

Library Information System Design at Library And The Archives Agency Of Tangerang City

H. Haris, M.Kom¹, Silvia Permatasari², Rizki Bayu Saputro³
Science and Technology, Raharja University
JL. Jendral Sudirman No.40 Modern Cikokol Tangerang 15117
Indonesia

e-mail: ¹: haris@raharja.info ²: silvia.permatasari@raharja.info ³: rizki.bayu@raharja.info

To cite this document:

Haris, H. ., Permatasari, S., & Saputro, R. B. (2020). Library Information System Design at Library And The Archives Agency Of Tangerang City. IAIC Transactions on Sustainable Digital Innovation (ITSDI), 2(2), 179-191.
DOI : <https://doi.org/10.34306/itsdi.v2i2.136>



Author Notification

05 December 2020

Final Revised

09 December 2020

Published

14 December 2020

Abstract

The library is one of the containers used by the community to look for a variety of literature reviews in the form of books, catalogs and journals. A computerized library information system is needed to improve the quality of library services. This study aims to create a computerized system that can be used by librarians and library visitors easily. In this study, researchers used the PIECES method (Performance, Information, Economy, Control, Efficiency, Service). For designing the model using UML (Unified Modeling Language). The design concept uses MVC (Model View Controller). The design framework used is Bootstrap and CI, while the programming language uses PHP HTML CSS and Javascript. With this library information system, it is expected to facilitate the performance of officers in serving library visitors.

Keywords: Library, Services, Computerization

1. Introduction

Technology has an important place for the advancement of education. Information systems in the world of education have an important role as a container to get information easily. That matter requires every school one of them is a library or institution. The government must have a computerized information system so able to improve the quality of service of the agency.

With the use of an optimal information system, the school or The library can facilitate the librarian as well library visitors in carrying out their work and provide good service to the community. This is what makes the Service The City of Tangerang Library and Archives wants to create a system well computerized information.

At the Tangerang City Regional Library and Archives Service, the problem is faced with is that library visitors still have to fill in data manually yourself into the guest book, when input No. Members are still inputted manually so that the same data still often occurs. During the process borrowing and returning books still uses manual recording into the Big Book. When visitors look for books, the process of finding books is still manual and not yet categorized based on the shelf / category of the book.

Based on these problems, then in this study, the author took the title "Library Information System Design at Library And The Archives Agency Of Tangerang City".

2. Research Method

To get the data needed in making a thesis, the researchers used three methods, namely the data collection method, the analysis method, and the testing method.

2.1 Data Collection Method

Data collection methods used by the authors, including:

1. Observation

The author collects data directly at the Library and Archives Agency of the City of Tangerang through observation and systematically recording a number of research objects from a number of individuals concerned with the information system library.

2. Interview

Interviews were conducted directly to dig up information directly related to the library information system, the interview process carried out to the librarian namely the Library Secretary and Tangerang City Archives.

3. Literature Study

In addition to observing and conducting question and answer sessions or The interview writer also searched for data by means of literature study, viz conduct library studies to obtain more accurate data by collecting data theoretically sourced from books, journals, internet, magazines, etc.

2.2 System Analysis Method

Data that has been obtained at the time of observation and interviews were collected and analyzed using the PIECES analysis method (Performance, Information, Economic, Control, Efficiency, Service). Where in using this method, the problem can be known from various directions, including, results, information, economics, supervision, efficiency, service. After analyzing these methods, the authors describe the system which runs through the UML (Unified Modeling Language) diagram which consists of use case diagrams, activity diagrams, sequence diagrams, class diagrams.

2.3 Testing Method

The testing method is the final stage before the system has been implemented. This testing method uses Black Box Testing namely testing to find out the functions of the software that has been developed according to needs, so that it can make it easier for users to know the location of errors in the system that has been made.

2.4 Literature Review

| No | Author Name | Title | Discussion and Results |
|----|--|---|--|
| 1. | Ruli Supriati, Ilamsyah, and Dwi Adji Prasetyo (2019) | Data Processing System Applications Web Based Library To Improve Services At SMKN 2 Kab. Tangerang | this research was conducted to deal with problems found in SMKN 2 Kab. Tangerang still are semi-computer, where sometimes data and information are stored, loss and damage often occur. As is this system it is expected that library data can be stored properly in a website, and makes it easy for librarians to when searching for data. |
| 2. | Tarun Kumar Roy (2018) | Online Library Management System & Android Apps | System library designed by researchers aims to make it easy for users to find books, in the system users can download books, other than that users can comment on books available on the web. |
| 3. | Du-yi HE dan Qiang JIANG (2019) | Library Learning Sits Date System in Mobile-Phone Platform | The study explained that there are still at the University of China that still lacks space to learn, this is what makes researchers build a seating reservation system in the library, where users can |

| | | | |
|----|--|---|---|
| | | | reserve a seat to read in the library through mobile whenever and wherever. |
| 4. | Noval Hidayah dkk (2019) | Adequacy Index Analysis Model WebGIS Based Library | Output of the Index Analysis Model The adequacy of this WebGIS-Based Library is knowing which areas are lacking in number of libraries or adequate. This system is useful to help the government in planning the construction of new libraries in the region inadequate. |
| 5. | Ahmad Kartubi dan Rita Wahyuni Arifin (2019) | Library Based Information System Website with Laravel Framework | In the research problem faced is that students must come to the campus library to read a book or just looking for college assignments, it makes researchers to make Website based library system with Framework design Laravel and SDLC (System Development Life Cycle) methods where the stages consist of planning, analyzing, designing, and implementation. With this |

| | | | |
|---|-------------------------------------|--|--|
| | | | system made students and lecturers can access information about the book anytime and anywhere. |
| 6 | Tiara Putri Amanda dkk (2019) | Email Notification As a Book Return Reminder On Integrated Website Based Library With RFID And QR Code | In the research system Website-based library services integrated with Radio Frequency Identification (RFID) as a visitor's identity card library that can also be used when borrowing and book returns, and the Quick Response Code (QR Code) is used as book identification. In this application the admin can process data, registering books and members, conducting borrowing and returning books, and viewing transaction reports. This application also provides email notifications to resolve issues such as late returns to losses borrowed books |
| 7 | Siti Nurajizah (2019) | Implementation of Web-based E-CRM on the | in research The problem faced is by increasing the collection |

| | | | |
|--|--|--|--|
| | | Digital Library of the Gema Conscience School | library books, not matched by the alertness of the officers inside updating data, this makes it difficult for visitors to when searching data. Researchers want to create a system library information using the concept of CRM (Customer Relationship Management) is a technique that can be used to obtain, consolidate, and analyze data used as a means of interaction with customers, i.e members / visitors. |
|--|--|--|--|

3. Findings

Based on the introduction and research method described above, the authors formulated the following problem

3.1 Problem

1. How is the process of visitors filling their data into the book list visitors?
2. What is the process of registering library members who are currently running this at the Tangerang City Regional Library and Archives Service?
3. What is the process of searching books by library visitors on Tangerang City Regional Library and Archives Service?
4. What is the process of borrowing and returning book transactions now?

3.2 Research Implementation

After conducting analysis and research of the ongoing system at the Tangerang City Regional Library and Archives Service, hereafter discuss the proposed system design which can be explained in UML through use case diagrams, activity diagrams, sequence diagrams, and classes diagram, using Visual Paradigm 15.0 Enterprise Edition.

3.2.1 Proposed System Procedure

The following is the proposed system procedure contained in the Library and Tangerang City Archives :

1. Login Procedure

To access the system, each user is a librarian will use the username and password when logging in according to user username and password.

2. Book Data Input Procedure

At the time the library staff entered the book data, the officer the library doesn't need to manually input the book id, because the book id will be automatically filled, the librarian only needs to input title of book, author, publisher, year of publication, and stock of available books

3. Procedure for member registration

When inputting data from library members, the library staff ID will be filled in automatically, so library staff only need to input library member data.

4. Print a Membership Card

The clerk can print directly the member card that has been made and give it to members.

5. Transaction Procedure for Borrowing Library Books

Library members can search library books through the web available, and give books to officers to record. Officers only need to input Member Number and book id you want to borrow.

6. Transaction Procedure for Returning Library Book

The deadline for borrowing library books is for 7 days, members borrowing library books will receive an email notification.

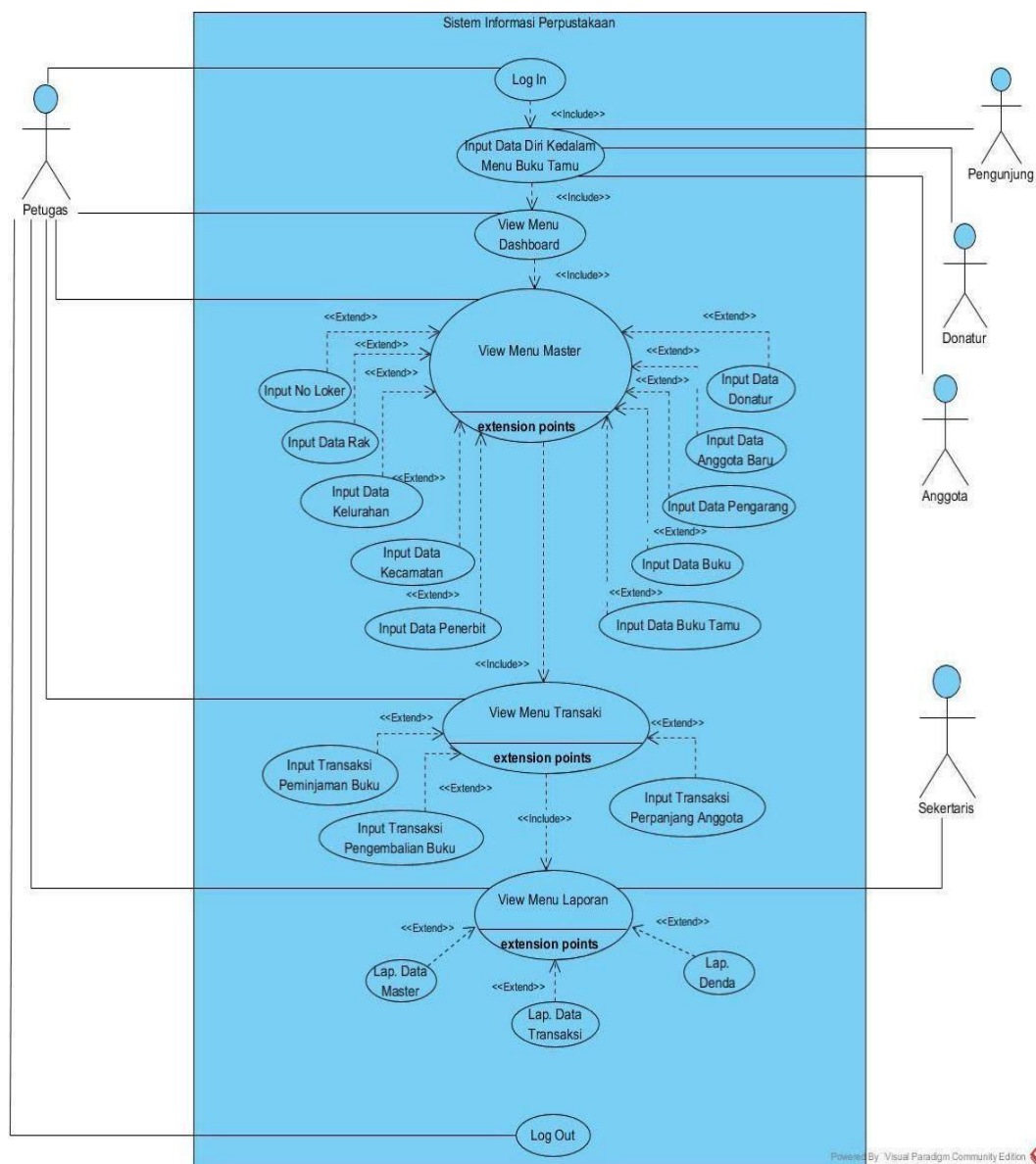
7. Report Procedure

Library staff can see the whole report library, and can print reports if needed.

8. Logout Procedure

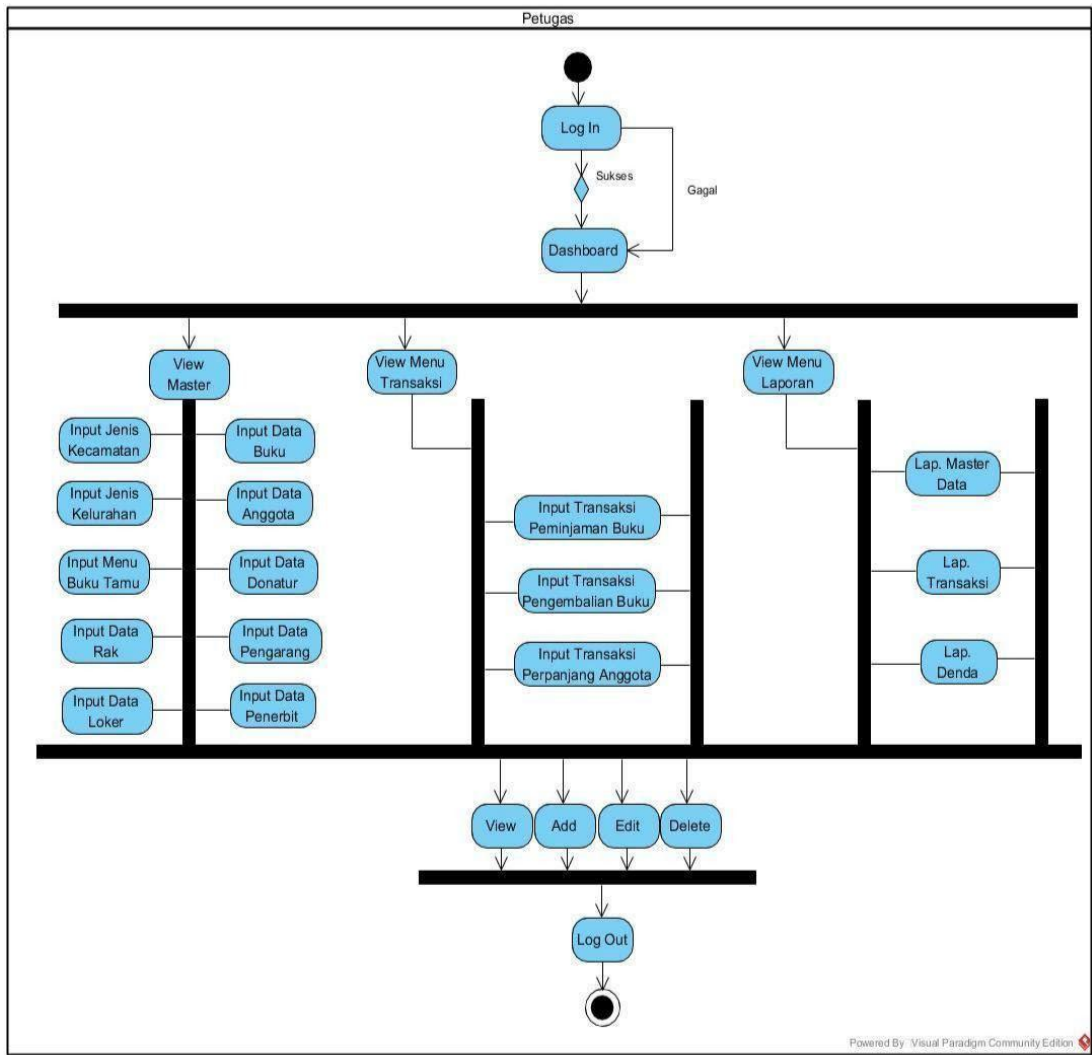
Librarians can logout or exit the system after completing activities in the system.

3.2.2 Use Case Proposed Diagram



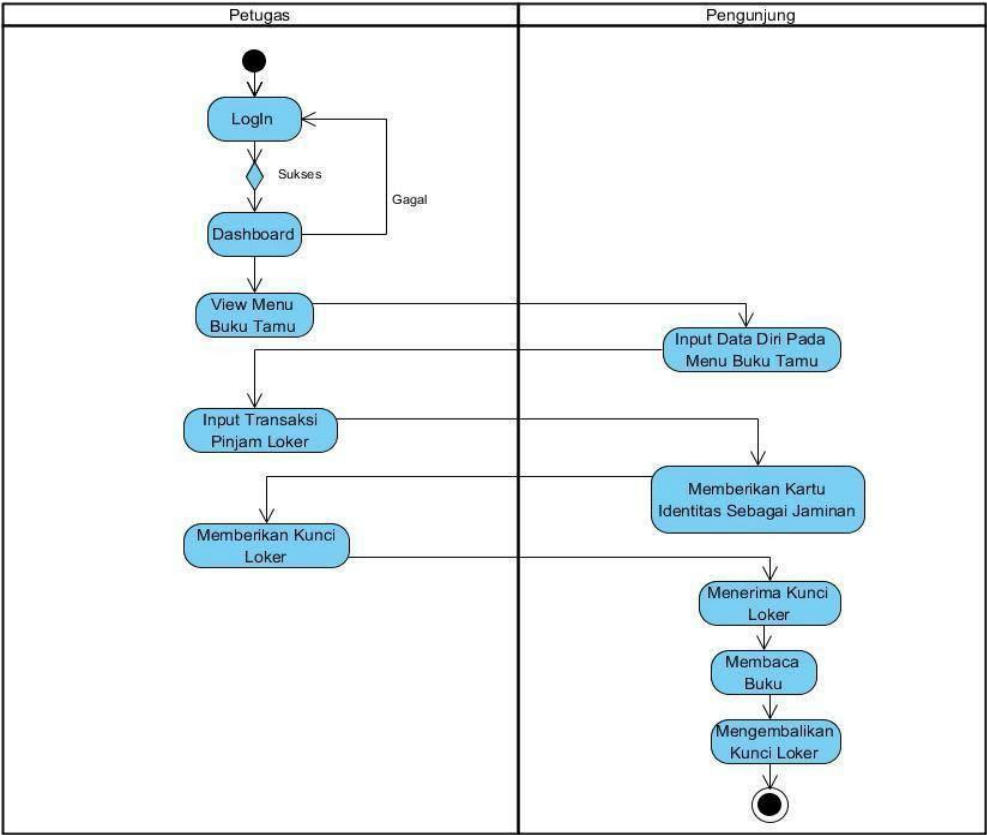
Picture 1. Use Case Proposed Diagram

3.2.3 Library Staff Activity Diagram



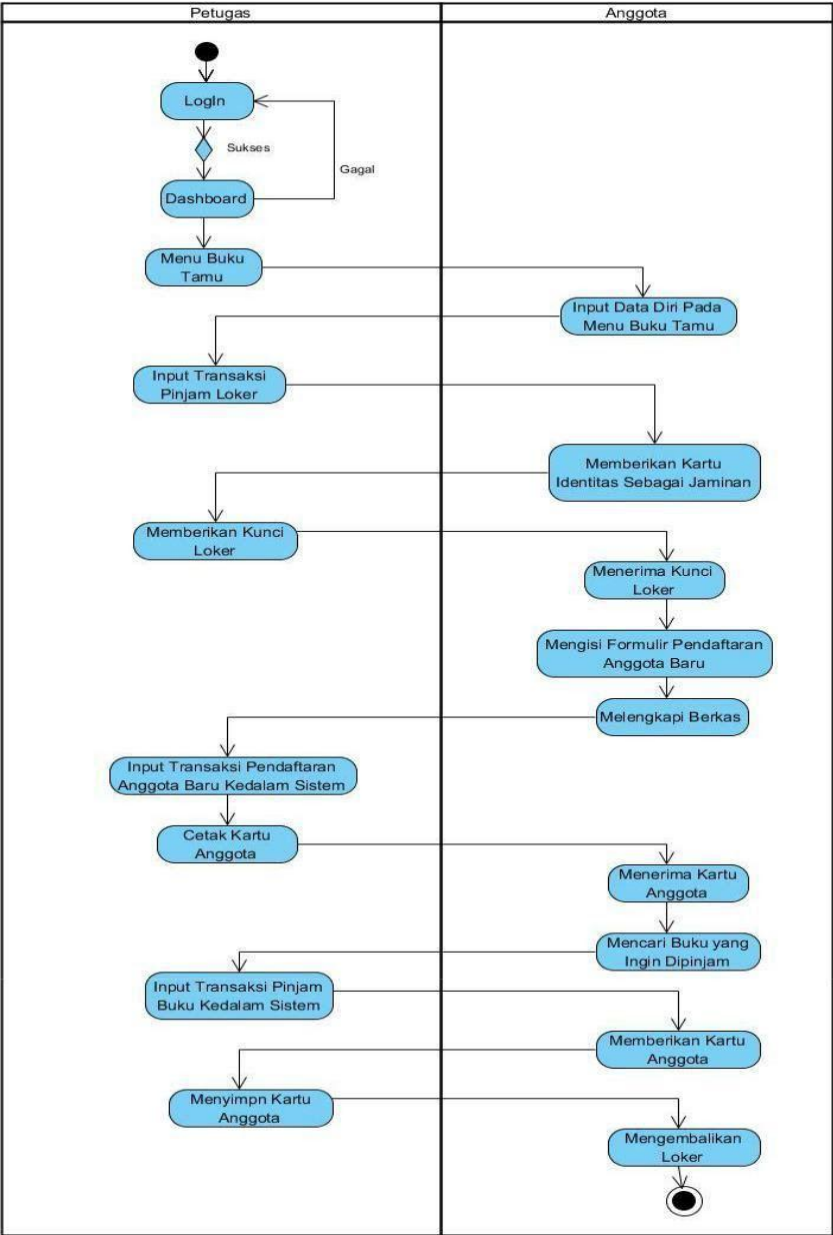
Picture 2. Library Staff Activity Diagram

3.2.4 Activity Diagram of Officers and Visitors



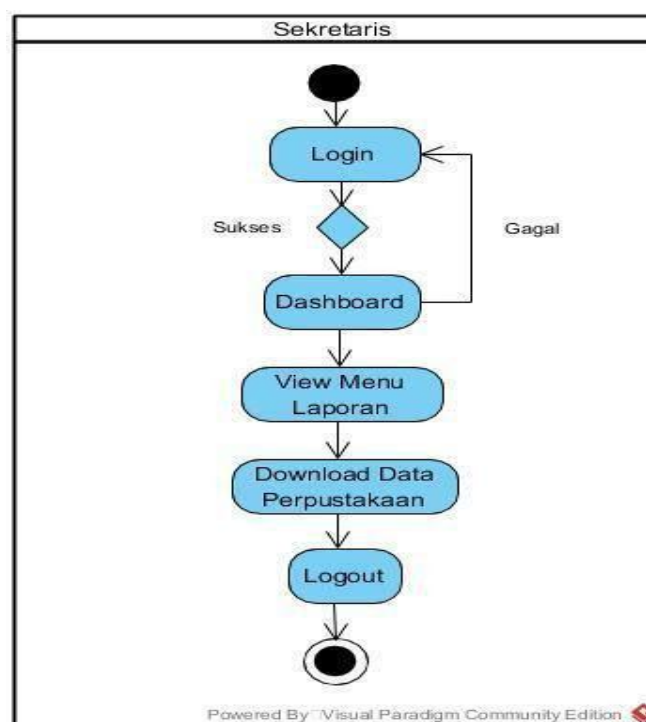
Picture 3. Activity Diagram of Officers and Visitors

3.2.6 Activity Diagram Officer & Members



Picture 4. Activity Diagram Officer & Members

3.2.7 Activity Diagram Proposed for the SecretaryLibrary



Picture 5. Activity Diagram Proposed for the Secretary Library

4. Conclusion

Based on the results of research that has been done at the Library and Archives of the City of Tangerang, the authors conclude that:

1. Visitors still have to fill in their personal data manually in the Guest Book.
2. The library member registration process is currently running, the officer still has to input manually no member library.
3. Library visitors still have to look for library books manually into the rack, it was felt to be less effective because visitors need a long time during the process looking for books.
4. When library members make loan transactions, the clerk still has to input it manually into the Book Big. This is due to the same member data.

References

- [1] Supriati, R., Ilamsyah, I., & Prasetyo, D. A. (2019). APLIKASI SISTEM PENGOLAHAN DATA PERPUSTAKAAN BERBASIS WEB GUNA MENINGKATKAN PELAYANAN PADA SMKN 2 KAB. TANGERANG. ICIT Journal, 5(1), 39-49.
- [2] Roy, T. K., Mamun, M., & Fatema, T. (2018). Online Library Management System & Android Apps.
- [3] HE, D. Y., & JIANG, Q. (2019). Library Learning Sits Date System in Mobile-Phone Platform. DEStech Transactions on Social Science, Education and Human Science, (miera).
- [4] Hidayah, N., Susetyo, B., & Kusumah, F. S. F. (2019). Model Analisis Indeks Kecukupan Perpustakaan berbasis WebGIS. Seminar Nasional GEOTIK 2019.
- [5] Kartubi, A., & Arifin, R. W. (2019). Sistem Informasi Perpustakaan Berbasis Website Dengan Framework Laravel. Jurnal Mahasiswa Bina Insani, 3(2), 213-222.

[6] Amanda, T. P., Rakhman, A., & Salamah, I. (2019). Notifikasi Email Sebagai Peningkat Pengembalian Buku Pada Perpustakaan Berbasis Website Terintegrasi Dengan RFID Dan QR Code. *Jurassic (Jurnal Riset Sistem Informasi dan Teknik Informatika)*, 4(1), 65-73.

[7] Nur Azizah, S. (2019). Implementasi E-CRM berbasis Web pada Perpustakaan Digital Sekolah Gema Nurani. *SISFOTENIKA*, 9(1), 82-93.