DESIGN OF A WEB-BASED INFORMATION SYSTEM FOR THE INDONESIAN METHODIST CHURCH ANTIOCH TEBING TINGGI

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Abstract

Advances in information technology have a significant impact on various aspects of life, including the religious sphere. The Antioch Methodist Church of Indonesia still faces challenges in congregation data collection and information delivery due to its lack of an adequate information system. To address this issue, a website-based information system was developed that church administrators can use to manage congregation data and deliver information more effectively. This system helps speed up work processes, minimize errors, and improve the quality of service to the congregation and the general public. Furthermore, the system is designed to be easy to use and accessible at any time, thus supporting a more modern, transparent, and responsive church ministry to the congregation's needs.

Keywords: system, information, information system, congregational data.

I. INTRODUCTION

Technological developments are constantly changing and improving, making it easier to speed up human work in processing data and producing accurate and clear information. The internet is one technology that can help people receive, convey, and disseminate information (Hendrik Sitorus & Gunawan Sianipar, 2023). Information technology can help organizations and companies manage information. A good information system produces quality data and information (Sitindaon et al., 2024).

The Antioch Indonesian Methodist Church is a church organization located in the city of Tebing Tinggi. Currently, the Antioch Indonesian Methodist Church has various types of data, including worship information data, pastor data, congregation data, sector data, worship schedules, Sunday worship information and news about the Church, but the means used to convey news at the Antioch Indonesian Methodist Church is still manual, namely by using news delivered by officers. Therefore, a web-based information system is needed that can help the Antioch Indonesian Methodist Church of Tebing Tinggi in managing activities and administration in a more structured and efficient manner.

The Antioch Indonesian Methodist Church has 100 family cards. The Antioch Indonesian Methodist Church faces several challenges in its congregational records, one of which is the lack of an online system, making data recording and updating slow and often inaccurate. Manual recording can lead to misspellings, loss, or difficulty in finding data. When members leave or move churches, the process of deleting or updating data becomes complicated, leaving inactive members still listed. This also creates a lack of transparency, as members and church administrators struggle to access the latest congregational information. Furthermore, the current system makes it difficult to analyze data, such as congregation growth and service needs.

To address the issue of registering new members, churches can start by creating a manual registration form, including important information such as names, addresses, and telephone numbers. The data from this form is then neatly recorded in a notebook for easy access. Ensure data is properly stored and backed up. Data updates should be conducted regularly, for example, monthly, to remove inactive members. Church administrators also need to be trained to understand how to properly record and manage data. Communication with members is crucial to ensure they report changes in membership status. In the future, churches can consider creating an online congregation management system to simplify data

recording and analysis. These steps are expected to improve the registration of new members and reduce existing problems.

II. LITERATURE REVIEW

2.1 Theoretical Framework

2.1.1 Understanding Systems

Several expert opinions explain the definition of a system as follows:

1. A system is a collection of elements that interact with each other to achieve broader goals (Sitindaon et al., 2024).

2. A system is a collection of parts that work together to achieve the same goal (Sidin, 2016).

3. A system is defined as a set of interrelated and interconnected procedures to perform a task together (Rochman et al., 2020).

Based on the definition above, it can be concluded that a system is an entity consisting of elements or parts that interact and work together to achieve a specific goal. This system involves interrelated and connected procedures, enabling collaboration in carrying out tasks effectively.

2.1.2 System Characteristics

The system has certain characteristics or properties, the system characteristics are as follows:

1. Component

The system has components that interact to form a single unit and work together with various systems.

2. External environment

The external environment is the influence of the system's operations from the environment outside the system.

3. System boundaries

System boundaries are systems that have system boundaries with other systems according to the circularity of their area or the outer scope of the system is limited by the scope.

4. System interface

A system interface is a tool that connects one subsystem to another. The output from this subsystem becomes input for the subsystem with the interface.

5. Enter the system (Input)

System inputs are resources entered into the system, in the form of maintenance input and signal output. Maintenance inputs are resources entered to enable the system to operate.

6. System output

System output is the energy produced after processing the input output that is discarded or needed.

7. System processing

System processing is the part of the process that changes input into output.

8. System targets

The system target is the goal or objective target.

2.1.3 Understanding Information

Information is a collection of processed data or facts that can be useful for decision-making. It also encompasses everything humans need to increase insight and knowledge and form opinions. Information can be accessed in various forms, both in print and online media (Sitindaon et al., 2024). Information is a tool for determining attitudes and a crucial element in developing concepts and ideas (Rochman et al., 2020). Quality information has the following characteristics.

1. Accurate means that the information received must describe the actual situation that actually occurred in reality, that is, the information must be free from misleading errors.
2. Timeliness means that information must be available when it is needed.
3. Relevant means the information needed must be in accordance with the information provided.
4. Complete means that the information provided must be complete and complete, meaning that nothing is omitted in conveying the information.

2.1.4 Understanding Information Systems

An information system is a combination of human resources, hardware, software, communication networks, data resources, and policies and procedures for storing, accessing, changing, and disseminating information within an organization (O'Brien, 2021). An information system is also defined as a system within an organization that meets the needs of daily transaction processing, particularly managerial ones, with activities to provide reports required by certain external parties. The resources contained within an information system include human resources, hardware resources, software resources, data resources,

and network resources (Hendrik Sitorus & Gunawan Sianipar, 2023).

An information system can be defined as a collection of interconnected elements that form a single unit to integrate data, process and store and distribute information.

So, based on the above understanding, it can be concluded that an Information System is a system in the form of a group of data that provides information for the management sector in making decisions and as a tool for carrying out operations in a particular organization or company.

2.1.5 Church Information System

The church is an organization that serves the congregation. It has an information management system that includes data management, storage, and presentation. Members of a church organization are considered a congregation, a group of believers who worship God. Therefore, within the church, there is congregational organizational data obtained from church activities, including data on baptisms, marriages, worship services, births, deaths, and congregational status (Asih et al., 2022).

A church information system is a structure that integrates technology, processes, and people to manage data and information related to church activities and services. The importance of a system in a church is to ensure that all aspects of service run smoothly and in accordance with religious teachings. With a clear system, the church can be more effective in serving the congregation and the community. Furthermore, the system in the church also reflects the values and principles embraced by the community.

For example, a system based on congregational participation can demonstrate a commitment to democracy and member involvement in church life. Based on the definition above, a church information system serves to increase efficiency in church management and support better communication between the board and the congregation.

III. RESEARCH METHODS

Overview of GMI Antioch Tebing Tinggi

ChurchAntioch Methodist is a church located in the center of Tebing Tinggi, namely on Church Street No. 9-13. This church is the largest Antioch Methodist Church in Tebing Tinggi, its congregation is in District 4 of the Antioch Methodist Church Region 1. The Antioch Methodist Church has 100 Family Cards that have been registered as members of the church, and the registered congregations are included in the Matthew Sector, Mark

Sector, Luke Sector, John Sector, Acts Sector, Romans Sector, Corinthians Sector, Galatians Sector, Ephesians Sector, Philippians Sector. The purpose of establishing the Antioch Methodist Church in the Tebing Tinggi area is to make it easier for Christians to worship

Organizational structure

Organizational structure is the arrangement of work units within an organization. Below, we can see the organizational structure of the Indonesian Methodist Church of Antioch in Figure 3.1.
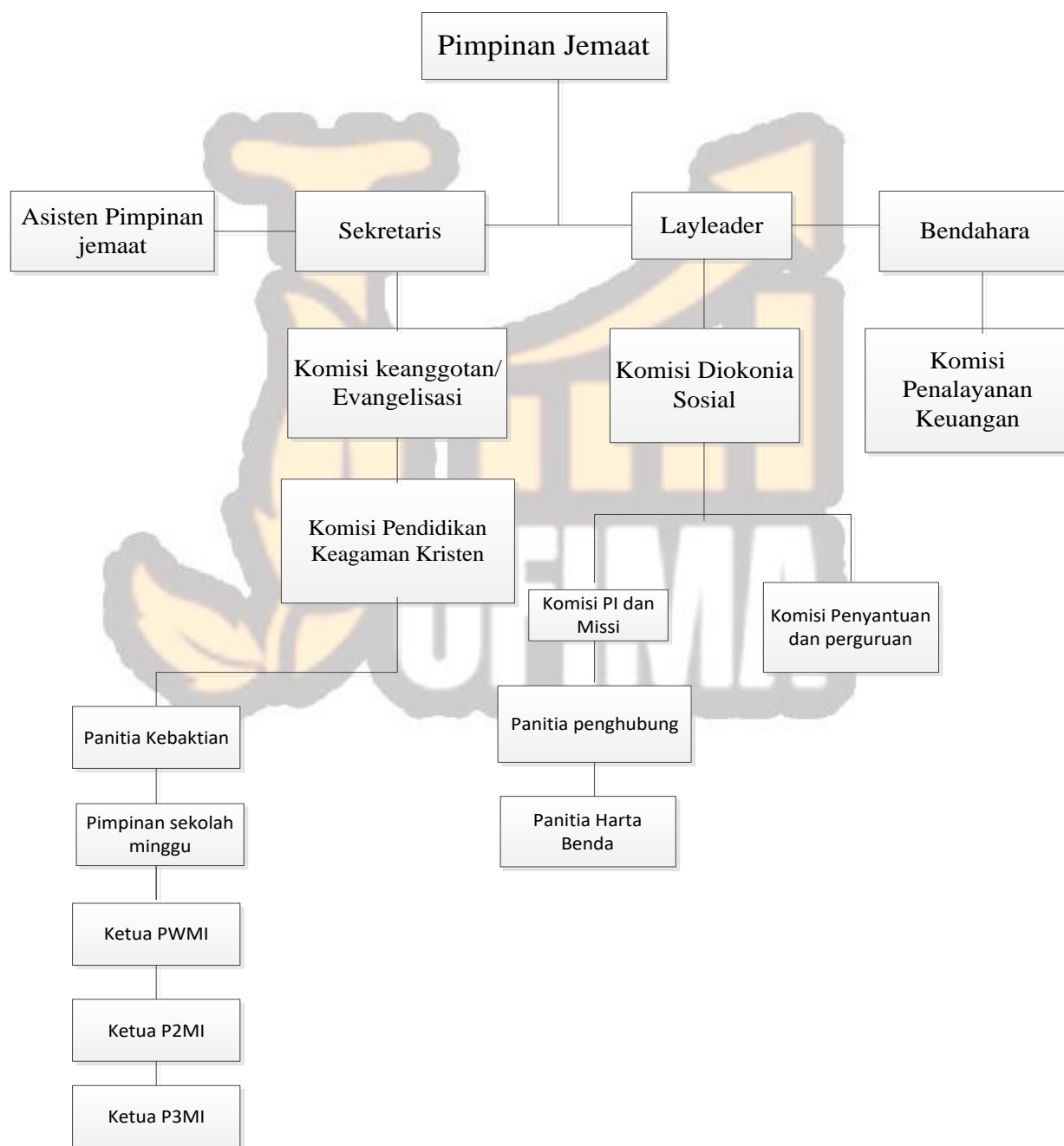

Figure 3.1 Organizational structure

IV.   RESEARCH RESULTS AND DISCUSSION

Running System Analysis

Analysis of the running system is carried out by analyzing the objects needed for the system to be designed, intended to focus on the functioning of the running system, without focusing on the process flow of the system (Informat et al., 2016).

The information system of the Indonesian Methodist Church of Antioch that is obtained by users such as congregations and non-congregations includes worship schedules, weekly service schedules, and activities within the church.

Results

Based on the results and design of the web-based information system of the Indonesian Methodist Church of Antioch Tebing Tinggi, the results and appearance of the website can be seen below:

Home Page View

The main page is the initial display that users will first see when we access the website we are searching for. On this page, several menus will be displayed in the form of a home page, gallery, worship schedule, service activity schedule, congregational news.
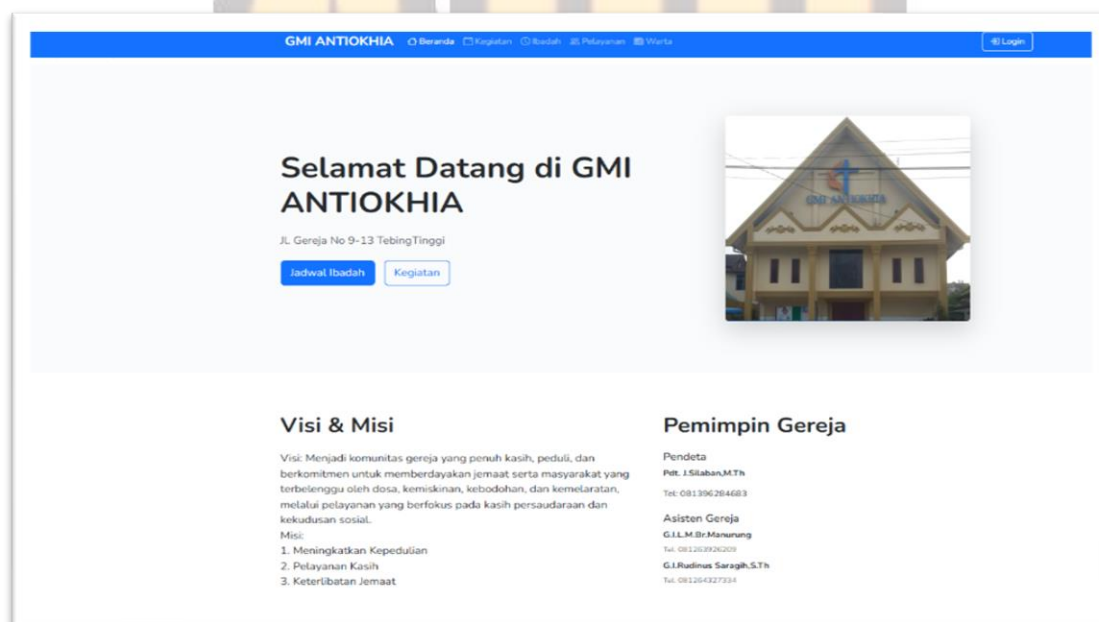

Figure 4.1 Main Page View

Gallery Home Page View

The Main Menu's Activity Gallery serves as visual and narrative documentation of the church's various activities. This includes both spiritual and social activities, such as retreats, celebrations, and other service activities.
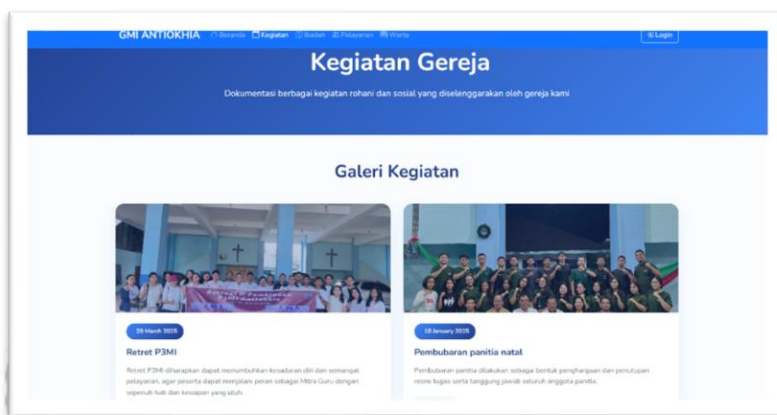

Figure 4.2 Gallery Main Page View

Main Page View of Worship

The main display of the worship menu presents information about the various types of worship held by the church, including the schedule, location, type of worship, and the officers who serve.

Figure 4.3 Main Worship Page Display

Main Page View of the service

The main display of the service menu provides information about the various forms of service available in the church environment.
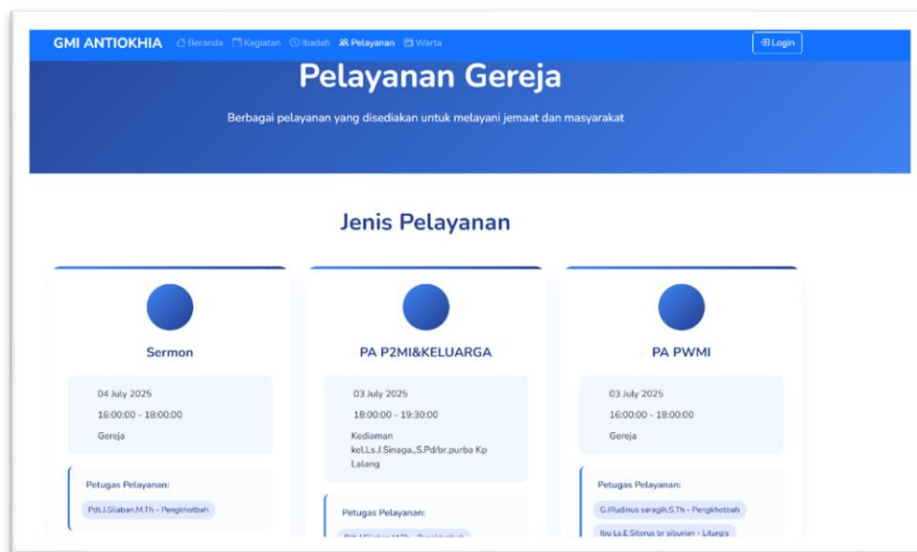
Figure 4.4 Main Service Menu Display

Main Page View of Congregation News

The main display of the congregation news menu contains information, announcements, and the latest news that all church members need to know.
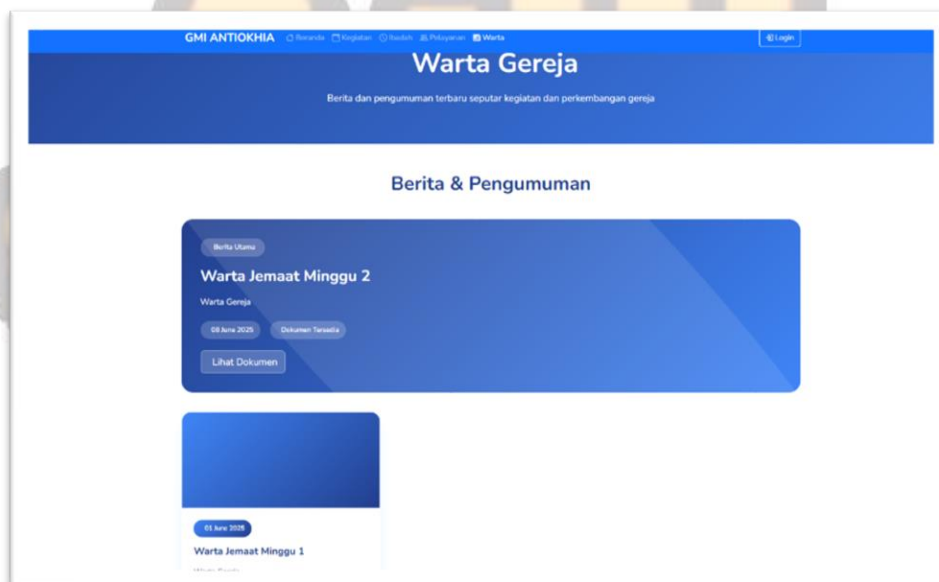

Figure 4.5 Main News Page Display

Discussion

The Web-Based Antiochian Indonesian Methodist Church Information System is a system designed using PHPMyAdmin, MySQL, and Sublime Text to design each system. This church information system can be used to assist the Antiochian Indonesian Methodist Church administrators in collecting congregation data and easily conveying church information to all members and non-congregants.

Hardware and Software Requirements

The system design created for its implementation is inseparable from the hardware and software requirements. To test the program system, the following computer specifications are used:

1. Hardware

a. Windows 11

b. 8 GB RAM

c. 1 Tera hard disk

d. USB

e. Mouse

f. Keyboard

2. Software

a. PHPMyAdmin

b. MySQL

c. Sublime Text

d. XAMPP server

e. Google Chrome

System Advantages and Disadvantages

In the system that has been designed, there are advantages and disadvantages to the system that will be used. The following are the advantages and disadvantages of the system that has been designed, namely:

1. The advantages of the system are:

a. The system that has been built can help the service at the Antioch Indonesian Methodist Church.

b. This system can help reduce any errors that occur in churches when inputting church data.

c. Helps in conveying church information easily to all congregations and non-congregations.

2. System deficiencies, namely:

This system still requires improvements to each system so that it can provide good service and be more effective in its use.

Black Box Testing

System testing is a crucial step in ensuring that the system operates as intended and meets expectations. The following are the results of the system testing process:

1. **Administrator Login Page Testing**

This test aims to ensure that the admin login process is running correctly. If the username and password are entered correctly, the system will allow access. Conversely, if the login details are incorrect or missing, the system will deny access and display a warning message.

Table 4.1 Administrator Login Test Results

No	Test scenario	Test Case	System Results	Test Results	Conclusion
1.	The user does not fill in the username and password and then presses the Sign In button.	Username: (blank) Password: (blank)	Login failed, the system displays "Incorrect username or password"	As expected	Valis
2.	The user only needs to fill in the username column, leave the password blank and then press the Sign In button.	Username: Congregation Password: (blank)	Login failed, the system displays "Incorrect username or password"	As expected	Valid
3.	The user only needs to fill in the password column, leave the username blank, then	Username: (blank) Password: 11	Login failed, the system displays "Incorrect username or password"	As expected	Valid

	press the Sign In button.				
4.	The user fills in the username and password, but only one of them is correct.	Username: Secretary Password: a A	Login rejected, the system displays the message "Incorrect Username or Password"		Valid
5.	The user fills in the correct username and password then presses the Sign In button.	Username: SecretaryPassword: 123	Successfully logged in as Admin	As expected	Valid

2. Admin Main Data Page Testing

Testing the admin's main data page begins when the admin clicks on the main data page. This action displays several submenus, including assembly data, congregation data, family data, and user data. The admin can also enter data into each submenu, including assembly data, congregation data, family data, and user data. The admin can also enter data into each submenu.

V.   CONCLUSION AND SUGGESTIONS

Conclusion

Based on the results of the web-based design of the Indonesian Antioch Methodist Church information system, the following conclusions can be drawn:

The information system of the Antioch Indonesian Methodist Church helps church administrators in collecting congregation data and also makes it easier to convey information about church services easily to all members of the Antioch Indonesian Methodist Church.

The information system of the Antiochian Indonesian Methodist Church can also be easily viewed by both congregation members and non-congregation members anywhere and anytime.

The Antiochian Indonesian Methodist Church Information System supports the mission of serving with love and responsibility, because service data and information are presented in

an orderly manner and are easily accessible to all parties.

Suggestion

Based on the above conclusions, the author accepts all suggestions regarding the information system. To improve the system and enhance its performance, the author will undertake the following:

The Information System of the Indonesian Antioch Methodist Church must be further improved to provide the desired results.

In using this information system, it is hoped that it can be used optimally to provide appropriate and satisfactory results.

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