

## THE DESIGN OF MANAGEMENT INFORMATION SYSTEMS AT JAMI KAUTSAR MOSQUE

Sri Rezeki Candra Nursari<sup>1</sup>, Prasetyo Linuwih<sup>2</sup>

<sup>1</sup>Prodi Teknik Informatika Fak.Teknik Universitas Pancasila Jakarta

<sup>2</sup>Prodi Teknik Informatika Fak.Teknik Universitas Pancasila Jakarta

<sup>1,2</sup>Jl. Srengseng Sawah Jagakarsa, Jakarta , Indonesia

E-mail: sri.rezeki.candra.n@univpancasila.ac.id<sup>1</sup>, gigabyte387@gmail.com<sup>2</sup>

### Article history:

Received: Feb 3, 2021

Revised: May 15, 2021

Accepted: May 26, 2021

### Abstract

This research is motivated by the management of the Jami Al-Kautsar Mosque in Depok which has not been properly recorded and the data storage is scattered. These constraints have the potential for data loss and inaccurate information and a process taking a long time to produce such information. In this study, the data collection techniques used are observation, interviews and literature study. The information system built uses the waterfall method as a software development or Software Development Life Cycle (SDLC) using object-oriented design of the Unified Modeling Language (UML) and testing using Black Box. The process in this study includes the process of managing activities, managing the mosque, inventory, finances and goods (income and expenditure). The results of research implemented by the author on the Management Information System of the Jami Al-Kautsar Mosque is a system that can provide information on the management of activities, mosque administrators (human resources), inventory, finances and goods (income and expenditure) as well as communicative and informative reports so that they can make evaluation materials and transparent accountability reports from the management to all congregations of the Jami Al-Kautsar Mosque. User satisfaction with the evaluation information system uses the five-category Black Box test and produces a good information system. Three categories of Black Box testing are no errors in functions, database access and structure and system performance above 60%.

### Keywords:

Design;

Systems;

Information;

Mosque Management;

Finance;

### 1. INTRODUCTION

Mosques have meaning in the lives of Muslims, because since the time of the Prophet Muhammad, they have become the main center for all Muslim activities. In fact, the mosque at that time became a facility for Muslims to achieve the advancement of civilization. The function of a mosque in the history of its emergence is not only for "a place of prostration" as its literal meaning, but is multifunctional as a center for educational, political, economic, social and cultural activities [1] [2].

Jami Al-Kautsar Mosque is located at Jl. Mahakam No.51, RT.3, Bakti Jaya, Sukmajaya, Depok City, West Java. The Jami Al-Kautsar Mosque has a large area so that the Jami Al-Kautsar Mosque often facilitates weddings or other activities. The Mosque Prosperity Council (DKM) of the Jami Al-Kautsar Mosque continues to improve its performance through comprehensive coaching in three areas including: management (idarrah) to improve the quality of mosque organization by seeing how the mosque is managed professionally in an organized manner, development in the field of prosperity Mosque (imarah) by observing the function of the mosque in the activities of empowering the people, and fostering the

maintenance of the mosque (riayah) by seeing how the physical form and infrastructure of the mosque are always properly maintained and improved [3]. Mosque administrators understand that the prosperity of the mosque lies in its empowerment activities, as an effort that must be followed while strengthening the potential or power possessed by each community [3] [4]. Many of the activities carried out by DKM Jami Al-Kautsar are not only religious in nature, so that the mosque administrators often experience difficulties in managing the data management of their activities. Documentation of activities is also not neatly recorded and communication is lacking so that there is often an overlap between one activity and another.

The inventory at the Al-Kautsar Mosque is not neatly recorded, only in the form of scribbles sometimes located in various rooms of the mosque secretariat. Mosque administrators do not often know the mosque inventory that can still be used, lost and lent to the surrounding community. Finances and goods (income and expenditure) occurring at the Jami Al-Kautsar Mosque are currently still using the method of recording in a book (paper based), where every income either in the form of money or goods is only recorded in a book. This has a big potential

for miscalculation and loss of the income list if the mosque's entry log is lost.

The mosque management (human resources) at the Jami Al-Kautsar Mosque is also one of the root problems occurring today. The list of mosque administrators is not well recorded and only has a list of the main mosque administrators printed in an organizational chart and only placed at the mosque secretariat. The list of the mosque's congregation is not recorded so that the management does not remember who can be used for activities at the mosque. The responsibility of a job is often delegated to the same people so that there is a lack of equal distribution of work in each administrator or congregation.

Technological updates in the management of the mosque system internally will make the mosque better. In this study, the information system will be built on a web-based basis so that it will make it easier for mosque administrators and congregations to access this information system. In addition to easy access, this information system can help make it easier for mosque administrators to manage data and provide information in a transparent, fast and accurate manner to the public through the information system created.

## II. THEORETICAL BASIS

### 2.1. Information System

Information systems, namely collecting, processing, storing, analyzing, disseminating information for specific purposes. Like other systems, an information system consists of input (data, instructions) and output (reports, calculations). Information systems process input and produce output sent to users or other systems. A reciprocal mechanism controlling operations can be included as well. Like any other system, an information system operates in an environment. In studying information systems, it is necessary to know about the differences in data, information, and knowledge [7] [9] [10].

### 2.2. Management

Management comes from the word to manage meaning to organize. In regulating matters, problems, processes and questions will arise about what is regulated, who regulates, why should it be regulated and what is the purpose of the arrangement. Management also analyzes, sets goals / objectives and determines tasks and obligations properly [8].

### 2.3. Definition of a mosque

Estimologically, a mosque is a place to prostrate, in the framework of worshipping Allah SWT or a place to offer prayers. Meanwhile, sociologically the mosque developing in Islamic society in Indonesia is a certain place or building intended for Muslims to pray, consisting of obligatory prayers and sunnah prayers, either individually or in congregation.

Basically, mosque is not only used as places of worship, but mosque also plays a role as a center for community and Muslim community activities including coaching, education, learning, community empowerment, and big day celebration activities.

Strengthening the capacity of administrators in mosques is divided into three areas, namely [6]

- The field of organizational management (Idarah).

The developments are:

- Idaratu binail maddiyyi, physical management including structural management, development arrangements, guarding of honor, cleanliness, order, beauty, maintenance of order, peace, financial and administrative arrangements, and maintenance of the attractiveness of the mosque in inviting worshipers to come.
- Idaratu binair ruhiyyi, including the regulation of the implementation of the function of the mosque as a place or forum for community guidance, as a center for community development through education and teaching (majlis taklim).
- Mosque prosperity management (imarah)
- Facility and infrastructure management (ri'ayah)

### 2.4. Basic Inventory Concepts

Assets in a company are of two types: current assets and fixed assets. Current assets are company assets having a useful life of less than one year. Meanwhile, fixed assets are company assets having a useful life of more than one year [13].

## III. RESEARCH METHOD

This study uses the following methods: waterfall, observation, interviews, literature study and Black-Box Testing. The system design is based on data obtained from observations, interviews and literature studies. The author directly observes the input process and activity data management, mosque management, inventory, finances and goods (income and expenditure). The waterfall method is a software development carried out by research stages, namely:

- Analysis
- Design
- Encoding
- Testing
- Implementation [5] [11] [14].

Black-Box Testing is a software testing technique focusing on the functional specifications of the software. Blackbox Testing works by ignoring the control structure so that attention is focused on domain information. Blackbox Testing allows software developers to create a set of input conditions that will train all the functional requirements of a program [12].

**IV. RESULTS AND DISCUSSION**

At this stage the researchers discuss the design of the Jami Al-Kautsar Mosque Management Information System starting from system modeling and implementation.

**System Modeling**

System modeling in designing uses the Unified Modeling Language (UML) diagram.

**Use case Diagram**

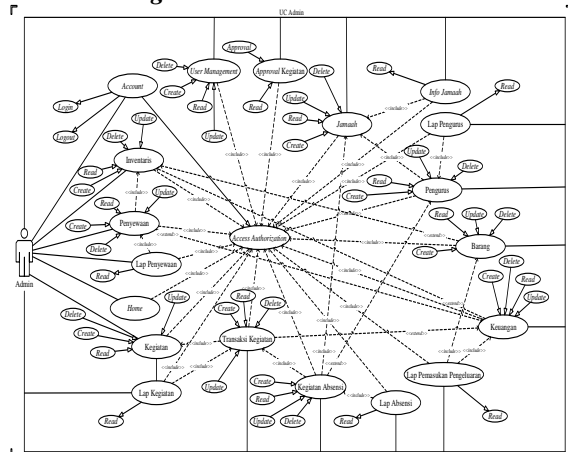


Figure 1. Use case Diagram

**Activity Diagram Login**

Figure 2 describes the login activity flow. If the authentication process is successful, the user will be directed to the home page.

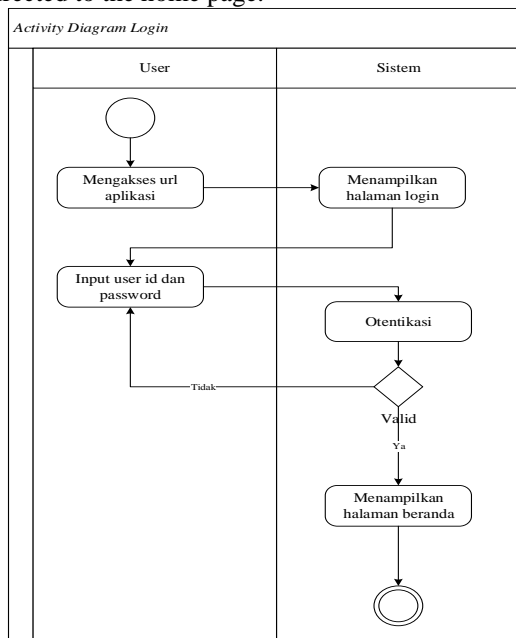


Figure 2. Activity Diagram Login

**Activity Diagram of Management**

Figure 3 describes the flow of management transaction activities carried out by users with the role of admin or secretary or takmir.

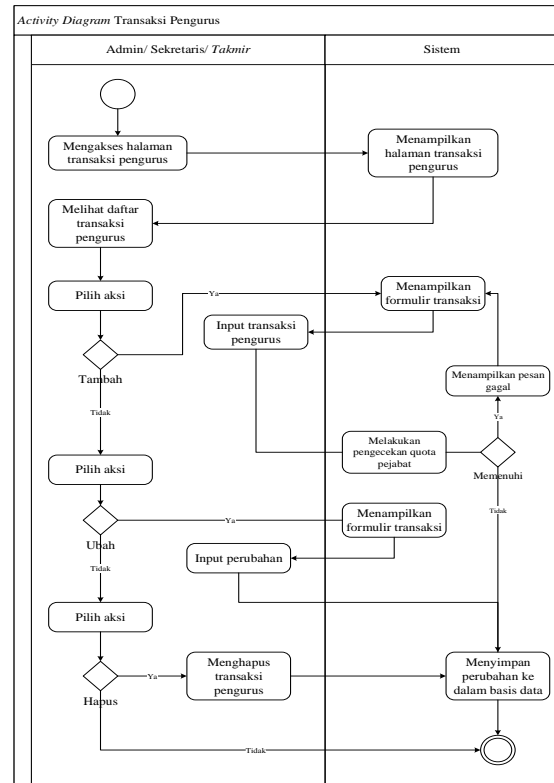


Figure 3. Activity Diagram of Management

**Activity Diagram (Activity)**

Figure 4 describes the flow of activity transactions carried out by users with the role of admin or secretary or takmir.

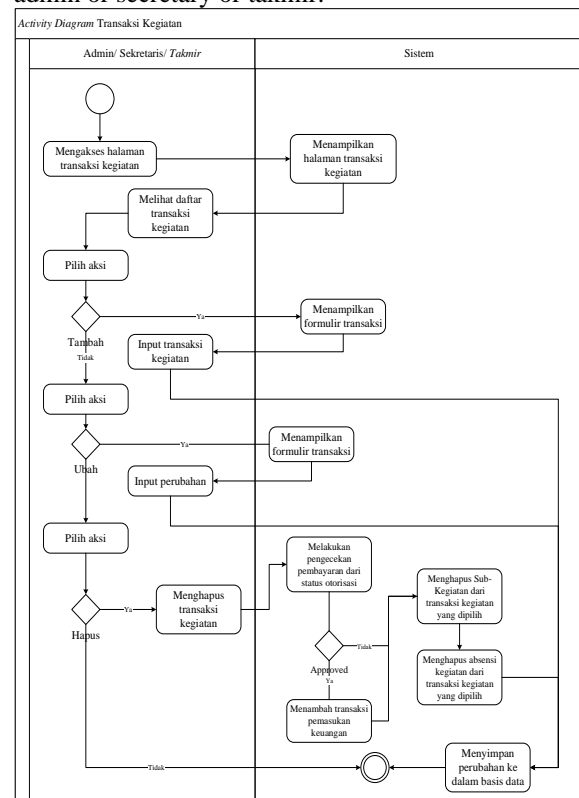
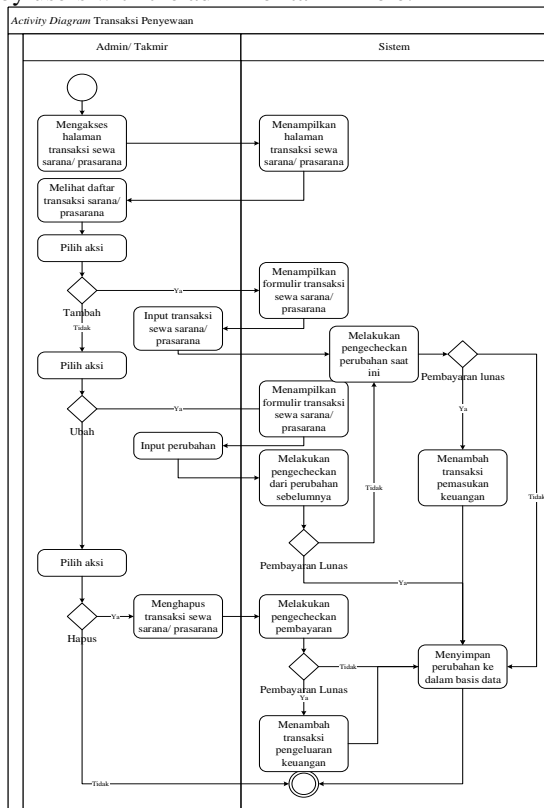


Figure 4. Activity Diagram (Activity)

**Activity Diagram of Rental**

Figure 5 describes the flow of inventory (facilities) or infrastructure lease transaction activities carried out by users with the admin or takmir role.



Gambar 5. Activity Diagram of Rental

**Activity Diagram of Income and Expenditure**

Figure 6 describes the flow of financial transaction activities (income and expenditure) carried out by users in the role of admin or treasurer.

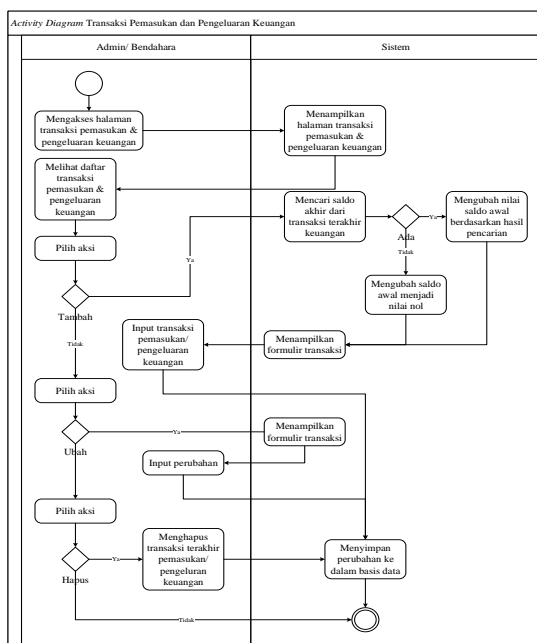


Figure 6. Activity Diagram Income and Expenditure

**Display Page of Homepage**

On the homepage there is information on the final financial balance, expenses for the current month and the total congregation of the mosque as well as a calendar feature for activities. Display in figure 7.

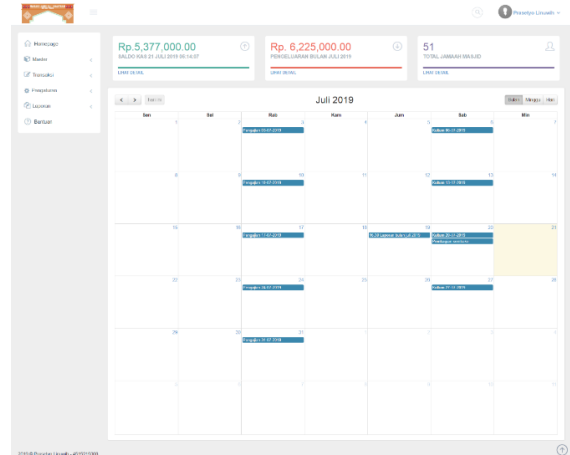


Figure 7. Display of Homepage

**Display of Management Input of Transaction**

This feature is used to manage the administrator's transaction data, equipped with the facility of adding, changing and deleting data. Display in figure 8.

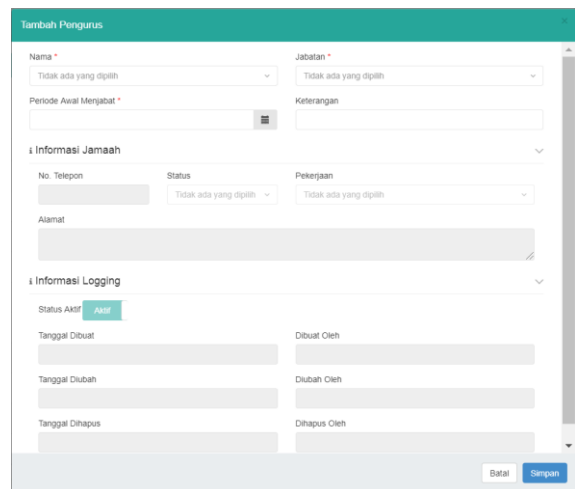


Figure 8. Display of Management Input of Transactions

**Display of Input of Activity Transaction**

This feature is used to manage activity transaction data equipped with the facility to add, modify and delete data. Display in figure 9.

Figure 9. Display of Input of Activity Transaction

### Display of Input of Rental Transaction

This feature is used to manage data on rental transactions for facilities (inventory) and infrastructure equipped with facilities for adding, changing and deleting data. Display in figure 10.

Figure 10. Display of Input of Rental Transactions

### Display of Input of Financial Income and Expenditure Transactions

This feature is used to manage financial income and expenditure transaction data, which is equipped with the facility to add, change and delete data. Display in figure 11.

Figure 11. Display of Input of Financial Income and Expenditure Transaction

### Display of Input of Transaction for the Entry and Issuance of Goods

This feature is used to manage transaction data for the entry and expenditure of goods equipped with the facilities for adding, changing and deleting data. Display in figure 12.

Figure 12. Display of Input of Transaction for the Entry and Issuance of Goods

### Output Reports

Jabatan	Nama	Jenis Kelamin	Tanggal Lahir	Tanggal Lulus	Alamat	Status	Pekerjaan	Pendidikan Terakhir
Ustadz Alim Dakwa	Hasbi Husein	Pria						
Ustadz Alim Dakwa	Fahri	Laki-laki	25-07-1986					
Ustadz Alim Dakwa	Baharji	Pria	28-07-1993					
Ustadz	M. Ahmad Hidayat, M.Pd	Pria						
Ketua Umum	H. Dhami Dhi	Pria			Kel. Darul Iqom, Sukarejo Depok	Muslim	Pemerintah	SI
Manajemen Umum	Jahidul Hudaib	Pria						
Manajemen Keuangan	Azzam Saifuddin	Pria	Depok		Jl. Suk 3 No. 47 020501 Kel. Bantayan Baru, Kecamatan Pulo Dugan	Singha	Multinasional	BMS
Sekretaris Umum	Rubandiyah	Pria						
Ketua I	Lik. Damarul Hafid	Pria						
Demografi	Ust. M. Ruzidi	Pria						

Figure 13. Management Report

Figure 14. Activity Report

Figure 17. Inventory Report

Figure 15. Sub-Activity Reports

Figure 18. Rental Report

Figure 16. Report of Activity Attendance List

Figure 19. Income and Expenditure Report

**Black Box Testing**

Software testing using the Black Box method, focuses on functional specifications using five categories: (1) incorrect or missing functions, (2) interface errors, (3) data structure errors / database access, (4) performance errors, (5) initialization and termination errors. The evaluation is carried out in the form of a questionnaire resulting from the respondents as follows:

- There are no errors found in the functions of 64.0%
- No interface errors are found by 55.8%
- 63.8% of database and data structure access errors are not found
- No 63.8% system performance errors are found
- No initialization and termination errors are found of 58.9%

It can be concluded that the evaluation of the system made in the three categories above 60% said that the system is good.

## V. CONCLUSION

Based on testing and design in making this system management, it can be concluded:

1. The Management Information System for the Jami Al-Kautsar Mosque can provide information on the schedule of activities that do not overlap anymore.
2. The Jami Al-Kautsar Mosque Management Information System can provide inventory information as well as a communicative and informative rental process.
3. The Management Information System for the Jami Al-Kautsar Mosque provides informative reports and a high level of accuracy of any existing management processes. With these reports, the mosque management can inform the congregation as a form of transparency to the congregation

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