Design Of Web Based RT Citizen Cover Letter System

Reza Santika Pramuditya[1], Ridwan Sanjaya[2], Agus Cahyo Nugroho[3]

[1,2,3,] Information System Study Program, Faculty of Computer Science
Soegijapranata Catholic University, Indonesia
[1]18n10021@student.unika.ac.id
[2]ridwan@unika.ac.id
[3]agus.nugroho@unika.ac.id

Abstract— The coronavirus (covid-19) pandemic has claimed many lives and poses a threat to the entire world. The government has implemented numbers of rules to suppress the spread of the coronavirus, one of them are implementing all physical activities into online. To support these rules, both the government and the community really need support from digital technologies. However, not all digital technology support is available to all citizens, like the smallest government auxiliary institutions, namely the scope of RT and RW, need digital technology assistance to provide maximum service to the community. This research aims to assist one particular service of RT and RW for the community to be maximized, which is the creation of a web-based community cover letter system.

Keywords— cover letter, RT, RW, digital technology, covid-19.

I. INTRODUCTION

In 2020 until recently, the world was shocked by the corona virus pandemic (covid-19) and its mutated variants. In the last 2 years this pandemic has become a threat to the entire world and has claimed approximately 6.08 million people who died [1]. The government policies have been issued to reduce the spread of the pandemic including; stay at home, social distancing, work from home and online school. And to support these government regulations, shifting offline activities to online is necessary by using digital technologies. Digital technology can be defined as an information technology that uses fully automated systems by operations that can only be read by computers [2]. As a government support institutional, RT community still lacks to utilize digital technology in its services to the community. Utilization of digital technology is important to improve the quality of service to the residents. The service process can be carried out faster and can be accessed anytime and anywhere online. online services can prevent the spread of the covid virus from spreading by reducing physical contact activities, to maintain public health. This is a concern for utilizing digital technology in solving existing problems, so that the role of digitalization is needed to provide more services.

II. LITERATURE REVIEW

Definitions of Digitization

Digitalization has become part of the growing technological culture. The definition of digitalization refers to the use of digital technology and digital data in efforts to improve business, profit and creating a digital culture. In the current digital 4.0 era, Digitalization has become a new culture with usage of internet and computer media in its work process [3]. Through internet support and computer media digitalization, various physical formats such as printed media, archives or documents, audio and video can be processed into documents or digital data [4]. By those support could reduce the accumulation of paper or documents in physical form in the work performed, so

these important documents would not be easily damaged or lost.

XAMPP

XAMPP is free software that functions to develop and produce various dynamic websites which can be run on various platforms such as; Windows, Linux, Solaris and Mac. XAMPP provides various features in an installation package such as PhpMyadmin, MySQL Apache HTTP server and others with the PHP and Perl programming languages to facilitate users to produce various dynamic websites [5]. XAMPP works as a local server or also called as localhost, so it does not require internet connection to access database or website being worked on. Through this function, it becomes easier for users to run and modify a website or database, besides users can also do a preview process to see if there are still errors or mistakes in the results that are being worked on.

PHP

PHP Hypertext Preprocessor is a program language that is widely used to produce and develop web integrated in HTML documents. PHP programs are processed through the computer's web server or also known as server side programming, which is used to develop and generate various dynamic websites [6]. To be able to create a good website PHP also support usage of database systems such as MySQL which is used to input/access data that can be called via sql. Sql is a programming language in Database Management that used to access and manipulate data in the database through sql commands. Through the sql function, the website that is generated can manage various kinds of data and information inputted in database or display information that can be written in PHP script. On a website script PHP that called through browser will be interpreted and translated into an html file, which will then be displayed on the browser used.

MySQL

MySQL stands for a database management system with SQL as the connecting language between the database server and software. MySQL has the flexibility towards various programming languages used by users in developing an application, such as PHP, Java, C and so on. This allows users to migrate data between systems more effectively. In data management, MySQL uses a database management system which is rational or called Relational Database Management System (RDBMS) [7]. This system helps users search and access specific data on a database and allows them to run queries on multiple tables at once.

FPDF

FPDF is a library developed to create PDF documents or reports with PHP programming. Using PHP as the web scripting language, it requires the module installation such as a local web server, MySQL, FPDF and also PHP so that FPDF can work [8]. The letter F in PDF which means free means that the software can be freely used and developed by many users. Users can modify pdf reports such as headers, footers, images, page numbering and so on through settings with PHP programming, to suit document formats with what they want to produce.

III. METHOD

The Waterfall method is an information system development model method which is sequential and systematic, and supports software development with non-dynamic specifications[9][10].

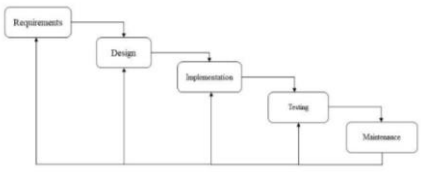


Figure 2.1 ***Waterfall Method***

Commented [1]: Cek penulisan.

The steps involved in the waterfall method can be described as follows [11]:

1. Necessity Analysis
Necessity analysis steps is a communicate process with users to understand problems and need for user to be defined in detail and useful on system specifications.
2. System Design
system design steps is a description of the system or software in general which forms the entire system architecture with user requirements as the basis for system design.
3. Implementation and Unit Testing
In implementation and unit testing step, the system or software is implemented as a series of programs to be tested so that the success rate of the unit is known.
4. System Integration and Testing
The system integration and testing step is the process of combining units or systems that have been made to be tested again in order to ensure the suitability of system that has been made with user needs.
5. Operation and Maintenance
At the operational and maintenance step, installation of software system that has been completed will be carried out and can be used directly by users and in real terms.
The system maintenance process including quality improvement of system services as new interests arise as well as correcting errors that were not discovered in the previous stages.

Flowchart

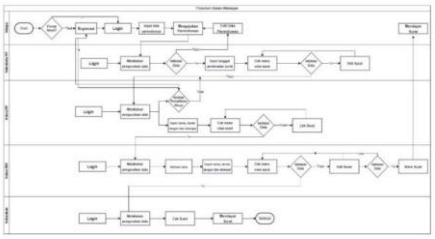


Figure 2.2 *Flowchart* Websuper

The picture above is a system flow or flowchart on Websuper. Resident users who already have an account can immediately log into the system, for those who do not can register by filling in their personal data. After registering the data will be stored in the database, but the residents cannot login before being approved by the Head of the RT. Residents can apply for a letter by inputting the needs and description, then wait for the letter to be sent via email. RT Secretary could check the data from submission of the citizen's letter request, after validation the secretary can input the date of the letter and submit it to the Head of the RT. On the menu, the Head of RT and RW can each input the name as well as stamp and signature, then the results of the finished letter were sent to residents via registered email.
Web design and concept

Web Cover Letter (Websuper) aims to help residents apply for a cover letter and to receive the latter via email to each resident in the RT and RW. In the process, there are three types of users who can use Websuper, including:

a. Residents

Residents can register first by filling in the required personal data, after completion residents cannot log in. but must first wait for data verification through each RT. Residents who have been verified can log in to fill the letter request requirements. The completed cover letter will be sent via email to each resident.

b. RT Secretary

RT secretary can log in directly to the Websuper system. Secretaries can fill in the letter number and see the results through the view letter menu, if it is finished the validated letter will automatically sent into RT head system.

c. Head of RT and RW

Each head of RT and RW has a menu that almost the same, where the head of RT and RW can input the name and stamp as well as the signature. Letters that have been sent at the RW heads will be sent to each resident via email automatically.

Design and assets

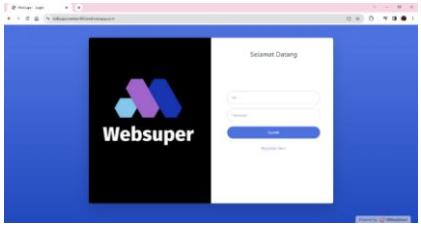


Figure 2.3 Websuper Login

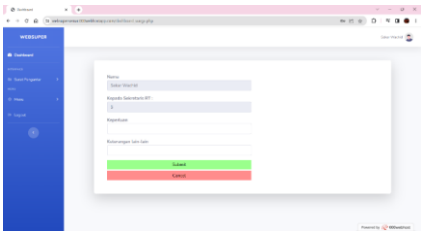
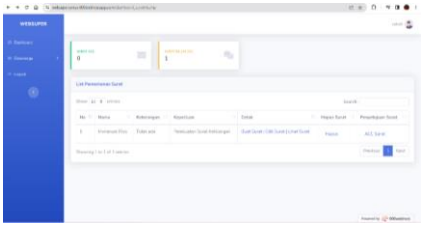
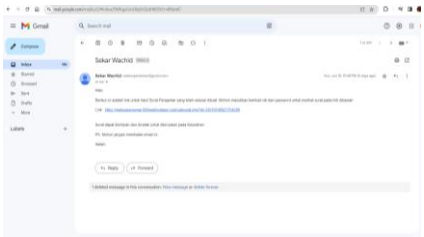


Figure 2.4 Websuper

Continues Websuper Figure





IV. RESULTS AND DISCUSSION

The study used a questionnaire to collect data. The questionnaire was aimed at all residents and administrators within RW 04. The following are the results of the questionnaire that have been obtained:

Figure 3.1 Display results are easy to understand

Based on the picture above, 60% of residents agree that the system display is easy to understand.

Figure 3.2 Results of appropriate display style

Based on the picture above, 51.4% of residents agree that the style and size of the websuper display is appropriate.

Figure 3.3 Results of ease of login

Based on the picture above, 65.7% of residents agree that the login system is easy to access.

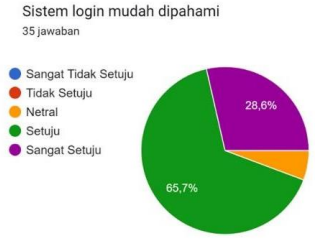


Figure 3.4 Results of understanding the login system

Based on the picture above, 65.7% of residents agree that the login system is easy to understand.

Figure 3.5 Effective & Efficient System Results

Based on the picture above, 54.3% of residents agree that the system is effective and efficient when used.

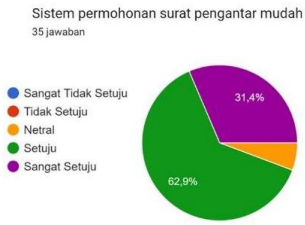


Figure 3.6 System results are easy to understand

Based on the picture above, 62.9% of residents agree that the system is easy to understand.

V. CONCLUSION

From the results of the research and testing that have been carried out, it can be concluded that the development of a cover letter website (Websuper) can provide solution to help residents and administrators in RW 4 Bendanduwur Village, Gajahmungkur Subdistrict to automate the making and validation of cover letters that were previously done manually to become automatic. The website (Websuper) helps residents on easing the submission and receipt of cover letters quickly and efficiently and can be flexible for use on various devices. For head of RT and RW, it helps them to automatize the validation of cover letter. Through Websuper, submission and acceptance of cover letters from residents and verification from the Head of RT and RW can be done online without having to meet face to face so that the process becomes faster and more efficient.

REFERENCES

[1] M. Roser, "Our World in Data," *2022*, 2022. [Online]. Available: https://ourworldindata.org/explorers/coronavirus-data-explorer. [Accessed: 21-Mar-2022].

[2] M. Danuri, "Development and Transformation of Digital Technology," in *Infokam*, 2019, vol. XV, no. II, pp. 116–123.

[3] M. Arief, S. Budi, and H. T. Sadiah, "Digitalisasi pengarsipan surat pada kantor kecamatan cigudeg," *J. Apl. Bisnis dan Komput.*, vol. 1, no. 1, pp. 38–43, 2021.

[4] A. Nurkholis *et al.*, "Digitalisasi Pelayanan Administrasi Surat Pada Desa Bandarsari," *J. Soc. Sci. Technol. Community Serv.*, vol. 3, no. 1, p. 21, 2022.

[5] G. Farell, H. K. Saputra, and I. Novid, "Rancang Bangun Sistem Informasi

Pengarsipan Surat Menyurat (Studi Kasus Fakultas Teknik Unp)," *J. Teknol. Inf. dan Pendidik.*, vol. 11, no. 2, pp. 56–62, 2018.

[6] A. Suryadi, "Rancang Bangun Sistem Pengelolaan Arsip Surat Berbasis Web Menggunakan Metode Waterfall (Studi Kasus : Kantor Desa Karangrau Banyumas)," *J. Khatulistiwa Inform.*, vol. 7, no. 1, pp. 13–21, 2019.

[7] A. Syaebani, D. V. Tyasmala, R. Maulani, E. D. Utami, and S. N. Wahyuni, "Pengembangan Sistem Informasi Pelayanan Surat Menyurat (Sira) Berbasis Website Dengan Menggunakan Framework Codeigniter," *J. Inf. Syst. Manag.*, vol. 3, no. 2, pp. 59–65, 2021.

[8] R. Sanjaya, "Membuat Laporan PDF Untuk Aplikasi Web Dengan PHP 5," in *PT. Elex Media Komputindo*, 2009, p. 5.

[9] Nur Ali Farabi, "Rancang Bangun Sistem Informasi Surat Pengantar Dengan Metode Waterfall Pada Rt. 007 Rw. 08 Kelurahan Cibodasari Kecamatan Cibodas Kota Tangerang Provinsi Banten," *J. Chem. Inf. Model.*, vol. 53, no. 9, pp. 111–119, 2021.

[10] F. P. Bani Muhamad, M. S. Bunga, D. Darsih, and F. Firmansyah, "Analisis Dan Perancangan Aplikasi Pelayanan Publik Smart Rt/Rw Untuk Desa Terusan Kecamatan Sindang Kabupaten Indramayu," *MATRIK J. Manajemen, Tek. Inform. dan Rekayasa Komput.*, vol. 19, no. 2, pp. 283–293, 2020.

[11] I. Sommerville, *Software Engineering (9th ed.; Boston, Ed.). Massachusetts: Pearson Education*. 2011