Proceeding of the International Conference on Electrical Engineering and Informatics
Volume. 1, No. 2, 2024
Pages 130-144
Available Online at: https://prosiding.arteii.or.id/index.php/ICEEI

Implementation of a Web-Based Marriage Registration and Referral Information System at the Bandungan Sub-District Religious Affairs Office

Dheavita Reza Artamevia [1]; **Aji Priyambodo** [2];
Marsiska Ariesta Putri [3*]; **Andreas Tigor Oktaga** [4]
[1-4] Sistem Dan Teknologi Informasi, Institut Teknologi dan Bisnis Semarang, Indonesia
E-mail: dheavita.reza@gmail.com [1]; ajipro@itbsmg.ac.id [2];
marsiskaputri@itbsmg.ac.id [3*]; andreastigor@itbsmg.ac.id [4]

Abstract

The purpose of this research is to build a web-based information system for the Bandungan Sub-district Religious Affairs Office (KUA) that covers marriage registration, referral applications and receipt of marriage registration and referral reports. The research method used is the Research and Development (R&D) method. The R&D method is a research method used to produce certain products and test the effectiveness of these methods. In addition, this research uses the proven waterfall theory. The result of this research is to produce a web-based information system that is able to manage integrated marriage and referral registration data using R&D and Waterfall methods. This information system uses the PHP programming language and uses mysql data storage.

Keywords: HTML, MYSQL, PHP, Website

1. INTRODUCTION

In today's era of globalization and technology, the use of computers as one of the information technology tools is needed in almost every aspect of life. As one of the results of current technology, the use of computers is very widespread and popularized not only in the work environment but also in everyday life (Maniah & Hamidin, 2017). Where in this case the computer is an absolute tool used in the process of processing data and information as well as supporting the decision-making system.

The need for good information system technology is increasingly in demand by companies, agencies and organizations in designing information systems in order to optimize their performance so that they can operate more effectively, efficiently and controllably. So it is not surprising that many agencies, both government and private, utilize computers in improving their performance. One of the applications of information technology in companies, agencies and organizations is the use of web-based information technology. By using web-based information technology, the system can provide convenience to users who use it to get information more easily and quickly because it can be accessed anytime and anywhere as long as it is connected to the internet network (Mustakini, 2009).

The Office of Religious Affairs (KUA) is a community service center in the religious field, of course, it also needs information to streamline and streamline the processes in it such

Received: October 12, 2024; Revised: November 18, 2024; Accepted: December 27, 2024; Published: December 30, 2024

as marriage administration. This administration is very important for both prospective brides and grooms to obtain a validity or legality in marriage to be recognized by the state (Hasanuddin, 2017). Broadly speaking, the administrative process before the marriage contract is that the bride and groom must register the marriage by submitting the required documents to the local Religious Affairs Office. Then, by the KUA officer, the file is recorded in the receipt book of the marriage document file (Hamurwani, 2022).

Broadly speaking, the administrative process before the marriage contract is that the prospective bride and groom must register the marriage by submitting the required marriage documents to the local Religious Affairs Office (Susiyanti, 2018). Then, by the KUA officer, the file is recorded in the receipt book of the marriage document file.

In connection with the marriage data process that occurs, there are problems in data processing, which are not well organized because so far the administrative process is still conventional in the sense that it is still written in the marriage form and marriage report book so that there is a buildup of data and difficulty in searching for marriage data. In the preparation of marriage data reports, it takes a long time because marriage data reports are still carried out by recapitulating marriage data one by one, allowing errors to occur in the writing.

Based on this background, the author tries to improve the information system of the Bandungan District Religious Affairs Office (KUA) based on the web.

2. LITERATURE REVIEW

Sistem informasi

Information systems are the process of collecting, processing, analyzing, and disseminating information for specific purposes (Rainer & Cegielski, 2014). According to (Mulyanto, 2009) information system is a system contained in an organization that brings together the needs of managing daily transactions, supporting operations, managerial and strategic activities of an organization and providing certain external parties with the reports needed.

The purpose of the information system is to produce information (Information) from the form of data that is processed into a form that is useful for its users. The purpose of the information system consists of Usefulness, Economy, Reliability, Customer Service, Simplicity, and Flexibility (Mustakini, 2009).

1. Usefulness The system must produce accurate, timely, and relevant information for management decision making and operations personnel within the organization.

2. Economy All component parts of the system including reports, controls, machines must contribute a value benefit at least as great as the cost required.
3. Reliability (Realibility) System outputs must have a high degree of accuracy and the system itself must be able to operate effectively even when human components are absent or when machine components are temporarily inoperative.
4. Customer Service The system must provide good or friendly service to customers. So that the system can be in demand by its customers.
5. Simplicity (Simplicity) The system must be simple enough so that it is structured and its operation can be easily understood and the procedures are easy to follow.
6. Flexibility The system must be flexible enough to handle changes that occur, its importance is quite reasonable in the conditions in which the system operates or in the needs required by the organization.

Data Flow Diagram (DFD)

A data flow diagram (DFD) is a tool that describes the flow of data through a system and or the processing performed by the system (Purwanto, 2019). DFD can also be said to be a graphical depiction of data sources and destinations, which can show where data comes from and where it goes. In other words, data into the system or out of the system.

DFD can see the process / event (event) carried out by a system from the organization of data entering the system or data leaving the system, and in the end it can be seen that the data is stored. Data Flow Diagram starts from a context diagram, which is a diagram that contains an overview of the system (Purwanto, 2019).

So in the context diagram what we need to know is what system we are making produces information for outsiders and the system requires what data from outsiders. Or in other words, who provides data and to whom information needs to be provided. Furthermore, after the context is created, it is necessary to create a more detailed diagram, namely the zero diagram and detailed diagram (Purwanto, 2019).

Web

The World Wide Web consists of a large group of computers, known as servers, that exist only to provide information when that information is requested. The information is requested by computer software called a web browser (Suehering & Valade, 2013). It is said that the web operates on a client-server model, where the client is the web browser and the server is the computer that provides, or serves, the information (Suehering & Valade, 2013).

That information is usually stored in web pages, which are nothing more than specially formatted documents that usually contain images and often references to other resources that help the page look" and behave in a certain way (Suehering & Valade, 2013).

"Web browsers are programmed to read and decipher a special format of documents known as web pages. Web browsers not only know how to open and parse documents formatted for the web, but also how to contact other computers to request documents from them. For example, when you type http://www.braingia.org into the address bar of your web browser, the web browser knows how to translate that request into an eventual result page" (Suehering & Valade, 2013).

PHP Programming Language

Short for PHP (HyperText Preprocessor), it is a popular and powerful language used for server-side programming. When PHP builds a web page, it often needs to retrieve data to display on the resulting page. PHP is a language with papers designed specifically for web use, with features that make web design and programming easier (Suehering & Valade, 2013).

Cascading Style Sheet (CSS)

CSS (Cascading Style Sheet) is a programming language to provide a design appearance that will be used on the web such as color, font, outline, background, adjusting the appearance of the website to the screen size, etc. CSS is used in making this website is to collaborate with HTML in order to produce an attractive website display (Purwanto, 2019).

MySQL

MySQL is a multithreaded, multi-user, SQL database management system (DBMS) software with approximately 6 million installations worldwide. MySQL AB makes MySQL available as free software under the GNU General Public License (GPL), but they also sell under a commercial license for cases where its use is not compatible with GPL use. Unlike Apache which is software developed by the general community, and the copyright for the source code is owned by the respective authors (Solichin, 2016).

XAMPP

XAMPP is an opensource software that supports several operating systems and a combination of several programs. The program contained in XAMPP supports several programming languages such as HTML, Javascript, CSS, PHP, SQL, and others. In XAMPP, Apache is already contained, which is a localhost or web server that can be used in the process of creating a website. In its implementation, the use of localhost and database on

XAMPP needs to be activated first Apache and MySQL in the software and then access https://localhost and https://localhost/phpmyadmin in a web browser (Novendri et al., 2019).

Waterfall Paradigm Theories

According to (Pressman & Roger, 2010) "waterfall is a classic model that is systematic, sequential in building software".

The waterfall method or often called the waterfall method is often called the classic life cycle, the name of this model is actually the "Linear Sequential Model" where it describes a systematic and sequential approach to software development. Here are the stages: (Pressman & Roger, 2010)

1. Requirement Analyst

   At this stage, the developer must know all the information regarding user needs for the software. For example, such as the use of the software desired by the user and the limitations of the software. This information is usually obtained from interviews, surveys, or discussions. After that, the information is analyzed and processed to obtain complete data regarding the details of user needs for the software to be developed.

2. Design

   The next stage of the waterfall method is design. This stage generally includes technical design interests such as programming languages, data layers, services, and so on. Design specifications will usually be made to describe how the business logic covered in the analysis will be implemented technically. This aims to provide a complete picture of what needs to be done and how the desired system looks. So that it helps hardware and system requirements to be more specific and defines the system architecture that will be created as a whole.

3. Implementation

   The implementation and unit testing stage is the programming stage. So the process of writing code (coding) is at this stage. The creation of software is divided into small modules which will later be combined in the next stage. In this phase, the functionality of the modules that have been created is also checked. Whether it meets the desired criteria or not.

4. Testing

   In this fourth stage, the previously created modules will be merged and integrated into the overall system. After the integration process is complete, the next step is to check and test the overall system to identify possible failures and errors in the software.

5. Maintenance

Operation & Maintenance is the last stage of the waterfall method. At this stage, the finished software will be run or operated by its users. In addition, maintenance is also carried out in the form of: error correction, system unit implementation improvement, system upgrades as needed.

`3. METHODS

The research method to collect data used is the Research and Development (R&D) method. The R&D method is a research method used to produce certain products and test the effectiveness of the method. This R&D method is often used as a research process that aims to produce products, the steps of which are analysis, design, implementation, and maintenance.

4. RESULTS

The analysis of the current system conducted in this study is regarding the marriage registration procedure carried out by prospective brides and grooms and marriage registration and reconciliation registration.

The analysis of the current system regarding the marriage registration procedure carried out by prospective brides and grooms is as follows:

1. Prospective brides and grooms come to the local RT/RW to take care of the marriage introduction letter to be brought to the Village Office.
2. Next, the prospective bride and groom come to the Village Office to take care of the marriage introduction letter N1-N4 which is then brought to the Sub-district KUA Office.
3. Prospective brides and grooms come to the Sub-district KUA bringing letters N1-N4. Upon arrival at the Sub-district KUA, the prospective bride and groom are asked whether the marriage will be held outside the local Sub-district KUA or not. If it is held outside the local Sub-district KUA, the local Sub-district KUA will make a marriage recommendation introduction letter to be brought to the Sub-district KUA where the marriage contract is held. If not, the local Sub-district KUA will accept the marriage registration and write it in the marriage registration ledger.
4. Then the administration section provides information on the prospective bride and groom's course schedule if the data requirements are met and if the prospective bride and

groom's data requirements are incomplete, the administration section returns the requirements to the prospective bride and groom.

5. Then the administration section informs the prospective bride and groom's data to the head of the KUA to make a marriage certificate and issue a marriage book.
6. And for the head of the KUA to see the marriage schedule data, reconciliation data, registrar data and make a marriage certificate that will be given to the registrar who will later be given to the bride and groom.
7. The head of the KUA sees the prospective bride and groom data, reconciliation data, registrar data and receives a report on the prospective bride and groom data, prospective reconciliation data and registrar data which are then returned to the administration section to be used as KUA archives

Meanwhile, for the analysis of the current system regarding the previous reconciliation registration procedure, it is as follows:

1. The person who will reconcile must come with his wife to the Religious Affairs Office in the area where the wife lives, by bringing and submitting the following documents:
   a. Photocopy of KTP and Family Card (KK) each 1 (one) sheet.
   b. Letter of Reference for Reconciliation from the Village Head/Lurah where domiciled (formal R1 model).
   c. Original Divorce Certificate along with attachment of decision from Religious Court.
2. Then the administration department receives the requirements of prospective bride and groom or prospective reconciliation and submits it to the registrar. And the registrar checks the completeness of the marriage document data provided by the prospective bride and groom.
3. After the data is complete, the registrar provides information on the prospective bride and groom's course schedule to the administration department.
4. Then the administration department provides information on the prospective bride and groom's course schedule if the data requirements are met and if the prospective bride and groom's data requirements are incomplete, the administration department returns the requirements to the prospective bride and groom.
5. Then the administration department informs the prospective bride and groom's data to the head of KUA to make a marriage certificate and issue a marriage book.

6. And for the head of KUA to see the marriage schedule data, reconciliation data, registrar data and make a marriage certificate that will be given to the registrar who will later be given to the bride and groom.
7. The Head of KUA looks at the data of the prospective bride and groom, reconciliation, head of marriage and receives a report on the data of the bride and groom, data of the candidate for reconciliation and the data of the head of marriage then returns it to the administration section to be used as an archive for the KUA.

In the current marriage registration procedure, a problem is found, namely that marriage registration data is recorded in the marriage registration ledger and archiving files can cause data recording sheets to be lost, damaged and illegible writing when they are needed or processed again. The initial arrangement is for the bride and groom to go to the rt rw to arrange a letter of introduction, then go to the kelurahan and then end up at the kecamatan. This shortcoming also occurs when the prospective bride or groom is overseas or is migrating, which will certainly take a lot of time and is less efficient. Archiving files can also cause files to be lost, torn and damaged by termites, and searching for files takes a long time because the files are not neatly arranged, and the lack of efficiency of this system also occurs because archiving is still done manually and not digitally.

After observing the current system and finding its weaknesses, the authors will propose a system design that is more systematic and efficient, both in terms of time and energy. The proposed system can make it easier for prospective brides to register for marriage and referral and make it easier for the KUA to convey information on the pre-marriage guidance schedule for prospective brides, with this proposed system, it can be ensured that it can overcome existing problems so that later the proposed system is more effective and more efficient. Where in the proposed system will not change the old system to the system that will be developed, it is just that the proposed system is computerized while the old system is still conventional and this is the solution to the problems that have been studied. Thus, prospective brides no longer need to visit the KUA office many times, which saves time and energy. In addition, this system also allows the KUA to easily access and manage information, reduce the risk of human error, and increase transparency in the marriage and reconciliation administration process.

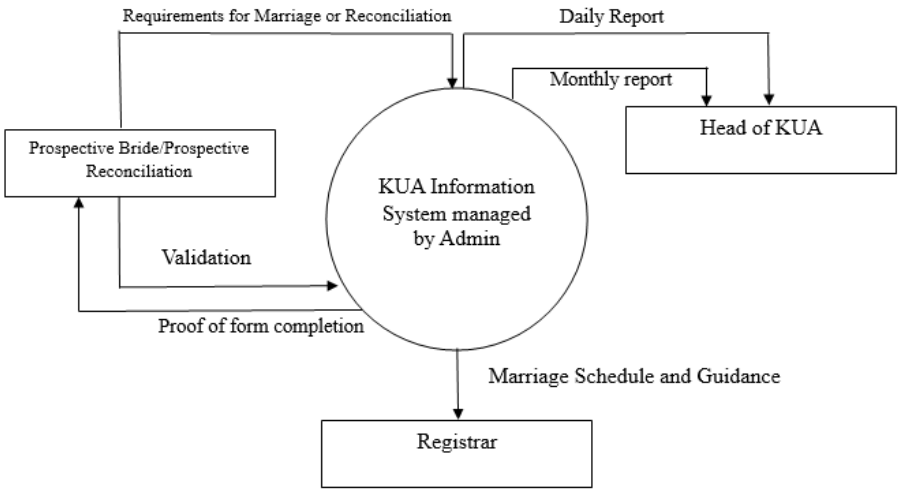

Figure 1: DFD level 0 Proposed System

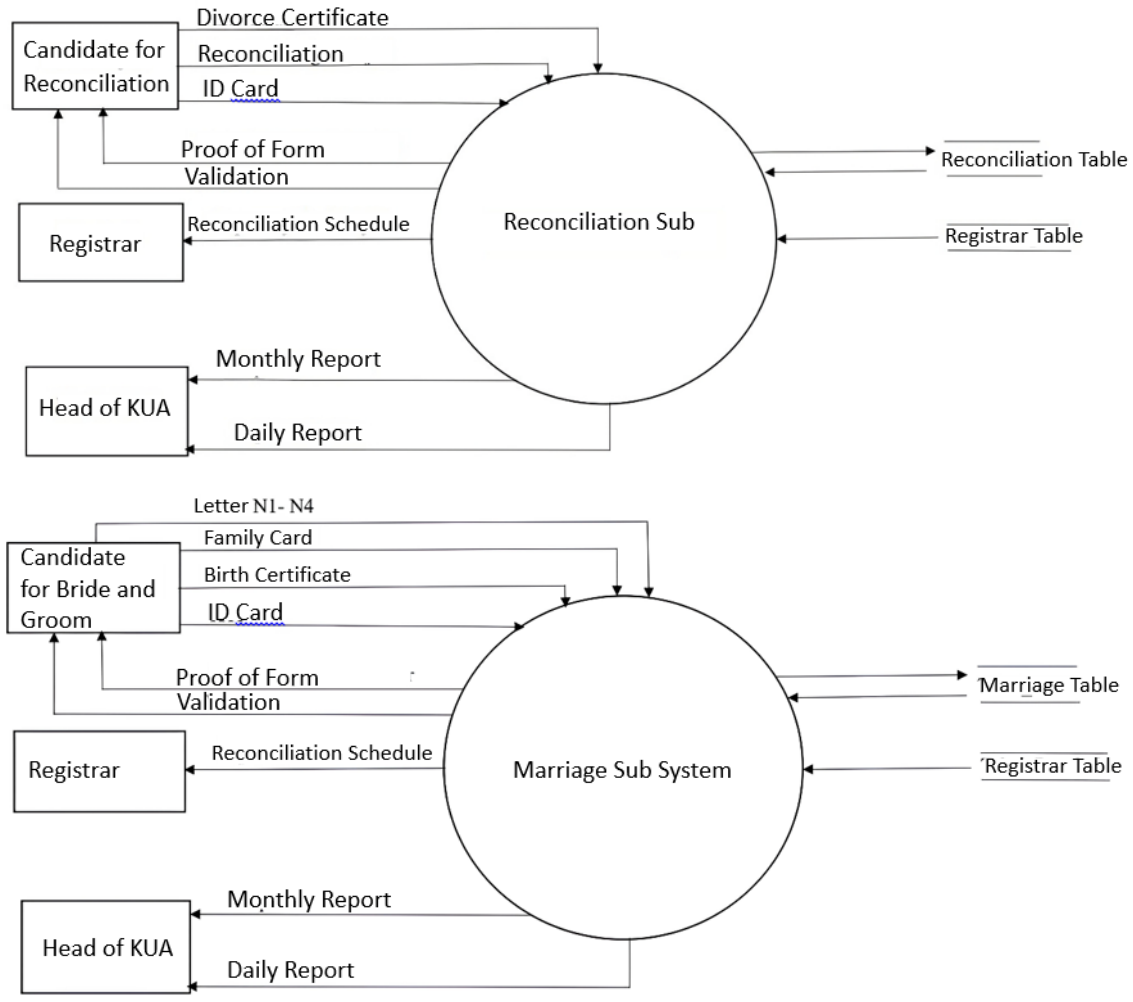

Figure 2: DFD level 1 Proposed System

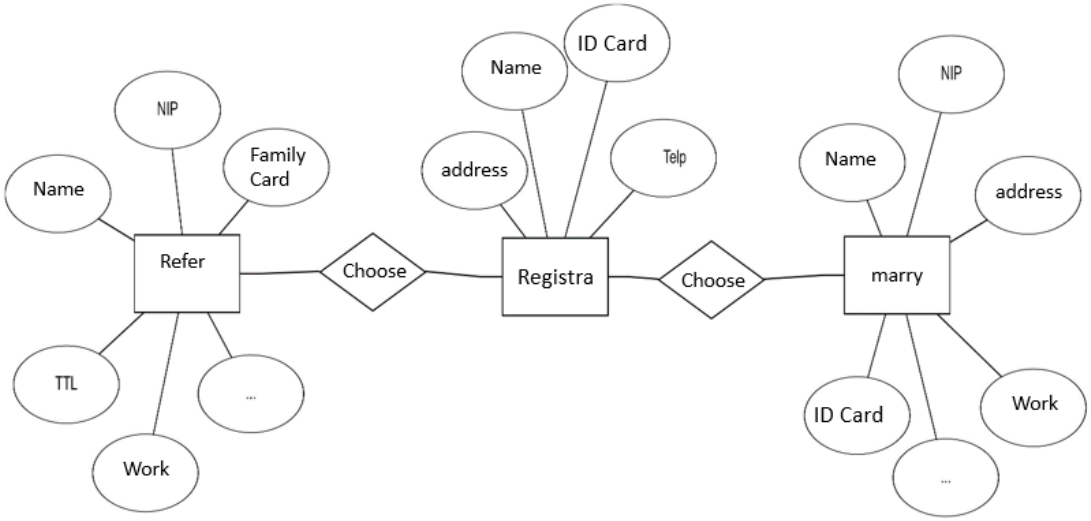

Figure 3: Proposed System Entity Relationship Diagram Design

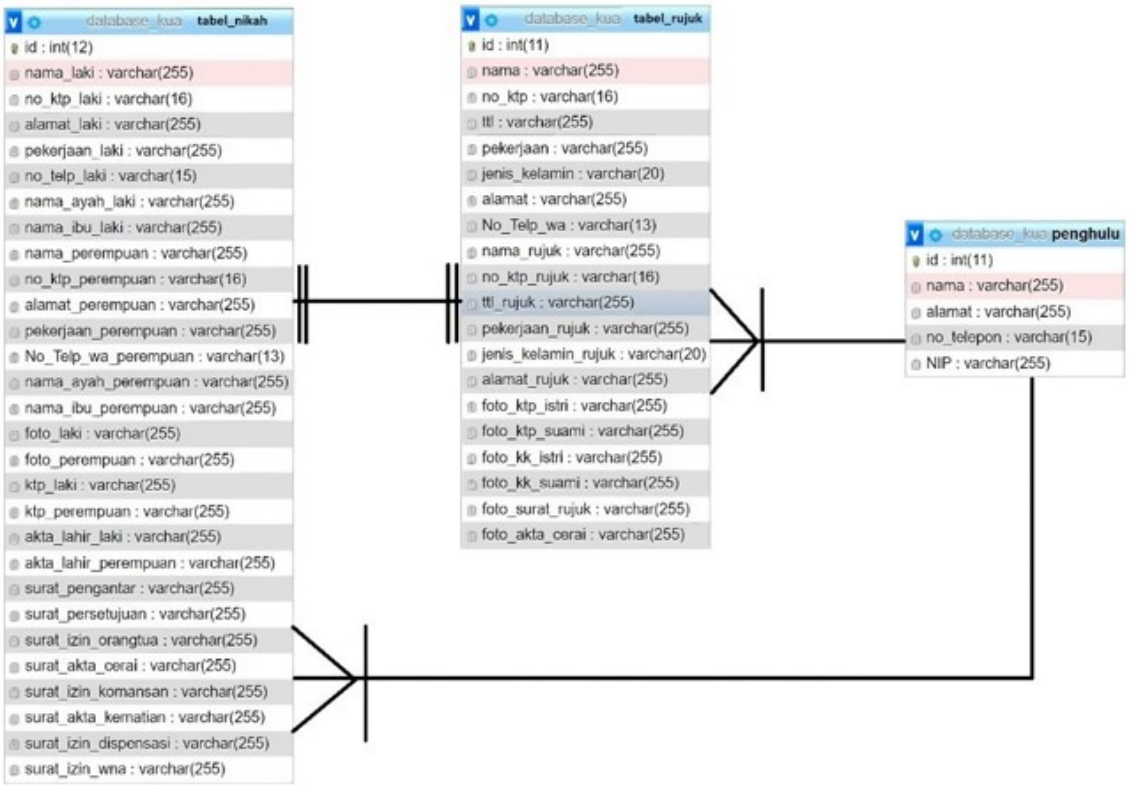

Figure 4: Database Design

Implementation of Marriage Registration Information System

The implementation of the design that has been designed previously on the web-based information system of the Bandungan District Religious Affairs Office (KUA) is as follows:

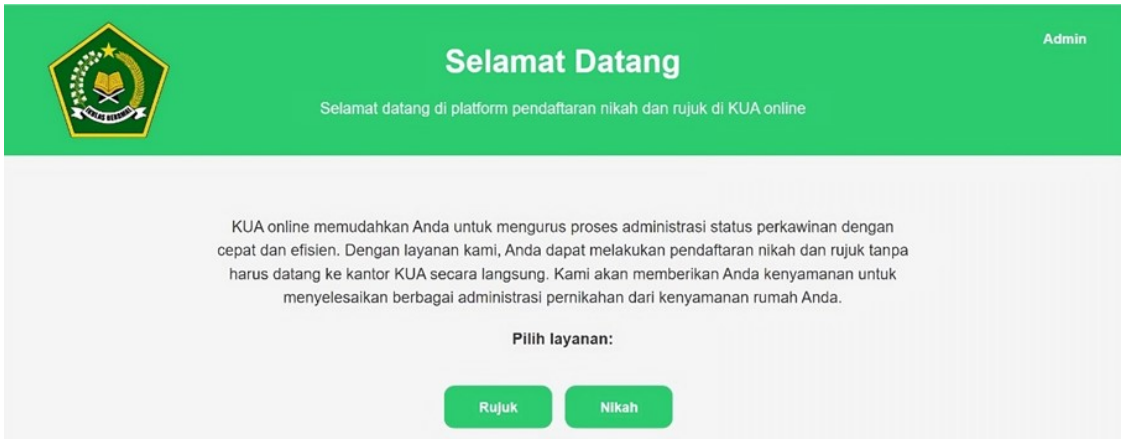

Figure 5: Home Page View

Figure 6: Referral Terms Page View

If the user has pressed the "marry" button on the main page, what happens is that the user will go directly to the marriage registration form page.

Figure 7: Referral Form Page View

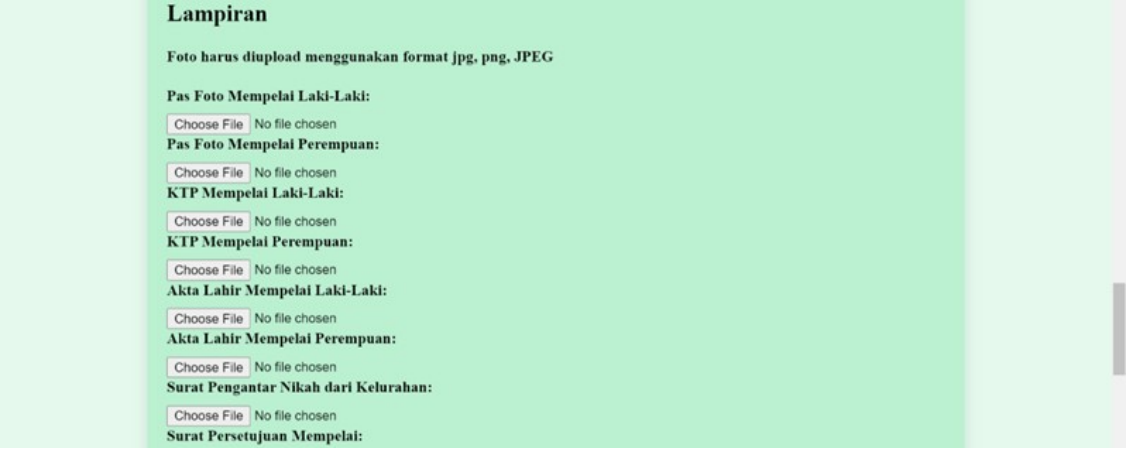

Figure 8: Marriage Attachment Page View

If the requirements are complete and the data is correct, you will be directed to the next page, namely the page for proof of filling out the Form.

Figure 9: Marriage Registration Form Download Proof View

When the user presses the "share to whatssapp" button, the page will automatically be directed to send a message to the admin. The user is expected to validate and the admin will inform the next steps, namely consultation or setting a meeting schedule to discuss the pre-marital guidance schedule at the BP4 (Marriage Advisory, Guidance and Preservation Agency) service online, and sending proof of the marriage registration form filling report.

Result of Admin Feature Information System Implementation

If we click on the main page of the admin feature in the upper right corner (see figure 5) then we will move on to the admin login page. The admin will be asked to fill in the username and password, if wrong then the user cannot enter the next page. If we have entered the username and password correctly, then we will move on to the main admin page, there are two buttons, namely daily and monthly recaps.

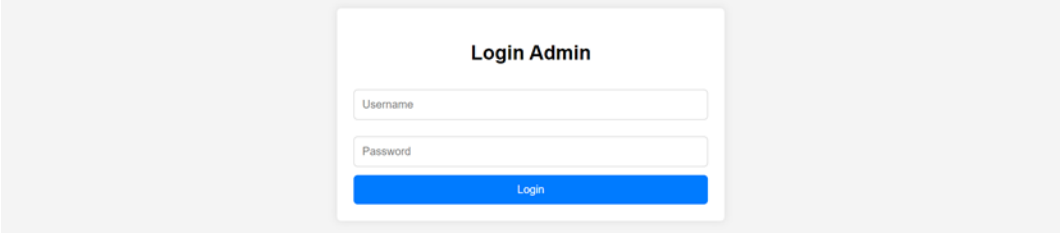

Figure 10: Admin Login Page View

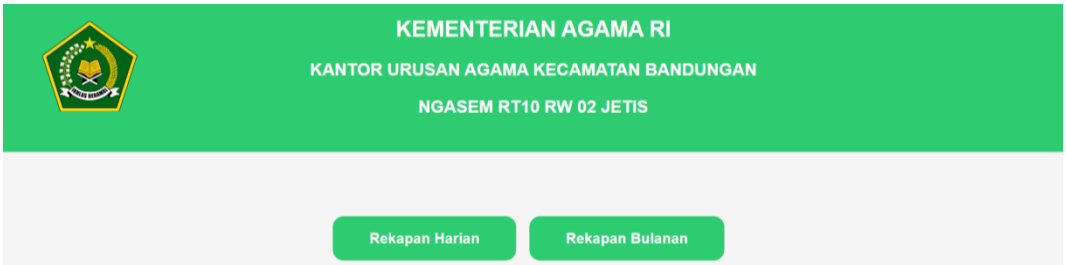

Figure 11: Daily and Monthly Recap Login Page View

Figure 12: Daily Recap Page View

Figure 13: Monthly Recap Page View

5. DISCUSSION

After observing the running system and finding its weaknesses, the author will provide a proposal for designing a more systematic and efficient system, both in terms of time and energy. The lack of efficiency of this system also occurs because archiving is still done manually and not digitally. The proposed system can make it easier for prospective brides and grooms to register for marriage or reconciliation and make it easier for the KUA to convey information on the pre-marital guidance schedule for prospective brides and grooms, with this proposed system it can ensure that it can overcome existing problems so that later the proposed system will be more effective and more efficient. Where the proposed system will not change the old system into a system that will be developed, only the proposed system is computerized while the old system is still conventional and this solves the problems that have been studied. Thus, prospective brides and grooms no longer need to visit the KUA office many times, thus saving time and energy. In addition, this system also allows the KUA to easily access and manage information, reduce the risk of human error, and increase transparency in the marriage and reconciliation administration process.

6. CONCLUSION

Based on the description and discussion in the previous chapters, starting from the data collection stage to implementation. The information system that is built can provide convenience for prospective brides and grooms in registering marriages, as well as for people who want to reconcile. Facilitate the KUA in conveying information on the pre-marital guidance schedule to prospective brides and grooms who will hold a marriage contract and can provide convenience in managing marriage data reports and reconciliation data. Facilitate the KUA in conveying information on the penghulu schedule to prospective brides and grooms and prospective reconciliation participants. With the existence of a marriage and reconciliation service information system at the Bandungan sub-district KUA, prospective brides and grooms no longer have to go back and forth to the Bandungan sub-district KUA to get a pre-marital guidance schedule or completeness of prospective bride and groom files.

In order for the web-based information system of the Bandungan District Religious Affairs Office (KUA) to be more perfect, it is necessary to improve the maintenance of the marriage and reconciliation service information system in order to maximize the function and performance of the system, such as data security. For further researchers, it is recommended to develop this web-based information system into an android application.

7. LIMITATION

This study focuses on the implementation of a web-based information system at the Bandungan District KUA which focuses on marriage registration and reconciliation.

BIBLIOGRAPHY

Hamurwani, N. H. (2022). *Penerapan Sistem Informasi Manajemen Nikah (Simkah) Dalam Peningkatan Kualitas Pelayanan Di Kantor Urusan Agama Kecamatan Kedamaian Kota Bandar Lampung*. Universitas Islam Negeriraden Intan Lampung.

Hasanuddin. (2017). *Sistem Informasi Pelayanan Nikah Dan Rujuk Pada Kantor Urusan Agama (Kua) Kecamatan Cempaka*. UIN Raden Fatah.

Maniah., Hamidin. (2017). *Analisis dan Perancangan Sistem Informasi* (1st ed.). CV Budi Utama.

Mulyanto, A. (2009). *Sistem Informasi Konsep dan Aplikasi*. Pustaka Pelajar.

Mustakini. (2009). *Sistem Informasi Teknologi*. Andi Offset.

Novendri, M.S., Saputra, A., Firman, C.E. (2019). Aplikasi Inventaris Barang Pada Mts Nurul Islam Dumai Menggunakan Php Dan Mysql. *Lentera Dumai*, *10*(2).

Pressman, P.D., Roger, S. (2010). *Pendekatan Praktisi Rekayasa Perangkat Lunak* (7th ed.). Penerbit Andi.

Purwanto, H. (2019). Rancangan Sistem Informasi Penjualan Barang Koperasi XYZ. *JSI (Jurnal Sistem Informasi)*, *6*(1).

Rainer, R.K., Cegielski, C.G. (2014). *Introduction to Information System Enabling and Transforming Business*.

Solichin, A. (2016). *Pemrograman Web dengan PHP dan MySQL*. Budi Luhur.

Suehering, S., Valade, J. (2013). *PHP, MySQL, JavaScript & HTML5 All-inOne For Dummies*. Wiley Publishing.

Susiyanti. (2018). *Sistem Informasi Kantor Urusan Agama Kecamatan Way*. Institut Informatika dan Bisnis Darmajaya.