


Improving mosque information media based on web applications using the system development life cycle method

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Article Info	ABSTRACT (Nunito 9 pt)
<p>Keywords: Website, CMS, Mosque, DKM,</p>	<p>This research is motivated by the difficulty of accessing mosque information. Starting from prayer schedules, call to prayer officers, imams, and Bilal, to information about mosque finances that should be transparent. All mosque congregations need to see where the funds are being spent, and donors also need access to see what activities have been carried out by the Al-Basfar Mosque Prosperity Council (DKM). All information is only written on the mosque's information board, finances are only made using a notebook. Mosque activities such as the Commemoration of Islamic Holidays (PHBI) only have photo documentation that is displayed on the mosque's information board, which will be replaced periodically. The purpose of this research is to create a web-based information media application for the Al-Basfar mosque in order to increase the socialization of the Mosque Prosperity Council (DKM) to worshipers and donors as well as the community in general. The first step of the method used in making this website is planning, then making a design that is approved by the Al-Basfar Mosque Prosperity Council (DKM), then the process of creating a program (scripting) using CMS (Content Management System), after creating the program, the author carries out testing both script testing and database testing, after the trials are carried out and the website runs well, the next stage is to introduce the website to the public, worshipers and donors (promotion), the last stage is perform maintenance on the website. After this research was carried out, the resulting target outputs were web-based information media applications for the Al-Basfar mosque and National journals with ISBNs for research documents..</p>
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INTRODUCTION

A mosque is a place of worship in the broadest sense. Mosque buildings were deliberately built by Muslims to carry out congregational prayers and various other purposes related to the interests of Muslims.[1] Mosques are very important for Muslims because mosques have an inseparable and very important history. closely related to Muslims. The relationship between mosques and Muslims is like the proverbial relationship between

water and fish. Fish do not survive long and do not survive when separated from air. The meaning of the proverb above is that the mosque is the soul and life force of Muslims.[2] Mosques are not just places of ritual worship, but mosques must be interpreted in various dimensions of life. Among other things, as an effort to empower the community, improve the economy of the people, such as organizing baitul mall, zakat, infaq and shodaqah service units.[3] Apart from mosques there are also places used for Muslim worship such as prayer rooms, langgar or surau, the difference is that these places are generally small so they are not used for Friday prayers and large events, while mosques are large and used for Friday prayers, Eid prayers and so on. There are many activities that are generally carried out at mosques, such as the Commemoration of Islamic Holidays (PHBI), as a place for community discussions, religious studies, lectures and studying the Al-Quran. Commemoration of Islamic holidays is an activity to commemorate Islamic holidays with the aim and purpose of spreading Islam and exploring the meaning and meaning of what happened.[4]

Al-Basfar Mosque is a mosque built by residents using donations from the surrounding community. The money collected is managed in such a way as to purchase equipment for the construction of the mosque and its accessories. Mosque finances and everything related to worship, such as the call to prayer, bilal, imam and others are managed by the Mosque Prosperity Council (DKM). The Mosque Prosperity Council (DKM) is a mosque institution which has a very important function and role in fostering youth religion.[5] Activities carried out in the mosque will be documented by the mosque youth and displayed on information boards. The list of expenses and income is also recorded and kept by the Mosque Prosperity Council (DKM). However, in its implementation, activities that have just taken place will be displayed on information boards, while old activities will be removed, because the information boards are only small, namely two meters long and one meter wide. Then documents related to mosque finances are only stored in the mosque's cash book so that the flow of expenses and income is not transparent. Financial activities and flows need to be reported to the public and donors so that there are no suspicions and misunderstandings in the future.

Based on this background, researchers are interested in conducting research to help "Improve Web Application-Based Information Media for the Al-Basfar Mosque". so that all information and documentation can be stored neatly and can be accessed by everyone, so that the mosque's finances are healthy and transparent.

1. Problem Identification

The identification of problems found by researchers at the Al-Basfar Mosque is as follows:

- a. There is a lack of information about the call to prayer, bilal and imam officers, so that miscommunication often occurs which results in officers not being present while on duty.
- b. Lack of socialization about mosque programs and activities that will be implemented.

- c. Information media is not sufficient to store the large amount of documentation of mosque activities.
- d. The mosque's cash flow is less transparent because it is only written in the cash book held by the mosque treasurer.

2. Research Objectives

The objectives of this research are as follows:

- a. Create a web-based information media application to announce the call to prayer, bilal and imam.
- b. Create web application-based information media for socialization about mosque programs and activities that will be implemented.
- c. Create web application-based information media to store documentation of mosque activities.
- d. Create web application-based information media to display the mosque's finances and cash flow.

3. Problem Limitations

The limitations of the problem in this research are as follows:

- a. Web application-based information media was created to announce the call to prayer, bilal and imam officials.
- b. Web application-based information media was created for socialization about mosque programs and activities that will be implemented.
- c. Web application-based information media was created to store documentation of mosque activities.
- d. Web application-based information media was created to display the mosque's finances and cash flow.

4. Benefits of Research

The benefits of this research are as follows:

- a. Get web application-based information media that can be accessed by admins and users
- b. Get premium hosting from researchers

5. Related research

In this research, several research references were obtained that were relevant to this research, so that they could be used as reference material during research. The following are several studies that the author used as literature reference material in this research, namely as follows:

- a. Research journal created by S. Widanarto Prijowuntato, Apri Damai Sagita Krissandi and Robertus Adi Nugroho in 2021 entitled "Creation of a website as an introduction to cultural tourism in Giring Village". In this research, the website development carried out was the development of a website specifically for cultural tourism / religious tourism. The development of the website was carried out because in Giring Village there are many relics related to culture, both historical objects and non-objects, such as Watu Dakon, Lumpang Jaka Tarub, Babad Alas, Goa Maria Tritis, and so on.[6]

- b. Research journal created by Abid Yanuar Badharudin and Setiawan Ardi Wijaya in 2020 entitled "Development of the KH Mosque Information System. Ahmad Dahlan Based on Website ". This research resulted in the development of the KH mosque information system. Ahmad Dahlan Muhammadiyah University Purwokerto is based on a website which is expected to help the Tamir mosque in terms of information and public disclosure of every agenda held by the Ta'mir as well as financial reporting of the mosque, so that the impetus for the implementation of Law No. 14 of 2008 concerning public information disclosure can be carried out smoothly. good.[7]
- c. A research journal created by Dendi Pratama in 2022 entitled "Designing a Website-Based Mosque Information System (Case Study of Masjidjami Al-Mukaromah)". In this research, a web-based mosque management information system was developed using Hypertext Preprocessor (PHP), Codeigniter framework and MySQL database which aims to make it easier for mosque administrators to manage financial data and mosque activities and will make it easier for the public to search for mosque information through the existing website system. The stages of this research include needs analysis, system design, implementation and testing.[8]
- d. Research journal created by Guntur Maulana Zamroni and Jefree Fahana entitled "Implementation of the MVC Framework in Modeling and Development of a Web-Based Mosque Information System". This research produces a mosque information system application. The information system developed is designed in such a way that mosque takmir administrators can make modifications in terms of features to suit the needs of their respective mosques easily. Based on the functional test carried out, a feasibility percentage of 100% was obtained. Thus it can be said that the system is suitable for use.[9]
- e. Research journal created by Jhody Dwi Bastian and Solehatin, in 2023 entitled "Development of the Banyuwangi Baiturrahman Mosque Information System by Applying the SDLC Method". This research uses the SDLC (Software/System Development Life Cycle) methodology, which consists of the following stages: needs analysis, design, implementation, testing, and system maintenance. The aim of this research is the results of the contribution provided in the form of an application which will later help mosque managers when processing information at the Baiturrahman Banyuwangi Mosque and so that the public can help find information about the mosque through this system.[10]

METHODS

Method of collecting data

The following are several data collection methods that the author used in this research:

- a. Observation Method

Observation is the process of observing research objects directly in the field when conducting research.[11] The author made observations by visiting directly the

location of the Al-Basfar Mosque which is on Jl. Al-Basfar Mosque RT.02/07, Pengasinan Village, Sawangan District, Depok City. Researchers made observations, namely by coming and seeing firsthand how the Al-Basfar Mosque Prosperity Council (DKM) works in socializing activity programs and the process of storing photo documentation of activity results. After that, the author was given the opportunity to look at the mosque's cash register to see the flow of expenditure and income from donors.



Figure 1. Photo of the Al-Basfar Mosque

b. Interview study

The Interview Method is a method used by the author to collect data by asking questions directly to the parties concerned.[12] Researchers also conducted interviews with the chairman of the Mosque Prosperity Council (DKM) Al-Basfar to find out what problems have arisen and been directly experienced so far. In this activity, oral questions are asked to complete the data that will be needed for the research.



Figure 2. Interview with the Chair of the Al-Basfar Mosque DKM

From the results of the interview, below we attach an activity diagram for the system that is currently running:

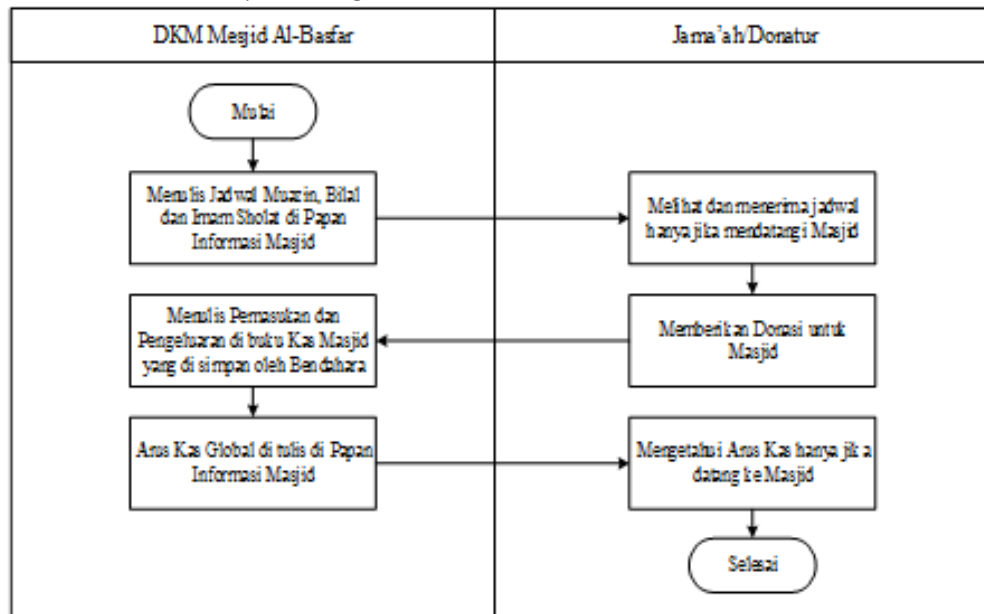


Figure 3. Activity Diagram of the running system

c. Literature Study

Literature study is a research activity carried out using information and data collection techniques with the contribution of various supporting tools found in the library such as reference books, results of similar research that has been carried out previously, articles, notes, and various journals related to the problem you want to solve.[13] In this research, the author also looked for theoretical references and methods related to creating websites as information media to help and support this research. These references come from books, journals, articles and previous research reports.

Metode Rekayasa Perangkat Lunak

This method is an information system development process, regarding the stages in system design/development. This research uses the System Development Life Cycle method. System Development Life Cycle (SDLC) is a logical process used by a system analyst to develop an information system that involves requirements, validation, training, and system owners. System Development Life Cycle (SDLC) or system development life cycle in systems engineering and software engineering is the process of creating and changing systems as well as the models and methodologies used to develop these systems. SDLC is also a pattern for developing software systems which consists of planning, analysis, design, implementation, testing and maintenance stages.[14]

According to English grammar, the meaning of Software Development Life Cycle Methodology is a software development life cycle methodology, which means it is a methodology used for the process of creating and changing systems. Usually the system is

a computer system or information system. The types of development models from the SDLC methodology are varied, such as the prototype model, RAD model, agile model, fountain model, v-model, RUD model, waterfall model, scrum model, iterative model, spiral model, big bang model, UP model, extreme programming. After knowing the types of models that exist in the SDLC methodology. Researchers decided to use the Waterfall model because of its structured flow. The system development method uses the Waterfall Method, which is the oldest software development method, one of its advantages is that it is natural and easy to adapt to the system.[15] Waterfall Modeling Waterfall Model or what is usually called a waterfall model. is a classic, systematic life cycle model in developing software (or what is usually known as software). This system development flow is structured starting from planning, analysis, design, implementation, operation and maintenance[16]

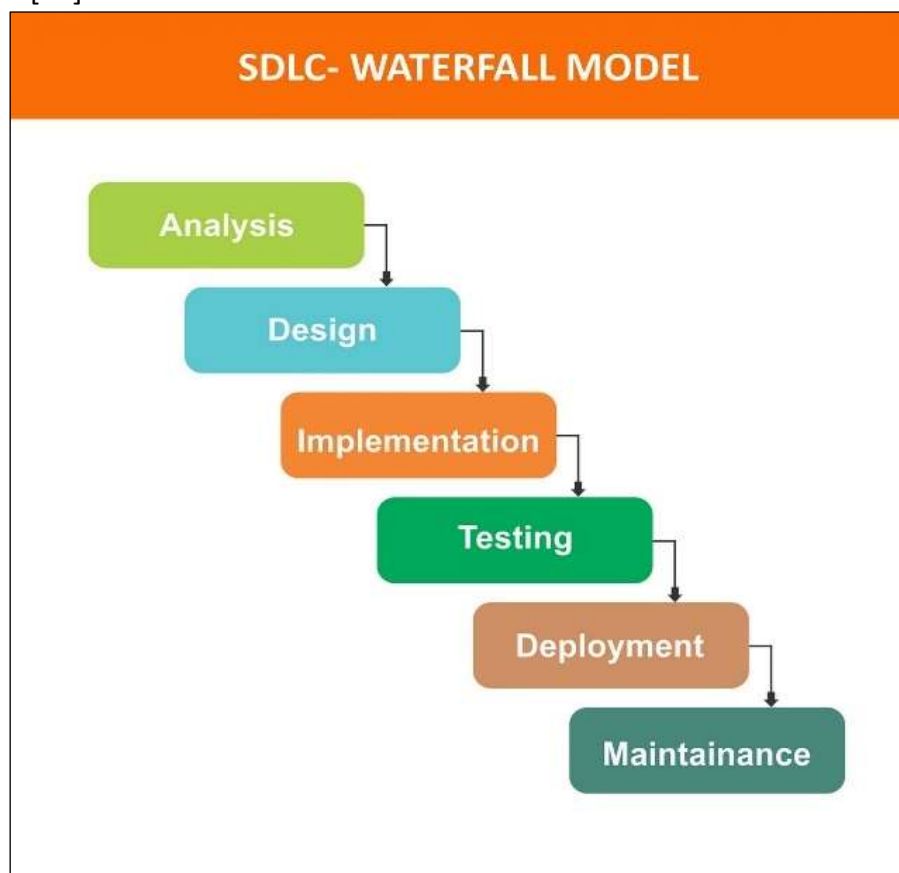


Figure 4. SDLC Method – Waterfall Model

The following are the stages of the SDLC method using the waterfall model:

- a. Analysis – The author collects complete requirements then analyzes and defines the requirements that must be met by the program to be built. This phase must be carried out completely to produce a complete design.
- b. Design – in this stage the developer will produce an overall system and determine the software flow down to detailed algorithms.

- c. Implementation – the author converts the entire design into program code. The programming language that the author uses is PHP, CSS and JavaScript with the database using MySQL to produce an attractive and interactive website display.
- d. Testing – at this stage, the web pages that have been created are combined and tested to find out whether the website created is in accordance with its design and function, as well as checking whether there are errors or not.
- e. Deployment – The Mosque Prosperity Council (DKM) will test whether the system is in accordance with existing needs.
- f. Maintenance – The author and DKM will carry out system maintenance and repairs according to needs, such as extending hosting and so on

RESULTS AND DISCUSSION

Observation and Interview Results

After conducting observations and interviews, what is needed is a new system that better adapts to the needs of mosque congregations, below is the activity diagram of the system that the author implemented:

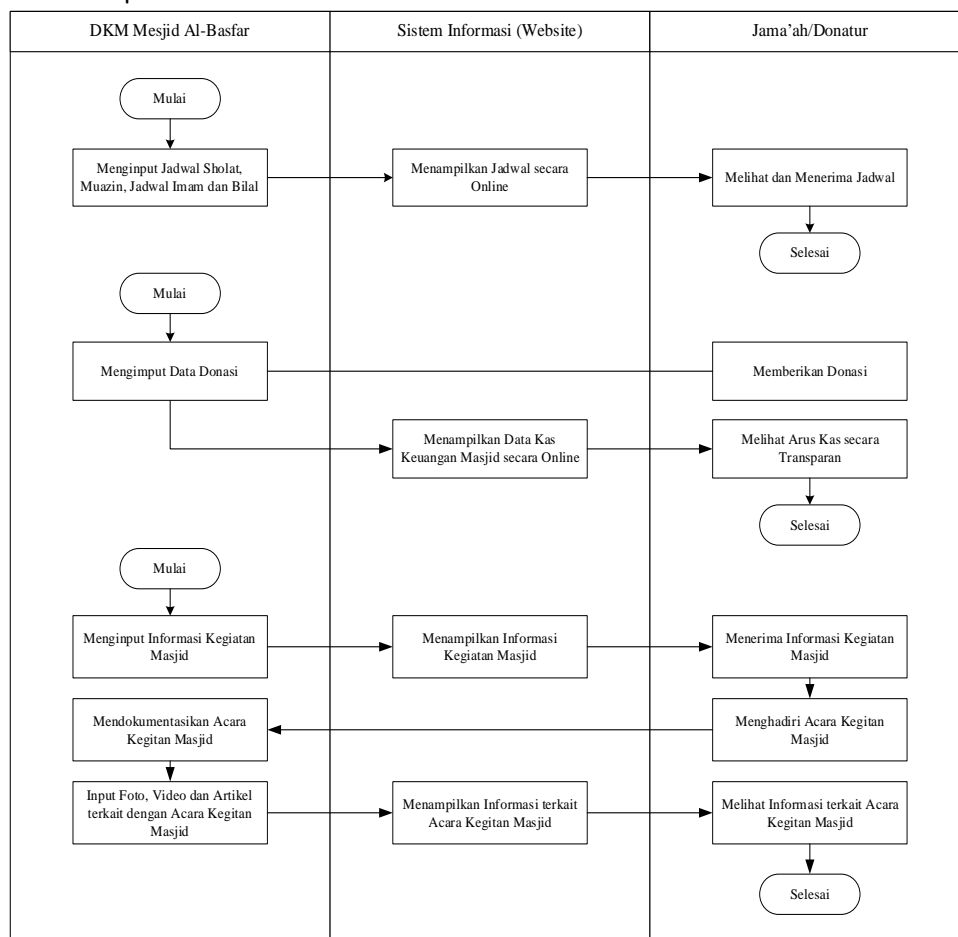


Figure 5. Activity Diagram of the Proposed System

Implementation

a. Determining the Website Theme

After conducting observations and interviews with the chairman of the Mosque Prosperity Council (DKM) Al-Basfar, the next step is to determine the website theme. From the results of observations and interviews, researchers found that there were shortcomings in the running system. So researchers will create a website to improve information media for the Al-Basfar Mosque. The theme that will be created on this website is an information website whose contents are as follows:

- 1) The website will display information about ongoing mosque activities
- 2) The website will display the program of activities that will be implemented, along with the costs required
- 3) The website will display mosque financial data transparently to make it easier for donors to see the funds that have been distributed
- 4) The website will display the call to prayer, imam and bilal officers every day
- 5) The website will also display the daily prayer schedule

b. Choosing Web Hosting

After the basic concept is complete, the next step is to choose the desired hosting. Researchers will buy hosting by registering it with a hosting service provider. At this service provider there are many choices of desired hosting capacity packages ranging from 500 MB to 3 GB with varying prices. In this research, we chose the 1 GB package which was deemed sufficient to improve web-based information media applications for the Al-Basfar mosque.

c. Determine the Domain Name

After selecting and purchasing a web hosting package, the next step is to determine the domain name that will be used for internet searches. Choosing a good and appropriate domain name is also one of the basic and most important things so that the website you create can be easily searched in the search column on the internet. On this occasion the researcher created the domain name www.masjidalbasfar.com.

d. Create a Data Base in cPanel

After we have a domain and hosting, the next step is to create a Data Base Management System. The following are the steps in creating a database.

Step 1 : Login to cPanel and select the MySQL Databases menu.

Please log in to cPanel, then click the MySQL Databases menu as seen in the image below. First, create a database name in MySQL on the hosting that has been rented.

Step 2 : Enter the Database Name.

The name for the database must be entered in the column provided (write the database name without spaces). After entering the database name, please click the Create Database button as below.

Step 3 : Create a Username

Please click the Go Back button to return to the database settings page. Please scroll down and you will see the Add New User section. Enter your username in

the column provided without spaces. Also enter the password and re-enter the password again. You can use Password Generator to generate passwords randomly. Don't forget to note down the password that is generated when you use this facility. Once finished, please click the Create User button.

Step 4 : Add User to Database

In the Add User To Database section, you will see a drop down list for User and Database. Please select the User and Database you want to connect. After pressing the Add button, the privileges will appear as seen in step 5, please continue to the next stage.

Step 5 : Select All Privileges.

Put a tick in the ALL PRIVILEGES section, then click the Make Changes button

e. Installing a Content Management System (CMS)

After creating the database is complete, the next step is to install the CMS available on the hosting service. There are many CMS options that can be used, one of which is the WordPress CMS which is one of the CMS most widely used by people to create websites. This research also uses WordPress CMS because researchers consider this WordPress CMS to be simpler, safer and more user friendly than other CMS.

f. Determining the Graphic Display

A graphic display or template is a website display that uses the CSS, HTML and jQuery programming languages. The graphic display chosen is an Islamic themed display, specifically for mosques and with a green background

Discussion

The result of this research is a website developed and supported by CMS-based technology with WordPress version 5.9.3. The appearance of the website that has been built includes several page menus according to the functionality and purpose of the information you want to convey as follows:

a. Beranda

This page explains information related to the Mosque Address, Profile of the DKM Chair, Information Center, Infaq Report, Infaq Fund Report Balance, Bank Account Information, Attachments to the latest news both in written form and also in video form.

b. Tentang

This page is divided into 3 sub pages, including a brief profile of the Al-Basfar Mosque, a brief history of the Al-Basfar Mosque and the Mosque Management Board of the Al-Basfar Mosque.

c. Agenda

This page explains the schedule of events that will be upcoming or that have already been held.

d. Jadwal Jumat

This page explains the Friday Prayer Schedule, Friday Prayer Imam Information, Friday Prayer Khatib Information, Friday Prayer Muazdin Information, Friday Prayer Bilal Information.

e. Tausiyah

This page provides information related to the tausiyah schedule and tausiyah articles.

f. Laporan

This page is divided into 2 sub-pages, including the Infaq Report, explaining information related to the inflow of Al-Basfar Mosque infaq funds, the PHBI Report explaining information related to a detailed report related to the PHBI event accountability report.

g. Lainnya

This page is divided into 2 sub-pages, including Announcements, Institutions, Services, Inventory, Library, Blessing Friday Information, Let's Infaq!, and can be added again according to future needs.

h. Download page

On this page the admin provides facilities for website users to download files that can be accessed generally.

The focus of this research is the development of a website that is used for the Al-Basfar Mosque, where this is a medium in the form of a website-based application that explains the profile of the mosque and provides information needed by the community using the Al-Basfar Mosque in the form of a Mosque Agenda, Prayer Schedule, Tausiyah Info , Infaq and Waqf reports, Inventory Reports and much more information related to worship activities at the A-Basfar Mosque. Websites can be visited via various devices owned by visitors and can be accessed by various browsers. The following link can be accessed to visit the Al-Basfar Mosque website: <https://masjidalbasfar.com/>

The following is the homepage of the Al-Basfar Mosque website:



Figure 6. Al-Basfar Mosque Website Page View

With this website, all people who use the Al-Basfar Mosque can more easily channel and distribute all the information needed by the surrounding community regarding activities and reports that have been created, summarized and managed manually, so by This website can all be stored in a database in digital form.

CONCLUSION

In this research, namely improving web-based information media applications for the Al Basfar mosque, it can be concluded as follows: With this website, all information about call to prayer officers, bilal and imams can be immediately disseminated on a scheduled basis with updates so that there is no longer a lack of information on these things. With this website, all information can be disseminated quickly about the mosque's programs and activities that will be carried out. Information media for documenting mosque activities can be stored properly and better organized from time to time. And with this website, information regarding mosque cash flow for cash income and expenditure both monthly and yearly or anything related to cash for mosque activities becomes more transparent

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