Implementation of Infaq and Zakat Management Information System Case Study at Al-Hikmah Toyan Mosque

Asroni1*, Ronald Adrian2, Eko Prasetyo1, Reza Giga Isnanda1, Anisa Nurfadila Dwi Karina1 and Aditya Hafizul Anhar1

1Information Technology Department, 55183 Universitas Muhammadiyah Yogyakarta, Indonesia
2Internet Engineering Technology Department, 55281 Universitas Gadjah Mada, Indonesia

Abstract. Information on the management of infaq and zakat funds on the scale of the mosque environment so far still carries out all activities and transactions conventionally. This makes it difficult to monitor the total income, expenditure, and balance of available funds, even though it is also necessary to detail the funds needed to see cash flow to analyse several submission items for activities that determine the progress of the mosque in serving worshippers. This problem is the basis for making additions to help improve better management and use the latest information technology as websites using the Laravel framework and MySql databases. Laravel framework is the best framework with PHP programming language. This application only focuses on managing infaq and receiving zakat. Using an information system website, the infaq and zakat management process can be done automatically to become faster, more precise, and more accurate.

Keywords: infaq, zakat, information system, mosque

1 Introduction

Information on the management of infaq and zakat funds on the scale of the mosque environment so far is usually reported through the mouthpiece of microphones, sheets of paper, or notice boards that are updated at the end of each year or at every meeting as the responsibility of the management of the mosque taker. Usually, mosque infaq information is in the form of a summary of various sources and what it is used for, while zakat is in the form of an overview of how much money and rice collected and then distributed to anyone in need[1]. From this pattern of activity then arises a big question: "Where is the source of mosque cash, and where is it used or how much rice collected? Who receives zakat fitrah?". This question arises because the information is not known with certainty or is not widely spread among the worshippers in the mosque.

Information systems are needed in various sectors to present precise and accurate information; data must be processed first to realize this. Handling data processing requires accuracy, accuracy, speed, and accuracy[2]. Therefore, the information needed for decision-making can be produced in accordance with what is desired. Information systems related to data processing problems are important for an agency, institution, or organization. Organizations in the religious field need information of data processing, one of which is mosques. Currently, many mosques compete to improve services to mosque worshippers

* Corresponding author: asroni@umy.ac.id
through information. However, many mosques still carry out all activities and transactions conventionally, which has the potential for errors, less quick and inefficient.

Masjid Al-Hikmah Toyan is in the village of Triharjo, Wates, Kulon Progo. The mosque has many worshippers dominated by residents around the mosque, and is frequently visited by worshippers who are travelling or just stopping by. The administration of mosques so far still feels difficult to record the management of infaq and zakat. This motivated the author to encode and develop a website-based information system for managing the infaq and zakat of Masjid Al-Hikmah Toyan. With the problems found in the background above, a method is needed to control the process of managing infaq and zakat. Based on this description, the author takes the Laravel Framework for Infaq and Zakat management information systems with the waterfall method as a solution to existing problems.

The structure was created to build the Infaq and Zakat information system, as shown in Figure 1. The Laravel PHP framework comes with updated features in the form of MVC in the framework[3]. MVC, which stands for Model View Controller, is a paradigm commonly used in the application's logic. The advantages of the MVC model separate the management of databases, logic, and interfaces in an application, making it easier for developers to maintain a program or application[4].

![Figure 1. MVC concept process flow.](image)

**2 Methodology**

Waterfall software development methods are designed in stages to build and implement information systems. The *Waterfall* model has several steps, including data collection, requirements analysis, design, program code implementation, testing and bug fixes and adding features, as shown in Figure 2 [5].

![Figure 2. Website development of waterfall method.](image)
In Figure 2, the process of website development goes through the following stages [6]:

- **Data collection:** The author started the study by supplying needs. At this stage, the author used primary data collection methods: interviews, observations, and secondary data collection using literature studies from articles, books, or Internet sources.
- **Analysis:** the data collected from data collection were analysed to be used as reference material at the design stage. At this stage, known user needs and system needs.
- **Design:** At the design stage, several diagrams were made, such as using case diagrams to visually model the interaction between actors and systems, flow charts and sequence diagrams used to model application flows and application business processes, user interface design and class diagrams as a reference for program code implementation.
- **Implementation:** At this stage, program code implementation based on the design made in the previous step was carried out. The author did system development using the Laravel framework and PHP.
- **Testing:** In the last stage, testing was conducted. Testing was carried out using functional tests with a black box testing approach.
- **Bug fixes and feature additions:** At this stage, bug fixes were made on features/menus that still had errors and user accommodations to add features were needed for website perfection [7].

### 3 Results and Discussion

The results of the development of infaq and zakat information systems in detail are explained in four parts: Interview Results, Database Creation, Implementation, Survey Results, Testing, and Hosting.

#### 1.1 Interview Results

The interview was conducted with the management of Al-Hikmah Toyan Mosque using several questions. Table 1 is an example of many interviews.

<table>
<thead>
<tr>
<th>Name: Mr. Anang Junanta</th>
<th>Position: Chairman of the Takmir Masjid</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>P1</strong></td>
<td>Already know.</td>
</tr>
<tr>
<td><strong>P2</strong></td>
<td>It has, but only limited to the web division of the Ministry of Religion because the mosque has been officially registered.</td>
</tr>
<tr>
<td><strong>P3</strong></td>
<td>Necessary information needed today regarding infaq and zakat.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name: Sri Agung</th>
<th>Position: Core administrators</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>P1</strong></td>
<td>Already know.</td>
</tr>
<tr>
<td><strong>P2</strong></td>
<td>Already have.</td>
</tr>
<tr>
<td><strong>P3</strong></td>
<td>Need the information needed today regarding infaq, zakat, and data collection of worshippers.</td>
</tr>
</tbody>
</table>

From Table 1, all core administrators and treasurers already know what an information system or web system is, Al-Hikmah Toyan Mosque already has a website, and all core
administrators and treasurers feel the need for the mosque to have a website with more specific information in infaq and zakat.

1.2 Database Creation

Figure 2 is a database of information websites for managing infaq and zakat of Al-Hikmah Toyan Mosque. Each table had the following roles [8]:

- Users table is a table used to store super admin and treasurer data after successfully registering. These super admin and treasurer data are also used as authentication when logging in.
- Kasmasjids table is a table used to store the data of the mosque’ infaq, both income and expenditure.
- The Fitrahmasuks table is a table used to store zakat fitrah income data; this table is related one to many with the rice price table; Hargaberас table is a table used to store the latest rice price data; the rice price table has the many to one relationship with Fitrahmasuks tabel.
- Jamaahs table is used to store data on the worshippers of Masjid Al-Hikmah Toyan.
- Zakatmals table is a table used to store data on zakat mals income.

![Figure 2. Database Information System of Infaq and Zakat.](image)

1.3 Implementation

The results of making the Infaq and Zakat information systems generally went well, and here was the urgent menu snippet related to information system testing.

- The main menu during online access

![Figure 3. Infaq and Zakat Information System Homepage.](image)
Figure 3 shows the initial process of logging into the website by displaying the main menu of infaq and zakat. The main menu will be accessible through a user-level process that has been given rights according to the agreed user.

- **Admin Menu**

![Admin Menu](image1)

**Figure. 4. Admin menu.**

Figure 4 shows the process of the website admin to carry out the transaction management process for users entitled to access, infaq, zakat, recapitulation, and others. These menus manage all operations and must be carried out by users with commitment and confidentiality regarding mosque data.

- **Infaq Menu**

![Infaq Menu](image2)

**Figure. 5. Infaq inflow management menu.**

![Infaq Menu](image3)

**Figure. 6. Infaq outflow management menu.**
Figure 7. Infaq recapitulation management menu.

Figure 5 is the entry process of infaq with criteria for type, date, description of activities and the number of infaq. Regular data entry will make it easy to obtain information in real-time and quickly. Figure 6, with the same process as in Figure 5, used to record expenses, then Figure 7 is the recapitulation of infaq inflow and outflow data.

- Menu Zakat

Figure 8. Zakat fitrah inflow management menu.

Figure 9. Zakat mal inflow management menu.
Figure 8 and Figure 9 are the process for transactions, including zakat fitrah and zakat mal. This process is to sort out the types of zakat that will be for acquisition management in real and quick time which is also supported by the recapitulation display as in Figure 10 and Figure 11 [9].

![Figure 10. Recapitulation of zakat fitrah management menu.](image)

![Figure 11. Recapitulation of zakat mal management menu.](image)

1. Pilgrim Data Recapitulation Menu

![Figure 12. Recapitulation monitoring of worshipper condition management menu.](image)
Figure 12 shows the recapitulation process to record the condition of worshippers with 2 clusters to determine the distribution of infaq or zakat, to facilitate reading supported by a graphic model as in Figure 13.

1.4 Survey Results

The survey was conducted in the neighborhood of Al-Hikmah Toyan Mosque, consisting of 5 mosque administrators and 25 worshippers, with questions that can be seen in Figure 14. This result shows the highest effect with the condition 'Agree' [10].

Figure 14 reveals that ten out of 30 agree, and eight people, 30 respondents, strongly agree that the application interface is interesting.
Figure 15 illustrates that 11 out of 30 respondents agree, and six out of 30 respondents state that the application is easy to use. Therefore, users did not find accessing the application or existing information difficult.

![Figure 15. Information Survey Results](image1)

**Figure 16. Information Survey Results**

Figure 16 shows that 11 out of 30 respondents express their agreement, and six out of 30 respondents state that the information in the application follow the needs so that users can get infaq and zakat information easily.

![Figure 16. Information Survey Results](image2)

**Figure 17. Usability survey results.**

Figure 17 conveys that ten out of 30 respondents agree, and nine out of 30 respondents say the application is useful.

### 1.5 Testing

This testing phase aimed to ensure that each function of the information system application runs according to the desired position. This test was carried out for all user roles, or everyone could access the web in the testing process and obtained a good status with a mark of ‘√’. The sample is in Table 2.
Table 2. Sample of table testing.

<table>
<thead>
<tr>
<th>No</th>
<th>Test Cases</th>
<th>Expected Results</th>
<th>Result</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Home Page</td>
<td>The page will appear when the user opens the website address</td>
<td>After opening the web address, the user will enter the user's home page</td>
<td>✓</td>
</tr>
<tr>
<td>2</td>
<td>Information navbar button</td>
<td>Displays various information related to infaq and zakat.</td>
<td>The system displays home with the focus page in the information.</td>
<td>✓</td>
</tr>
<tr>
<td>3</td>
<td>Navbar infaq button</td>
<td>Direct the user to the infaq information page, and the user can see the infaq information</td>
<td>Users can view infaq information in detail.</td>
<td>✓</td>
</tr>
<tr>
<td>4</td>
<td>View zakat information button</td>
<td>Direct the user to the infaq information page, and the user can see the zakat information</td>
<td>Users can see detailed zakat information.</td>
<td>✓</td>
</tr>
</tbody>
</table>

1.6 Hosting

Figure 18 and figure 19 are facilities available from hosting rentals in the form of VPS and cPanel which are used to upload source code and databases to be accessed online [11]. Previously, it also required a process for purchasing domains for public access. The domains can be accessed online with http://alhikmahtoyan.informasi.link tools.

![Figure 18. cPanel view for uploading source code and database.](image-url)
4 Conclusions

From the results of tests carried out with the Information System website for the management of zakat and infaq of Al-Hikmah Toyan Mosque, it can be concluded that:

- With the availability of a system of information on zakat and infaq management, the management of Al-Hikmah Toyan Mosque can carry out the process of collecting infaq zakat and congregations.
- From the general testing performed, applications can run without bugs as well; worshippers get available information.
- From the super admin role, testing is performed. Applications have restrictions that non-super admin roles cannot access.
- The admin and treasurer roles are performed from testing. Admin and treasurer roles can add, change, and delete data without bugs.

References


