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Website Development as a Media for Disseminating Information in RT. 39 Jelutung Village, Jambi City

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ABSTRACT

RT 39 Jelutung Village, Jambi City is currently facing challenges in terms of disseminating information to its citizens. Conventional methods that have been used, such as announcements on information boards, regular meetings, and distributing leaflets, are often ineffective in reaching all residents. This research seeks to create a website for sharing information for disseminating information in RT. 39, Jelutung Village, Jambi City, using the Waterfall method and UML modeling to describe the system flow. This website is designed to facilitate effective communication between RT administrators and residents and provide fast and accurate access to information regarding activities, announcements and public services. The Waterfall methodology includes the phases of needs analysis, design, implementation, testing and maintenance. UML modeling is used to visually describe the structure and flow of a system, including use case diagrams, activity diagrams, and class diagrams. The finding is a website with main features such as Information Portal, Website Dashboard, Manage Mail. Evaluation was carried out through a survey of RT residents. 39 to assess the effectiveness and satisfaction with the use of this website. The evaluation results show that this website has succeeded in increasing information accessibility and citizen participation in RT activities. 39. Thus, it is hoped that the development of this website can become a model that can be applied in other RTs To enhance the caliber of communication and informational offerings.

INTRODUCTION

The development of ICT has profoundly influenced numerous facets of individuals' lives, such as the dissemination of informayio. In today's digital age, the internet has emerged as a primary platform for swiftly and effectively distributing information. In this digital era, the internet has become one of the main tools for disseminating information quickly, efficiently and widely. The use of this technology is not only limited to the business and education sectors, but has also spread to the local community level, such as the Rukun Tetangga (RT)(Dewi et al., 2019)(Yusuf Siregar et al., 2024).

RT, also known as Rukun Tetangga, is an organization established by local residents following community discussions to enhance the services provided by both the government and the community. It is owned by the local government and aims to enhance community involvement, well-being, services, and participation (Ratnaningsih et al., 2023).

RT 39 Jelutung Village, Jambi City is currently facing challenges in terms of disseminating information to its citizens. Conventional methods that have been used, such as announcements on information boards, regular meetings, and distributing leaflets, are often ineffective in reaching all residents. Information conveyed through this method is often received late, unevenly, or even does not reach some residents. This results in a lack of citizen participation in RT activities and reduces their level of awareness of the important information conveyed (Ekadewi et al., 2018).

To overcome this problem, developing a website as a medium for disseminating information for RT 39 residents is a potential solution. Websites can function as platforms that provide real-time information and can be accessed by all citizens anytime and anywhere (Ikhsan, 2024). With a website, information such as activity schedules, important announcements, local news and RT financial reports can be disseminated more effectively and efficiently. Apart from that, the website can also be a means of interaction between RT administrators and residents, allowing residents to provide input, report problems, and actively participate in various activities.(N et al., 2023).

This research seeks to create a website will be used as a medium for disseminating information for residents of RT 39 Jelutung Village, Jambi City. This research will cover the design, development, implementation and evaluation stages of the website.(Samboga et al., 2021) With this research, it is hoped that an integrated and responsive information system can be created, which is able to improve communication and citizen participation in RT activities.

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Apart from that, This study also seeks to assess the efficacy of utilizing websites in increasing the dissemination of information at the local community level.(Salvator & K. Heremba, 2023).

The development of this website is in line with the government's efforts to encourage digitalization and the implementation of smart cities, where information technology is used to improve people's quality of life. Thus, this research not only provides practical benefits for RT 39 Jelutung Village, but also provides academic contributions in the field of community information system development. Hopefully,the findings can become a model that can be applied in other RT communities in Jambi City and in other areas.(Fattah & Azis, 2021).

On This research will use the waterfall method as a system development method and technically website development uses the Model-View-Controller concept.(Bagustian Sonjaya & Al Mudzaki, 2023).

LITERATURE REVIEW

Websites are crucial in today's digital age as they provide quick and easily accessible information anytime and anywhere. Websites are a component of technological advancements. They serve as areas of information where valuable resources are distinguished by a global identifier known as the URI. A website is a digital document presented as a page with text structured in HTML. Websites are housed on a hosting server and can be reached through an Internet browser using a URL. Web-based applications are created with particular purposes in mind. This site was built using PHP coding language alongside the Laravel framework.

Creating web applications necessitates the utilization of a framework that consists of structured program code organized in folders for enhanced usability. Laravel, an open source PHP framework initiated by Taylor Otwell in 2011, exemplifies this framework concept. Laravel (Shobur et al., 2022) framework was developed based on the MVC architecture. This design separates views from the processing logic, enabling the sharing of system operations.

Laravel prioritizes clear and straightforward code organization and readability and appearance in its design, and produces functional web applications that work.(Helmina, Akbar, et al., 2023).

PHP serves as a server-side scripting language within HTML files for web development. Incorporating PHP enables websites to become dynamic, simplifying and enhancing the efficiency of website maintenance. MySQL is a type of database management system software known as DBMS that is used with various database systems like Oracle, MySQL, PostgreSQL, etc (Helmina, Santoso, et al., 2023).

The Waterfall methodology, as described by (Ikhsan & Dani, 2023) involves progressing through stages and methods in a sequential and continuous manner, much like the steady flow of a waterfall. This approach to development follows a structured and step-by-step method known as the waterfall model. It earns its name from the cascading nature of its stages, where each phase depends on the completion of the previous one before progressing in a sequential manner. This model progresses linearly, starting with the initial planning phase and concluding with the maintenance phase.

METHOD

Types of research

The author employs R&D as the research methodology (Purnama et al., 2021). This approach involves creating a product such as a model or design and assessing its efficacy, with some steps:

Figure 1. Research and Development Methods

1. Preliminary Study marks the beginning of conducting a needs assessment. Information for this assessment is gathered through observations, surveys, interviews, and reviewing documents with participants.
2. Model development is a phase in creating a preliminary model undertaken by developers in a setting where researchers, specialists, professionals, and stakeholders are present.
3. Testing is the phase where the final product undergoes trials to assess its efficacy and performance.

Waterfall Method

In building a system, especially a website, stages and methods are needed that can support the sustainability of building a system. This methodology for software creation is known as SDLC (Helmina Helmina et al., 2023). This method is the oldest method because of its natural nature, with the phases:

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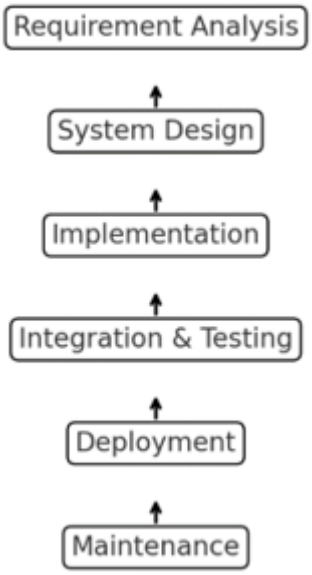

Figure 2. Waterfall Method

Requirements

During this phase, developers require communication focused on comprehending the type of software users anticipate and the constraints of the software. Data can be gathered through interviews, conversations, or surveys. This information is then scrutinized to gather the necessary user data.

System and software design

At this point, the developer creates a system design that assists in identifying hardware and system needs, as well as in defining the overall system structure.

Implementation

In this phase, the system is initially constructed in small components known as units, which are then combined in later phases. Every unit undergoes creation and assessment for its performance, a procedure recognized as unit testing.

Verification

At this point, the system undergoes verification and testing to ensure it meets the defined requirements. This testing includes unit testing (focused on individual code modules), system testing (examining system behavior with all modules combined), and acceptance testing (done by or for the customer to verify if all their requirements are met).

Maintenance

In the last phase, the completed software is executed and upheld, which involves rectifying any issues that were not identified in earlier stages.

Model-View-Controller (MVC)

The MVC concept is a website development concept which consists of three modules, namely Model, View and Controller(Ikhsan et al., 2019). The Model module will contain the data processing used in the system. The View module consists of visualization of data presented as information on the system platform used. Meanwhile, the Controller is a module that is used to manage the data that will be displayed in the View module.

RESULT

System planning

The system design aims to provide a clear picture and produce a design for the public service system in the Rukun Warga 05 area. The design is carried out by the findings of the preceding problem analysis. This research employs UML for system design, incorporating tools like use cases, activity, sequence, and class diagrams.

Use Case Diagrams

Based on the problems that occurred at RT 39, an analysis of system problems was created in the proposed use case scheme as follows:

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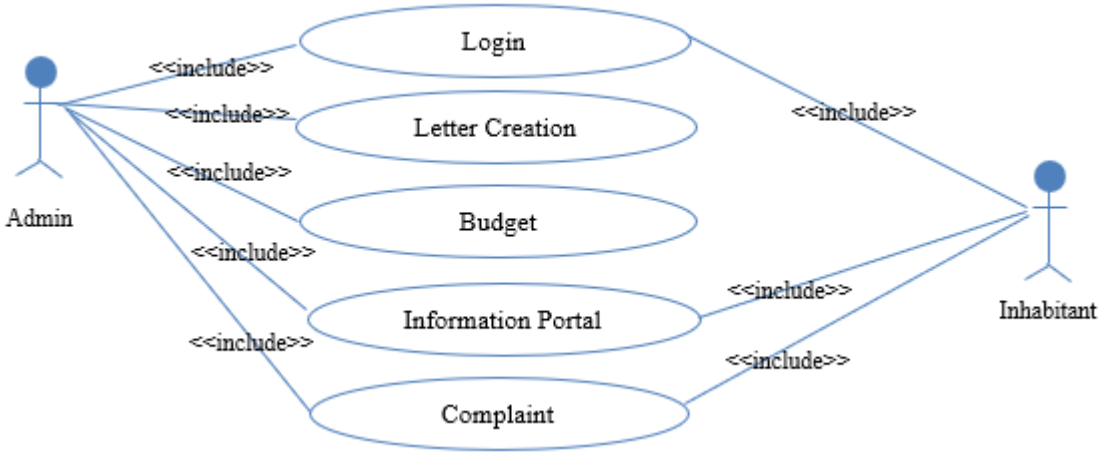

Figure 3. Use Case Diagram

From the picture above it can be explained that, there are 2 (Two) Actors, namely Admin and Citizens. Where the admin can log in and can manage the creation of letters, input budgets, view the information portal and view Citizen Complaints, while Citizens can view the Information Portal after entering this website , then residents can also log in if they want to write a letter and make a complaint if there is something they want to report.

Activity Diagrams

Activity Diagrams are used to draw activities in a business process, to illustrate the workflow contained in a use case down to specific details of the use case. One example of an activity diagram is as follows:

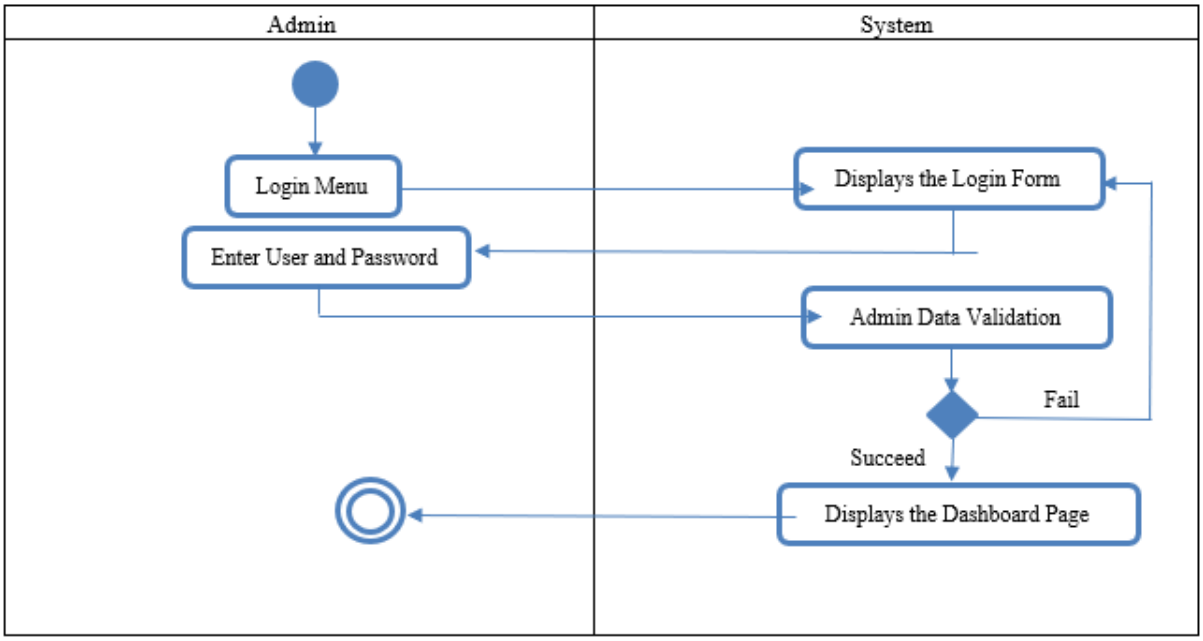

Figure 4. Login Menu Activity Diagram

Implementation

Researchers created and implemented a design for a letter and complaint management information system using the Codeigniter framework. The results produced are:

Information Portal Page

The Information Portal page in Figure 5 will contain detailed information about RT 39's profile, including RT history, organizational structure, RT officers and their contacts list, and vision and mission news. This section will display official announcements from RT 39, including announcements of events and projects. development, policy changes, or other important events that are relevant to RT residents.

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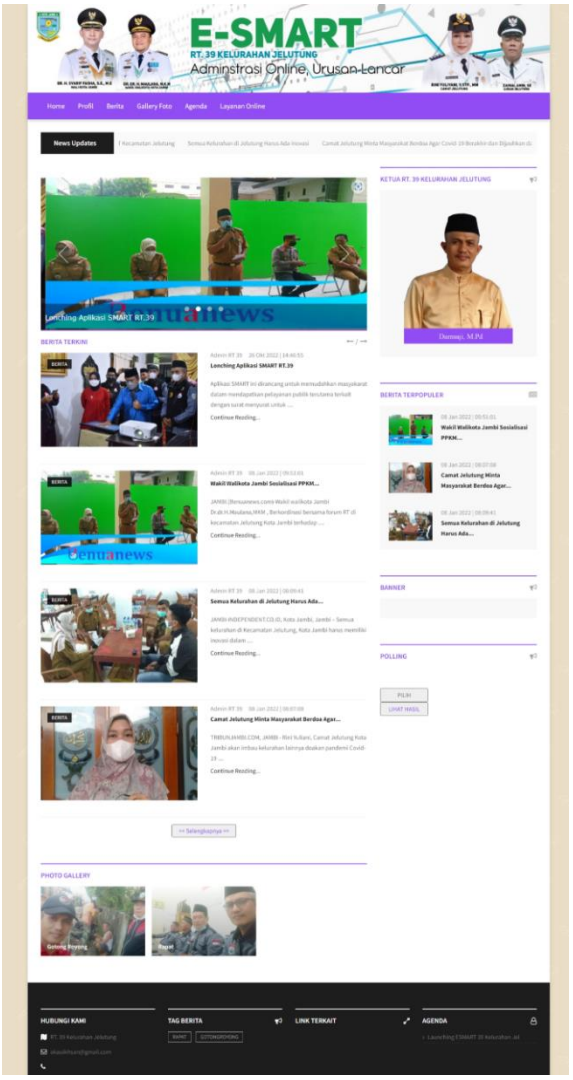

Figure 5. Information Portal Page

Login Page

The login page in Figure 6 is used for residents and admins to enter the system created. Admin/Head of RT who already has a registered username and password can enter the username in the filling form provided then press login. Meanwhile, residents who want to access the system are expected to register first and carry out validation.

Figure 6. Login page

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Dashboard Page

The dashboard page in Figure 7 is the initial display after successful login which consists of several sections, the side bar consists of several available dashboard menus, including the complaints menu, writing letters, budget information. This section displays important information related to data that has been entered into the system which consists of the Main Menu, News Module, Content Module, Video Module, Advertisement / Banner Module, Web Module, Interaction Module, Users Module, Edit Profile, and Logout Menu.

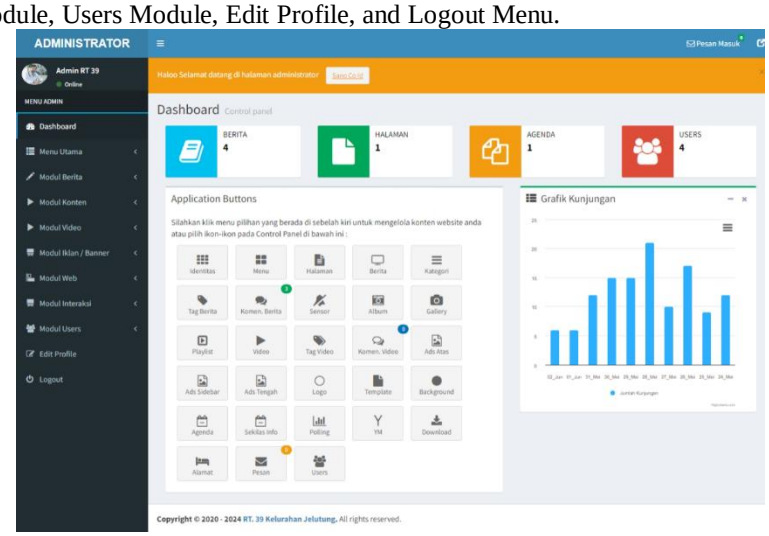

Figure7. Dashboard Page

Manage Mail page

In Figure 8 is the incoming letter page. On this page, the system will display RT residents to submit administrative applications online, such as domicile certificates, business permits, or other applications. On this page the admin can process incoming letters, edit the letter form, print and delete. The technology used is a combination of HTML, CSS, JavaScript, and server-side programming languages such as PHP, Javascript for databases using MySQL

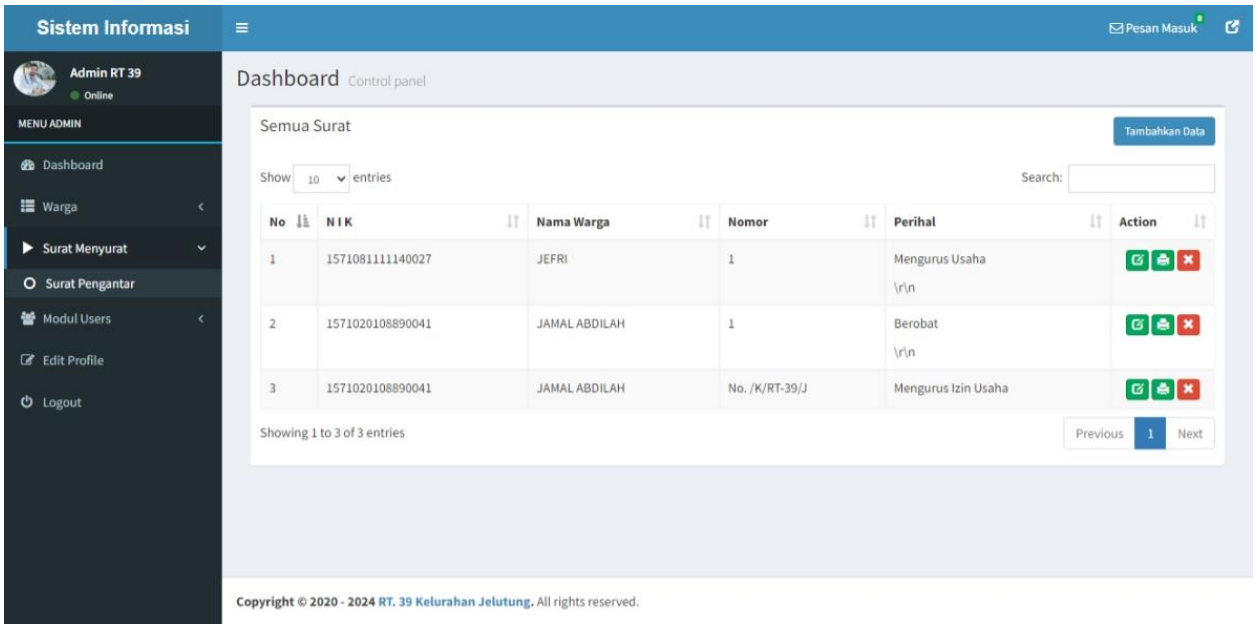

Figure 8 Manage Mail page

Print Letters

In Figure 9 is the printed display of the letter. Where when the user fills in the format when creating a letter, a template is available which makes it easier for the admin to print incoming letters.

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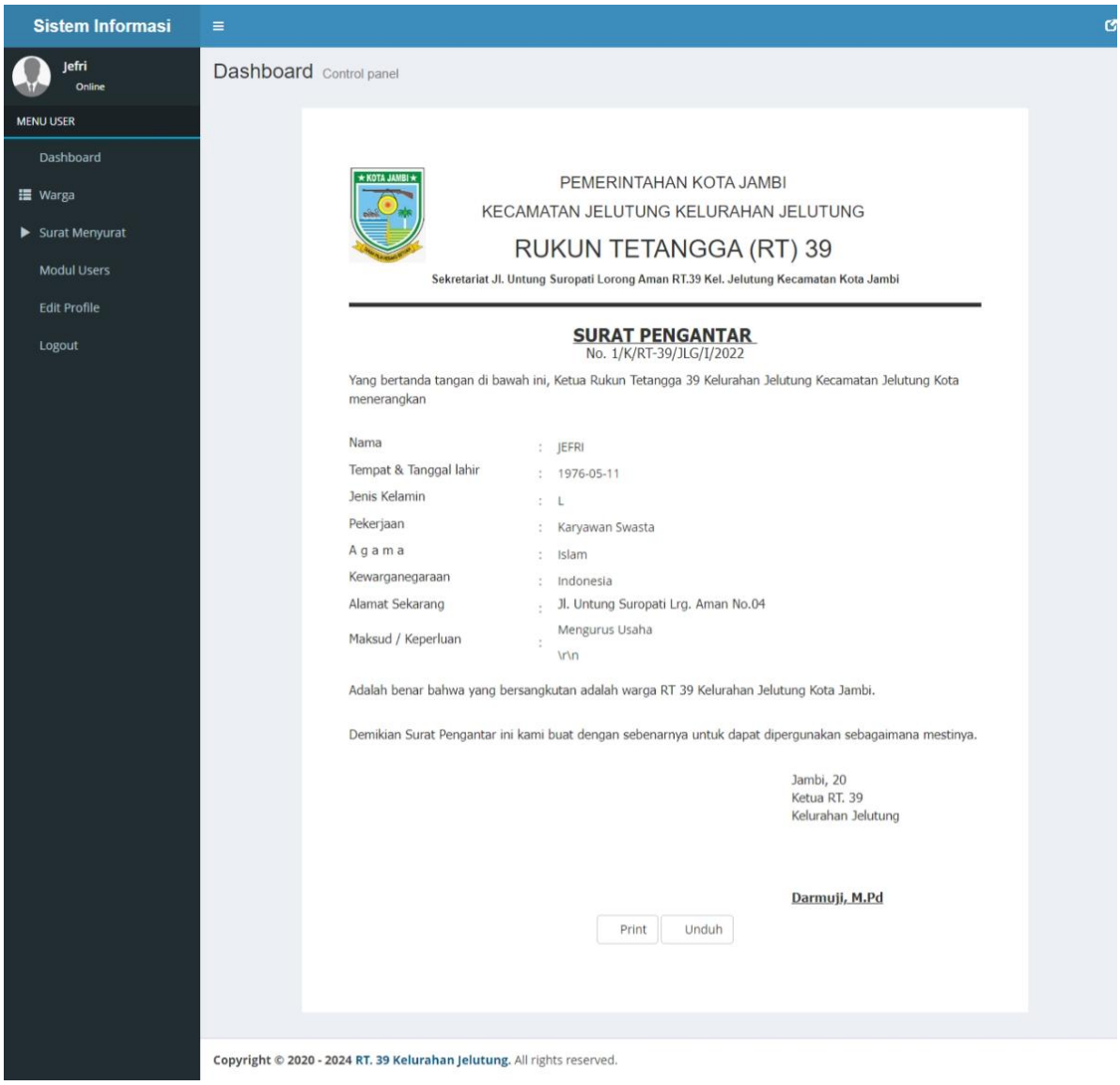

Figure 9. Printed Letter Page

DISCUSSION

This social website provides fast and easy access to important information for RT residents. 39. Any information from RT can be accessed anytime and anywhere. The website increases transparency in RT management and encourages active participation of residents in community activities. With discussion forums and other interactive features, residents can more easily communicate and provide input. With proper implementation, it is hoped that this website can become a model for other RTs in adopting digital technology to improve communication and citizen involvement. This research shows that website development is not just about technology, but also about building a more connected and informative community.

CONCLUSION

The RT/RW management information system uses the Laravel framework with the MVC model. The model is specifically for developing and processing databases, the view is related to the display of information that the user will see, while the controller is the link between the model and the view. Residents can input applications for writing correspondence online. There are features that can make it easier for residents and RT heads to provide services. The features available include mail management, agenda information, news information and. Overall, based on observations and interviews conducted with RT managers and residents regarding the existence of this system, 90% agreed that this correspondence management system increases the efficiency of interaction between residents' correspondence with RT administrators.

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REFERENCES

Bagustian Sonjaya, C., & Al Mudzaki, T. (2023). Pengembangan Website Desa Sebagai Media Informasi Masyarakat Desa Segarjaya. *Jurnal Pengabdian Mahasiswa*, *2*(2), 5345–5358.

Dewi, E., Mulyani, S., & Wiyono, R. A. (2019). Sistem Informasi Warga (Simwarga) Tingkat Rt/Rw Berbasis Web. *Seminar Nasional Pengabdian Pada Masyarakat (SNPMas)*, 447–454.

Ekadewi, S., Yunanto, P. W., & Sastrawijaya, Y. (2018). Pengembangan Website Dan Pemanfaatan Media Sosial Sebagai Media Informasi Dan Promosi Pariwisata Di Kabupaten Bangka Selatan. *PINTER : Jurnal Pendidikan Teknik Informatika Dan Komputer*, *2*(1), 9–16. https://doi.org/10.21009/pinter.2.1.2

Fattah, F., & Azis, H. (2021). Pemanfaatan Website Sebagai Media Penyebaran Informasi Pada Desa Tonasa Kecamatan Sanrobone Kabupaten Takalar. *Ilmu Komputer Untuk Masyarakat*, *1*(1), 15–20. https://doi.org/10.33096/ilkomas.v1i1.771

Helmina, Akbar, Z., Ikhsan, M., Dani, R., & Amandha, S. (2023). Analysis and design of website-based hospital management information system applications. *Jurnal Mantik*, *7*(2), 2685–4236.

Helmina, H., Santoso, H., Nurdin, N., & Ikhsan, M. (2023). Perancangan Sistem Evaluasi Dosen Oleh Mahasiswa (Edom) Universitas Muhammadiyah Jambi Berbasis Website. *Jurnal Informatika, Sistem Informasi Dan Kehutanan (FORSINTA)*, *2*(1), 14–20. https://doi.org/10.53978/jfsa.v2i1.263

Helmina Helmina, Rian Dani, Trie Hierdawati, Siswoyo Siswoyo, & Rika Neldawaty. (2023). Pengenalan Internet dan Jaringan Serta Pembuatan Kabel Unshielded Twisted Pair (UTP) pada Mahasiswa Universitas Muhammadiyah Jambi. *Jurnal Pengabdian Masyarakat Sains Dan Teknologi*, *2*(4), 89–96. https://doi.org/10.58169/jpmsaintek.v2i4.266

Ikhsan, M. (2024). *Design of a Web-Based Lecturer Attendance Information System Using QR Codes at Muhammadiyah University of Jambi*. *4*(1), 94–99.

Ikhsan, M., Adhiatma, N., & Sauri, M. (2019). *Kota Jambi Berbasis Web*. 39–42.

Ikhsan, M., & Dani, R. (2023). *Rancang Bangun Aplikasi Manajemen Gudang Pada Percetakan Dolphin Corp*. *1*(6).

N, M. A. Z., A, Y. R. W. P., Putri, A. L., & W, R. E. (2023). *Pemanfaatan Website Sebagai Media Penyebaran Informasi dan Pelayanan Publik di Desa Kabuaran Kecamatan Grujugan Kabupaten Bondowoso*. *2*(2), 34–41. https://doi.org/10.12487/JNPMIK.v1i1.xxxxx

Purnama, F., Ikhsan, M., Syah, T., & Hamzah, U. N. (2021). *Implementasi Sistem Informasi Reservasi Hotel Syariah di Kota Jambi Berbasis Website pembuatan laporan khususnya untuk menghitung jumlah laporan yang menginap di kurang memberikan layanan yang maksimal kepada tamu hotel karena keterbatasan kamar dan fasil*. *1*(2), 73–82.

Ratnaningsih, A., Hidayat, A. N., Nugrahaini, W., Asti, R., Nurul, I., Sa'idah, Iga, A., Sedya, W., Wati, N. S., Oktavioleta, A., Tama, A. W., & Ardiyanto, Y. (2023). Pemanfaatan Website Sebagai Media Penyebaran Informasi Di Desa Pogungrejo. *BERNAS: Jurnal Pengabdian Kepada Masyarakat*, *X*(2), 1211–1216. https://doi.org/10.31949/jb.v4i2.4739

Salvator, M., & K. Heremba, N. (2023). Efektivitas Penyebaran Informasi Publik Melalui Website oleh Dinas Komunikasi dan Informatika Kabupaten Ngada. *Jurnal Terapan Pemerintahan Minangkabau*, *3*(1), 42–55. https://doi.org/10.33701/jtpm.v3i1.3137

Samboga, R., Alifani, M. T., & Rahma, D. H. (2021). Pengembangan Website Desa Sebagai Media Informasi Pengenalan Potensi Desa Patokpicis Kecamatan Wajak Kabupaten Malang. *Jurnal Graha Pengabdian*, *3*(4), 345. https://doi.org/10.17977/um078v3i42021p345-351

Shobur, A. F., Helmina, H., & Santoso, H. (2022). Perancangan Sistem Informasi Penjualan Pada Toko Jaya Jambi. *Jurnal Informatika, Sistem Informasi Dan Kehutanan (FORSINTA)*, *1*(1), 44–50. https://doi.org/10.53978/jfsa.v1i1.209

Yusuf Siregar, R., Aldito Fayyadh Yustihar, Akbar, & Olivia Maylina. (2024). Perancangan Sistem Informasi Manajemen RT/RW Pada Dusun II Sukamaju Berbasis Web. *Jurnal Komputer Teknologi Informasi Dan Sistem Informasi (JUKTISI)*, *2*(3), 469–479. https://doi.org/10.62712/juktisi.v2i3.93

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