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THE APPLICATION OF WATERFALL MODEL IN THE DESIGN OF ZAKAT MANAGEMENT INFORMATION SYSTEM AT DKM BAITURRAHMAN

Didih Aditiyawarman, Saeful Mu'alim
Bina Sarana Infomatika University, Jakarta, Indonesia
Email: didih.dda@bsi.ac.id, saefulmualim22@gmail.com

Abstract

The process of receiving zakat is very sensitive because zakat receipts are included in the category of financial management that needs to be accounted for in reporting. DKM Baiturrahman Mosque is one of the institutions that carry out the process of receiving zakat, where the process of receiving zakat is carried out and managed using a manual or conventional system, reporting recapitulation still uses the manual method so that data recording still has several weaknesses such as vulnerability to data loss, data search that takes time quite a long time and poor data accuracy. Therefore, it is necessary to build an information system for zakat management by using a good information technology. This application is called SIPEZAK (Sistem Informasi Pengelolaan Zakat). The development of this website-based zakat management application is built using the waterfall model approach. With this information system, it is hoped that it will help the process of receiving zakat, distributing and reporting zakat funds to be more effective and efficient.

Keywords: zakat; information system; website; waterfall

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Introduction

Zakat comes from the form of the word "zakat" which means holy, good, blessing, growing, and developing. It is called zakat, because it contains the hope of obtaining blessings, cleansing the soul and cultivating it with various virtues. The meaning of growing in the sense of zakat shows that issuing zakat is the cause of the growth and development of assets, the implementation of zakat results in many rewards. While the sacred meaning shows that zakat is to purify the soul from ugliness, falsehood and purification from sins. Zakat is a certain part of the property that must be issued by every Muslim when it has reached the specified conditions. As one of the pillars of Islam, Zakat is paid to be given to those who are entitled to receive it (asnaf). Zakat is also a social and humanitarian charity activity that can be developed in accordance with the development of mankind.

Although it has many institutions of zakat management but not suitable with the system that applied in each institutions. Mostly, zakat management system in institutions are still applying the manual system or not computerized that make it less effective to conduct the operasional of zakat management. (Indriyani & Wahyu, 2018) One of them is the DKM Baiturrahman Karawang. This institution, still using conventional or manually, that write data of zakat to the register book and recorded after it was transferred into the computer but still using Microsoft Excel. Then the making of the report is less efficient for much data, and hard to make that report. With this system, many problems are often encountered, such

as sheets or archive data is vulnerable missing, precision is less accurate, the process is longer, and others.

Therefore, the role of technology is needed in improving the zakat management system in order to reduce the weaknesses faced during the conventional process. In the research by Indriyani, states that by creating a zakat payment information system online can save time and not interfere with work activities because payment can be done anywhere. that the use of technology will help the zakat management process, zakat fund reporting will be more effective and efficient. The people Based on this, DKM Baiturrahman Karawang need solusion to solve that problem with designing of Zakat information system zakat based on website to managed Zakat management more effective and efficient and called SIPEZAK (Sistem Informasi Pengelolaan Zakat) (Supriadi & Fitriani, 2018) (Supriadi & Fitriani, 2018). With a web-based information system, people involved in zakat management can manage and monitor the use of zakat funds anytime and anywhere.

Related Study

(Supriadi & Fitriani, 2018), in their research said that the amount of zakat data that must be recorded starting from the registration, receipt and distribution of zakat gives rise to various problems, such data loss, so designing a web-based zakat management information system is one way to overcome the problems and weaknesses of the zakat management process.

in their research was conducted on the basis of the need for a data management system for recipients of zakat, infaq and shodaqoh that can be used to manage data on the utilization section (PDG) at the Indonesian Zakat Initiative (IZI) Lampung. The application of this system provides convenience during the process of managing data input for recipients of zakat, infaq and shodaqoh in search of data and making report (Najmudin, Syihabudin, Fatoni, & Sujai, 2022).

Method

This research uses a waterfall model approach. According to (Rosa, 2016) stated that the waterfall model is a linear sequential or classical life cycle, The waterfall model provides a sequential software life flow approach starting from analysis, design, coding, testing and support stages (Roger & Bruce, 2015). (Wantoro, 2019) Refers to Pressman in linear sequential, development software is done systematically and sequential starting from the analysis phase, design, implementation, testing and maintenance. (Wantoro, 2019) The researcher used four stage are as follow:

a. Requirement Analysis

In this process, the researcher analyses the requirement of data, application and observes the zakat management process carried out by the zakat management committee and so on.

b. Design

At the software design stage the researcher uses Entity Relationship Diagram (ERD) to design the database design and its components such as entities, attributes and relationships. To design the program model, the author uses diagrams in the Unified Modelling Language (UML). Unfied Modeling Language (UML) according to is a family of graphical notations supported by a single meta-model, which helps the description and design of software systems, especially systems built using object-oriented programming (OO).

c. Coding

He coding used in the design of this system follows the coding system in the php programming. The result of this stage is a computer program in accordance with the design that has been made at the design stage.

d. Unit Testing

he researcher conducted testing of the system and program units. Then unit testing involves verifying that each program unit meets its specifications.

Results and Discussion

A. User Requirements

In designing the Zakat Management Information system there are several

users who have different information needs, such as the following:

1) Administration

Administration can be logged on the login form before access program, managing data of Muzaki, managing data of Zakat type, managing data of Mustahik, managing of Zakat transactions and confirmation, managing of Zakat Balance, managing of Zakat distribution and Managing of Zakat Report.

2) Muzaki

Muzaki can make registration, view and edit profile, making transactions and confirm zakat, View the zakat distribution report and view mustahik data

B. System Requirements

1) Users (Admin/Managers) must first login to be able to access this application by entering their username and password.

2) The user must log out after using the application.

3) The system can process zakat management data and zakat data reports.

4) The system provides transaction and confirmation of zakat payment

5) Users can monitor the distribution and utilization of the zakat funds they provide

C. Software Design

1) Usecase Diagram

Usecase diagram is used to describe briefly who is using the system and what can be done. A Usecase represents how a system interacts with its environment by illustrating the activities that are performed by the users system and the system's responses (Fowler, 2004). Use Case Diagram that will be described only associated with major process of managing the Zakat information system can be seen at figure 1 bellow.

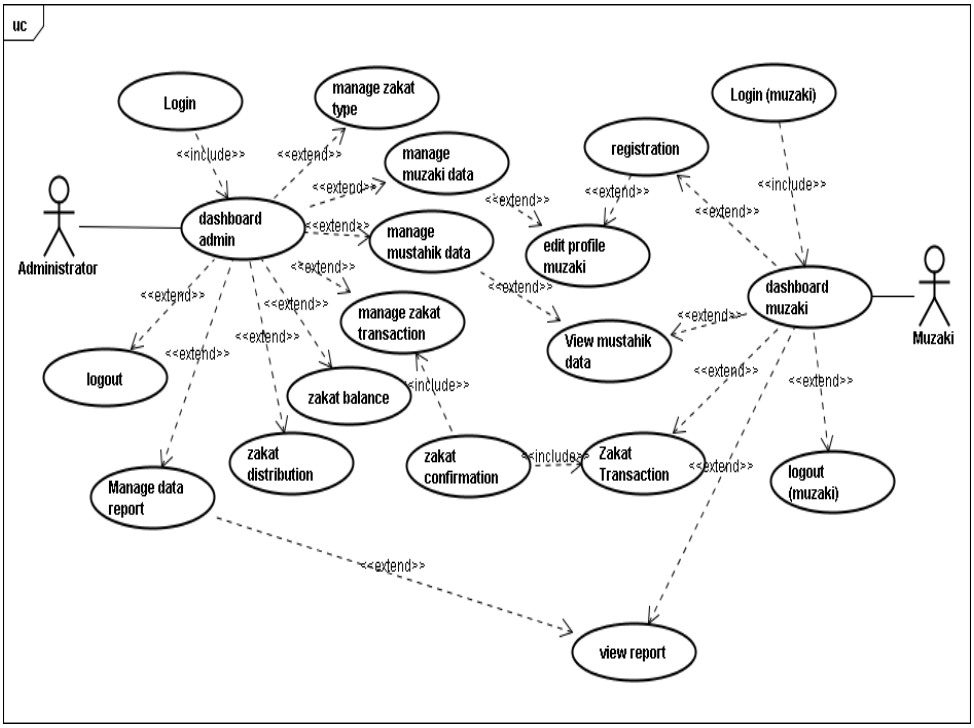

Figure 1
Usecase diagram of Zakat management Information System (SIPEZAK)

D. Database design

A database is a collection of interconnected data groups (archives) that are organized in such a way that they can be reused quickly and easily . (Fatansyah, 2018) Database design are describing the relationship between tables. The description of database for Zakat Management Information systems at the DKM Baiturrahman are using Entity Relationship Diagram (ERD) to specification the table or file requirement for the application. Entity Relationship Diagram (ERD) or Entity Relationship Diagram is a diagram that describes entities and their data elements and their relationships (relationships) with other entities. (Dennis, Wixom, & Roth, 2012) The database design of Zakat information system can be seen at figure 2 as follows:

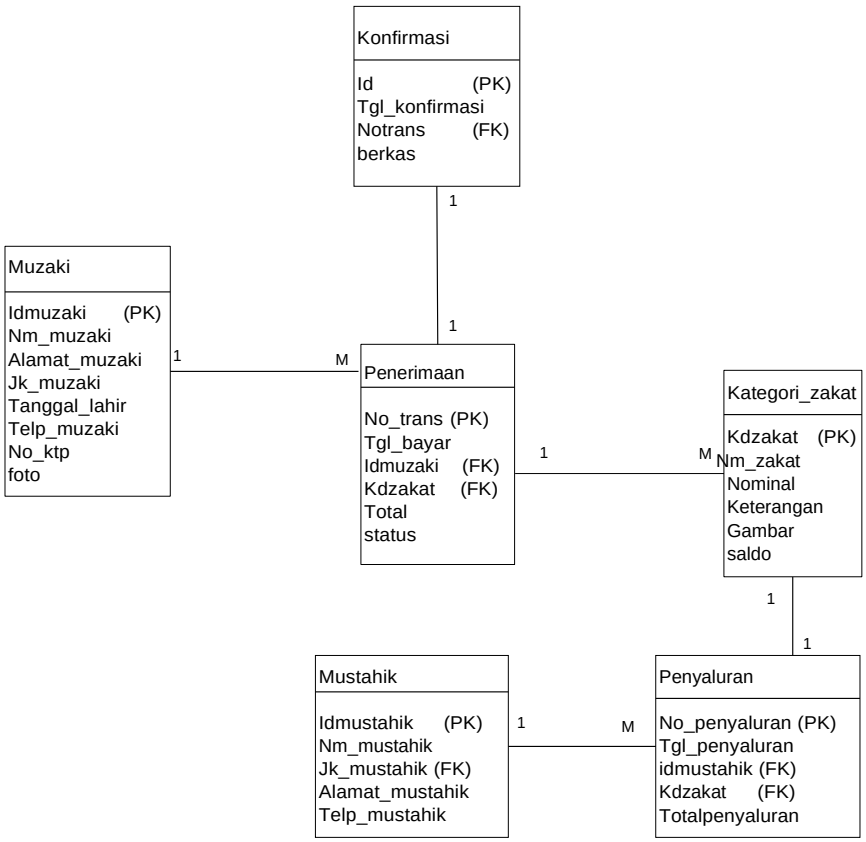

Figure 2
Database design Zakat management Information System (SIPEZAK)

E. User Interface

User Interface is the way of program and user to communicate. The interface was designed with user friendly system and comfortable to use, straight to the program content of the basic functions of the program was created, and can meet the requirement of the system. The interfaces of Zakat management application at DKM Baiturrahman can be seen at figures below.

1) User Interface

Figure 3
Login Interface for user

2) Muzaki's dashboard

Figure 4
Muzaki's dashboard Interface

3) Muzaki Registration Interface

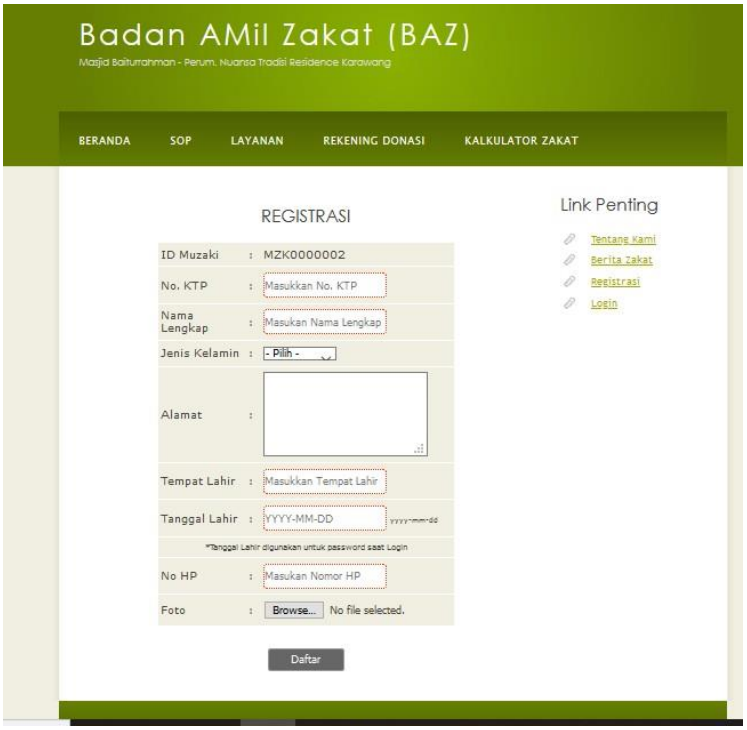

Figure 5
Interface of muzaki's Registration

4) Muzaki's profile

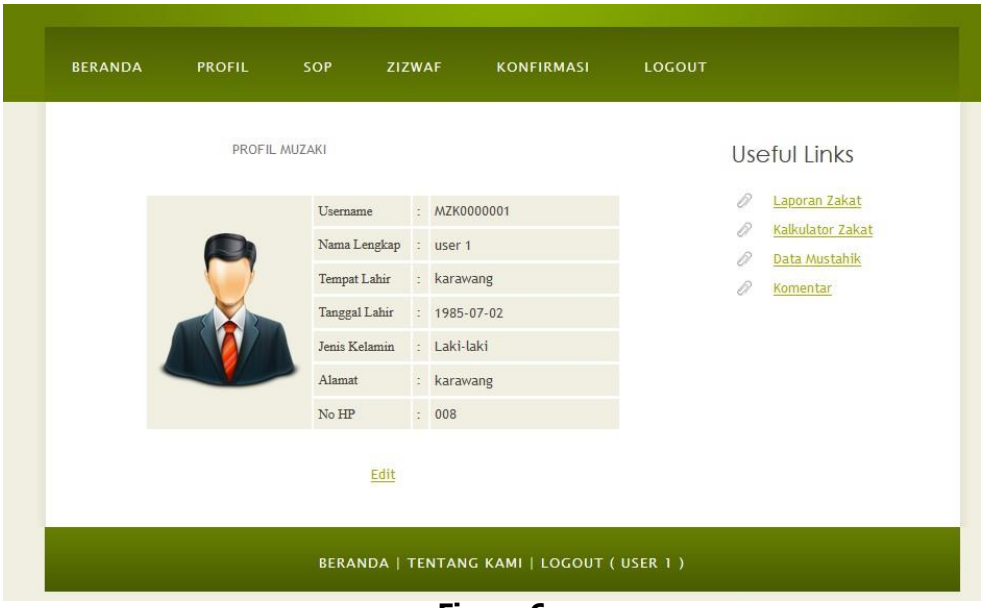

Figure 6
Interface of muzaki's profile

5) Zakat Processing

Figure 7
Interface of Zakat processing

6) Zakat Transaction

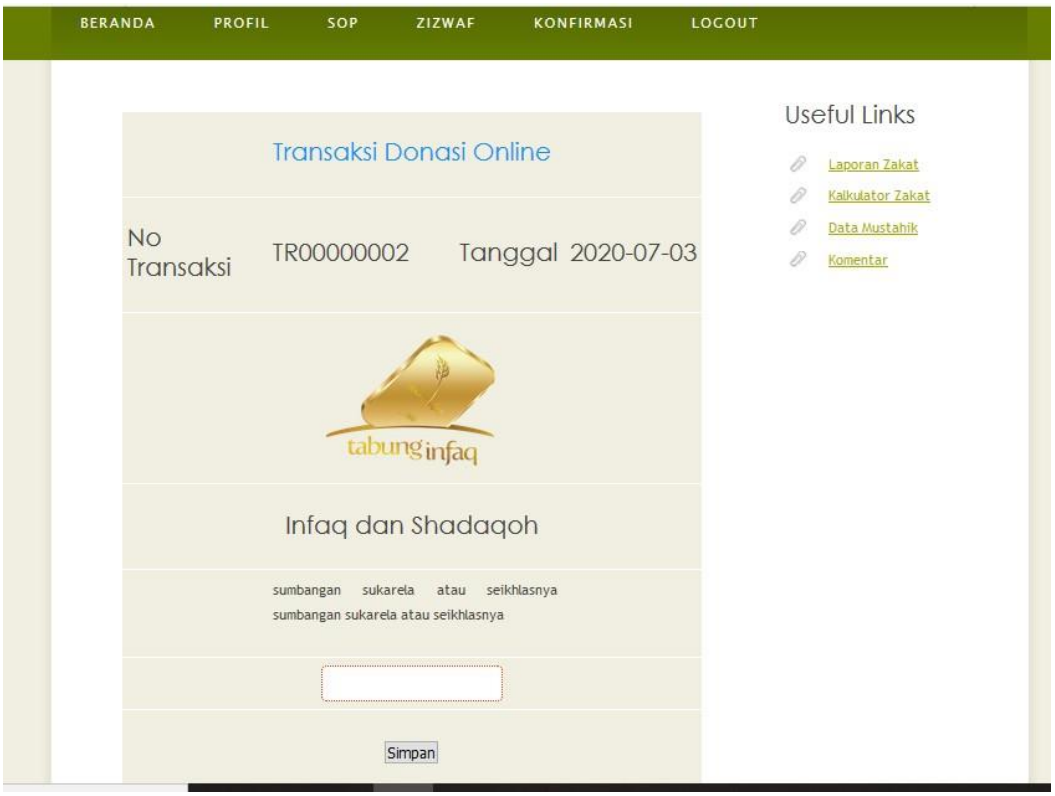

Figure 8
Interface of zakat transaction by muzaki

7) Zakat Confirmation

Figure 9
Interface of zakat confirmation

8) Invoice of zakat

Figure 10
Interface of zakat invoice

9) Calculator of Zakat

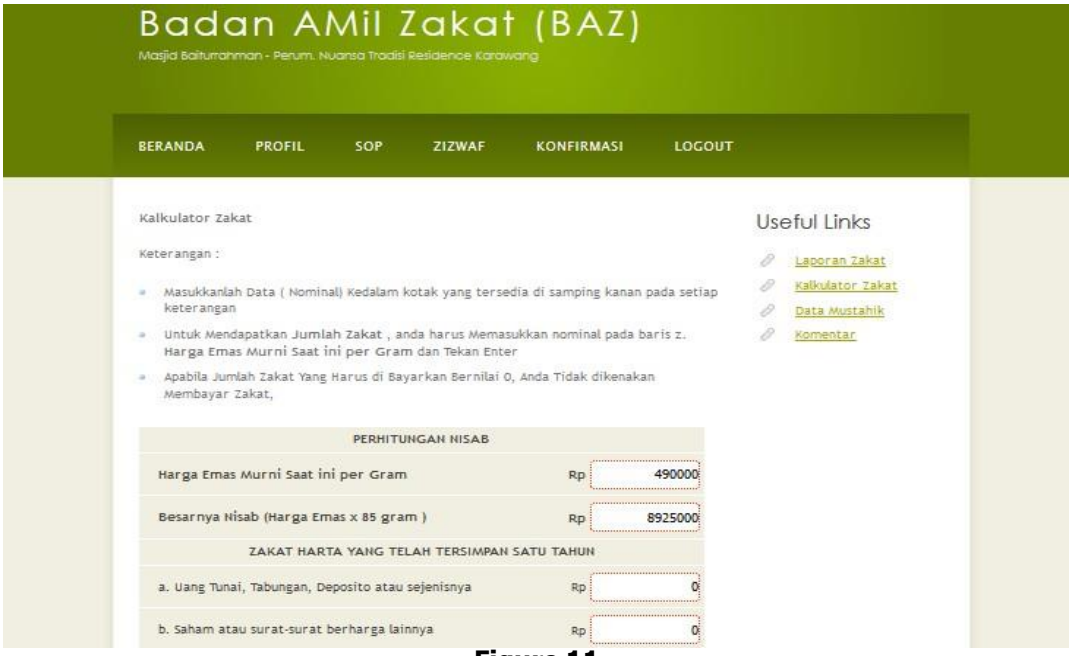

Figure 11
Interface of zakat calculator

10) Administrator dashboard

Figure 12
Interface of Administrator dashboard

11) Input Data of Mustahik

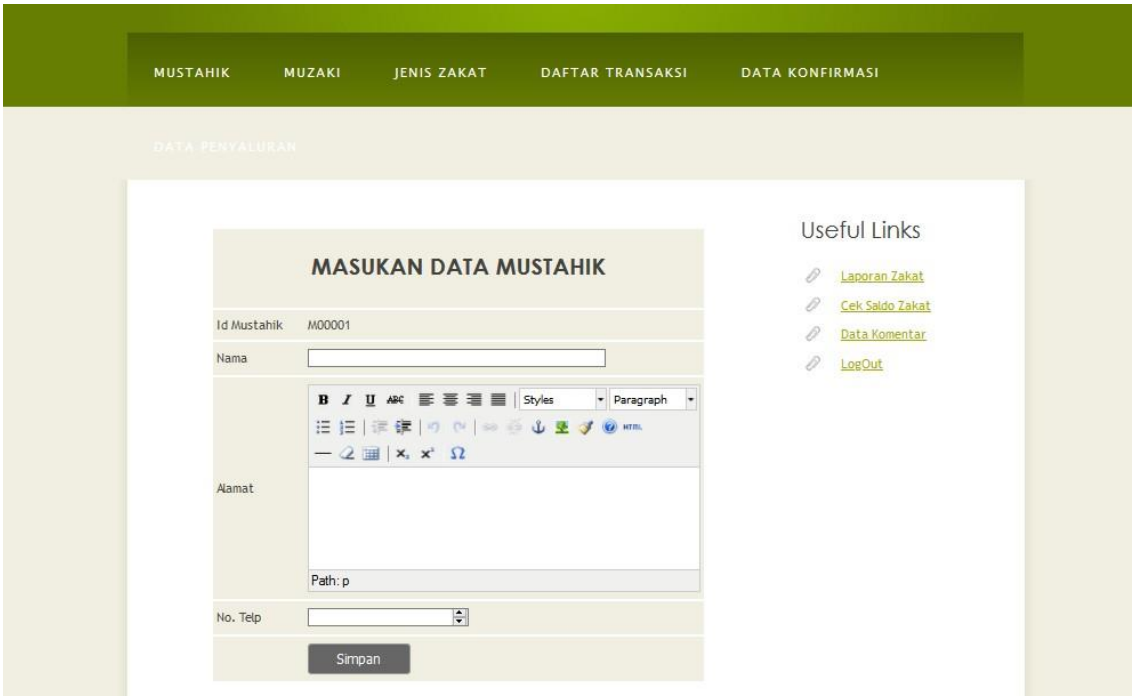

Figure 13
Interface of Mustahik list

12) List of Muzaki

Figure 14
Interface of muzaki's list

13) List of Zakat type

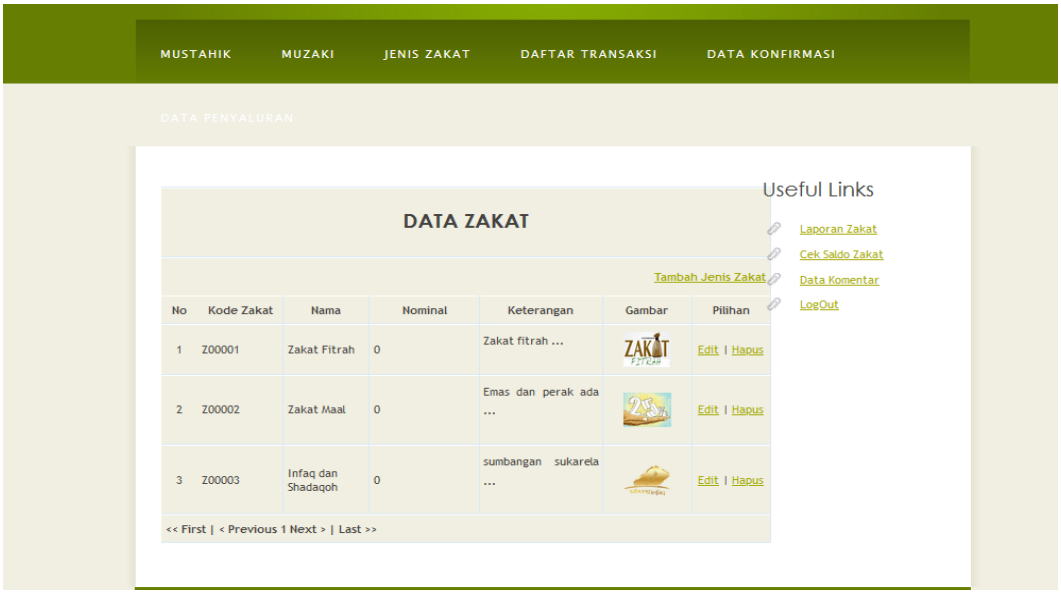

Figure 15
Interface of zakat type list

14) Report of zakat transaction

Figure 16
Interface of Zakat Report

15) Report of Zakat distribution

Figure 17
Interface of zakat distribution report

16) Balance of Zakat

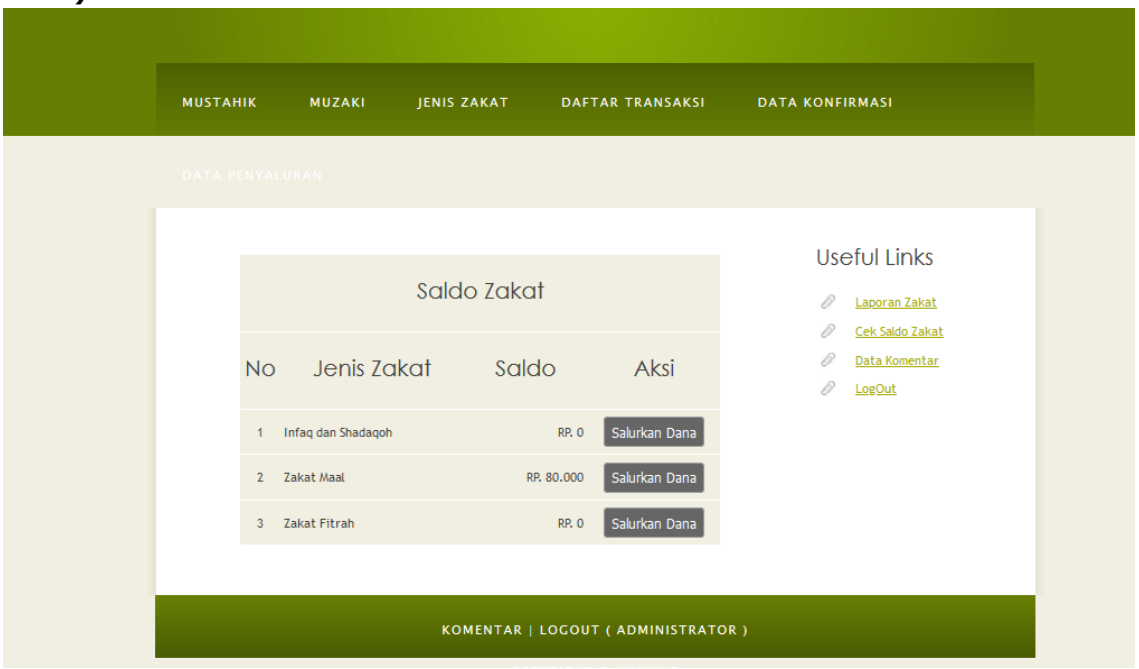

Figure 18
Interface of zakat balance

Conclusion

From the results of research on the Zakat Management System (SIPEZAK) at the DKM Baiturrohman, it can be concluded that The existence of a computerized process provides a fundamental advantage for the company in the form of automation and improving the quality of information. Using the web-based application of the zakat management information system can increase

the effectiveness and efficiency in the zakat management process. The information system is able to provide convenience for muzakki in carrying out the zakat process (Rais, 2009). Muzaki can monitor zakat funds managed by DKM and the DKM is helped by computerized data archiving which makes the data neater, safer and easier to manage for reports. The next development, SIPEZAK can be made even better by adding features and can also be made a mobile application so that it can be more easily used smartphones.

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