APPLICATION OF THE FIRST COME FIRST SERVED METHOD IN A WEB-BASED MARRIAGE REGISTRATION SYSTEM

Tenriangka[-1], Lilis Nur Hayati[-2], Amaliah Faradibah[-3]

Faculty of Computer Science[-1, -2, -3]
Universitas Muslim Indonesia
13020220038@student.umi.ac.id[-1], lilis.nurhayati@umi.ac.id[-2], amaliah.faradibah@umi.ac.id[-3]

Abstract

Marriage registration at the Office of Religious Affairs (KUA) in Bulupoddo Sub-district is still largely conducted using conventional methods, leading to problems such as document accumulation, risk of data loss, recording errors, and delays in verification. This study aims to develop a website-based marriage registration system to improve service efficiency and ensure fair service order. The study applies the First Come First Served (FCFS) method to manage queues based on registration time and uses the Waterfall model for system development, including requirement analysis, design, implementation, and testing. System evaluation was conducted through Alpha Testing for functionality and Beta Testing using a Likert-scale questionnaire analyzed with the Weighted Mean Score (WMS) method. The results show that the system operates according to the designed workflow and all features function properly. Beta testing produced an average score of 4.18 (83.6%), categorized as good, indicating high user acceptance. The implementation of the FCFS method enables a more transparent, fair, and well-structured service process in managing marriage registration at KUA. This study contributes to the development of public service information systems by integrating a queue management method into a digital marriage registration system, thereby improving service efficiency, fairness, and transparency.

Keywords: First Come First Served; Marriage Registration; Office of Religious; Waterfall; Website

Abstrak
Pendaftaran pernikahan di Kantor Urusan Agama (KUA) Kecamatan Bulupoddo masih banyak dilakukan secara konvensional, sehingga menimbulkan permasalahan seperti penumpukan berkas, risiko kehilangan dokumen, kesalahan pencatatan, serta keterlambatan verifikasi. Penelitian ini bertujuan untuk mengembangkan sistem pendaftaran pernikahan berbasis website yang mampu meningkatkan efisiensi layanan serta mengatur urutan pelayanan secara adil. Metode yang digunakan adalah First Come First Served (FCFS) untuk mengelola antrian berdasarkan waktu pendaftaran, serta model pengembangan Waterfall yang meliputi analisis kebutuhan, perancangan, implementasi, dan pengujian. Evaluasi sistem dilakukan melalui Alpha Testing untuk menguji fungsionalitas dan Beta Testing menggunakan kuesioner skala Likert yang dianalisis dengan metode Weighted Mean Score (WMS). Hasil penelitian menunjukkan bahwa sistem berjalan sesuai dengan rancangan dan seluruh fitur berfungsi dengan baik. Pengujian beta menghasilkan nilai rata-rata 4,18 (83,6%) dengan kategori baik, yang menunjukkan tingkat penerimaan pengguna yang tinggi. Penerapan metode FCFS dalam sistem ini mampu menciptakan proses pelayanan yang lebih transparan, adil, dan terstruktur dalam pengelolaan pendaftaran pernikahan di KUA. Penelitian ini memberikan kontribusi dalam pengembangan sistem informasi layanan publik dengan mengintegrasikan metode manajemen antrian ke dalam sistem pendaftaran pernikahan berbasis digital, sehingga meningkatkan efisiensi, keadilan, dan transparansi layanan.

Kata kunci: First Come First Served; Kantor Urusan Agama; Pendaftaran pernikahan; Waterfall; Website

INTRODUCTION

Marriage is a sacred bond that not only unites two individuals but also brings together two extended families within social life. The process of marriage holds very significant meaning and is carried out with great care and thorough preparation. Therefore, marriage registration must be conducted through clear and well-organized procedures to ensure that the marriage is legally and religiously valid. One of the institutions that plays a central role in this process is the Office of Religious Affairs (Irsandi, Putri, & Santoso, 2024). KUA is an institution under the Ministry of Religious Affairs of the Republic of Indonesia that is responsible for recording marriages of Muslims and organizing various other religious services at the sub-district level. The implementation of KUA's duties is based on prevailing laws and regulations, including Law Number 1 of 1974 concerning Marriage and regulations issued by the Minister of Religious Affairs (Halim et al., 2023).

The process of marriage registration for Muslims in Indonesia is still largely carried out conventionally through local KUA offices. Although several regions have begun adopting digital systems, most areas, especially remote regions, have not yet fully utilized technology in marriage administration services. One example is the KUA of Bulupoddo Sub-district, where prospective brides and grooms are required to come directly to the office while bringing a number of required documents, such as photocopies of identification, letters of introduction, and other supporting documents. Due to the conventional nature of the process, these documents are collected and stored in physical form without the support of an organized digital system. This condition often leads to document accumulation, misplaced files, and even the risk of data loss. In addition, prospective couples who live far from the KUA office frequently face difficulties because they must repeatedly travel back and forth to complete or correct incomplete documents. This situation not only complicates services but also increases the potential for administrative errors.

To address these problems, a website-based marriage registration system is required to accelerate and simplify the administrative process. A website is a collection of pages that function to present information in various forms, such as text, images, animated videos, audio, or a combination of these elements, which can be static or dynamic and are interconnected to form an organized structure through hyperlinks between pages (Hayati, Astuti,

& Pratama, 2021; Nurul Istiqomah, 2021). By utilizing a website as a service medium, this system enables prospective brides and grooms to register online, complete registration forms, and upload required documents without having to visit the KUA office directly. With a user-friendly interface, the system can be easily accessed anytime and anywhere, thereby improving the efficiency of marriage registration services.

To ensure smoothness, orderliness, and fairness in the marriage registration process, the developed system applies the First Come First Served (FCFS) method as a registration queue management method. FCFS is a scheduling method that operates based on the principle that whoever arrives first will be processed first, without considering the duration or complexity of the process (Riyadi Purwanto, Linda Perdana Wanti, M.Kom, & Rostika Listyaningrum, 2022; Syaifullah, Hayati, & Ilmawan, 2025; Wulandari, Muhamad Resya Novario, & Muhamad Fahreza, 2021) Each incoming registration is placed into a queue according to its arrival time and processed sequentially (Pambudi, Ansky, Ghassani, Yulianti, & Hartati, 2025; M. R. M. Ramadhan, Sarwido, & Tamrin, 2025; Yusuf Muharam, 2021).

In the developed system, the FCFS method is applied at the document verification stage by KUA officers, where each incoming registration is processed based on the order of registration time. Thus, prospective couples who register earlier will be verified first in accordance with the FCFS principle, creating a fair and orderly service process.

To systematically and structurally develop the website-based marriage registration system, the waterfall software development model is used, which is one of the methods within the Systems Development Life Cycle (SDLC) (Asis & Salim, 2024). This model is sequential in nature and represents a systematic and orderly development approach, consisting of stages such as requirements analysis, system design, implementation, testing, and maintenance (Agus, Harlinda, & Arfah, 2024; Hamid, Alwi, & Asis, 2024; Harits, Anshor, & Tedi, 2024; Muhammad Nur Adil, Irawati Irawati, 2023). Through the implementation of a website-based system that integrates the FCFS method, improvements are achieved in the efficiency of marriage registration services, reduction of administrative errors, and assistance for KUA officers in performing recording and verification in a more accurate and well-organized manner.

Several previous studies have addressed similar issues. A study on a web-based marriage

registration system at KUA Medan Baru applied the Rapid Application Development (RAD) model and showed improved efficiency and accessibility (Sibarani & Manurung, 2023). Another study at KUA Telluwanua developed an online registration system using the Waterfall model, achieving a system utilization rate of 96% and reducing processing errors (Kanna, Mukramin, & Hasnahwati, 2023). Furthermore, research on the implementation of FCFS in a web-based futsal field booking system demonstrated that the method effectively ensures fairness and transparency by prioritizing users based on arrival time (R. Ramadhan, Fauziah, & Esti Handayani, 2022).

Despite these advancements, most studies focus only on system digitalization without integrating queue scheduling methods, or they apply FCFS in domains unrelated to public service administration. The implementation of FCFS in marriage registration systems at KUA remains limited. This indicates a research gap in developing a digital marriage registration system that not only facilitates online services but also manages service order in a fair and structured manner.

Based on the identified research gap, this study not only develops a website-based marriage registration system but also integrates the FCFS method to manage service order in a fair and structured manner. Unlike previous studies that primarily focus on system digitalization or apply FCFS in unrelated domains, this study combines both approaches within the context of public service at KUA.

RESEARCH METHODS

Research Phases

This study focuses on the development of a website-based marriage registration system implemented at the Office of Religious Affairs (KUA). The system is designed to simplify the marriage registration process and improve service efficiency through the application of the FCFS method as the primary mechanism for managing service order. By implementing this method, the processes of registration services and marriage ceremony scheduling can be conducted fairly based on the order of registration time, thereby creating a more structured and transparent service flow for both prospective couples and KUA officers. The system development model used in this study is the Waterfall model, which is a structured and systematic development approach in which each stage is carried out sequentially (Beno, Silen, &

Yanti, 2022; Maulana, Wahyuni, Informatika, Teknik, & Malang, 2025). This model was selected because the objectives and scope of the system are well-defined and aligned with the project requirements, making a linear development approach suitable for supporting a well-planned and systematic development process.
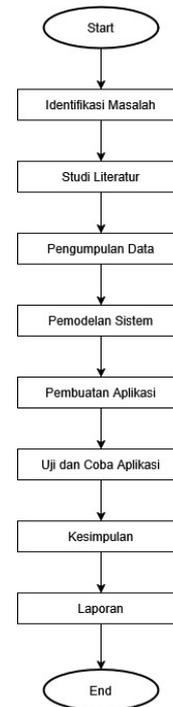

Figure 1. Research Phases

Based on the research stages shown in Figure 1 each stage of the research implementation can be described as follows:

1. Problem Identification

This stage involves analyzing the obstacles encountered in the marriage registration process in Bulupoddo Sub-district and formulating solutions based on an information system approach.

2. Literature Review

This stage involves studying references related to website-based marriage registration information systems, software development methodologies, and relevant technologies to ensure that the developed system meets user requirements.

3. Data Collection

Data in this study were collected using both primary and secondary data sources. Primary data

were obtained through interviews, observations, and documentation. Interviews were conducted with the head of KUA and KUA officers in Bulupoddo Sub-district to gather information regarding the marriage registration process. Observations were carried out by directly examining the existing registration procedures and reviewing related records and reports at KUA. In addition, documentation techniques were used to collect relevant data in the form of written documents, images, and administrative files.

Secondary data were collected from journals, books, and scientific articles related to the application of the First Come First Served (FCFS) method in queue systems, including its principles, advantages, limitations, and the role of technology in improving the efficiency of digital registration services. The collected data were used as the basis for system requirement analysis and development.

4. System Modeling

After the data are collected, system modeling is conducted using diagrams such as Use Case Diagrams, Activity Diagrams, Class Diagrams, and Sequence Diagrams. This stage aims to provide an overview of the structure and functionality of the application to be developed.

5. Application Development

This stage involves designing and developing a website-based marriage registration system using the Laravel framework and a MySQL database. The application is built with features that allow prospective couples to register online without having to visit the KUA office directly, while KUA officers can monitor and manage registration data in real time.

6. FCFS Method Implementation

The First Come First Served (FCFS) method is implemented as a queue scheduling mechanism in the website-based marriage registration system, particularly at the document verification stage. Each registration is recorded with a timestamp and processed sequentially based on the order of submission.

The implementation begins when prospective couples submit registration data, which is automatically stored along with the registration time. The system then sorts the data in ascending order and places them into a queue. KUA officers process the data sequentially according to this order, and the system displays the queue to ensure transparency in the service process. Algorithm of the FCFS Method:

1) Input: Registration data along with timestamps
2) Store the registration data in the database
3) Sort the data in ascending order based on timestamps
4) Insert the data into a queue structure
5) Process the data sequentially from the earliest to the latest
6) Output: An ordered registration queue for verification

7. Application Testing

At this stage, system testing is conducted using Alpha Testing and Beta Testing methods. Alpha Testing is performed by the development team to evaluate system functionality, identify bugs, and ensure that all features operate according to specifications before being tested by users. Meanwhile, Beta Testing involves prospective couples and KUA officers using the system and providing feedback regarding usability and effectiveness in the registration process. The data obtained from Beta Testing were analyzed using the Weighted Mean Score (WMS) method. Each response is assigned a score from 1 to 5 based on the Likert scale, where 1 represents Very Poor and 5 represents Very Good. The WMS is calculated using the formula:

$$M = \frac{\sum F\,(X)}{n}$$

Where f is the frequency of responses, x is the score value, and N is the total number of respondents. The results are then interpreted into categories such as Very Poor, Poor, Fair, Good, and Very Good to evaluate system usability and user satisfaction.

8. Conclusion

Conclusions are drawn based on the results of system testing and evaluation. The conclusions include the extent to which the system meets user needs, the effectiveness of the application in improving the efficiency of marriage registration, and the potential for further development.

9. Reporting

After all stages have been completed, a report is prepared that includes the testing results and the overall conclusions of the study.

Use Case Diagram

A Use Case represents a model used to describe the relationships and interactions between users and the developed system. This diagram illustrates how users interact with the functions provided by the system, as well as the involvement of other parties or external systems that are related to the system (Muhammad Fahmi Siahaan, Muhammad Hendri, & Sri Lindawati, 2022; Taufan, Rusdianto, & Ananta, 2022; Wayahdi & Ruziq, 2023).
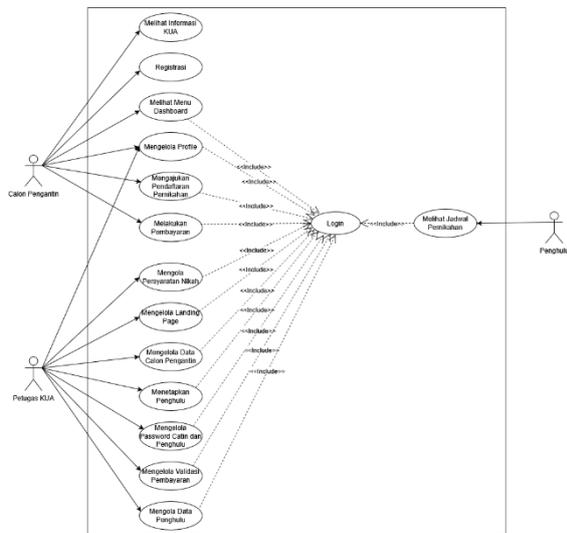

Figure 2. Use Case Diagram

Based on Figure 2 the website-based marriage registration system has several main functions involving three actors, namely Prospective Couples, KUA Officers, and Marriage Registrars. Each actor has different access rights and activities according to their respective roles.

1. Prospective Couples

Prospective Couples act as the primary users in the marriage registration process. This actor can access KUA information, register an account, view the dashboard menu, and manage personal profile data. After successfully logging in, Prospective Couples can submit a marriage registration application, upload and complete the required marriage documents, and make payments for marriage fees. All these activities are integrated within the system to ensure that the registration process runs in a structured manner and is well documented.

2. KUA Officers

KUA Officers serve as system administrators who have access to manage and verify marriage registration data. After logging into the system, KUA Officers can manage prospective couple data, review and validate marriage requirements, assign a marriage registrar (Penghulu), and verify payments for the marriage ceremony. In addition, KUA Officers also have access to manage registrar data, configure the landing page, and manage user accounts and passwords registered in the system.

3. Marriage Registrar (Penghulu)

The Marriage Registrar is an actor involved in the final stage of the marriage service process. After logging in, the registrar can access information related to the marriage schedule that has been determined by the KUA Officers. This information serves as a reference for conducting the marriage ceremony in accordance with the schedule established by the KUA.

RESULTS AND DISCUSSION

RESULTS

The website-based marriage registration system has been fully implemented, and its performance can be observed through various interface screens provided by the system. These interfaces illustrate how users interact with key features, including the registration of prospective brides and grooms, data entry and document uploads, marriage ceremony scheduling, and registration status monitoring. The visual representations demonstrate that the system operates in accordance with the designed workflow.
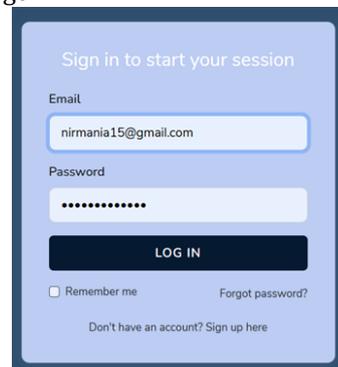
1) Login Page

Figure 3. Login Page

Figure 3 shows the login page used by users to access the system by entering their email address and password.
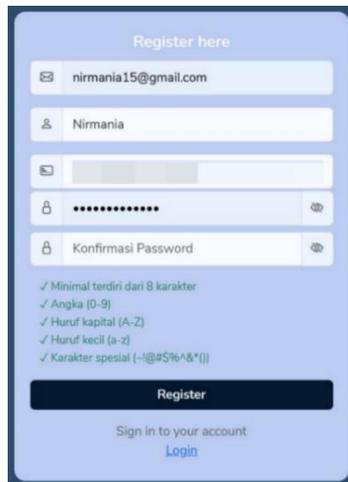
2) Account Registration Page

Figure 4. Account Registration Page

Figure 4 shows the page used to create a new account by entering the email address, name, national identification number (NIK), and password.

3) Prospective Bride and Groom Dashboard Page

Figure 5. Prospective Bride and Groom Dashboard Page

Figure 5 shows the dashboard page displayed to prospective brides and grooms after successfully logging in. On this page, users can view their marriage registration status as well as information related to marriage requirements.

4) Marriage Registration Page

Figure 6. Marriage Registration Page

Figure 6 shows the marriage registration page, where users fill in forms related to the location and schedule of the marriage ceremony, personal data and required documents of the prospective bride and groom, as well as marriage-related information.

5) Marriage Ceremony Schedule Page

Figure 7. Marriage Ceremony Schedule Page

Figure 7 shows the registration status page indicating that the process has reached the marriage ceremony scheduling stage. This page also displays detailed information regarding the marriage ceremony schedule, including the date, time, location, and the assigned marriage registrar.

Blackbox Testing Results (Alpha)
Table 1. Blackbox Testing Results (Alpha)

No	Test Scenario	Expected Output	Result
1	Click Login with incorrect email or password	The system does not redirect to the dashboard and displays an error message	Valid
2	Click Register with	The system displays a warning message and	Valid

	incomplete account data	cancels the registration process	
3	Click Submit without selecting a payment proof file	The system displays the message "Please select the payment proof file first" and cancels the process	Valid
4	Click Login with valid email and password	The system redirects to the dashboard page	Valid
5	Submit complete marriage registration data	The system saves data and proceeds to the next process	Valid
6	Upload valid payment proof file	The system successfully uploads and stores the file	Valid
7	KUA officer verifies registration data	The system processes data based on FCFS order	Valid
8	System sorts registration data by timestamp	The system displays queue in correct chronological order	Valid
9	Click Logout	The system returns to the login page	Valid

Table 1 presents the results of Blackbox Testing (Alpha) conducted to ensure that the main system functions operate according to the designed workflow. The results indicate that the system is able to handle both invalid and valid inputs across various processes, including login, account registration, data submission, file upload, and logout. In addition, the system successfully implements the FCFS method by processing and sorting registration data based on timestamp order. Therefore, all test scenarios obtained a Valid status and met the specified functional requirements.

Blackbox Testing Results (Beta)

Beta testing was conducted to evaluate user experience in using the web-based marriage registration application. This phase involved direct interaction with the system by actual users to assess usability and system performance. A total of 30 respondents participated in this testing,

consisting of 1 KUA officer, 2 marriage registrars, and 27 prospective brides and grooms.

The evaluation was carried out using a five-point Likert scale questionnaire, ranging from Very Poor (VP) to Very Good (VG). The questionnaire consisted of several evaluation indicators, including ease of use, interface design, system responsiveness, information consistency, and the overall registration process. The collected data were analyzed using the Weighted Mean Score (WMS) method to obtain the average score based on the weight of each response category. The results are presented in Table 7, which summarizes respondents' assessments of the system.

The analysis resulted in an average Assessment Point (AP) value of 4.18, equivalent to 83.6%, indicating that the system falls into the "good" category across all evaluated aspects. This result demonstrates that the system is easy to use, responsive, and capable of meeting user needs in the marriage registration process.

Further analysis indicates that the system provides strong usability and supports efficient task completion. Users are able to understand system features clearly, complete registration procedures without significant difficulty, and access information effectively. The high score also reflects a user-friendly interface and stable system performance during operation.

Moreover, the implementation of the FCFS method enhances the overall service quality by ensuring that the registration process is carried out in a fair and orderly manner based on submission time. This reduces potential scheduling conflicts and improves transparency in service delivery. Therefore, the system not only improves usability but also increases efficiency and fairness in public service processes.

DISCUSSION

The results indicate that the web-based marriage registration system has been successfully implemented and operates according to the designed workflow. The proper functioning of key features, such as login, account registration, marriage registration submission, and ceremony scheduling, demonstrates that the system is capable of supporting the marriage registration process in a structured and systematic manner within the KUA service environment.

The application of the FCFS method contributes to fairness and transparency in the registration process, as registrations are processed based on the order of submission time. This approach is well suited to public service systems,

where equal treatment is essential. The results of Blackbox Testing (Alpha) confirm that the system effectively handles invalid inputs by rejecting incorrect login credentials, preventing incomplete data submission, and blocking payment proof uploads when required files are missing, ensuring data validity and system reliability.

Furthermore, the Beta testing results indicate positive user acceptance, with a score of 83.6%, placing the system in the good category across all evaluated aspects. These findings suggest that the system is easy to use, responsive, and capable of meeting user needs and expectations, while also offering the potential to improve the efficiency and quality of marriage registration services through digital transformation.

Compared to previous studies, such as the web-based marriage registration system at KUA Medan Baru which focused primarily on digitalizing the registration process, and the system developed at KUA Telluwanua which emphasized the use of the Waterfall model, this study provides additional value by integrating the FCFS method into the system. This integration enables not only the digital transformation of services but also the management of registration queues in a fair and structured manner.

The implementation of the FCFS method in this study is also consistent with previous research in other domains, such as booking systems, where FCFS has been proven to improve fairness and transparency. However, this study extends the application of FCFS into the context of public service, particularly in marriage registration at KUA, which requires orderly and equitable service management.

Despite the positive results, this study has several limitations. The system is implemented only in a specific location, namely KUA Bulupoddo, and has not been tested in a wider or more diverse environment. In addition, the number of respondents involved in Beta testing is relatively limited, which may affect the generalizability of the results. The system also focuses primarily on functionality and usability aspects, without incorporating advanced data security features or integration with other government systems.

For future development, the system can be enhanced by integrating it with other government services, such as population administration systems, to improve data accuracy and efficiency. Furthermore, implementing stronger data security mechanisms is recommended to ensure the protection of sensitive user data. Additional evaluation using more advanced usability testing methods and a larger number of respondents is also suggested to obtain more comprehensive results.

CONCLUSIONS AND SUGGESTIONS

Conclusion

This study successfully developed a website-based marriage registration system at KUA that supports a more structured and efficient service process. The system facilitates registration, data management, and service scheduling in a systematic manner within a public service environment.

The implementation of the First Come First Served (FCFS) method contributes to ensuring fairness and transparency by managing service queues based on registration time. The evaluation results indicate that the system is well accepted by users and has the potential to improve the quality of marriage registration services through digital transformation. Therefore, this study contributes to the development of public service information systems by integrating digital services with an effective queue management mechanism.

Suggestion

Future system development is recommended to integrate with other government services, such as population administration systems, to improve data accuracy and service efficiency. In addition, strengthening digital data security is essential to ensure the protection of sensitive user information. Further research is also suggested to evaluate the system using more robust usability testing methods and involve a larger number of respondents, in order to obtain more comprehensive and generalizable results.

REFERENCES

Agus, M., Harlinda, L., & Arfah, M. (2024). Perancangan Sistem Informasi Penjualan Berbasis E-Commerce dengan Metode Waterfall. *LINIER: Literatur Informatika Dan Komputer*, *1*(4), 365–378. doi:10.33096/linier.v1i4.2536

Asis, M. A., & Salim, Y. (2024). JOURNAL CERITA : Rancang Bangun Sistem Manajemen Data Akreditasi Berbasis Web. *JOURNAL CERITA: Creative Education of Research in Information Technology and Artificial Informatics*, (May). doi:10.33050/cerita.v10i1.2989

Beno, J., Silen, A. ., & Yanti, M. (2022). Perbandingan Model Waterfa. *Braz Dent J.*, *33*(1), 1–12. doi:10.47652/metadata.v5i1.311

Halim, A., Bugis, S. H., Syahputri, I. A., Harahap, F. A., Hidayah, A., Yusasni, E., … Lubis, Z. A. (2023). Peranan Kantor Urusan Agama (KUA) Dalam Menangani Pernikahan dan Kepentingan Keagamaan Masyarakat di Kecamatan Medan Timur. *As-Syar'i: Jurnal Bimbingan & Konseling Keluarga*, *5*(1), 293–300. doi:10.47467/as.v5i1.2577

Hamid, A., Alwi, E. I., & Asis, M. A. (2024). Sistem Informasi Asrama V Ikatan Pemuda Pelajar Mahasiswa (IPPM) Pangkep Berbasis Web. *Jurnal Informatika, Sistem Informasi Dan Kehutanan (FORSINTA)*, *3*(1), 1–14. doi:10.53978/jfsa.v3i1.365

Harits, D. A. I., Anshor, A. H., & Tedi, N. (2024). Sistem Informasi Inventory Berbasis Website Menggunakan Metode Waterfall. *Journal of Information System Research (JOSH)*, *5*(4), 1179–1187. doi:10.47065/josh.v5i4.5548

Hayati, L. N., Astuti, W., & Pratama, A. R. (2021). PkM Penerapan Website Desa Binaan UMI di Desa Lanna Kecamatan Parangloe Kab. Gowa. *Ilmu Komputer Untuk Masyarakat*, *2*(1), 30–36. doi:10.33096/ilkomas.v2i1.905

Irsandi, M., Putri, R. A., & Santoso, H. (2024). Perancangan Sistem Informasi Pendaftaran Nikah Menggunakan Metode FAST. *Bulletin of Computer Science Research*, *5*(1), 61–68. doi:10.47065/bulletincsr.v5i1.405

Kanna, H., Mukramin, & Hasnahwati. (2023). Sistem Informasi Pelayanan Pendaftaran Nikah Secara Online Di Kua Kecamatan Telluwanua Menggunakan. *JUTINDA (Jurnal Teknik Informatika Unanda)*, *2*(2), 43–52. Retrieved from https://ojs.unanda.ac.id/index.php/jutinda/article/view/1847/0

Maulana, M. R., Wahyuni, E. D., Informatika, T., Teknik, F., & Malang, U. M. (2025). Evaluasi Metodologi Waterfall Dan Agile : *JITET (Jurnal Informatika Dan Teknik Elektro Terapan)*, *13*(1), 1287–1294. doi:10.23960/jitet.v13i1.5900

Muhammad Fahmi Siahaan, Muhammad Hendri, & Sri Lindawati. (2022). Perancangan Sistem Informasi Promosi Dan Penjualan Pada PT. Gaya Makmur Mulia Menggunakan Metode Prototype. *Jurnal Armada Informatika*, *6*(2), 631–643. doi:10.36520/jai.v6i2.60

Muhammad Nur Adil, Irawati Irawati, R. R. (2023). Aplikasi Antrian Online Menggunakan Metode Multi Channel Single Phase di Puskesmas Lasepang Kabupaten Bantaeng. *Buletin Sistem Informasi Dan Teknologi Islam (BUSITI)*, *4*(3), 210–220. doi:10.33096/busiti.v4i3.1793

Nurul Istiqomah, A. H. (2021). Sistem Informasi Website Sebagai Media Promosi dan Sarana Informasi pada Rumah Sakit Mardi Waluyo Metro. *Jurnal Mahasiswa Sistem Informasi (JMSI)*, *3*(1), 19–26. doi:10.24127/jmsi.v3i1.1687

Pambudi, R. K., Ansky, B., Ghassani, J., Yulianti, R., & Hartati, E. (2025). Digital Menggunakan Metode First-Come First-Served. *Jurnal Informatika Dan Tekn*, *13*(3), 198–205. doi:10.23960/jitet.v13i3.6702

Ramadhan, M. R. M., Sarwido, S., & Tamrin, T. (2025). Implementasi Algoritma First Come First Served Pada Sistem E-Booking Lapangan Dihafa Mini Soccer. *Jutisi : Jurnal Ilmiah Teknik Informatika Dan Sistem Informasi*, *13*(3), 2437–2449. doi:10.35889/jutisi.v13i3.2404

Ramadhan, R., Fauziah, F., & Esti Handayani, E. T. (2022). Penerapan Algoritma First Come First Served dalam Menentukan Penyewaan Lapangan Futsal Berbasis Web. *Jurnal JTIK (Jurnal Teknologi Informasi Dan Komunikasi)*, *6*(1), 102–110. doi:10.35870/jtik.v6i1.373

Riyadi Purwanto, Linda Perdana Wanti, M.Kom, R. H. M., & Rostika Listyaningrum. (2022). Penerapan Metode First Come First Served (FCFS) Pada Sistem Informasi Layanan Perawatan dan Perbaikan Aset Kampus. *Infotekmesin*, *13*(2), 322–328. doi:10.35970/infotekmesin.v13i2.1548

Sibarani, F. H., & Manurung, S. O. (2023). Sistem Informasi Pendaftaran Pernikahan KUA Kecamatan Medan Baru Berbasis Web. *Jurnal Minfo Polgan*, *12*(1), 280–288. doi:10.33395/jmp.v12i1.12373

Syaifullah, M. A., Hayati, L. N., & Ilmawan, L. B. (2025). Application of the First Come First Served Method in the Mobile-Application System, *8*(2). doi:10.32877/bt.v8i2.3331

Taufan, M. A., Rusdianto, D. S., & Ananta, M. T. (2022). Pengembangan Sistem Otomatisasi Use Case Diagram Berdasarkan Skenario Sistem Menggunakan Metode POS Tagger Stanford NLP. *Jurnal Pengembangan Teknologi Informasi Dan Ilmu Komputer*, *6*(8), 3733–3740. Retrieved from https://j-ptiik.ub.ac.id/index.php/j-ptiik/article/view/11432

Wayahdi, M. R., & Ruziq, F. (2023). Pemodelan Sistem Penerimaan Anggota Baru dengan Unified Modeling Language (UML) (Studi Kasus: Programmer Association of Battuta). *Jurnal Minfo Polgan*, *12*(1), 1514–1521. doi:10.33395/jmp.v12i1.12870

Wulandari, Muhamad Resya Novario, & Muhamad

Fahreza. (2021). Sistem Informasi Penyewaan Lapangan Futsal Menggunakan Metode First Come First Served Pada NF Mini Soccer. *KRESNA: Jurnal Riset Dan Pengabdian Masyarakat*, *1*(1), 44–51. doi:10.36080/jk.v1i1.11

Yusuf Muharam, M. D. S. (2021). Implementasi Algoritma First Come First Served Pada Aplikasi Pemesanan Lapangan Futsal Berbasis Website Pada Bisoc Futsal Batununggal Bandung. *COMPUTING | Jurnal Informatika*, *8*(01), 41–45. doi:10.55222/computing.v8i01.570