

DEVELOPMENT OF ZAKAT INFORMATION SYSTEM FOR THE ABC ZAKAT INFAQ SHADAQAH CHARITY BASED ON WEBSITE

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Abstract

Information System is a collection of interconnected elements that work together to gather, process, store, and disseminate information that is beneficial to users. The method used in implementing this project is the sequential linear method, which has several stages, including analysis, design, coding, and testing.. The result of this research is the development of a Zakat information system based on a website for the ABC Zakat, Infaq, and Shadaqah Amil Zakat Institution using the Laravel framework that utilizes the PHP programming language and is connected to the MySQL database. This system is valuable in enhancing the efficiency, transparency of Zakat management, and distributing funds more effectively within the ABC Zakat, Infaq, and Shadaqah Amil Zakat Institution (LAZIS) ABC.

Keywords: Information Systems, Zakat, LAZIS ABC, Website

INTRODUCTION

Zakat is one of the Five Pillars of Islam, the fourth one, making it obligatory for every Muslim to perform it, just like the obligation to perform prayer (Saleh et al., 2023). Zakat is not only a religious obligation involving ritual and spiritual dimensions, however it also strongly emphasizes social values (Yulianti, 2024). In its transparent and accountable distribution (Jalaluddin, 2023), Zakat has great potential to improve the welfare of the community and strengthen the work ethic of society, while also serving as an instrument for economic equity (Rustandi et al., 2023). Besides providing assistance to the poor (Sapitri et al., 2024), Zakat also has a positive impact on community productivity by creating more job opportunities and increasing community savings (Siregar & Soemitra, 2023).

The importance of Zakat is reflected in Allah's promise of praise and the happiness of paradise for those who perform Zakat, receiving blessings in wealth and multiplied rewards

(Prasetyo et al., 2024). In Surah Al-Baqarah, verse 267, Allah says: "O you who have believed, spend from the good things which you have earned and from that which We have produced for you from the earth. And do not aim toward the defective therefrom, spending from that, while you would have turned your face away from it yourself except with closed eyes. And know that Allah is Free of need and Praiseworthy" (Yarham et al., 2024).

In addition to being part of Islamic law, Zakat in Indonesia is regulated through Law Number 23 of 2011 concerning Zakat management (Putra et al., 2024). According to Hisam Asngari, with the changing times, Zakat management in Indonesia faces several challenges that have resulted in its management not yet reaching an optimal level (Suradi & Amalia, 2024). Some of the challenges include insufficient understanding of Zakat jurisprudence among the administrators, which hampers Zakat management; lack of public

awareness about paying Zakat, which is a barrier to managing Zakat funds; the need for skilled labor in Zakat institutions to manage Zakat in an accountable and transparent manner; and the underdeveloped use of technology in Zakat institutions compared to financial institutions. Additionally, Zakat management institutions have not yet developed or integrated information systems that connect all Zakat administrators comprehensively, resulting in a lack of connectivity among them (Suradi & Amalia, 2024).

The Amil Zakat Infaq Shadaqah ABC Institution is an organization responsible for managing Zakat, infaq, and shadaqah from the capable members of the community to those in need. This institution is committed to carrying out its duties with full integrity and in accordance with Islamic sharia principles. In its efforts, the Amil Zakat Infaq Shadaqah ABC Institution aims to be a reliable intermediary, ensuring that all collected funds are distributed accurately and transparently. The institution focuses not only on fund collection but also on effective and efficient distribution to maximize the benefits received by the recipients. To achieve this goal, an effective and efficient Zakat information system is required to serve as a platform for the accurate and transparent collection and distribution of Zakat funds.

The information system can be described as a system comprising technology, media, organized procedures, and human resources working together to form a structured system (Raihan Dika Febriansyah et al., 2024). The Zakat information system aims to create a computerized platform for recording and distributing Zakat, optimized to enhance the performance of Zakat administrators (Zidan, 2023). The development of the Zakat information system for the Amil Zakat Infaq Shadaqah ABC institution uses the Linear Sequential method. The Linear Sequential method provides a sequential and systematic approach, starting with analysis, design, coding, and testing phases (Anis et al., 2024). This collaboration between technology and humans aims to gather information that supports the management decision-making process (Manajemen & Added, 2023).

Previous research conducted by (Wantoro, 2019) developed a Zakat information system that resulted in a Zakat fund management system at

IZI Lampung, featuring menus for master data, reports, and charts. Additionally (Haryanto et al., 2023), designed a Zakat information system for the Wisma Mualaf, which resulted in a desktop application providing features for entering data on Muzakki, mustahiq, transactions, and manual Zakat distribution using Java programming language. Another study by (Apriani & Riyadi, 2019) applied a Zakat information system at LASIZ Nurul Iman, which offered features like a Muzakki menu and an admin page but had limitations in manual Zakat fund management and security features that were still vulnerable and could be manipulated by unauthorized parties.

Based on the previous issues, it can be concluded that the development of a Zakat information system allows individuals and institutions to donate, manage, and distribute funds more easily and efficiently (Mufid, 2024). With an integrated, web-based Zakat information system, the problems faced by the Amil Zakat Infaq Shadaqah ABC institution can be effectively addressed.

METHODS

The method used in this project is the Linear Sequential method. The following are the phases of the Linear Sequential method for the development of a web-based Zakat information system for the Amil Zakat Infaq Shadaqah ABC institution, as illustrated in Figure 1.

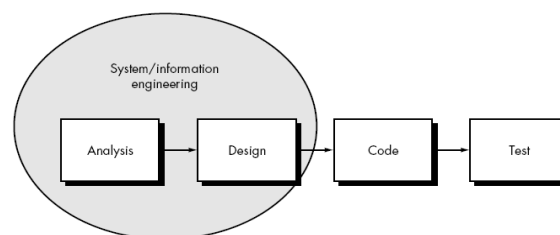


Fig. 1: Sequential Linear Method

1. Analysis

The analysis process involves various activities, such as gathering information about the Zakat needs to be fulfilled, analyzing existing Zakat collection processes, identifying potential issues, and determining the technical and functional requirements that the web-based Zakat information system to be developed must meet.

2. Design

In the design phase, the conceptual solutions that have been developed will be translated into detailed technical designs. This phase will involve creating use case designs, database designs, and interface designs.

a. Usecase Design

In the use case design, each use case will be identified, documented, and analyzed in detail. Each use case will include information about the actors involved, the interaction scenarios between the actors and the system, and the expected outcomes of those interactions. The use case design also helps in understanding the overall workflow of the system and ensuring that all required functionalities have been considered.

b. Database Design

Database design involves data modeling, selecting appropriate data types, Normalizing the database to avoid data redundancy, and determining indexing concepts to improve database performance. The goal of database design is to create an efficient, easily accessible, and secure database structure that meets the storage and retrieval needs of the information system being developed.

c. Interface Design

In the interface design phase, a user interface wireframe will be created, including the layout of interface elements, navigation, text, and other visual components. The interface design will also consider UX (User Experience) and UI (User Interface) design principles to ensure an optimal user experience.

3. Code

At this stage, developers or programmers will write the program code based on the previously created technical designs. The coding process involves translating the system design into a programming language understood by computers. The written code must adhere to good coding standards, be understandable, efficient, and maintainable. Additionally, coding involves unit testing to ensure that each part of the program functions correctly before being integrated with other parts.

4. Testing

In the testing phase, various types of tests are conducted to identify bugs, logic errors, and other issues within the system. Testing includes a range of scenarios that might occur during

system use, including both Normal and extreme scenarios. The results of these tests will be used to fix bugs and address issues so that the system operates smoothly and is effectively usable by the end users.

RESULTS AND DISCUSSION

1. Analysis

Here are the results of the analysis for the development of the web-based Zakat information system at the Amil Zakat Infaq Shadaqah (LAZIS) ABC institution.

a. Information Gathering

- 1) **Type of Zakat:** Zakat Fitrah dan Zakat Mal.
- 2) **Zakat Collection Process:** Collection is done manually through LAZIS ABC.
- 3) **User Needs:** An Information system that facilities Muzakki to make Zakat payments online and view their Zakat payment history.

b. Problem Identification

- 1) **Problem:** The Zakat collection process is still manual and prone to errors and delays in reporting.
- 2) **Solution:** The development of a web-based Zakat information system aims to improve efficiency and address delays in Zakat processing.

c. Technical and Functional Requirements

- 1) **Technical:** Use of web technology for easy access, ensured data security, and fast system performance.
- 2) **Functional:** Online Zakat payment features, Zakat payment history, payment Notifications, and Zakat collection reports.

d. Stakeholder Identification

After identifying the stakeholders, the following parties are involved: LAZIS ABC Management, finance team, humanitarian team, Zakat administrator, Muzakki, and IT team.

e. Project Scope

The scope of the projects includes: development of a web-based Zakat information system and integration with LAZIS ABC financial system.

f. Data Collection

The Data required for developing the Zakat information system includes: Muzakki data, Zakat payment history, LAZIS ABC finance data, and applicable Zakat policies.

g. Hardware Requirements

- 1) **Server:** For storing and managing data of Zakat information system.
- 2) **Computer/Laptop:** For development and testing of the web application.
- 3) **Internet Network:** For online access to the information system.
- 4) **Database Server:** For securely storing Zakat data.
- 5) **Printer:** For printing reports and documentation of Zakat collection.

h. Software Requirements

- 1) **Server Operation System:** Linux Ubuntu 20.04.6 LTS.
- 2) **IDE (Integrated Development Environment):** Visual Studio Code 1.86.
- 3) **Database Management System (DBMS):** MySQL 8.3.
- 4) **Web Server:** Apache httpd 2.4.59.
- 5) **Browser:** Chrome, Mozilla, Microsoft Edge.
- 6) **Framework Web:** Laravel Framework 11.
- 7) **Graphic Design Software:** yEd Graph Editor 3.23.2 (Desain Diagram) dan Figma 9 (User Interface & User Experience).
- 8) **Testing Software:** Postman 11.

2. Design

Here are the results of the design for the development of the web-based Zakat information system for the Amil Zakat Infaq Shadaqah (LAZIS) ABC institution.

a. Use Case Diagram Design

Here is the use case diagram used in the Zakat information system for LAZIS ABC, as shown in Figure 2.

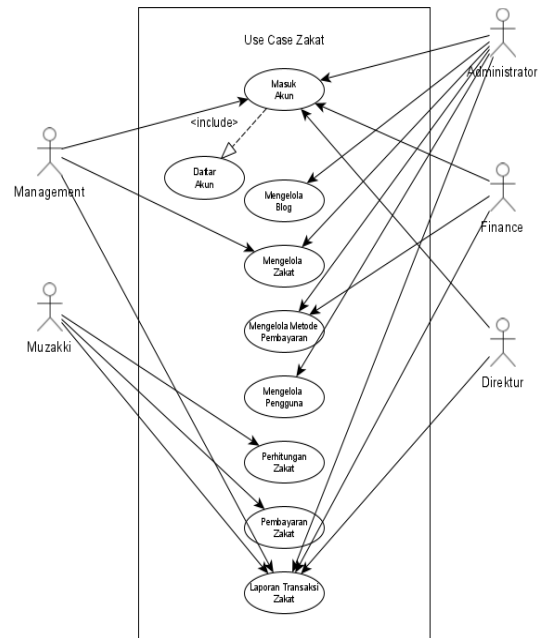


Fig. 2: Use Case Diagram for Zakat

In Figure 2, there are 5 actors interacting with the features of the Zakat information system, including: Administrator, Director, Finance, Management, and Muzakki. The Administrator can manage the blog, oversee Zakat, handle payment methods, manage users, and generate Zakat transaction reports. The Director can view Zakat transaction reports. The Finance team can manage payment methods and Zakat transaction reports. The Management team can oversee Zakat and view Zakat transaction reports.

b. Database Design

1) tb_user

Dalam pengembangan sistem informasi Zakat, maka pengguna perlu memasukkan username dan password untuk dapat mengakses halaman dashboard. Berikut merupakan desain Table user yang ditunjukkan pada Table 1.

Table 1. User Table

No	Name	Type
1.	id	int (12, Pk)
2.	username	varchar (30)
3.	password	varchar (40)
4.	id_userdetail	int (12)
5.	id_access	int (12)

In Table 1, there are 5 rows in the database design for the user table, including: id, username, password, id_userdetail, and id_access. The primary toy in Table 1 is id, which serves as a unique value for each data record. The foreign toys in Table 1 are id_userdetail and id_access, which are used to reference data in the userdetail table in Table 2 and the access table in Table 3.

2) **tb_userdetail**

The userdetail table is used to store personal information for each user, which functions to display names on the dashboard, send information to email, and show user photos. The design of the userdetail table is shown in Table 2.

Table 2. Userdetail Table

No	Name	Type
1.	id	int (12, Pk)
2.	full_name	char (30)
3.	address	text
4.	email	varchar (40)
5.	photo	varchar (100)

In Table 2, there are 5 rows in the database design for the userdetail table, including: id, full_name, address, email, and photo. The primary toy in Table 2 is id, which serves as a unique value for each data record.

3) **tb_access**

The access table is used to store access rights that users need to access and restrict menu options on the dashboard according to their rank/position. The design of the access table is shown in Table 3.

Table 3. Access Table

No	Name	Type
1.	Id	int (12, Pk)
2.	access_name	varchar (30)

In Table 3, there are 2 rows in the database design for the access table, including: id and access_name. The primary toy in Table 3 is id, which

serves as a unique value for each data record.

4) **tb_transaction**

The transaction table is used to store proof of transactions that are in progress or have been completed by Muzakki. The transaction table is crucial as it holds financial data. The design of the transaction table is shown in Table 4.

Table 4. Table Transaction

No	Name	Type
1.	id	int (12, Pk)
2.	date_of_transaction	timestamp
3.	amount	decimal (12,4)
4.	id_payment	int (12)
5.	id_userdetail	int (12)
6.	id_Muzakki	int (12)
7.	status	enum ("Paid", "UnPaid")

In Table 4, the database design for the transaction table includes 7 rows: id, date_of_transaction, amount, id_payment, id_userdetail, id_Muzakki, and status. The primary toy in this table is id, which uniquely identifies each record. The foreign toys are id_payment, which links to the payment table shown in Table 5: id_userdetail, which references the userdetail table shown in Table 2; and id_Muzakki, which connects to the Muzakki table shown in Table 6.

5) **tb_payment**

The payment table is used to record the types of payment methods supported by LAZIS ABC. The design of the payment table is shown in Table 5.

Table 5. Table Payment

No	Name	Type
1.	id	int (12, Pk)
2.	method	varchar (30)

In Table 5, the database design for the payment table includes 2 rows: id and method. The primary toy in Table 5 is id, which serves as a unique value for each data record.

6) **tb_muzakki**

The Muzakki table is used to store data about Muzakki, or individuals who

pay Zakat. The design of the Muzakki table is shown in Table 6.

Table 6 Table Muzakki

No	Name	Type
1.	id	int (12, Pk)
2.	full_name	varchar (30)
3.	address	text
4.	number_phone	int (12)

In Table 6, the database design for the Muzakki table includes 4 rows: id, full_name, address, and number_phone. The primary toy in Table 6 is id, which serves as a unique value for each data record.

7) tb_blog

The blog table is used to store articles aimed at educating the audience or readers of LAZIS ABC when they access the front end or main page. The design of the blog table is shown in Table 7.

Table 7. Table Blog

No	Name	Type
1.	id	int (12, Pk)
2.	id_access	int (12)
3.	title	varchar (30)
4.	description	text
5.	publish	timestamp
6.	thumbnail	varchar (100)

In Table 7, the database design for the blog table includes 6 rows: id, id_access, title, description, publish, and thumbnail. The primary toy in Table 7 is id, which serves as a unique value for each data record. The foreign toy in Table 7 is id_access, which is used to reference data in the access table shown in Figure 3.

c. Cardinality

1) tb_user to tb_userdetail (one-to-one)

Cardinality: one user has one userdetail. The foreign key id_userdetail in the user table refers to id in the userdetail table. Each user has only one set of personal detail information, such as full name, address, email, and photo.

2) tb_user to tb_access (many-to-one)

Cardinality: many users can have one access. The foreign key id_access in the

user table refers to id in the access table. Multiple users can have the same access rights, such as admin or regular user, as defined by the access_name column.

3) tb_transaction to tb_userdetail (many-to-one)

Cardinality: many transactions can be associated with one userdetail. The foreign key id_userdetail in the transaction table refers to id in the userdetail table. A user can make multiple transactions, which are stored in the transaction table.

4) tb_transaction to tb_Muzakki (many-to-one)

Cardinality: many transactions can be associated with one Muzakki. The foreign key id_Muzakki in the transaction table refers to id in the Muzakki table. One Muzakki (the person paying Zakat) can perform multiple Zakat transactions.

5) tb_transaction to tb_payment (many-to-one)

Cardinality: many transactions can be associated with one payment method. The foreign key id_payment in the transaction table refers to id in the payment table. Each transaction can use one of the various payment methods provided.

6) tb_blog to tb_access (many-to-one)

Cardinality: many blogs can be associated with one access level. The foreign key id_access in the blog table refers to id in the access table. Blogs can be created and published by users with specific access rights.

d. Interface Design

The wireframe for the front end or main page of the LAZIS ABC website is displayed as seen when users visit the site, shown in figure 3

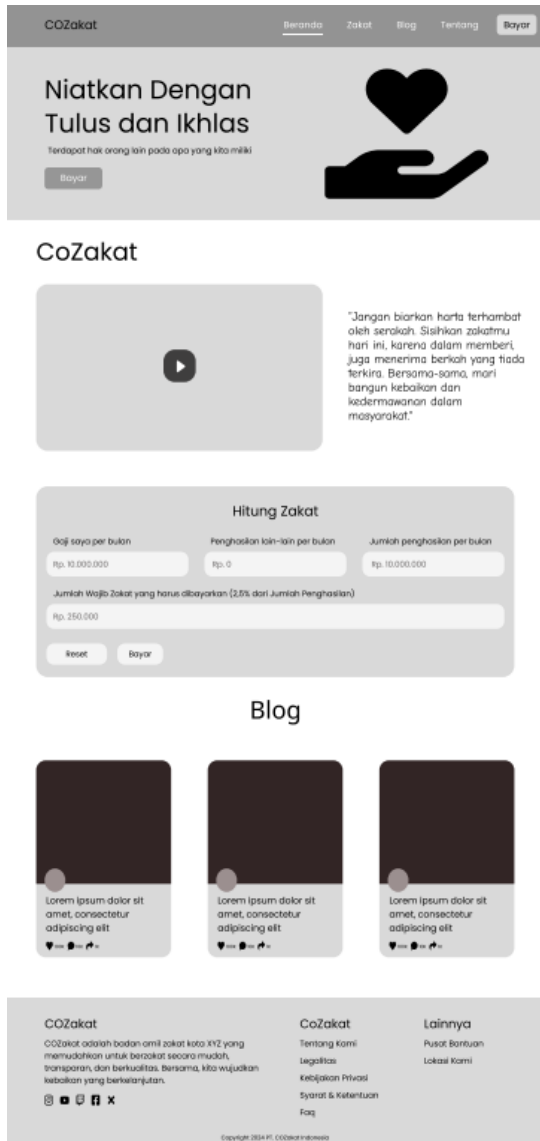


Fig. 3: Front End View

In Figure 3 above displays, The website features four main menus: Home, Zakat, Blog, and About. Additionally, there is a video describing the activities conducted by LAZIS ABC. The website also includes a calculator for users to compute the amount of Zakat to be paid based on their income or earnings. The Blog section is included to educate users or visitors about Zakat. Lastly, there are social media links used by LAZIS ABC to document their activities and educate their audience.

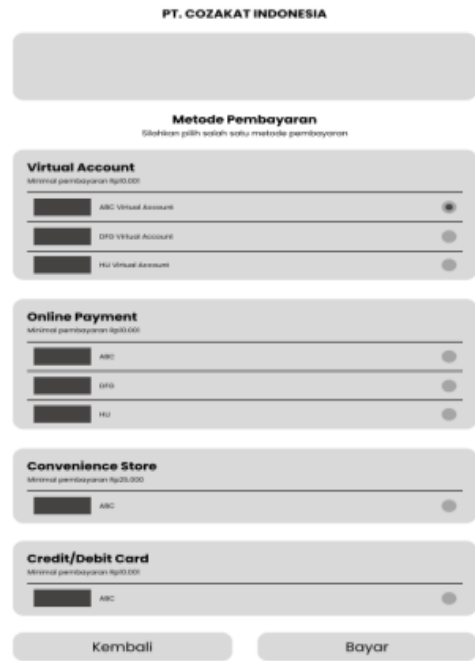


Fig. 4: Payment Methods

In Figure 4 above displays, the wireframe for the payment methods page is shown, which appears after users have calculated their income or earnings using the calculator on the front-end page displayed in Figure 3. There are several payment options available, including virtual account payments, online payments (bank transfers), convenience store payments, and credit/debit card payments.

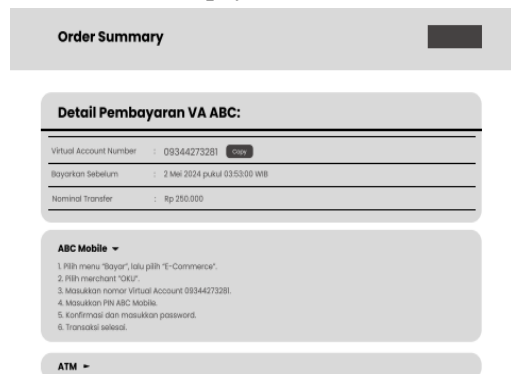


Fig. 5: Virtual Account Invoice

In Figure 5 above displays, the wireframe for the Virtual Account Invoice or the Zakat payment page using the virtual account method is displayed. This page appears after the Muzakki has selected their payment method on Figure 4. Muzakki can then send Zakat through the provided virtual account number and complete the transaction using mobile banking or an ATM.



Fig. 6: Convenience Store Invoice

In Figure 6 above displays, the wireframe for the Convenience Store Invoice or the Zakat payment page using the payment method through a participating store is shown. This page appears after the Muzakki has selected the payment method on Figure 4.

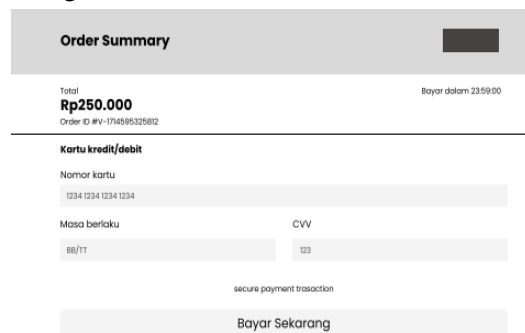


Fig. 7: Credit/Debit Card Invoice

In Figure 7 above displays, the wireframe for the Credit/Debit Card Invoice or the Zakat payment page using this method is shown. It includes fields for entering information such as the 12-digit card number on the front of the ATM card and the 3-digit CVV/CVC code on the back of the card. This page appears after the Muzakki has selected the payment method in Figure 4.

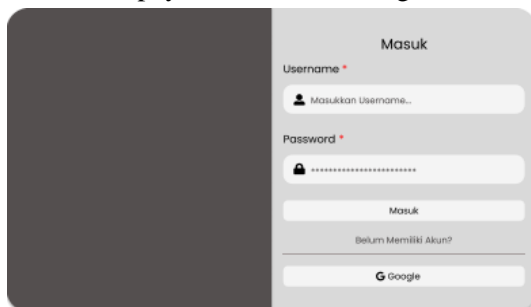


Fig. 8: Login User Form

In Figure 8 above displays, the wireframe for the User Login Form is displayed. This page allows access to the administrator section, where users with credentials can log in. Only those with access rights—Administrator, Finance, Management, and Director—can log in. Each access

level presents different menus based on their role within LAZIS ABC.

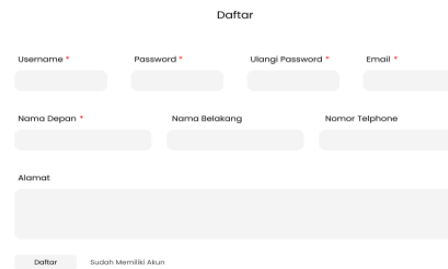


Fig. 9: Registration User Form

In Figure 9 above displays, the wireframe for the User Registration Form is displayed. This page is used for creating new accounts and can only be accessed by users with Administrator privileges. It allows for adding new users who will have access to the Zakat information.

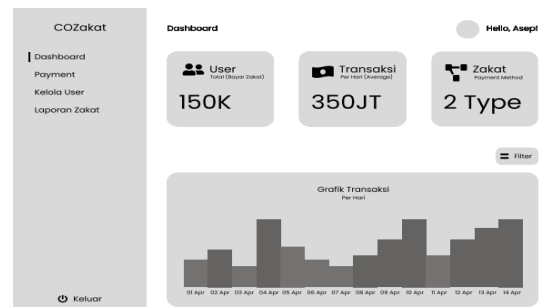


Fig. 10: Backend Dashboard

In Figure 10 above displays, the wireframe for the Backend Dashboard is displayed. This page provides comprehensive information regarding Zakat. The dashboard shows the number of Muzakki who have made Zakat payments, the total number of transactions, and the types of Zakat. Additionally, it includes graphs representing daily transaction activity by Muzakki. Each menu on the dashboard features a logout button, which is used to end the session for users who have finished using the Zakat information system.

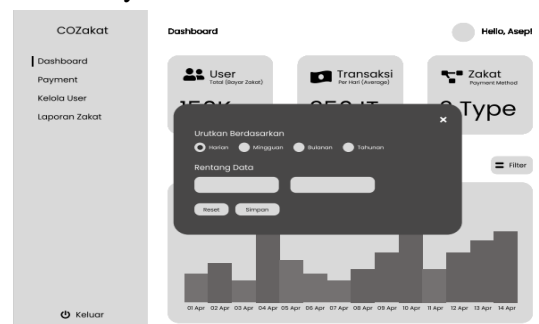


Fig. 11: Data Filter

In Figure 11 above displays, the wireframe for the data filter is displayed. This feature allows users to filter the data on the Dashboard. Users can adjust the data view based on daily, weekly, monthly, or yearly intervals and specify the time range for the data displayed.

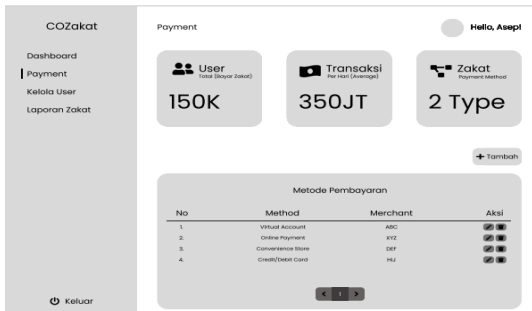


Fig. 12: Payment Dashboard

In Figure 12 above displays, the wireframe for the Payment Dashboard is displayed. This dashboard shows information related to transactions that have been completed or are in progress by Muzakki. Additionally, this page also serves to manage the payment methods accepted by LAZIS ABC for channeling Zakat from Muzakki to mustahiq.

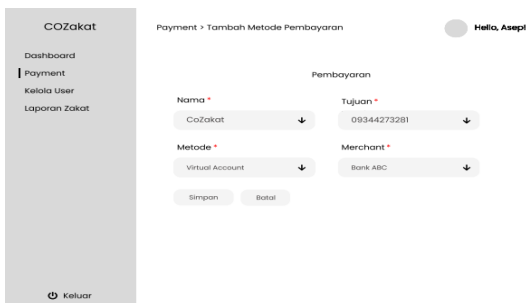


Fig. 13: Add Payment Methods

In Figure 13 above displays, the wireframe for Adding Payment Methods is displayed. This page can be accessed when users add a new payment method as shown in Figure 12. After users save the data, they will be redirected to the Payment Dashboard page in Figure 12.

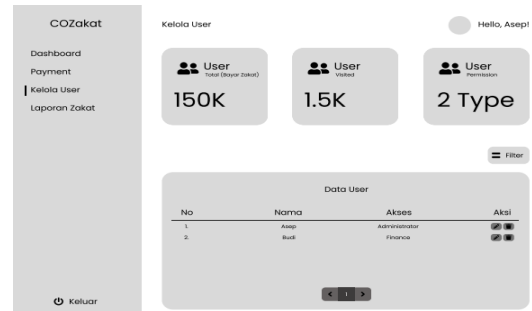


Fig. 14: Setting Users Dashboard

In Figure 14 above, the wireframe for the User Dashboard is displayed. This page is used to view user information, such as the number of users making transactions, the number of website visitors, and user access rights. It also allows for adding access levels to users once they have been registered by the administrator, as shown in Figure 9.

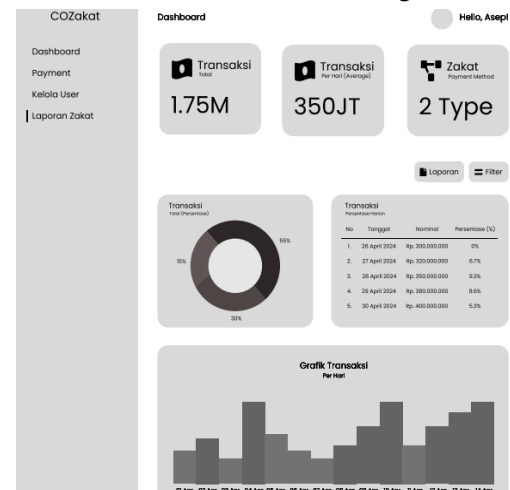


Fig. 15: Zakat Report Dashboard

In Figure 15 above displays, the wireframe for the Zakat Report Dashboard is displayed. This page serves to provide information on all transactions conducted. The Zakat report dashboard includes information presented in tables and charts. Users can filter the data and print Zakat reports based on the selected time range.

PT. COZAKAT INDONESIA
Laporan Keuangan
01 April 2024 - 30 April 2024
(Rp)

No	Tanggal	Keterangan	Debet	Kredit
1.	26 April 2024	Transfer Bank ABC KC Sudirman, Pekanbaru	Rp. 300.000.000,00	Rp. 0,00
2.	27 April 2024	Transfer Bank CDF KC Sudirman, Pekanbaru	Rp. 320.000.000,00	Rp. 0,00
3.	28 April 2024	Transfer Bank EFG KC Sudirman, Pekanbaru	Rp. 350.000.000,00	Rp. 0,00
4.	29 April 2024	Transfer Bank HIJ KC Sudirman, Pekanbaru	Rp. 380.000.000,00	Rp. 0,00
5.	30 April 2024	Transfer Bank KLM Bank NOP KC Sudirman, Pekanbaru	Rp. 400.000.000,00	Rp. 0,00
6.	30 April 2024	Tarik Tunai ATM Bank NOP KC Sudirman, Pekanbaru	Rp. 0,00	Rp. 1.130.000.000,00
Total			Rp. 620.000.000,00	Rp. 1.130.000.000,00

Fig. 16: Zakat Report Print

In Figure 16 above displays, the wireframe for the Print Zakat Report is displayed. This page allows users to view transactions based on the time range selected in Figure 15 and provides the option to directly print the Zakat report.

e. Implementation Planning

Here is the Implementation Plan shown in Table 8.

Table 8. Implementation Planning Table

Number	Description	Step
1.	Initial Preparation: a. Formation of Project Team b. Budget Determination c. Project Scheduling	a. Formation of the development team consisting of programmers, system analysts, and UI/UX designers b. Project budget determination and allocation of required resources c. Scheduling of development stages and determination of project milestones
2.	System Design: a. Use Case Design b. Database Design c. Interface Design	a. Creating use case design to illustrate the interaction between users and the system b. Designing an efficient database structure that meets the system's requirements c. Developing intuitive and appealing user interface wireframes
3.	Coding: a. Program Code Implementation b. Unit Testing c. Component Integration	a. Writing program code based on the technical design that has been prepared b. Testing each program component

		separately to ensure its functionality
		c. Integrating program components to build the system as a whole
4.	Testing: a. System Testing b. Performance Testing c. User Testing	a. Comprehensive system testing to ensure system performance and reliability b. System performance testing under specific load conditions to ensure responsiveness c. User testing to gather feedback and for further improvements
5.	Launch and Evaluation: a. System Implementation b. User Evaluation c. System Maintenance	a. Launching the web-based Zakat information system into the production environment b. User evaluation of the system to ensure user satisfaction and effectiveness of use c. Bug fixing, routine maintenance, and advanced feature development

In Table 8 above displays, the implementation plan for the development of the Zakat information system is outlined. With a structured approach as detailed in the table, steps including initial preparation, system design, coding, testing, deployment, and evaluation will be carried out systematically and thoughtfully. This will ensure that the development of the Zakat information system is conducted efficiently and effectively, with attention given to each phase necessary to achieve the desired objectives.

f. System Efficiency Indicators

1) Task Completion Time

Measuring how quickly users can complete key tasks, such as paying Zakat or accessing information. The

shorter the time required, the more efficient the system is.

2) User Error Rate

The user error rate indicates how often users make mistakes while using the system. A user-friendly system will have a low error rate, showing that users can easily understand and navigate the interface.

3) User Retention

This indicator measures how many users return to use the system after their first attempt. A high retention rate indicates that users feel comfortable and satisfied with their experience using the Zakat information system.

4) Respon Time

This indicator measures the system's speed in responding to user inputs. A fast and responsive system creates a more positive user experience, reduces frustration, and improves overall usage efficiency.

g. Big Data Handling Mechanism

1) Scalability Based Architecture

This architecture is used to address the growing data generated by Zakat, infaq, and shadaqah transactions. The system can be scaled both horizontally and vertically to increase server capacity as needed, ensuring that it remains responsive even as the number of donors and Zakat recipients grows.

2) Data Compression

Data compression is implemented to reduce the size of stored data, such as Zakat transaction archives. This improves access times and saves storage space without sacrificing system performance.

3) Caching Utilization

Caching can help store frequently accessed data, such as donor information or routine reports, in temporary memory. This speeds up data access and reduces the load on the main database, which is essential for maintaining high

system performance when many users are accessing it simultaneously.

h. System Performance Metrics

1) Uptime

Uptime is a metric that measures the percentage of time the system is available and functioning properly without interruptions. High uptime, such as above 99.9%, indicates that the system rarely experiences downtime or is inaccessible. A reliable system should have effective monitoring and maintenance mechanisms to ensure high uptime. This is especially crucial in applications like the Zakat information system, where continuous availability is necessary to serve users making payments or accessing important information.

2) Response Time

In the context of the Zakat system, particularly when handling critical transactions such as Zakat payments, the response time must be very fast. An optimal response time is under 2 seconds, ensuring a smooth user experience without significant delays. Longer response times can lead to user frustration and even transaction failures, which can undermine user trust in the system.

3) Error Rate

The error rate measures the percentage of errors that occur during system use. Errors can include transaction failures, issues with page access, or other malfunctions that disrupt system functionality. A low error rate, such as below 1%, indicates that the system is functioning well and is stable. In the Zakat information system, a low error rate is crucial to ensure that financial transactions and user data are processed accurately without disruptions.

4) Throughput

Throughput measures the number of transactions or requests the system can process within a given time period. This metric is essential for evaluating the system's ability to handle high

workloads, especially during peak periods such as Zakat payment times. A reliable system should be capable of processing thousands to tens of thousands of transactions per hour without performance degradation. High throughput ensures that the system remains efficient and responsive, even when facing sudden user surges.

5) **Scability**

Scalability is critical in the Zakat information system to ensure that the system remains reliable as the number of users and transactions grows. This includes adding more users, data volume, or transactions that need to be handled. A scalable system can dynamically add resources without performance degradation. For example, if the number of users increases significantly, the system should be able to accommodate the growth without experiencing downtime or a slowdown in speed.

6) **Data Integrity Checks**

A reliable system should have automated mechanisms to regularly check data integrity, such as every few hours. This is important to ensure that Zakat data, transactions, and user information remain secure and unaffected by errors or data corruption. Data integrity checks help prevent the loss of critical data and maintain user trust in the system.

7) **Disaster Recovery Time**

In the context of the Zakat information system, quick recovery is vital to maintaining the continuity of services that are essential to users. Fast recovery times are crucial to minimizing the negative impact on users and ensuring that services remain available even in the event of technical failures or natural disasters.

i. Inovation

1) **Integration of Modern Technology in Zakat Management**

The system adopts modern technologies such as distributed

databases and parallel processing to handle large amounts of data, ensuring that it can serve thousands to millions of users with consistent performance. This innovation enhances the speed and efficiency of Zakat management.

2) **Educational and Informational Features about Zakat**

The system is equipped with educational content that explains the importance of Zakat, types of Zakat, and guides on how to correctly fulfill Zakat obligations. This feature helps users who may not be familiar with Zakat requirements.

3) **Diverse and Flexible Payment Options**

The system supports various payment methods, including bank transfers, credit cards, e-wallets, merchants, and QRIS. By offering a range of options, users have the flexibility to choose the method that is most convenient for them.

4) **Enhanced Security**

In addition to data encryption, the system features real-time security monitoring to detect and prevent potential threats to user data. The security measures also include SSL/TLS encryption, Web Application Firewall (WAF), backups, and disaster recovery tools. This innovation provides additional assurance that users' financial and personal data are secure.

5) **Detailed Financial Reporting Features**

The system offers detailed and easy-to-understand financial reporting features. Users can view reports on Zakat fund usage, distribution, and remaining funds with transparency. This innovation helps to increase users' trust in the management of Zakat.

j. Security

1) **SSL/TLS (Secure Sockets Layer/Transport Layer Security)**

SSL/TLS is a security protocol used to encrypt data transmitted between the

web server and users. In the Zakat information system, data such as personal information, passwords, and financial transactions are encrypted to prevent them from being altered or viewed by third parties during transmission. SSL/TLS ensures that the URL begins with 'https://' and displays a padlock icon in the browser's address bar.

2) WAF (Web Application Firewall)

WAF (Web Application Firewall) is a type of firewall specifically designed to protect the Zakat information system from various threats. WAF monitors, filters, and blocks HTTP/HTTPS traffic to the web based on security policies. It is also used to prevent attacks such as SQL Injection, Cross-Site Scripting (XSS), and Cross-Site Request Forgery (CSRF), which exploit web vulnerabilities.

3) Data Encryption

In the Zakat information system, data is a collection of information that is highly susceptible to misuse, so the data stored in the database requires encryption to protect sensitive information, such as users' personal details and financial data. The encryption algorithm used is AES (Advanced Encryption Standard), which is widely used and considered very secure for protecting data at both the software and hardware levels.

4) Backup dan Disaster Recovery Tools

Backup is a crucial step to protect data from loss due to system failures, cyberattacks, or natural disasters. This Zakat information system utilizes AWS Backup, which allows for regular data backups that can be restored in the event of data loss. A disaster recovery plan should be designed to ensure that the system can be restored and back online as quickly as possible after an interruption.

5) Monitoring Tools

Monitoring tools are used to track all system activities in real-time, helping to

detect anomalies or potential attacks. Tools like Nagios provide insights into system performance, resource usage, and network activity. By monitoring logs and performance indicators, administrators can quickly respond to any signs of attacks or performance issues.

CONCLUSION AND RECOMMENDATIONS

Based on the previous explanation, it can be concluded that an information system is a collection of elements that work together to collect, process, store, and disseminate information beneficial to users. Understanding the importance of Zakat as an obligation in Islam involving ritual, spiritual, and social values, and the role of the Amil Zakat Infaq Shadaqah ABC institution in managing Zakat, infaq, and shadaqah according to Islamic sharia principles, it is concluded that the development of a web-based Zakat information system is a crucial step to enhance efficiency, transparency, and distribution of Zakat funds at the ABC Zakat Management Institution.

By implementing an automated control system in a user-friendly and integrated web-based Zakat information system, challenges faced in Zakat management, such as insufficient understanding of Zakat jurisprudence, lack of public awareness about paying Zakat, and limited technology adoption in Zakat institutions, can be effectively addressed. This solution will not only improve Zakat management efficiency but also strengthen transparency and targeted distribution of funds, providing greater benefits to Zakat recipients and the community as a whole.

Recommendations for the design of the Zakat information system at the Amil Zakat Infaq Shadaqah ABC institution include involving users in the development process to ensure the interface is truly user-friendly, validated through direct prototype testing by users and meeting their needs; ensuring that the database used is efficient, structured, and has strong security mechanisms to protect Muzakki data; and conducting system speed tests during access and routine monitoring of automated controls in the Zakat information system to

ensure smooth Zakat management and alignment with project goals.

REFERENCES

- Anis, Y., Wahyudi, E. N., & Kurniawan, H. C. (2024). Metode Waterfall dalam Pengembangan Sistem Inventaris Guna Meningkatkan Efisiensi Manajemen Stok Barang. *Jurnal TekNumberlogi Dan Sistem Informasi Bisnis*, 6(2), 329–338. <https://doi.org/10.47233/jteksis.v6i2.1351>
- Apriani, V., & Riyadi, S. (2019). Sistem Informasi Manajemen Zakat Infaq Dan Sedekah Pada Lazis Nurul Iman Berbasis Web. *Jurnal Penelitian Dosen FIKOM (UNDA)*, 1–4. <http://jurnal.unda.ac.id/index.php/Jpdf/article/view/78/72>
- Haryanto, F., Rahayu, W., & Kurniawan, I. (2023). Perancangan Sistem Informasi Dana Zakat, Infaq, dan Shodaqoh Pada Wisma Muallaf Dompot Dhuafa. *Jurnal Riset Dan Aplikasi Mahasiswa Informatika (JRAMI)*, 4(04), 597–604. <https://doi.org/10.30998/jrami.v4i04.2565>
- Jalaluddin, J. (2023). Strategi LAZISNU Jawa Barat dalam Mewujudkan Masyarakat Sadar Zakat. *Jurnal Maps (Manajemen Perbankan Syariah)*, 7(1), 33–42. <https://doi.org/10.32627/maps.v7i1.823>
- Manajemen, J. I., & Added, E. V. (2023). *Jurnal Ilmu Manajemen, Bisnis dan EkoNumbermi* | JIMBE <https://malaqbiipublisher.com/index.php/JIMBE>. 1(4), 285–292.
- Mufid, A. (2024). *Implementasi TekNumberlogi dalam Pengelolaan Zakat, Infaq, Shadaqah, dan Wakaf: Studi Kasus Platform Digital*. 1, 38–59.
- Prasetyo, D. H., Rahma, T., Santosa, A., & Hadiyanto, H. N. (2024). *Pengetahuan Zakat Dalam Islam Untuk Masyarakat*. 2(3).
- Putra, P. A. A., Nurrachmi, I., & Bhari, A. (2024). *Model Pengelolaan Zakat Produktif di Indonesia dan Malaysia*. 5(1), 80–97. <https://doi.org/10.54396/qlb.v5i1.1222>
- Raihan Dika Febriansyah, Andronias Siregar, & Arief Satriansyah. (2024). Perancangan Sistem Informasi Pengumpulan Dana Zakat Berbasis Web Pada Masjid Jami Nur Muhammad. *IKRA-ITH TekNumberlogi Jurnal Sains Dan TekNumberlogi*, 8(1), 9–17. <https://doi.org/10.37817/ikraith-tekNumberlogi.v8i1.3238>
- Rustandi, R., Abidin, Y. Z., Rahman, A., & Yuliani, Y. (2023). Manajemen Pemberdayaan Zakat dan Implikasinya terhadap Aspek Sosio EkoNumbermi dalam Tosejahteraan Umat. *Tadbir: Jurnal Manajemen Dakwah*, 8(2), 135–152. <https://doi.org/10.15575/tadbir.v8i2.33855>
- Saleh, M., Sinaga, A., & Mahmudiyah, S.-J. (2023). *JEKSya Jurnal EkoNumbermi dan Touangan Syariah*. 2(1), 285–297.
- Sapitri, M., Hasanah, R., Tinggi, S., Islam, A., & Bengkalis, N. (2024). *Issn : 3025-9495*. 5(10), 1–9.
- Siregar, M. L. P., & Soemitra, A. (2023). Peran Yayasan Baitul MALLPLN dalam Meningkatkan PerekoNumbermian Mustahiq dalam Penyaluran Dana Zakat. *Jrime: Jurnal Riset Manajemen Dan EkoNumbermi*, 2(1), 25–37. <https://doi.org/10.54066/jrime-itb.v2i1.1016>
- Suradi, R., & Amalia, S. (2024). Strategi Pengelolaan Zakat Pada Badan Amil Zakat Nasional (Baznas) Kota Pontianak. *Jurnal Ilmiah EkoNumbermi Islam*, 10(1), 1091. <https://doi.org/10.29040/jiei.v10i1.12009>
- Wantoro, A. (2019). Sistem Informasi Berbasis Web Untuk Pengelolaan Penerima Dana Zakat, Infaq Dan Sedekah. *Jurnal TekNumber Kompak*, 13(2), 31. <https://doi.org/10.33365/jtk.v13i2.338>
- Yarham, Miro, A. B., Syahrudin, M., & Yasin, M. (2024). Strategi Komunikasi Dakwah Lazismu Dalam Meningkatkan Tosadaran Masyarakat Menunaikan Zakat Di Tocamatan Sangatta Utara Kabupaten Kutai Timur. *Journal of International Multidisciplinary Research Strategi*, 2(3), 100–107. <https://journal.banjaresepacific.com/index.php/jimr/article/view/367>
- Yulianti. (2024). *PEDOMAN HIDUP ISLAMI: Ibadah, Akhlak, dan Muamalah yang Sempurna* (Cetakan 1). UMKO Publishing.
- Zidan, M. (2023). *Strategi Penghimpunan ZIS (Zakat, Infaq Dan Sedekah) Melalui Digital QRIS Di Baznas Provinsi Sulawesi Tengah*. 1–22.