Jurnal Mantik, 6 (1) (2022) 374-382

Published by: Institute of Computer Science (IOCS)

Jurnal Mantik

Journal homepage: www.iocscience.org/ejournal/index.php/mantik/index

APPLICATION OF LAUNDRY SERVICES AT DWI ANISA LAUNDRY WITH THE APPLICATION OF WEB-BASED WATERFALL METHODS

Ayu Lestari[1], Ibnu Rasyid Munthe[2], Marnis Nasution[3]

[1,2,3] Faculty of Science and Technology, Labuhanbatu University, Jln. Sisingamangaraja No. 126 A, Kab. Labuhanbatu, North Sumatera, 21418, Indonesia

E-mail : layu8208@gmail.com[1], ibnurasyidmunthe@gmail.com[2], marnisnst@gmail.com[3]

ARTICLE INFO

Article history:
Received: April, 02 2022
Revised: May, 10 2022
Accepted:May, 30 2022

Keywords:
Berbasis Web, Database, Dwi Anisa Laundry, HTML, Method Waterfall, Mysql, PHP.

ABSTRAC

Many types of businesses currently use information technology media in the form of applications that can facilitate customers and service providers. These applications can help the development of businesses that are run, such as laundry services at Dwi Anisa Laundry, Rantauprapat, which are currently developing and multiplying customers so that the services they run can develop. This built application, created using tools such as VSC, MySQL, and XAMPP as a database with HTML and PHP programming languages, and designed with simple flow and interface design using design methods including context diagram design, data flow diagram, database table structure, and other designing methods, explains the flow of the laundry service management application at Dwi Anisa Laundry Based Web, so that it can be used easily by employees in making transactions, speeding up time, analyzing energy in transaction reports, and reducing the need for laundry service stationery.

1. Introduction

In the development of increasingly sophisticated times make the lifestyle is also more sophisticated, one example is the existence of a special place to wash or commonly called Laundry. [1]. Dwi Anisa In the process of washing clothes in place of service providers needed by customers, most of the data management is still manual, for example in the management of clothing data, suits, bed covers, ambal, package management, and making transaction reports that are less effective and require a long time. As a result, there are often errors in the recording of clothing and other materials from customers, and there are often errors in the calculation of transaction reports, and there is a slowness in making reports, resulting in obstacles in decision making. So the old system must be changed to a computerized system. A system is a collection of elements that merge into a single unit and have the same goal. [2]. Information systems are the activities of organizational procedures used to provide decision-making and control information to an organization. [3]. An information system is a system within an organization that brings together the needs of daily transaction data processing, supports the operations, managerial, and strategic activities of an organization, and provides certain outside parties with the necessary reports. [4]. In the development of this software, using the waterfall method, which will be performed step-by-step in the completion of the design of the built system. [5]. The system being built consists of stages of analysis, design, implementation, and testing of the system..[6]. The tools used in this structured method are flow maps, context diagrams, and data flow diagrams as process design tools.. [7]. System design is a solution to solving work process problems by utilizing technological and information advances by choosing effective and efficient system development methods. [8]. Software

Accredited "Rank 4"(Sinta 4), DIKTI, No. 36/E/KPT/2019, December 13th 2019.

engineering in Black Box testing is a testing method that does not need to show its contents but is specific to the results and the software will run to test whether it has been as needed. [9].

2. Research Methods

The software development process known as the SDLC (waterfall) model is also known as the linear sequential model or traditional life cycle. Starting with analysis, design, coding, testing, and support, the waterfall model gives a sequential or sequential approach to software process. The waterfall is depicted here as a model. [10].

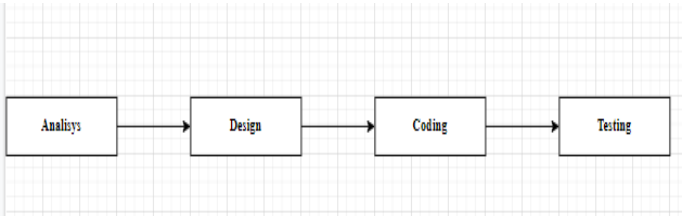

Figure 1. Research Methods

The waterfall paradigm, which is used in software development, is separated into four stages: analysis, design, coding, and testing.

3. Result and Discussion

3.1 Analysis

In this stage using several research methods, namely, observation, interview, and needs analysis.

3.1.1 Observation

Make direct observations by visiting Dwi Anisa Laundry, which is on the way to the Rantauprapat mosque, to get the data that the author carefully analyzes and evaluates the problems to be discussed.

3.1.2 Interview

To complete the observations, the author conducts an interview or question and answer method to get a data. The author also conducted a verbal Q&A to the owner of Dwi Anisa Laundry who was directly related to laundry issues.

3.1.3 Analysis of Requirements

Analyze the requirements for establishing this washing service Business is the background of people who are too preoccupied with their jobs to keep their personal concerns organized like laundry. As a result, the proprietor launches dwi. Anisa's Laundry Service.

3.2. Information Systems Flow

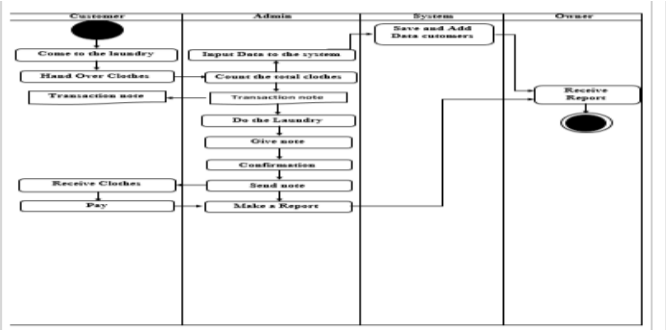

Figure 2. Information Systems Flow

An information system flow is a diagram that depicts a program's work flow from start to finish.[11]. An example of information system flow is a client submitting a washing request to the administrator. The admin then calculates the entire quantity of clothes to be washed, creates a transaction note, and gives it to the customer to pay for. The administrator then inserts the information into the system and generates a report for the laundry proprietor. The owner will then go over all of the reports with them.

3.3 Context Diagram

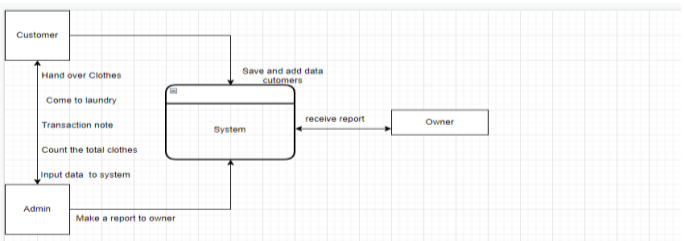

Figure 3. Context Diagram

Context Diagrams are used to visualize the application's processes, as well as where and how they are carried out. [12]. The context diagram created in the application of Dwi Anisa Laundry Rantauprapat is also included.

3.4 Data Flow Diagram Level 0

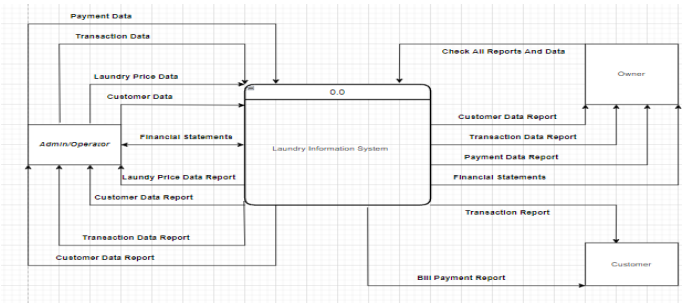

Figure 4. Data Flow Diagram Level 0

In this study, Data Flow Diagram Level 0 (DFD Level 0) explains the intricate interaction of users with the system and the interaction of user and system processes in detail.

3.5 Entity Relational Diagram (ERD)

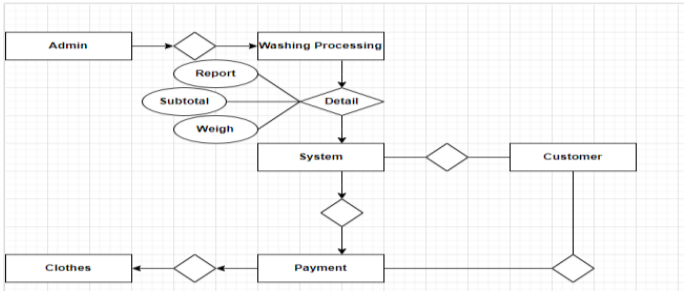

Figure 5. Entity Relational Diagram (ERD)

ERD is used to describe the relationships between data in the diagram.[13]. An ERD (Entity Relational Diagram) is a diagram used in the laundry service information system to show links between forms.

Accredited "Rank 4"(Sinta 4), DIKTI, No. 36/E/KPT/2019, December 13th 2019.

3.2 Design

System design is the stage of making the design of the system to be built. At this stage, the author makes a design of a data processing system that will be built based on the results of the analysis at the previous stage.

3.2.1 Login Page Design

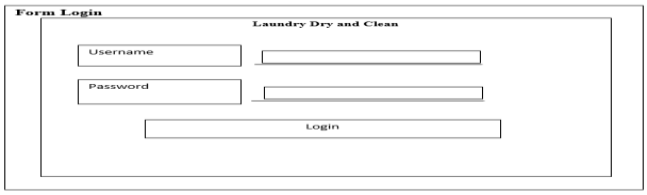

Figure 6. Sign-up Page

The login page on the program features laundry dry and clean text at the top, a username and password form below the text, and a login button below that, as seen in the design table above.

3.2.3 Login page

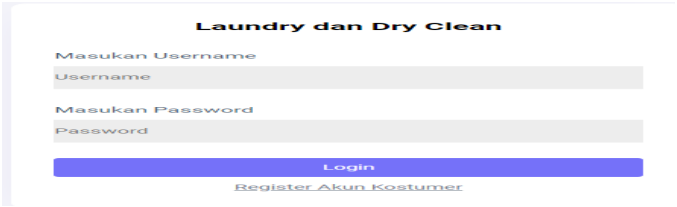

Figure 7. Login page

3.2.4 Admin Login Design

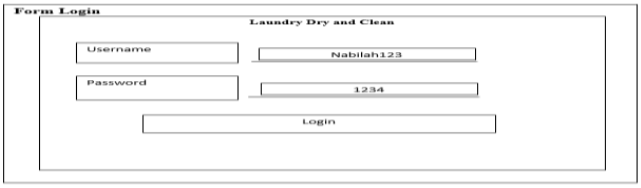

Figure 8. Admin Login Design

This table depicts the look of the admin login form when the username "nabilah123" and password "1234" are entered on the Login as admin page's form.

Accredited "Rank 4"(Sinta 4), DIKTI, No. 36/E/KPT/2019, December 13th 2019.

3.2.5 Admin Home Page View

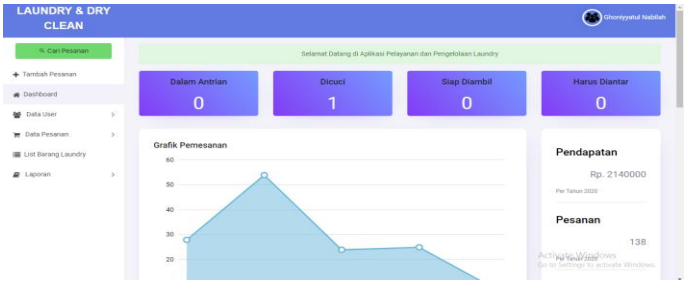

Figure 9. Admin Main Menu page

If you enter the correct username and password for the admin, then we will be taken directly to the admin main page.

3.2.6 Consumer Login Design

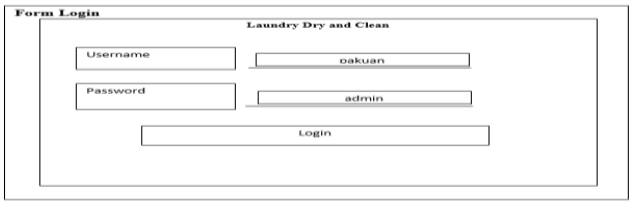

Figure 10. Consumer Login Setup

This table describes the design of the consumer login form by entering the Username "pakuan" and password "admin" to login as a consumer.

3.2.7 Consumer Home Page View

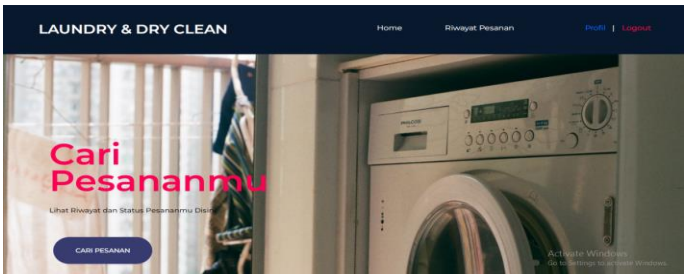

Figure 11. Consumer Home Page

3.3 Coding

This code was written in the Visual Studio Code programming language, with databases written in the PHP and mySQL programming languages. HTML (Hyper Text Markup Language) is a standard or programming language for creating web pages or the world wide web, as well as for displaying hypertext and other information on the web. [14]. PHP (HyperText Preprocessor) is a server-side scripting language that allows you to construct dynamic web pages by combining HTML with PHP.[15]. A server side script is a web programming language that allows the server computer/provider to process data. When a website is accessed, the server sends the requested data from the database, which is subsequently displayed on the website.

Accredited "Rank 4"(Sinta 4), DIKTI, No. 36/E/KPT/2019, December 13th 2019.

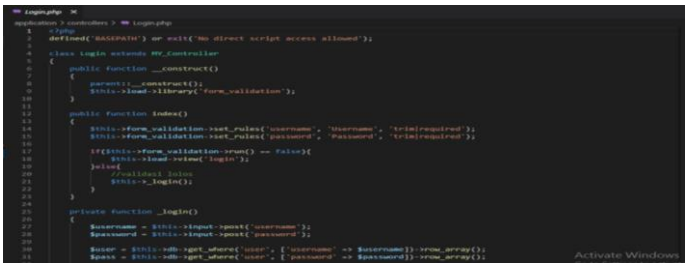

Figure 12. Examples of laundry application program codes

3.4 Verification

The BlackBox testing method is used at this stage to carry out the testing. In application system research, testing is done to detect flaws or defects. Application frameworks that meet application system design objectives are evaluated during testing.

TABLE 1
BLACK BOX TESTING

Unit Test	Test Description	Model Testing	Test Results
Admin Menu Login	Verify Email dan Password	Black Box	Valid
Customer Menu Login	Verify Email dan Password	Black Box	Valid
Admin Main Menu Page	Navigate the Admin Main Menu Page	Black Box	Valid
Customer Main Menu Page	Navigate the Consumer Main Menu Page	Black Box	Valid

3.5 Implementation

Implementation is an action taken to find out what if the application that has been built can be implemented into a system, whether this application is able to provide good benefits for its users. Implementation is also carried out to determine the system limitations needed to run this application.[16]

3.5.1 Admin and Consumer Login Page View

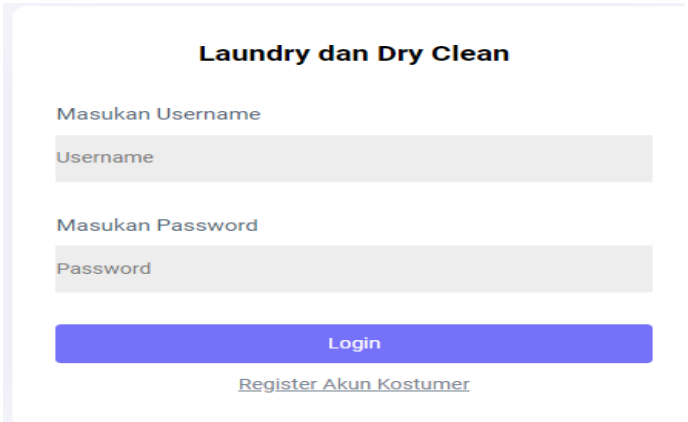

Figure 13. Admin Login Page View

The Login Page is the app's first view when it starts up. To access the system, a username and password must be entered.

Accredited "Rank 4"(Sinta 4), DIKTI, No. 36/E/KPT/2019, December 13th 2019.

3.5.2 Item Data page view

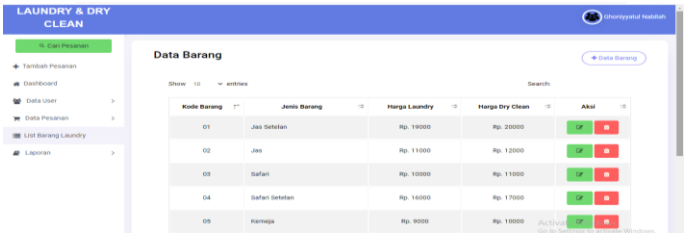

Figure 14. Item data page

The image above depicts the layout of the Goods Data page. In this laundry, there are many listings of commodities and costs for washing. Edit, Delete, Search Orders, and Add Goods Data buttons are also available.

3.5.3 Edit Item Data View

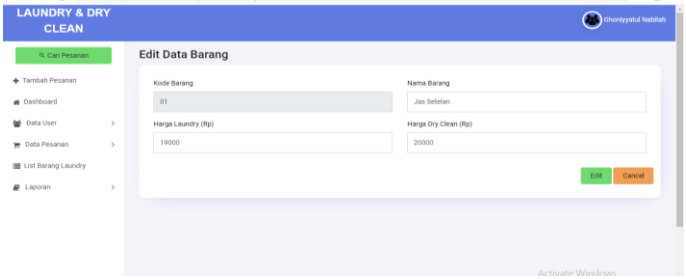

Figure 15. Goods data Edit page

The Item Data Edit Page appears in the image above. Goods Code, Laundry Price, Item Name, and Dry Clean Price are some of the options. On this page, there is also a "Edit and Cancel" button.

3.5.4 Consumer Data View

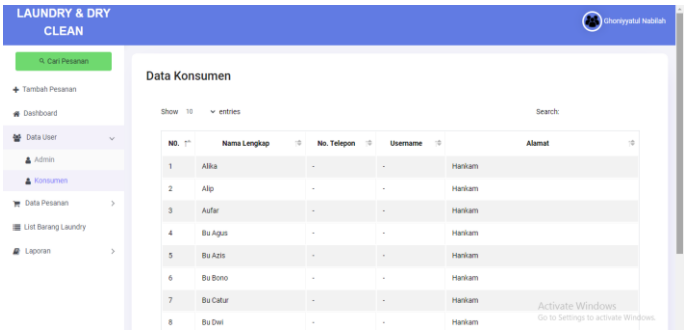

Figure 16. Consumer data page

Accredited "Rank 4"(Sinta 4), DIKTI, No. 36/E/KPT/2019, December 13th 2019.

3.5.5 Admin Main Menu View

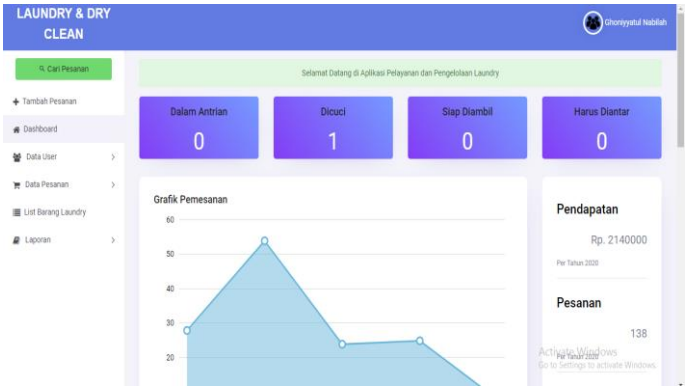

Figure 17. Admin Main Menu View

After logging in, the main page is displayed with the Admin Main Menu. Several options for system activity can be found in this main menu.

3.5.6 Consumer Main Menu View

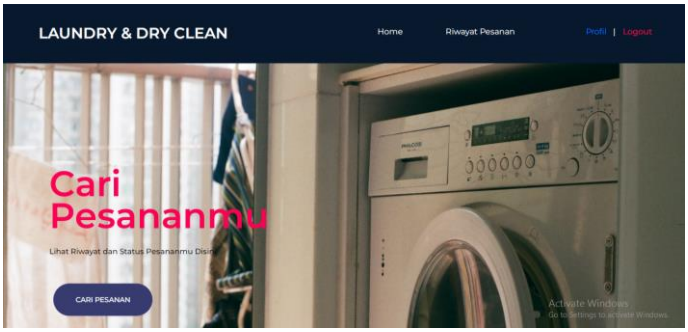

Figure 18. Consumer Main Menu View

Main Menu for Consumers After logging in, go to the home page.

4. Conclusion

The research was conducted at Dwi Anisa Laundry, which is located on Jalan Mesjid Padang Bulan Rantauprapat, precisely 300m from the main road junction with four red lights at Rantauprapat mosque. Dwi Anisa Laundry serves clothing washing services with various types of services. The waterfall method describes a systematic approach to software development, starting with the specification of user needs and continuing through the stages of planning (planning), modeling (modeling), construction (construction), and system delivery to the user (deployment), which ends with support of the complete software produced. The purpose of this research is to provide convenience for both administrators, employees, and owners to carry out the process of handing over clothes to customers, as well as find customer data quickly and easily. The service application at Dwi Anisa Laundry is managed by the administrator, then continued by employees to manage service data and finally by the store owner to see the report data. This service application for Dwi Anisa Laundry is made using PHP and MySQL programming languages. The use of the application makes it easy to record all service data and save service notes if needed at any time.

Accredited "Rank 4"(Sinta 4), DIKTI, No. 36/E/KPT/2019, December 13th 2019.

References

[1] N. D. Dzikrillah, "Aplikasi Pelayanan Jasa Laundry Di Zazi Laundry Berbasis Web Dan Nexmo Sms Api," *JATISI (Jurnal Tek. Inform. dan Sist. Informasi)*, vol. 8, no. 4, pp. 1854–1867, 2021, doi: 10.35957/jatisi.v8i4.1195.

[2] A. Kurniati, A. Sadikin, and B. Irawan, "BERBASIS WEB PADA TOKO RIANATA HIJAB," pp. 117–124.

[3] D. Java and D. A. N. Mysql, "Telp/Hp :0857-6562-8625," vol. 9, no. April, 2019.

[4] M. Y. Simargolang and N. Nasution, "Aplikasi Pelayanan Jasa Laundry Berbasis WEB (Studi Kasus : Pelangi Laundry Kisaran)," *J. Teknol. Inf.*, vol. 2, no. 1, p. 9, 2018, doi: 10.36294/jurti.v2i1.402.

[5] I. R. Munthe, E. W. Wardana, and G. J. Yanris, "Rancang Bangun Sistem Informasi Geografis Pemetaan Hutan Pada Kabupaten Labuhan-Batu," *Rabit J. Teknol. dan Sist. Inf. Univrab*, vol. 6, no. 2, pp. 77–82, 2021, doi: 10.36341/rabit.v6i2.1717.

[6] A. D. Husnil Kamil, "Pembangunan Sistem Informasi Pelayanan Jasa Laundry Berbasis Web," *Semin. Nas. Sains dan Teknol. Fak. Tek. Univ. Muhammadiyah Jakarta*, vol. 8, no. November, pp. 1–9, 2016, [Online]. Available: https://media.neliti.com/media/publications/172316-ID-pembangunan-sistem-informasi-pelayanan-j.pdf

[7] I. Mutia, "Jurnal String Vol . 1 No . 1 Tahun 2016 ISSN : 2527 – 9661 PEMANFAATAN KOMPUTASI AWAN (CLOUD COMPUTING) BAGI Pendahuluan ISSN : 2527 – 9661 Tinjauan Pustaka," *String*, vol. 1, no. 1, pp. 1–9, 2016.

[8] A. M. Raya, "Penerapan Model Waterfall Pada Sistem Informasi Beasiswa Berbasis Web," *Jursima*, vol. 9, no. 1, pp. 82–88, 2021, doi: 10.47024/jrs.v9i1.245.

[9] U. Labuhanbatu, "Jurnal Mantik," vol. 4, no. 3, pp. 1634–1640, 2020.

[10] W. E. B. Pada, P. T. Jasa, S. Jayatama, A. Bayu, and H. Yanto, "SISTEM INFORMASI E-RECRUITMENT KARYAWAN BERBASIS," vol. 4, no. 2, pp. 1–6, 2018.

[11] M. R. Ridho, "Jurnal Comasie," vol. 02, 2021.

[12] F. Y. Rahman and F. T. Informasi, "PENERAPAN METODE WATERFALL PADA APLIKASI LAUNDRY," vol. 12, no. 2, pp. 125–132, 2021.

[13] P. Studi, M. Informatika, P. Labu, and J. Selatan, "RANCANG BANGUN SISTEM ADMINISTRASI JASA," vol. XVI, no. 2, pp. 1–12, 2014.

[14] E. Costs, I. N. Pt, and P. North, "APPLICATION OF WEB-BASED ELECTRIC VOLTAGE INSTALLATION," vol. 4, no. April, pp. 32–40, 2019.

[15] I. Journal and S. Ijtis, "WEB-BASED BORROWING BOOK LENDING AND RETURN INFORMATION SYSTEM ON NAGARI SANING BAKAR LIBRARY," vol. 1, no. 2, pp. 37–42, 2020, doi: 10.24176/ijtis.v1i2.4889.

[16] Suri, G. P., Arifin, N. Y., Sina, U. I., Baja, L., Studi, P., Informatika, T., & Sina, U. I. (2020). *Pengembangan dan implementasi aplikasi perpustakaan berbasis web*. *2*(1), 21–28.