

Zakat Fitrah Application based on Web Framework using Waterfall Method

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Abstract: Zakat Fitrah is an obligation for every Muslim. In the management of zakat fitrah, the Amil Zakat Agency has a very vital function, namely managing the receipt and distribution of zakat to groups of people who are entitled to receive it (Mustahik). If the amil zakat is negligent and not careful in managing zakat, then the distribution of zakat is not right on target. The Buyung Rahimah Rantauprapat Mosque has the Amil Zakat Fitrah Agency, but in the management process it still uses the manual method so that the zakat management process takes a long time and the data stored is inaccurate. To solve these problems, an orderly, neat and good recording system is needed. This study aims to create an application for the management of Zakat Fitrah at the Buyung Rahimah Rantauprapat Mosque based on the Web Framework. The application development method uses the Waterfall model which divides into four stages, namely: analysis, design, program code generation, and system testing. This research has produced a zakat fitrah application with the main menus, namely: login menu, amil agency, types of zakat, zakat payment, zakat distribution, user management. This application also manages to display zakat fitrah data and zakat fitrah distribution history data. With the application of a web-based framework, making this application user friendly, making it easier for the Amil Agency to manage zakat fitrah. A web framework with the MVC concept and a complete library makes zakat fitrah data management accurate and fast.

Keywords: Codeigniter; Information System; Waterfall; Web; Zakat Fitrah.

INTRODUCTION

Zakat Fitrah is the obligation of every Muslim in the form of distribution of assets managed by the Amil, Zakat, Infaq, and Sadaqah (LAZIS) Institute (Nofitasari, 2020). Amil Zakat are people who are in charge of taking care of the distribution and distribution of zakat to groups who are entitled to receive it or what is called Mustahik (Karaing, 2021). If Amil is negligent and not careful in the management of zakat, the distribution of zakat will not be right on target. Zakat management is very important, given the different income levels of people (Purwanto, 2019).

The Buyung Rahimah Rantauprapat Mosque is a place for collecting zakat fitrah, but in its management it still uses the manual method so it takes a long time and stored data will be easily lost and damaged. To solve this problem, a computer application is needed that can help the Amil Zakat Agency of the Buyung Rahimah Rantauprapat Mosque in managing zakat Fitrah. With regular, neat and good records, zakat does not only function as a cleaner of wealth, but also functions as a means of distributing wealth so as to reduce the gap between the rich and the poor (Indrarini, 2017).

As time goes by and the current era, the use of digital-based information technology is increasingly in demand by the public (Fadilla, 2020). This is proven by 2020, Indonesian people are increasingly using mobile phones with a percentage of 96% (Rosyadi, Amrullah, Marcus, & Affandi, 2020). To complete a job related to data management, the computer has a very vital role because it has a high level of accuracy, so that the work process becomes shorter. Using a special application in managing zakat data can help Amil in completing his work quickly and thoroughly. Therefore, the use of computers is appropriate for the management of Zakat Fitrah (Rabkhir & Baharuddin, 2016).

Several studies have implemented computer applications in managing zakat. The desktop-based zakat application implemented at BAZNAS UNBAJA Banten has been able to facilitate the calculation of zakat in an effective time (Rakhmat & Fatullah, 2020). The development of an Android-based zakat calculation application

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at BAZNAS Karanganyar has made it easier for Muzakki to calculate zakat without knowing working hours (Pamungkas, Kristono, & Setiarso, 2020). By applying the concept of models, views, and controllers to the e-Zakah application, it is proven that it makes it easier to group objects and also makes it easier to carry out system maintenance (Fathonih, Maylawati, & Ramdhani, 2019).

This study aims to create an application for the management of Zakat Fitrah at the Buyung Rahimah Rantauprapat Mosque. Applications developed using web-based technology with the Codeigniter framework. The application development method uses the waterfall model. As for the formulation of the problem in this study, how to make an application for processing Zakat Fitrah at the Buyung Rahimah Mosque in order to make it easier for Amil in managing zakat fitrah. Then, how can the management of zakat fitrah data be carried out accurately and does not require a very long time. With this application, it is expected to be able to meet all information needs in real-time regarding information on the management of Zakat Fitrah at the Buyung Rahimah Rantauprapat Mosque.

LITERATURE REVIEW

Zakat Fitrah is the zakat that is obligatory on every Muslim man and woman which is carried out in the month of Ramadan. Zakat Fitrah has been paid since the beginning of Ramadan and no later than before the Eid prayer. Meanwhile, the distribution to mustahik is carried out no later than before the Eid prayer. The amount of zakat fitrah is rice or staple food weighing 2.5 kg or 3.5 liters per person (BAZNAS, 2022). Zakat has rules to whom zakat must be issued. There are eight groups of people who receive zakat, namely: Fakir, Poor, Amil, Mu'allaf, Servant of Sahaya, Gharimin, Fisabilillah, and Ibn Sabil (Jabar, 2019).

According to Law no. 23 of 2011, zakat management is an activity that includes the stages of planning, implementing, and coordinating the collection, distribution, and utilization of zakat. The purpose of its implementation is to follow the principles of financial accountability and transparency to increase the effectiveness and efficiency of zakat services, and to increase the benefits of zakat to realize community welfare in alleviating poverty (Indonesia, 2011).

Web-based application development is currently using the framework-based PHP programming language. There are a number of advantages why using Framework is better than Native. The use of the framework is able to save time in processing program code because of the availability of the concept of Model, View and Controller (MVC), Application Programming Interface (API) and a complete library (Laaziri, Benmoussa, Khouli, & Kerkeb, 2019). Second, the tutorial in the form of available documentation makes web developers faster in overcoming errors in the program (Benmoussa, Laaziri, Khouli, Larbi, & Yamami, 2019).

The waterfall method is a method that is often used by system analysts in building software. The waterfall method is a sequential software development process, where the process is seen as a waterfall flow that goes through the phases of needs analysis, design, implementation, and testing (Aldi, 2022). The essence of the waterfall method is that the working phase of a system is carried out sequentially or linearly. The point is that we must complete each stage first, if the first stage is complete then proceed to the next stage so that the stages do not repeat themselves (Indriani, Dar, & Irmayanti, 2022). This method has the advantage of being systematic and sequential (Nugroho & Kusuma, 2018) (Nurjannah, Dar, & Bangun, 2021), making it easier for developers to build systems and maintain software quality (Rizaldi, 2017).

METHOD

In developing this application, the Waterfall method was applied with a software life cycle approach sequentially starting from analysis, design, coding, and testing (Oktaviani, Susanti, Sarkawi, & Adriani, 2019) as shown in Figure 1.

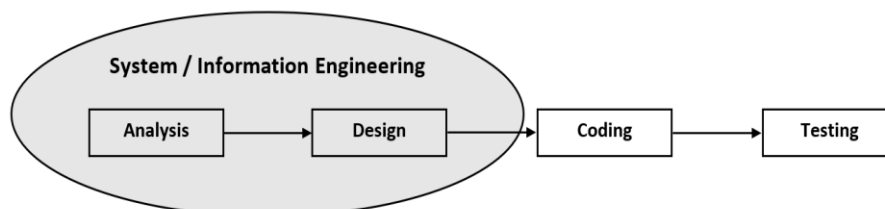


Fig 1. Waterfall Model (Wahyudi & Rhinaldi, 2018)

Analysis

At this stage, the needs analysis of the system to be designed is carried out. The trick is to understand the system that is running to identify existing problems, understand the existing business processes, and after that only a system requirements analysis can be carried out to determine the needs of the system to be designed both functional and non-functional requirements.

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Design

At this stage, the process of translating system requirements is made into a detailed system design, including its appearance, including output design, input design, data structure design. After that, model the needs by using several UML tools, namely Use Case Diagrams to define the function of the system, and Activity Diagrams to describe the behavior of objects in business processes, Component Diagram, and User Interface.

In accordance with the use diagram in Figure 2, there are two actors in the system, namely: Badan Amil as Admin and Muzakki as zakat payers. The two actors have different access rights. The process that is carried out is that the Amil Agency logs into the system first. Then, the Amil Agency enters the main menu and can enter the Amyl Agency data. Muzakki chooses the type of zakat, then Muzakki pays zakat. The Amil Agency enters data on muzakki (zakat payers). The Amil Agency enters data on zakat recipients and the Amil Agency can print a report. Then, Badan Amil logs out or exits the system.

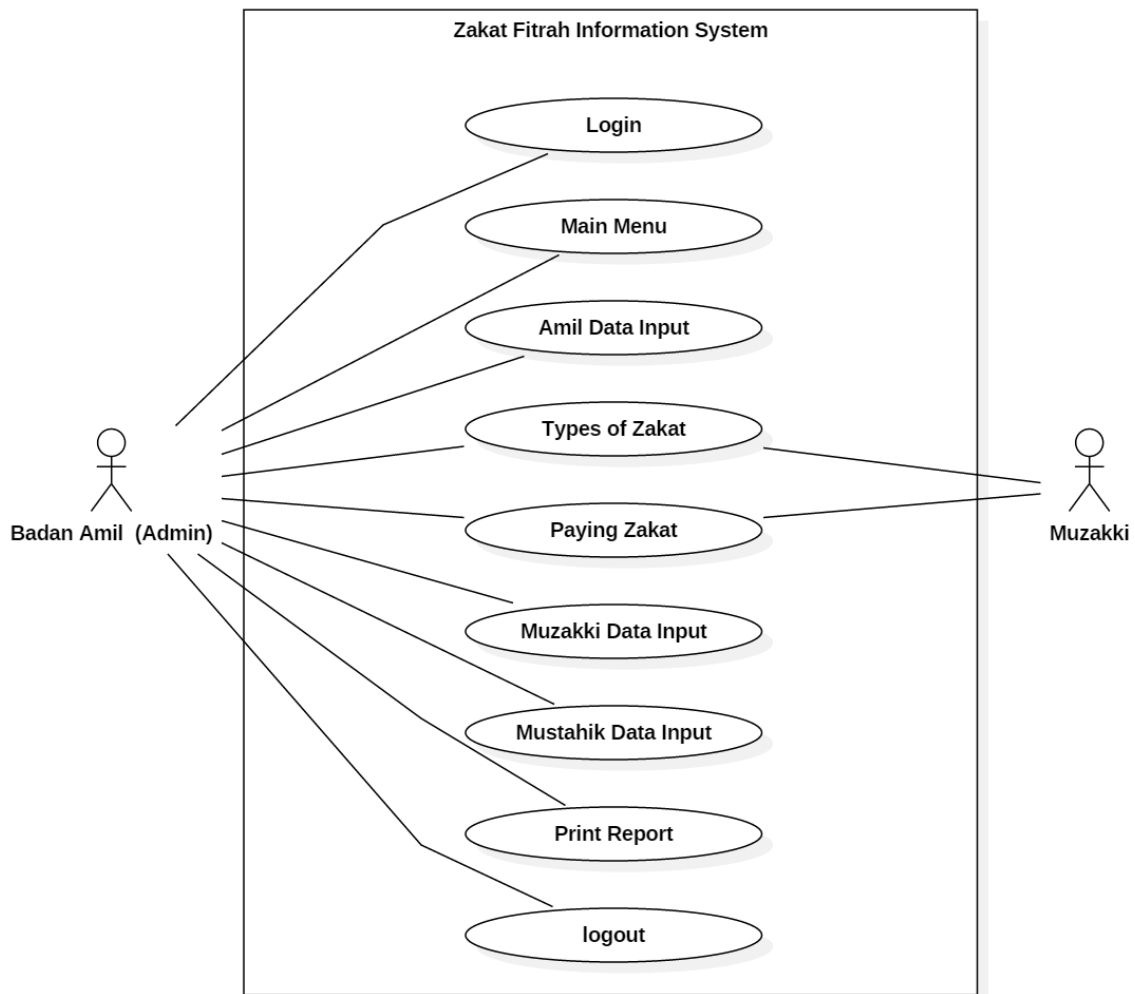


Fig 2. Use Case Diagram of Zakat Fitrah

Then the design is done to load the activity diagram. The process carried out in the diagram is that the Amil Agency logs into the system first. Then the Amil Agency enters the main menu. The Amil Agency enters the Amil Agency data. Then, Muzakki chose the type of zakat. Muzakki pays zakat. Then, the Amil Agency entered the muzakki data. The Amil Agency enters data on zakat recipients. The Amil Agency prints a report. Then, Badan Amil exited the system. The activity diagram of Zakat Fitrah is shown in Figure 3 below.

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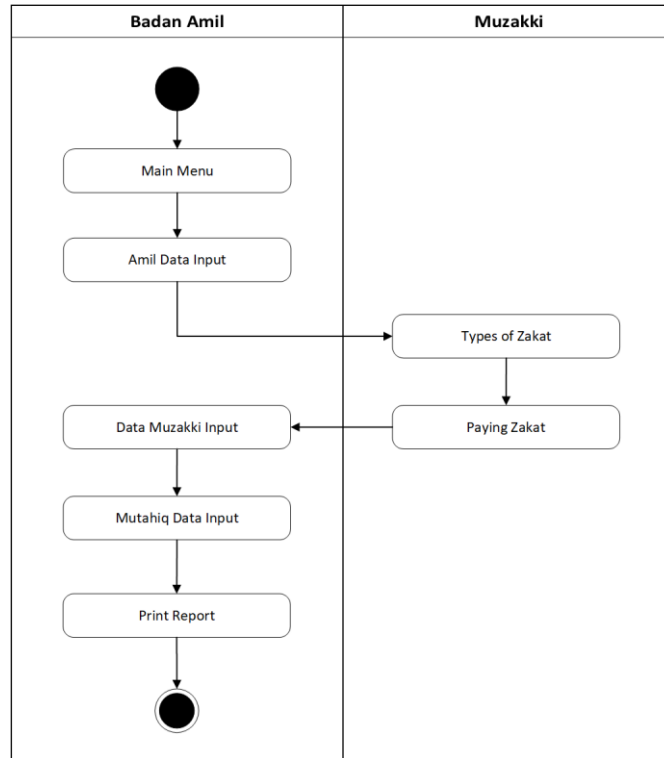


Fig 3. Activity Diagram of Zakat Fitrah

The zakat fitrah management system has a main menu. In the system there is an amyl agency data input menu, in this system there is a amyl agency data input form. Then there is a zakat payment input menu, in this menu there is a muzakki data input form and zakat payment input. Then there is a menu for the distribution of zakat fitrah, in this menu there is input data for receiving zakat fitrah.

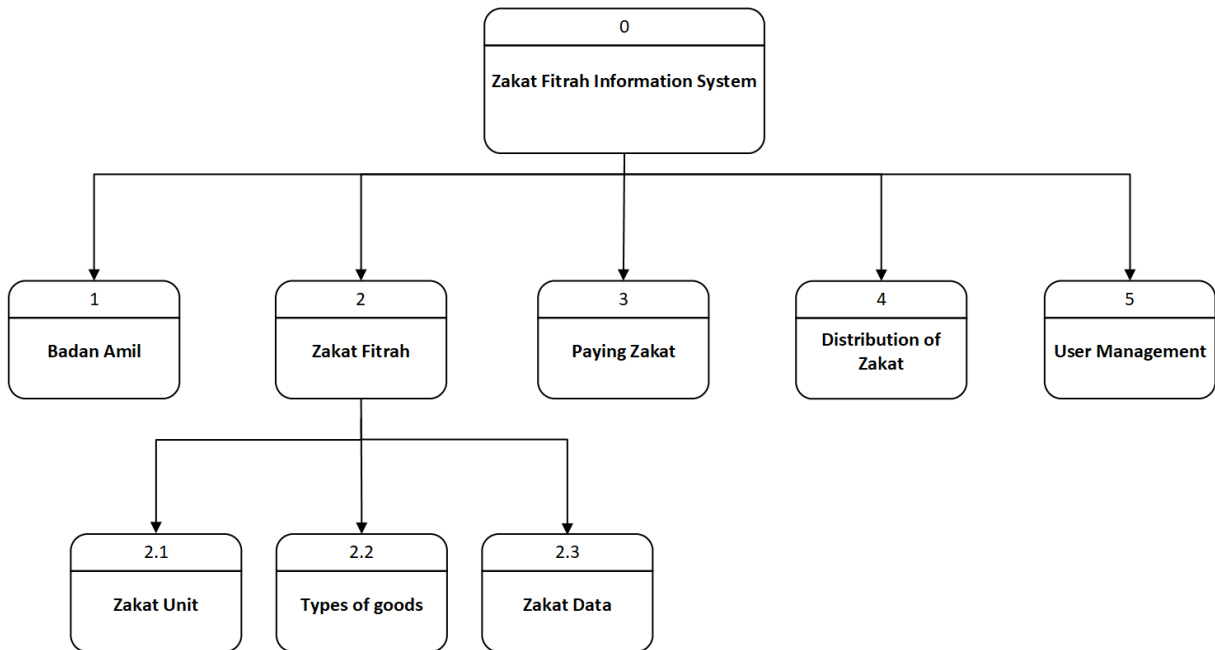


Fig 4. HIPO Diagram of Zakat Fitrah Information System

Figure 4 shows the main menu interface for the zakat fitrah management application which consists of 9 menus that can be used. The menus are the login menu, the amil agency menu, the zakat type menu consisting of

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zakat units, types of goods, and zakat data. Furthermore, there is a zakat payment menu, a zakat distribution menu, and a user management menu.

Coding

At this stage, an application is made based on the design in the previous stage by making a program using the PHP programming language based on the CodeIgniter framework and MySQL DBMS.

Testing

At this stage, the overall testing of the system that has been built is carried out. Testing the system using the Blackbox Testing Method by integrating the program units so that it becomes a complete system.

RESULT

After designing the system, the implementation process of making program code is carried out. The results are shown in the application menus as shown in Figure 5 below. The application menu display shows the compatibility between the application interface design and the implementation results obtained.

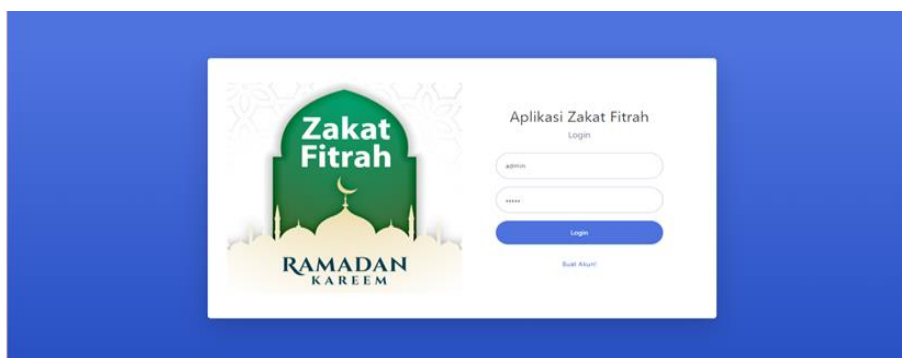


Fig 5. Zakat Fitrah Information System

After the Amil enters the username and password, the amil who acts as an admin can login. On the main menu display, there are other menus, namely the amil body menu, zakat type menu, zakat receipt menu, zakat distribution menu, and user management. On the amil agency menu, admins can manage data from zakat fitrah amil bodies such as: adding, viewing, editing, and deleting. In the zakat type menu display, there are three sub-menus, namely zakat units, zakat types, and zakat data. The zakat unit contains the names of units such as Kg, Rupiah, etc. In the type of zakat sub-menu, there are names of types of foodstuffs, and the means of payment used to pay zakat. Furthermore, the display of the zakat data menu shows the amount of zakat that has been collected.

The input of zakat fitrah acceptance data is carried out on the zakat acceptance input form which functions to add data on zakat receipts, or add data on people who pay zakat. This system can also display the history of the data of people who have paid their zakat. The zakat payment input menu functions to add data from people who have received zakat. In this menu, there is also a history of data from the distribution of zakat that has been carried out, as shown in Figure 6 below.

No.	No Transaksi	Tanggal Pembagian	Nama Penerima Zakat	Alamat Penerima Zakat	Jenis Zakat	Jumlah Zakat	User	Hapus
1	T-BK-20062900001	2020-06-29	jamal	kampung bantan	Uang	10000 Rp/Rupiah	Administrator	[X]
2	T-BK-20062900000	2020-06-29	mimin	medan	Beras	3 Kg/Kilogram	Administrator	[X]
3	T-BK-20050800003	2020-05-08	muthia	medan	Beras	2 Kg/Kilogram	Administrator	[X]
4	T-BK-20050800002	2020-05-08	muthia	medan	Uang	20000 Rp/Rupiah	Administrator	[X]
5	T-BK-20050800000	2020-05-08	amat	kampung bantan	Uang	30000 Rp/Rupiah	Administrator	[X]

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Fig 6. Data History of Zakat Fitrah

Pada pengujian dengan metode Blackbox testing dilakukan pengujian terhadap menu input sistem. Hasil dari pengujian tersebut diperlihatkan pada Tabel 1 di bawah ini.

Table 1. Blackbox Testing Results

Testing Scenario	Expected results	Test result	Conclusion
Use the correct username and password, then click login	The system accepts to login and enter the member's home page	Login is successful and the member goes to the main page	Valid
Use all the fields in the mail data, then save	The system will accept to add Amil's data and display a message successfully saved	Amil data was successfully added and a notification "Amil was successfully created with the name"	Valid
Type all Muzakki identity fields: name, bin/binti, and payment amount	The system saves Muzakki and a payment invoice will be issued	Payment data successfully saved and invoice issued	Valid
Click the logout button to exit the system	The system has successfully logged out	Logout is successful and returns to the login page	Valid

From the results of the Blackbox testing, it was found that the zakat fitrah information system was successfully run, as seen from the absence of errors during testing.

DISCUSSIONS

After successfully designing and making this zakat fitrah management application, the author analyzes several things for consideration. Based on the results of the application of the zakat fitrah management application, the resulting application can help in overcoming the problems that existed in the old system, where the manual system took a long time. With this application, the process of managing zakat fitrah at the Buyung Rahimah Rantauprapat Mosque becomes faster and more accurate. For further development of this system, the application can be implemented on android and ios based platforms. Or you can do comparison trials through other web development frameworks, such as Laravel.

CONCLUSION

This research has succeeded in making an application for the management of zakat fitrah at the Buyung Rahimah Rantauprapat Mosque. To be able to make this application so that it can make it easier for the Amil Agency to manage zakat fitrah, then the application must be web-based by utilizing the Codeigniter framework. Codeigniter which is oriented to the MVC concept and has a complete library is very helpful in making user friendly applications, making it easier for the Amil Agency to manage zakat fitrah. Codeigniter succeeded in making the program code produced very clean and search Engine Friendly (SEF) so that the management of zakat fitrah becomes more accurate and does not require a long time. Hopefully this zakat management application can make a positive contribution to the management of zakat fitrah at the Buyung Rahimah Rantauprapat Mosque.

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