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# Implementation of a web-based laundry application with the laravel framework for laundry Aisy Laundry

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A R T I C L E I N F O

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ABSTRACT

Aisy Laundry is a laundry service business located in Tambun, South Bekasi. The administrative service process at the site is still manual, paper and books are still used for recording transaction data and preparing reports. the purpose of this research is to complement the needs of users or users who can make it easier to do input so as to optimize the time used. in that place they still use paper and books, they still record transaction data in making reports. Paper media is susceptible to damage, tearing, loss and humidity, making it difficult to find the required data, a time-consuming process, and errors often occur during recording. Therefore, a laundry service application program was created. The development of this program uses the waterfall method, namely creating a database using a programming language and designing software using the web-based Laravel Framework by creating several features such as logins, User Data, Customer Data, Laundry Service Data, Account Data, Payment Transaction Data and Transaction Report Data. With this program, it can be a solution to help facilitate transaction creation and reporting, as well as increase the effectiveness and efficiency of an optimal work system at Aisy Laundry.



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## 1. INTRODUCTION

The rapid development of science and technology has had a major impact on human life. "Technological development is one of the many triggers for changing patterns of people's lives in communicating and socializing" (Wiryany, 2018) . In order for communication to work properly, we need information as a source of media. Information can be found easily, quickly, precisely, and accurately. The better the quality of the information, the easier it is to understand. Information technology is "technology that utilizes computers and telecommunication media to create complete information, starting from information sources, information storage media, receiving and searching and using information" (Suprapto, 2018).

The spread of information technology can be used to facilitate data processing into information that is useful in the world of business and the world of work. "By utilizing technology, a computerized system will be very useful in the operational activities of a business, therefore it is very appropriate to use a computer in handling transaction systems as a tool for data processing" (Wijoyo, 2019). This can encourage these businesses to be more advanced and keep up with the times, one of which is in the field of laundry services

Currently, laundry services can be found in many places, especially in urban areas. Most laundry services still use manual systems in recording transactions and bookkeeping. "Laundry services are commercial facilities that focus on the field of laundry services with the main raw material being water equipped with automatic washing machines and dryers" (Simargolang, 2018). Aisy Laundry's service process is still manual and not computerized, including in writing notes, customer data collection, recording transaction data and preparing reports on bookkeeping. As a result, it is difficult to find the desired data, and the process takes quite a long time, and errors often occur during the recording process. Based on these problems, a web-based application was created that can provide information needs while overcoming obstacles related to managing laundry services so that it can help make it easier to manage data, find some information, make laundry activity reports, and streamline the time used, and minimize errors in the process data recording.

## 2. RESEARCH METHOD

### 2.1. Method of collecting data

The data collection methods used in the preparation of this study are as follows:

a. Direct Observation

In this observation, the researcher visited Aisy Laundry's business location which is in the Puri Cendana housing complex, Tambun Selatan, Bekasi to see and directly observe the activities carried out in the laundry process, as well as collect the necessary data related to the laundry service process.

b. Interview

To obtain complete and accurate information, researchers used the question and answer method or interviews with informants, namely Mrs. Supriyatin, S.Pd as the owner of the Aisy Laundry business. In this method, researchers ask activities related to the laundry service process at Aisy Laundry to get a better understanding of all the processes that occur.

c. Literature review

In this case the researcher uses existing data as comparison and supporting material and takes an approach using reference books and journals by collecting reference sources such as books, journals and articles related to research.

### 2.2. Software Development Methods

The method used in software development uses the waterfall method. "The waterfall method is a simple classical model that is used to develop software sequentially like a flowing waterfall" (Tristianto, 2018) . The stages used in the waterfall method include:

a. System requirements analysis

The first thing to do is to make an application according to the user's needs which is used to process related data. The software requirements to support making applications are as follows: (a) HTML (Hypertext Markup Language), HTML is a markup language on the internet, especially the web, in the form of code and symbols that will be placed in a file with the aim of appearing on a website (Sitepu, 2018). (b) Web Browsers, The Web Browser is the main device that we will use to display web pages which are

basically made of HTML (Sitepu, 2018). (c) Text Editor, A text editor or text editor is software needed to create a web page or website (Sitepu, 2018). Examples are Notepad++, Sublime Text, Visual Studio Code, and others.

b. System design

System design describes the system that occurs with the software used, such as designing databases using MYSQL in the form of ERD (Entity Relationship Diagram) and LRS (Logical Record Structure) graphics, as well as designing software using Visual Studio Code. While designing UML (Unified Modeling Language) using Activity Diagrams, Use Case Diagrams, Class Diagrams, Sequence Diagrams, Component Diagrams

c. Writing Syncode Program or Implementation (Coding)

Syncode writing is an implementation in a software program with a programming language. The programming language uses PHP (Hypertext Preprocessor).

d. Program Implementation or Testing (Integration & Testing)

The program will be tested (testing). In this stage the program will be re-examined for its usefulness in accordance with the desired command using blackbox testing. This aims to reduce the occurrence of errors in the input process.

e. Maintenance (Operation & Maintenance)

Perform maintenance to ensure that the program is suitable for the new environment or location. The program must be appropriate to the environment in which the program occurs.

## 3. RESULTS AND DISCUSSIONS

### 3.1 Requirement Analysis

In the first step in creating a software program, the researcher analyzes the system requirements by seeking information about the laundry services that occur at Aisy Laundry. From these data the authors can implement it to create a laundry service program. This application is used to manage data related to laundry services, such as customer data, goods data, service type data, and transaction data and reports.

### 3.2 System Design

In this system design, researchers design using use case. "Use Case Diagram is a diagrammatic representation produced that is made simple and intended to make it easier to read the information provided by the user" (Sugiarti, 2018). As well as making activity diagrams, where the main element of the activity diagram is the activity itself. Activities are functions performed by the system. Activity diagrams are used for (Munawar, 2018), as well as making Entity Relationship Diagrams (ERD), Logical Relationship Diagrams (LRS) and making Sequence Diagrams.

a. Activity Diagram

"Activity diagram is a diagram that describes the flow of activity from a functional system that is being designed" (Masripah, 2019). "Activity diagrams are an important part of the UML (Unified Modeling Language) which describes procedural logic, business processes and workflow of a business that can be described easily" (Munawar, 2018).

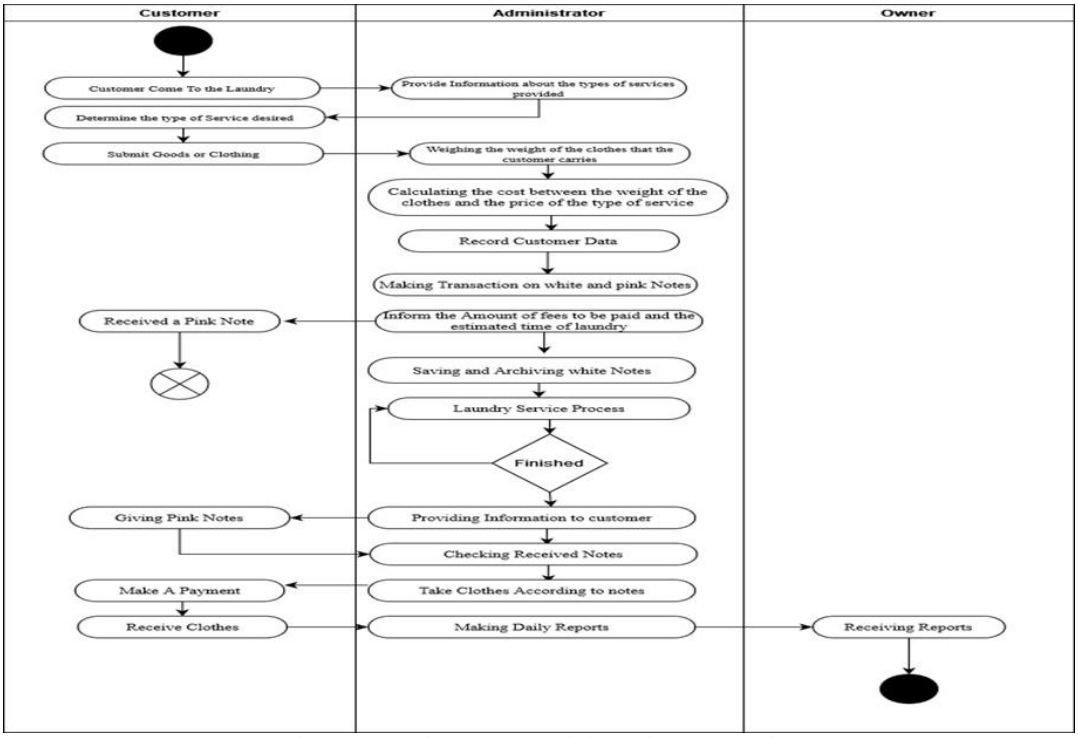


Figure 1. Diagram Activity Aisy Laundry

b. Usecase Diagram

At the design stage using use case diagrams. usecase diagram displays the role of the user and how the role is when using the system. Use case diagrams can be used to represent user interactions with the system and describe user problem specifications (Destriana, 2021). use case diagram is a collection of connected groups to build the system properly. Use case is the interaction between use cases and participants (Wijaya, 2019)

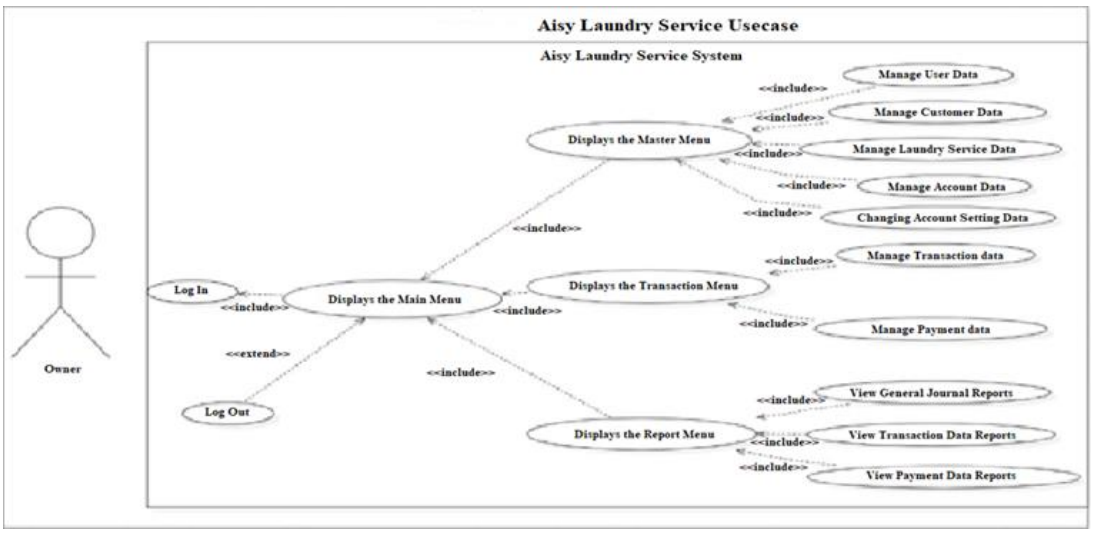


Figure 2.Usecase Diagram Aisy Laundry

c. Entity Relationship Diagram (ERD)

ERD or Entity Relationship Diagram is a diagram that can explain the design of a database" (Latukolan, 2019).

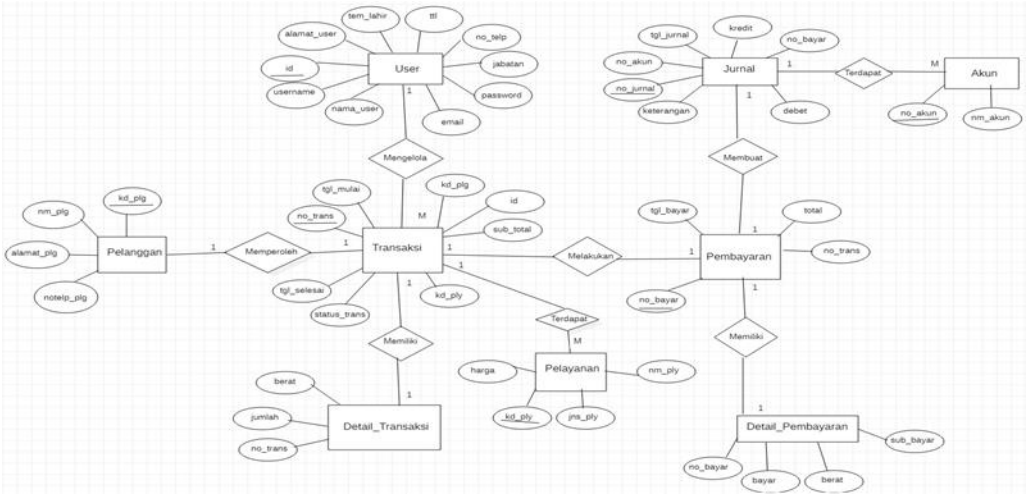


Figure 3. ERD Aisy Laundry

d. Logical Relationship Diagram ( LRS)

LRS or Logical Record Structure is a diagram that comes from changes in the ERD or Entity Relationship Diagram" (Farabi, 2018).

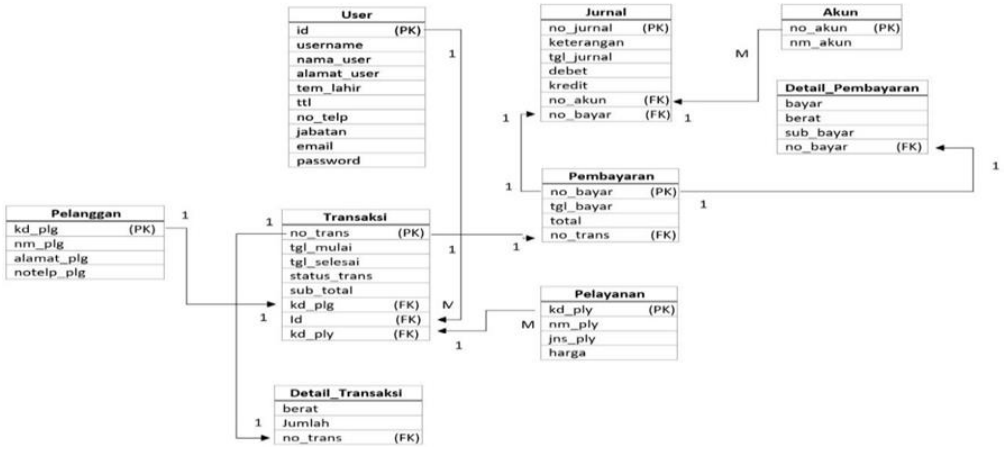


Figure 4. LRS Aisy Laundry

e. Diagram Sequence

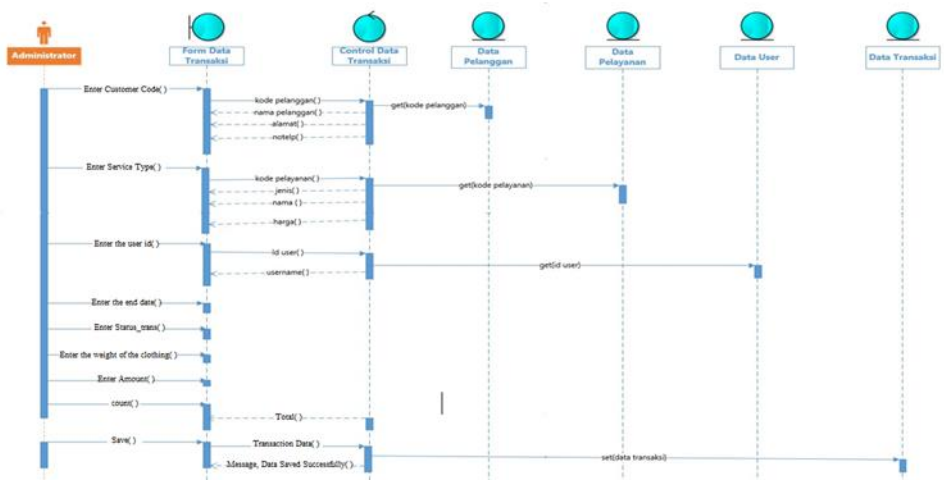


Figure 5. Diagram Sequence

3.3 Program Implementasi & Testing ( Integration & Testing)

a. Program Implementation (Integration)

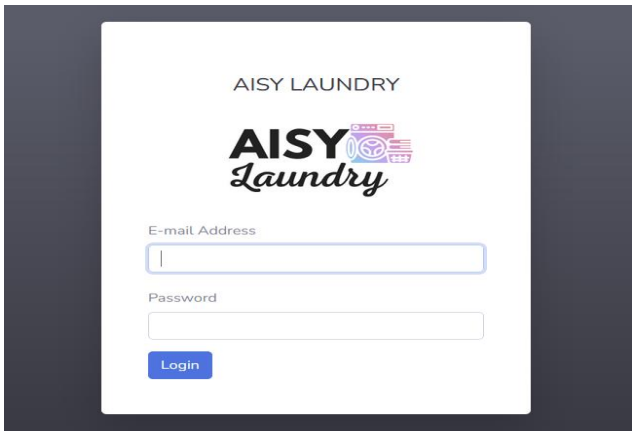


Figure 6. User Interface Form Login


Figure 7. User Interface Homepage

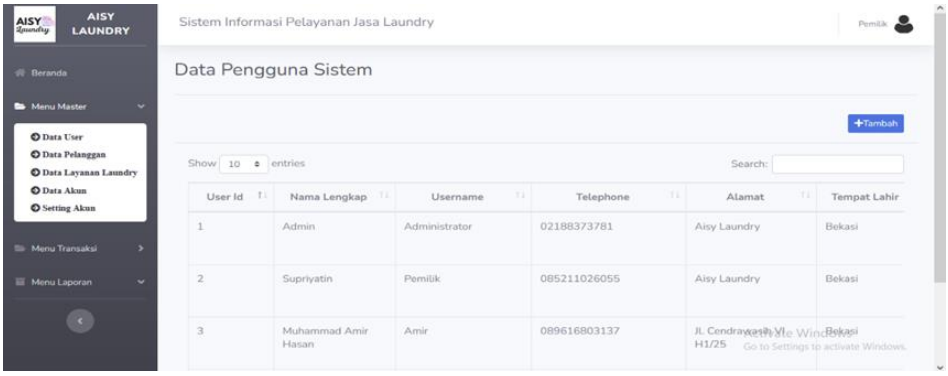


Figure 8. User Interface Page User

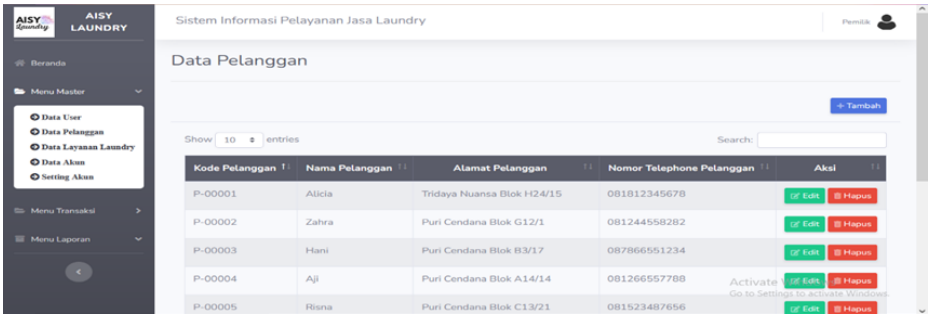


Figure 9. User Interface Customer Page

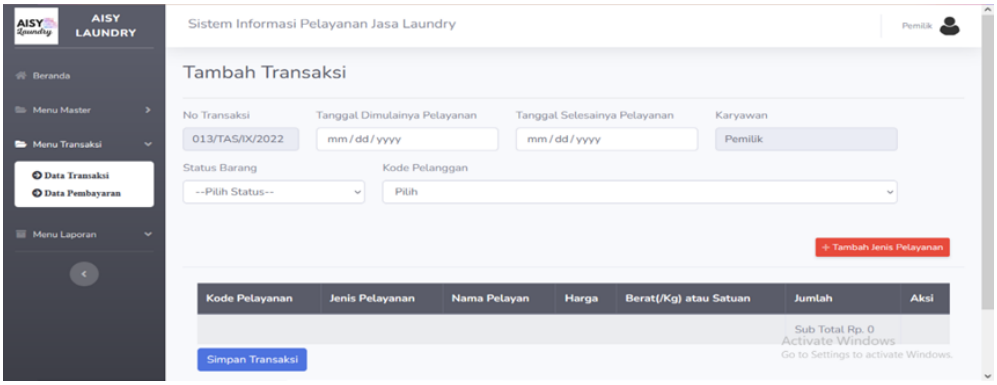


Figure 10. User Interface Transaction Page

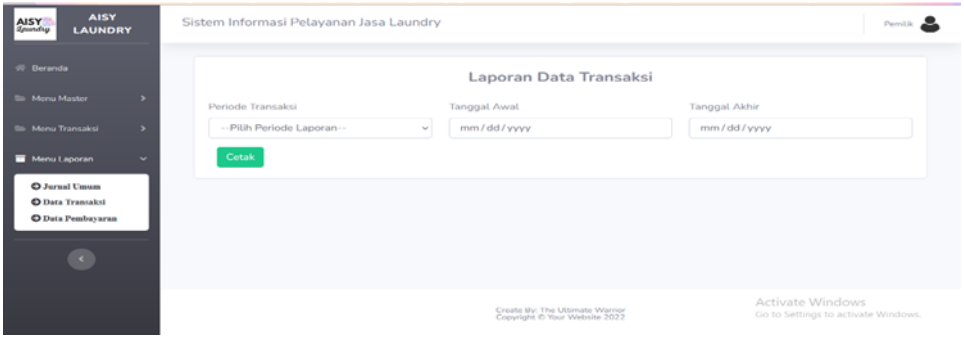


Figure 11. User Interface Report Transaction Page

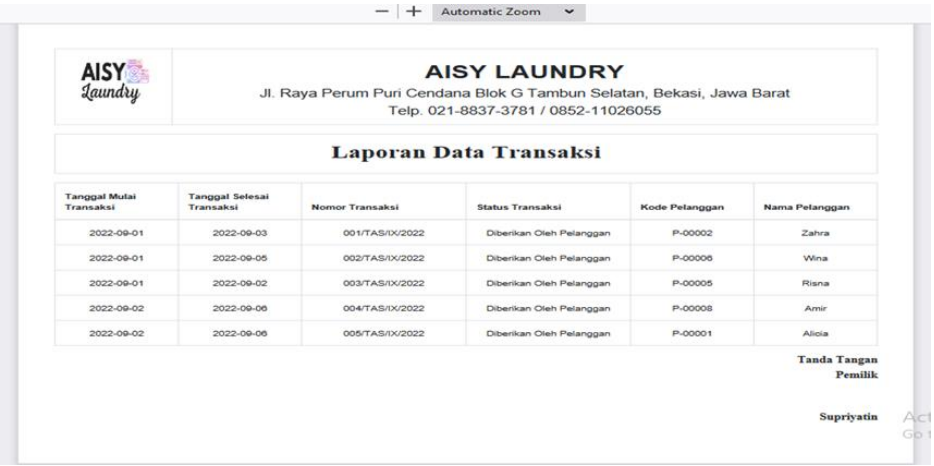


Figure 11. User Interface View Report Transaction Page

b. Program Testing (Testing)

Table 1. Blackbox Testing

| Cases and Test Results (Normal Data) | | | |
|---|---|---|---|
| Input Data | Which are expected | Observation | Conclusion |
| Email: pemilik@al.com<br>Password: pemilikusaha<br>Click the login button | The system displays the home page | Enter Main page | [✓] Success<br>[ ] fail |
| **Cases and Test Results (Incorrect Data)** | | | |
| Input Data | Which are expected | Observation | Conclusion |
| Email: pemilik@gmail.com<br>Password: (empty)<br>Click the login button | Unable to Login System | Unable to enter main view (home) and display message "Please fill out this field" | [✓] Success<br>[ ] fail |
| Email: (empty)<br>Password: pemilikusaha<br>Click the login button | Unable to Login System | Unable to enter main view (home) and display message "Please fill out this field" | [✓] Success<br>[ ] fail |
| Email: (empty)<br>Password: (empty)<br>Click the login button | Unable to Login System | Unable to enter main view (home) and display message "Please fill out this field" | [✓] Success<br>[ ] fail |

## 4. CONCLUSION

This research produces a web-based application with the Laravel framework that will simplify the Aisy laundry system. The Aisy Laundry application has several features such as inputting customer data, laundry service data, account data, transaction data, and transaction data reports so that reports can be generated quickly and as desired. Data storage with computer storage devices and media will be more secure and make it easier to find and edit data. but this application can only run on PCs or laptops that are on Aisy Laundry or Web Back end applications, and development and maintenance is needed on this website so that research can be carried out on an ongoing basis.

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