Haramain Mulia Tour, these activities previously faced several challenges, such as manual registration, unstructured data storage, slow retrieval of pilgrim information, and time-consuming report preparation. Previous studies have shown that web-based systems can improve data processing efficiency and service quality in administrative environments [3], [4]. Therefore, the implementation of an integrated web-based information system is needed to support more effective and organized umrah administration services.

PT. Nur Haramain Mulia Tour is an umrah and special hajj travel agency operating under KBIH Nurul Haramain. The company has official operational legality and has also been audited and accredited by the Ministry of Religious Affairs of the Republic of Indonesia. However, the administrative process in this institution was still not fully well organized. Based on field findings, prospective pilgrims still registered

manually by filling out forms, pilgrim data retrieval was conducted manually, and report preparation required considerable time because data had to be collected and checked one by one. These conditions had a practical impact on daily administrative activities, such as delays in data processing, difficulties in tracking pilgrim registration status, duplication or inconsistency of data, and an increased risk of data loss due to paper-based or scattered records. In addition, administrative staff needed more time to verify documents and prepare reports, which could affect service speed and reduce the quality of information delivered to prospective pilgrims. Therefore, the company required an integrated information system capable of organizing administrative services in a more structured, accurate, and efficient manner.

Several related studies have addressed similar problems. Budi developed a web-based umrah registration information system to overcome manual registration and paper-based document recording [3]. Usra proposed a web-based system for processing hajj plus and umrah pilgrim data to improve effectiveness in data management and payment administration [4]. Rinandi et al. also designed an online umrah registration system to improve administrative and information services for prospective pilgrims [5]. Although those studies demonstrated the benefits of web-based administration, this research differs in its implementation context, system design, and feature integration. The proposed system was developed specifically for PT. Nur Haramain Mulia Tour by adjusting its features to the institution's operational workflow, including login access, pilgrim registration, pilgrim data management, package and schedule management, document handling, and report generation in one integrated system. In terms of technology, Laravel was selected because it supports a structured Model-View-Controller architecture, improves code maintainability, and provides built-in features that are suitable for developing scalable and secure web applications. MySQL was used as the database because it is reliable, widely supported, and suitable for managing structured administrative data. Compared to existing systems, the proposed system is more specifically tailored to the administrative needs of PT. Nur Haramain Mulia Tour and provides a more integrated approach to managing umrah service data.

This study aims to develop a web-based umrah administration information system that can assist both administrative staff and prospective pilgrims in accessing information and managing registration data more effectively. The system was developed using the Rapid Application Development approach, which emphasizes iterative development and active user involvement to accelerate system delivery [6]. The novelty of this study lies in the integration of administrative service features tailored to the operational needs of PT. Nur Haramain Mulia Tour and in the use of Laravel and MySQL to support a more structured, maintainable, and reliable web application [5], [7]. Thus, the proposed system is expected to improve administrative effectiveness, minimize data management problems, reduce the risk of data loss, accelerate report preparation, and support better service quality for umrah pilgrims.

2. METHOD

This study employed a qualitative-based system development approach to analyze the existing administrative workflow and to design a web-based umrah administration information system for PT. Nur Haramain Mulia Tour. The qualitative approach was used to understand the actual service process, identify user needs, and formulate system requirements based on real operational problems in the field. The research focused on administrative activities related to pilgrim registration, data processing, information delivery, and reporting. The overall research framework is presented in Figure 1.

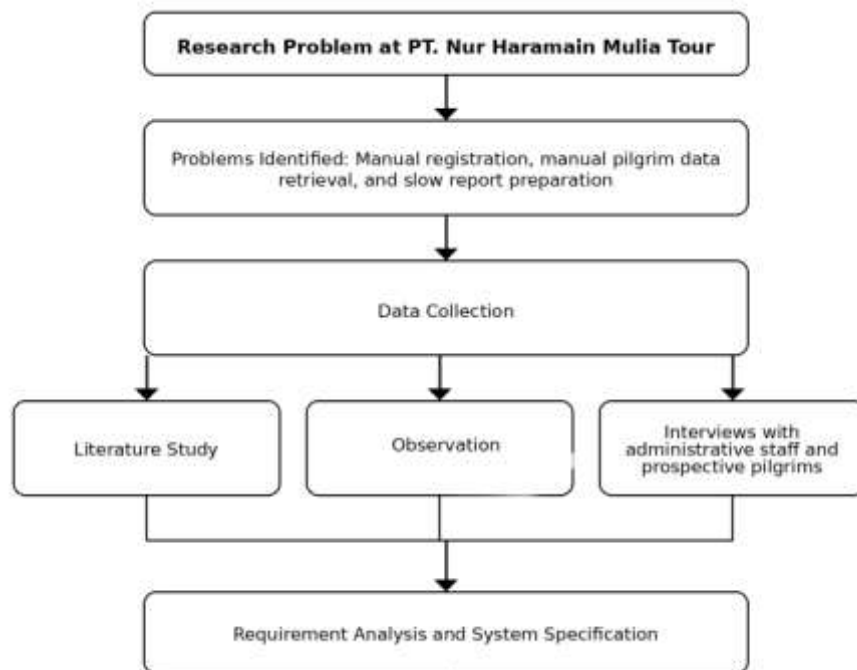


Figure 1. Research Framework

Data were collected using three techniques: literature study, observation, and interviews. Literature study was carried out by reviewing books, journal articles, and technical references related to information systems, web-based applications, and Laravel-based development. Observation was conducted at PT. Nur Haramain Mulia Tour from 4 to 7 December 2025 to examine the ongoing administrative service process and to identify operational constraints in handling pilgrim data and service information. Interviews were conducted during the same period with administrative staff and prospective pilgrims to obtain detailed information about the workflow of the current system, the limitations of manual administration, and the expected features of the proposed application.

The system was developed using the Rapid Application Development (RAD) method because this approach supports fast and iterative software development through continuous interaction between developers and users. RAD is suitable for this research because the system to be developed has clear operational objectives and requires rapid adjustment based on user feedback [6]. In the thesis, the RAD process was divided into three main stages: requirement planning, design process, and implementation, as illustrated in Figure 2.

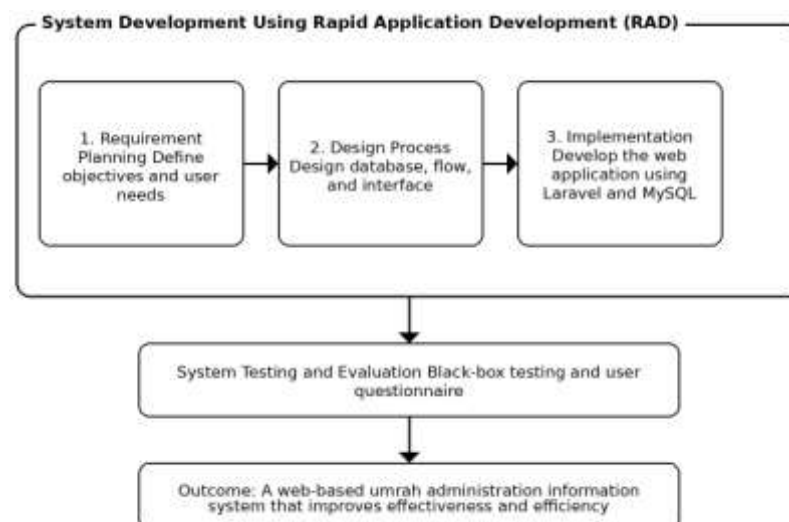


Figure 2. Stages of the Rapid Application Development Method

In the requirement planning stage, the researcher identified the goals of the system and analyzed the information needs of users. This stage generated the main functional requirements of the application, such as user login, online registration, pilgrim data management, package and schedule management, document handling, and report generation. In the design process stage, the system architecture, database structure, process flow, and user interface were modeled to ensure that the developed application could support the administrative services effectively. In the implementation stage, the approved design was translated into a web-based application using the Laravel framework, while MySQL was used as the database management system. This combination was selected to support structured development, centralized data storage, and easier maintenance of the application [7].

System evaluation was conducted through functional testing and user-based evaluation. Functional testing used the black-box testing technique to verify whether each feature performed according to the expected input and output scenarios. This test focused on validating the correctness of system functions without examining the internal program code. In addition, external evaluation was carried out using questionnaire-based assessment involving users to measure usability and acceptance of the developed system. Through these two evaluation stages, the proposed application was assessed not only in terms of technical correctness but also in terms of its usefulness in improving the administrative service process for umrah registration and data management. The overall research procedure therefore covered problem identification, requirement analysis, system design, implementation, and evaluation in an integrated cycle.

3. RESULTS AND DISCUSSION

3.1 System Design

The development of the web-based umrah administration information system was initiated by identifying the weaknesses of the existing administrative service process at PT. Nur Haramain Mulia Tour. Prior to system development, the registration process, pilgrim data retrieval, and report preparation were still conducted manually. This condition reduced work efficiency, prolonged service time, and increased the risk of data inconsistency and data loss.

The proposed system was designed to transform the manual workflow into a digital and integrated process. In the new model, data entered by users are stored in a centralized database and can be reused for further administrative activities such as verification, document checking, schedule management, and reporting. This design reduces repetitive manual work and supports a more efficient administrative flow.

From the functional point of view, the system involves two main actors, namely prospective pilgrims and administrators. Prospective pilgrims act as external users who access the website to obtain service information and submit registration data, while administrators act as internal users who manage the administrative process as a whole. Administrators are responsible for verifying registration data, managing packages, organizing schedules, handling supporting documents, and generating reports. The interaction between these two main actors and the system is generally described in Figure 3.

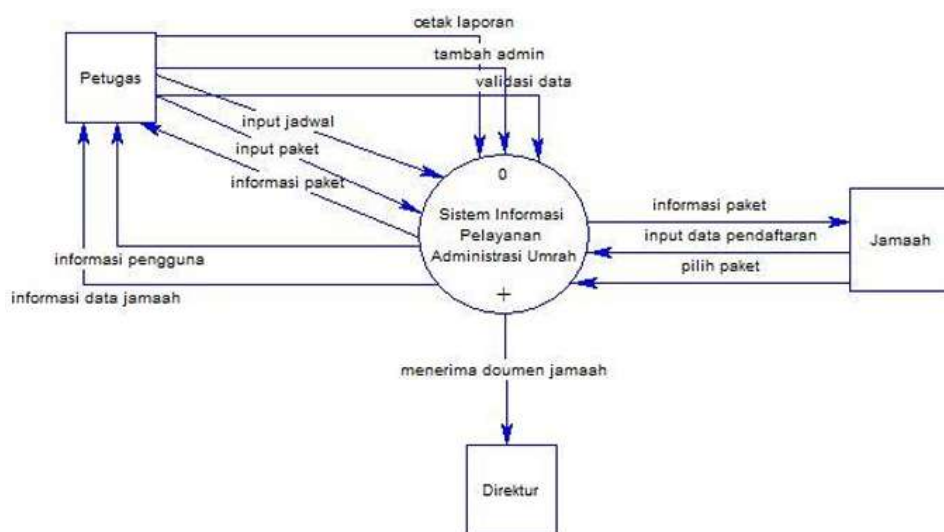


Figure 3. Context Diagram of the System

At the database level, the system was designed to manage several major entities, including user data, registration data, package data, schedule data, and supporting administrative records. These entities are connected in a relational structure to ensure data consistency and facilitate data retrieval. The relational structure among the main data entities is presented in Figure 4.

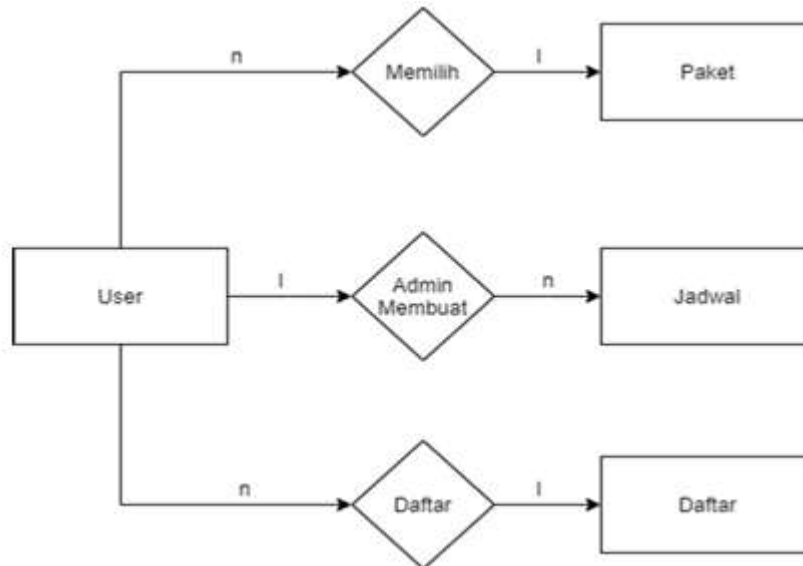


Figure 4. Entity Relationship Diagram

This database-centered design confirms that the system was developed not only as an informational website, but also as a complete administrative information system capable of storing, processing, and presenting operational data.

Overall, the design stage shows that the proposed application was planned as an integrated platform that supports the entire administrative cycle, starting from user registration and continuing to internal data management and report generation. The design results also indicate that the developed system was intended to provide a more structured, accurate, and accessible service process than the previous manual system.

3.2 System Implementation

After the design stage had been completed, the proposed system model was translated into a web-based application using Laravel as the development framework and MySQL as the database management system. The implementation stage focused on converting the identified requirements into operational features that could be accessed through a browser. As a result, the application became available for both prospective pilgrims and administrators, with each user group receiving different interfaces and access privileges according to their roles.

The implementation on the user side emphasizes accessibility of information and ease of registration. The application provides a home page that serves as the initial point of access for general users. This interface introduces the institution and directs visitors to the available service menus. The initial interface provided for general users is displayed in Figure 5. In addition, user authentication and controlled access to the application are shown in Figure 6. These pages indicate that the system supports online interaction and simplifies the early stages of administrative service.

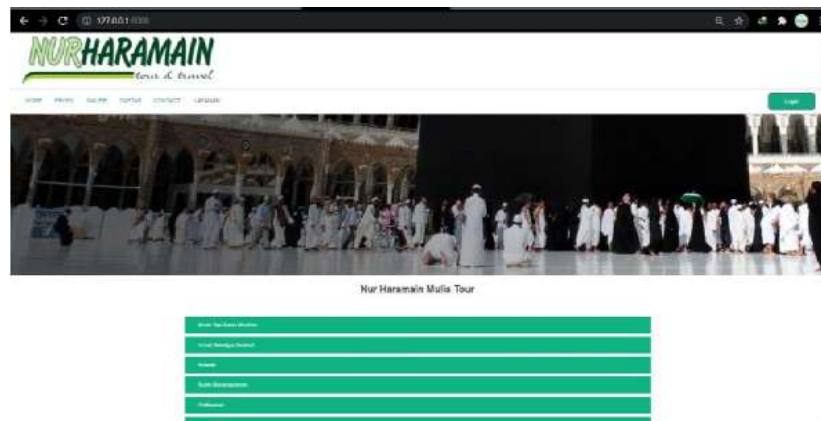


Figure 5. Home Page Interface



Figure 6. Login Page Interface

The implementation on the administrator side is more comprehensive because it serves as the operational center of the system. Through the administrator page, officers can control the overall administrative workflow and manage the data submitted by users. The main control interface for administrators is illustrated in Figure 7. This page functions as the central dashboard from which administrators can access package management, pilgrim data, schedules, documents, and reports.

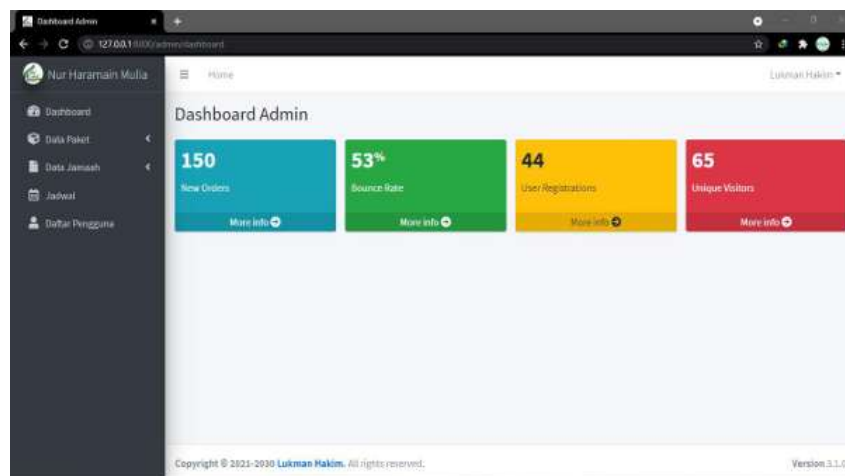
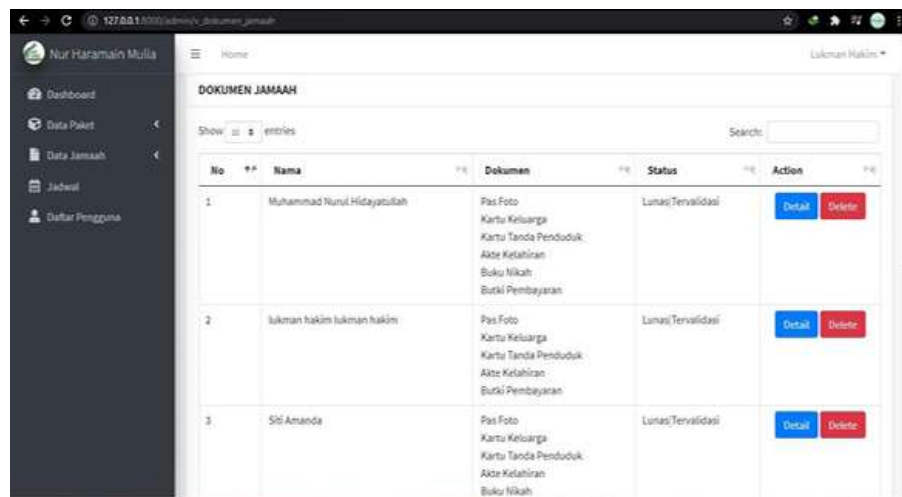


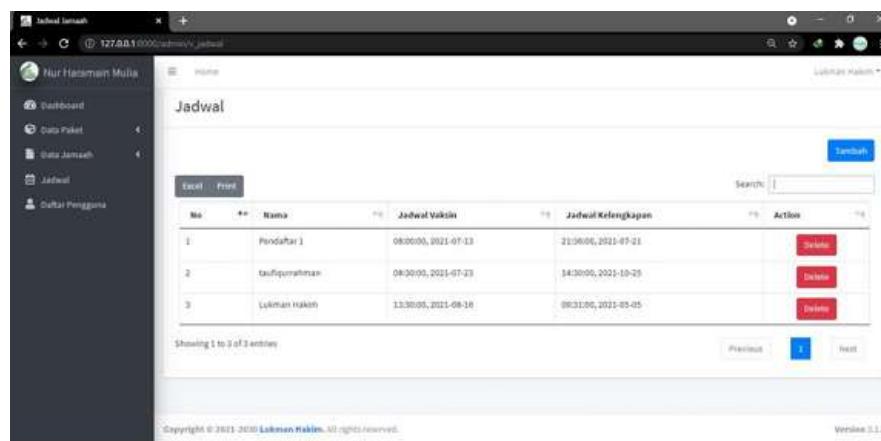
Figure 7. Administrator Main Page

Another important module is pilgrim data management, because the application must be able to record and organize the data of registrants in a structured way. The management of pilgrim registration records is presented in Figure 8. In addition, the implementation of schedule management for pilgrims is presented in Figure 9. These features confirm that the system supports the main administrative needs identified during the requirement analysis stage.



No	Nama	Dokumen	Status	Action
1	Muhammad Nurul Hidayatullah	Pas Foto Kartu Keluarga Kartu Tanda Penduduk Akte Kelahiran Buku Nikah Bukti Pembayaran	Lunas/Tervalidasi	Detail Delete
2	Lukman Hakim Lukman Hakim	Pas Foto Kartu Keluarga Kartu Tanda Penduduk Akte Kelahiran Bukti Pembayaran	Lunas/Tervalidasi	Detail Delete
3	Siti Amanda	Pas Foto Kartu Keluarga Kartu Tanda Penduduk Akte Kelahiran Buku Nikah	Lunas/Tervalidasi	Detail Delete

Figure 8. Document Management Page



No	Nama	Jadwal Vaqifin	Jadwal Kelengkapan	Action
1	Pendaftar 1	08:00:00, 2021-07-23	21:00:00, 2021-07-21	Delete
2	Taufiqurrahman	08:00:00, 2021-07-23	14:30:00, 2021-10-25	Delete
3	Lukman Hakim	13:30:00, 2021-08-18	09:31:00, 2021-03-05	Delete

Figure 9. Schedule Management Page

Another important result of the implementation stage is usability. The developed interfaces indicate that the system was designed to be operationally practical, with clear menus, structured layouts, and role-based access control. This is important because an administrative information system must be usable in daily service activities and not only function as a technical prototype. The implemented features demonstrate that the system was developed with practical institutional needs in mind.

In general, the implementation results confirm that the proposed design was successfully transformed into a functioning web-based application. The developed system does not merely present information, but also performs administrative tasks such as registration processing, data management, document handling, schedule management, and report preparation in an integrated environment.

3.3 System Testing

System testing was carried out to evaluate both the functional correctness of the developed application and its acceptance by end users. In this study, testing was divided into two stages, namely internal testing and external testing. Internal testing was intended to verify whether the core functions of the application operated according to the expected scenarios. External testing was conducted to measure user responses to the system after direct use in the context of umrah administrative services. The thesis states that internal testing was conducted by a web programming expert, while external testing involved 10 respondents consisting of eight prospective pilgrims and two administrative officers.

Internal testing used the black-box approach. This method evaluates system functions by observing inputs and outputs without examining the source code. The tested functions included login validation, data input validation, and output display. These three functions were selected because they represent the essential operational flow of the application, starting from authentication, continuing to data entry, and ending with data presentation. The internal testing results showed that the system was able to handle incomplete input, invalid credentials, successful login, data saving, editing, and output display according to the expected conditions.

In the login function, several scenarios were tested. When the email field was left empty, the system displayed a warning that the email had to be filled in. When the password field was empty, the system also rejected the login process and displayed a validation message. When incorrect email and password combinations were entered, access to the system was denied. In contrast, valid credentials allowed the user to proceed to the main page according to the assigned access rights. This result indicates that the authentication mechanism worked correctly and was able to enforce role-based access.

In the data input function, the system was tested under incomplete and complete input conditions. When one or more required fields were not completed, the application still captured the submission process but displayed a warning to complete the user data. When all required data were filled correctly, the system allowed saving and editing operations and displayed a success message. This shows that the developed application includes form validation and is able to support the administrative input process in a more controlled manner. The detailed internal testing results are presented in Table 1.

The output testing stage focused on whether stored data could be displayed properly in the interface. The results showed that data which failed to be saved could not be displayed in the view, while successfully stored data appeared correctly in the interface. This confirms that the connection between the input process and the data presentation process worked properly. Overall, the internal testing results indicate that the main functions of the system were operational and suitable for supporting routine administrative work.

Table 1. Internal Testing Results

No.	Tested Form	Test Scenario	Expected Result	Actual Result	Conclusion
1	Login	Email field is empty	User cannot log in to the system	The system displays "Email harus diisi"	Valid
2	Login	Password field is empty	User cannot log in to the system	The system displays "Password harus diisi"	Valid
3	Login	Incorrect email and password	User cannot log in to the system	The system returns the user to the main page/user login page	Valid
4	Login	Correct email and password	User successfully logs in and proceeds to the main page	The system continues to the main page according to access rights	Valid
5	Input Data	One or more input fields are empty	Data are stored but not yet valid	The system displays "Data tersimpan! Lengkapi data user"	Valid
6	Input Data	All data are completed	User can save and edit data in the system	The system displays "Data berhasil disimpan"	Valid
7	Output Data	Data fail to be saved	Data cannot be displayed in the view	The view remains empty	Valid
8	Output Data	Data are saved successfully	Data can be displayed in the view	The view displays the data stored in the system	Valid

External testing was then conducted using a questionnaire distributed to 10 respondents. The aim of this stage was to determine the level of user acceptance of the developed application. The assessment covered five aspects, namely system suitability to user expectations, ease of operation, usefulness in helping the registration process, accessibility of umrah and special hajj information, and interface attractiveness. The results of the external testing are presented in Table 2.

Table 2. External Testing Results

No.	Subject	Question	SB	B	C	K	SK
1	User	Does the current system run according to expectations?	8	1	1	0	0

2	User	Is the current system easy to operate?	5	3	1	0	1
3	User	Can this application help in carrying out registration?	7	2	1	0	0
4	User	Can information related to umrah and special hajj be accessed?	5	1	2	1	1
5	User	Is the design of this system attractive?	6	2	1	1	0

To calculate the questionnaire score, the thesis used a Likert-weighted approach with the following weights: SB = 10, B = 8, C = 6, K = 4, and SK = 2. The first calculation used the formula $T \times P_n$, where T is the total number of respondents choosing an option and P_n is the Likert score for that option. Because the questionnaire involved 10 respondents and the highest score was 10, the maximum score for each question was 100. The percentage index was then calculated using $\text{Index \%} = (\text{Total Score} / 100) \times 100$. The score interval used in the thesis classified 80%–99.99% as a very good category. Based on the score calculation, the final percentage for each question was obtained by dividing the total score by 100 and multiplying by 100%. The detailed calculation results are shown in Table 3 and indicate that all evaluated aspects were in the good to very good range, with the highest score obtained for system suitability. And Final Questionnaire Results in table 4.

Table 3. Questionnaire Score Calculation

No.	SB × 10	B × 8	C × 6	K × 4	SK × 2	Total Score
1	8 × 10 = 80	1 × 8 = 8	1 × 6 = 6	0 × 4 = 0	0 × 2 = 0	94
2	5 × 10 = 50	3 × 8 = 24	1 × 6 = 6	0 × 4 = 0	1 × 2 = 2	80
3	7 × 10 = 70	2 × 8 = 16	1 × 6 = 6	0 × 4 = 0	0 × 2 = 0	92
4	5 × 10 = 50	1 × 8 = 8	2 × 6 = 12	1 × 4 = 4	1 × 2 = 2	76
5	6 × 10 = 60	2 × 8 = 16	1 × 6 = 6	1 × 4 = 4	0 × 2 = 0	86

Table 4. Final Questionnaire Results

No.	Question	Calculation	Result
1	Does the current system run according to expectations?	$(94/100) \times 100$	94%
2	Is the current system easy to operate?	$(80/100) \times 100$	80%
3	Can this application help in carrying out registration?	$(92/100) \times 100$	92%
4	Can information related to umrah and special hajj be accessed?	$(76/100) \times 100$	76%
5	Is the design of this system attractive?	$(86/100) \times 100$	86%

The external testing results show that the system was positively accepted by users. The system suitability aspect obtained 94%, ease of operation 80%, usefulness in helping registration 92%, accessibility of information 76%, and interface attractiveness 86%. The thesis concludes that the application achieved an interpretation result of 94%, which was categorized as “Sangat Setuju” and indicates that the developed system was considered highly feasible and useful for umrah administrative services. These results confirm that the application was not only functionally valid, but also capable of meeting user expectations in practical use.

4. CONCLUSION

The study concludes that the web-based umrah administration information system developed for PT. Nur Haramain Mulia Tour is feasible and effective in supporting administrative services. The system is able to improve the process of pilgrim registration, data management, information delivery, and report preparation in a more structured, efficient, and accurate manner compared with the previous manual process. The testing results indicate that the developed system performs properly and is well accepted by users. Based on the external evaluation, the system obtained a feasibility percentage of 94%, which falls into the very good category. In addition, several assessment aspects also showed positive results, namely 94% for system suitability, 80% for ease of operation, 92% for usefulness in supporting registration activities, 76% for information accessibility, and 86% for interface attractiveness. These results show that the system is suitable for practical implementation and capable of improving the quality of administrative services at PT. Nur Haramain Mulia Tour.

For future development, the system can be improved by enhancing information accessibility, refining the interface design, and expanding its features to support broader administrative and service needs.

ACKNOWLEDGEMENTS

The author would like to express sincere gratitude to PT. Nur Haramain Mulia Tour for providing permission, information, and support during the data collection and system development process. The author also thanks the academic supervisors, reviewers, and all parties who provided valuable suggestions and feedback to improve the quality of this research. Appreciation is also extended to the administrative staff and prospective umrah pilgrims who contributed to the needs analysis and system evaluation. This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sector.

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