



Sales Monitoring Information System at Mojokopi Coffee Shop Using Website-Based Moving Average Method

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ABSTRACT

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Mojokopi is a small coffee shop engaged in the sale of various kinds of coffee products such as milk coffee, Toraja coffee, Flores coffee and others. In the coffee sale transaction at Mojokopi, there is a flow where the buyer must first see the list of menus available at the coffee shop, then the seller will record the order into the book according to the buyer's order, if the order is complete, the buyer will pay according to what the buyer ordered. Of course, it really needs a system to be able to simplify the process of transactions so that the data will be faster and safer than the bookkeeping process. The mojokopi coffee shop sales monitoring information system based on the website can process transaction data so as to produce information in monitoring sales reports without having to open documents, as well as using the application of sales forecasting to get sales prediction results. This website-based monitoring information system conducts interviews and direct observations as a method of data collection. It is designed using the PHP and MYSQL programming languages. With the existence of a monitoring information system, existing problems from monitoring sales can be resolved, therefore a website-based information system is designed.

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1. Introduction

Mojokopi is a coffee shop in East Jakarta with its address at Jalan Raya Bina Marga RT.007/05 No.33 Cipayang, East Jakarta. Mojokopi was chosen because the coffee place is strategically located in the corner and Mojokopi is present as a small coffee shop that sells various kinds of coffee drinks in In Indonesia, there are many different types of coffee with bitter taste variants that typically represent the area of origin of the coffee, such as Toraja coffee, Gayo coffee, Aceh coffee, Flores coffee, Bali coffee, Bajava coffee, Papua Wamena coffee and also selling non-coffee drinks[1]. Coffee drinks in modern coffee shops as they are today have become a habit for Indonesian people, especially young people in urban areas to spend their time in coffee shops just to gather to tell stories and has become a lifestyle in itself especially for young people.

In the coffee sale transaction at the coffee shop, there is a flow where the buyer must see the list of menus available at the coffee shop then the seller will record the order into a book according to the buyer's request. If the order is complete, the buyer will pay according to what the buyer ordered. These transactions have an impact on the duration of time which is relatively short and data collection is not easy to manage because it requires the seller to open a sales record book to analyze the data. In the transaction process, of course, really need a system to be able to simplify the transaction process so that the data is faster and safer than the bookkeeping process.

Information system is a series of procedures by which data is collected into information for system users [2]The website-based coffee shop sales monitoring information system can process transaction data so that it can produce information in monitoring sales reports without having to open a document book which will take a long time. With the existence of a website-based monitoring information system, it can perform data processing in a virtual manner, namely where to enter buyer data and the data will be stored into the system and sellers can perform data processing directly from a website-based system without requiring to come to the store and the processed data can be stored and viewed anywhere and anytime. anytime.



The website-based monitoring information system is built using programming languages such as PHP with the CodeIgniter Framework and MySQL database management is general in nature so that it can facilitate and expedite system development. In the monitoring information system, the seller will get access rights as data processing and monitoring at the Mojokopi coffee shop. The development of a website-based monitoring information system can also facilitate data processing and users have no limitations such as manual data processing with bookkeeping documentation.

The main purpose of this study is to be able to make a purchase price prediction with the Moving Average method using the actual amount of past data to be able to produce a forecast systematically. [3]Therefore, Mojokopi coffee shop needs an information system to be able to help deal with problems in sales monitoring management by building a "Website-Based Mojokopi Coffee Shop Sales Monitoring Information System" to make it easier to manage transaction data at the coffee shop (Mojokopi) to be more effective and efficient. .

2. Methodology

This research was carried out with using data collection methods, namely interviews, observations to collect data needed in taking research results can be described as follows:

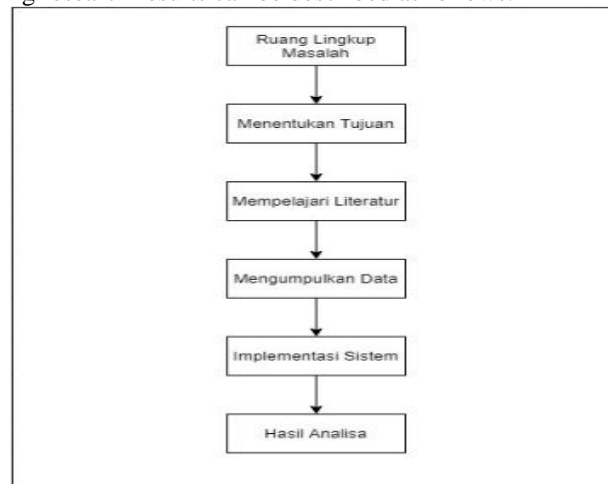


Fig 1 Research Process Flow

2.1 Scope of the Problem

The research carried out has the following scope:

- a. A system intended for sales at the Mojokopi coffee shop
- b. The system will be built based on a website
- c. The data used is the data that is sold

2.2 Setting Goals

Based on the problems faced, the objectives achieved in this study were determined. The goal is to see the targets achieved, of course, to reduce problems in terms of monitoring the Mojokopi coffee shop transactions.

2.3 Studying Literature

In order to achieve this goal, a number of literatures must be studied in order to be used. Then the literature studied was taken in order to be able to determine what literature should be used in this study. Literature can be in the form of scientific journals on Monitoring Information Systems from several books.

2.4 Collecting data

Data collection was carried out by conducting interviews with the aim of obtaining the necessary information. Then direct observation is carried out on the spot so that the problem can be clearly identified.

2.5 System Implementation

The implementation of this system is very useful to make it easier to prove the results of the analysis carried out.

2.6 Result Analysis

Analysis of the results built to determine the results of the implementation of the system that can be

used for Monitoring Information at the Mojokopi Coffee Shop.

2.7 Information Systems

Information systems are a combination of information technology and the people who use that technology to support operations and management. The term information system is used to refer to the interaction between people, data and technology. As for another understanding of the information system is a system within an organization that brings together the needs of daily transaction data processing with the required reports[4].

2.8 Monitoring System

Monitoring system is the process of monitoring systems a systematic effort to set performance standards on planning to design information feedback systems, To collect data from various sources usually data collected realtime data[5]. Broadly speaking, the stages in a monitoring system are divided into three major processes as shown in Fig.

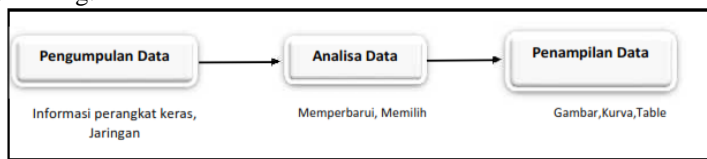


Fig2 Monitoring System Process

The process that occurs begins with data collection from data analysis, data appearance, and the data is analyzed in data analysis.

2.9 Website

A website is a collection of pages on a domain on the internet created with a domain or url. Website is a component consisting of text, images, sound or a combination of all, both static and dynamic, making it interesting to visit[6].

2.10 PHP

PHP is a script-based programming language that is used to process data and send it back to a web browser into html code that can be generated from an application instead of an HTML document created using a text editor or HTML editor. PHP/FI is the initial name of PHP. PHP is Personal Home Page, FI is Form Interface. First created by Rasmus Lerdoff. PHP, originally a program that is devoted to receiving input through a form that is displayed in a web browser. This software is distributed and licensed as Open Source software. PHP is officially short for PHP Hypertext Preprocessor, is a server-side scripting language embedded in HTML.[7].

2.11 Databases (MySQL).

MySQL is a database management system software (Database Management System - DBMS) which is very popular among web programming, especially in the Linux environment by using PHP scripts and 18 database software tools. This database is now also available on the Windows operating system platform. MySQL is known as the first database supported by script programming languages for the Internet - PHP and Perl. MySQL and PHP are considered as an ideal web-based application development software partner (Sidik: 2005). MySQL is an RDBMS (Relational Database Management System), which is why the terms tables, rows, and columns are used in MySQL.

2.12 Moving Average

Moving Average is an indicator that calculates a moving average using a certain amount of data in a certain time to produce a forecast[3]. Mathematically simple moving average (is a prediction of future period demand)[8] stated as follows:

$$MA = x / n$$

Where

MA = Moving Average

x = Number of time period data

n = Number of periods moving average



2.13 Use Case Diagrams

Use case diagram is a diagram that shows the relationship between the actor and the system. The system built has 2 actors, namely admin and owner. Admin gets login access rights, manages data usage where admin can access the system, manages item data, manages transaction data, admin can also make transactions with customers where data on customers can be documented on the system by admin and see report results owner has access rights to view logins and sales report results of managed coffee shops. The following is a use case diagram for the system to be built.

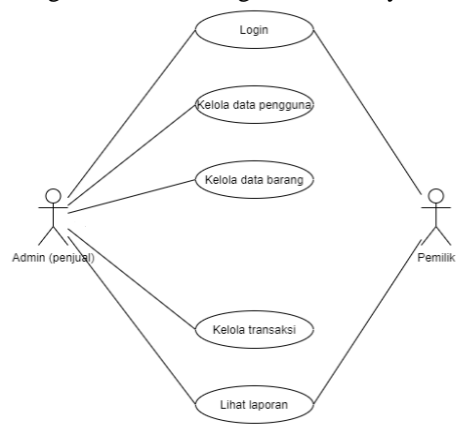


Fig3 Use CaseDiagram

3. Results and Discussion

3.1 Program Implementation (containing program screenshots) Admin system implementation.

a. Login Page

The login page is a page for admins to login, the admin must first enter the correct username and password to be able to access the menu contained therein.

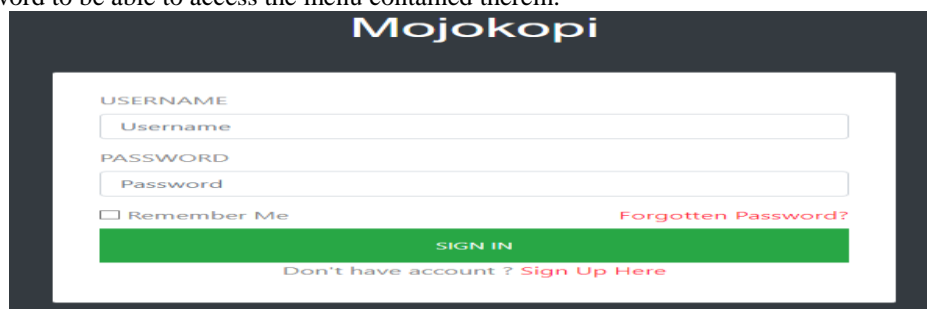


Fig4 Login Page

b. Dashboard Page

The dashboard page is the main page after logging in from the coffee sales monitoring information system.

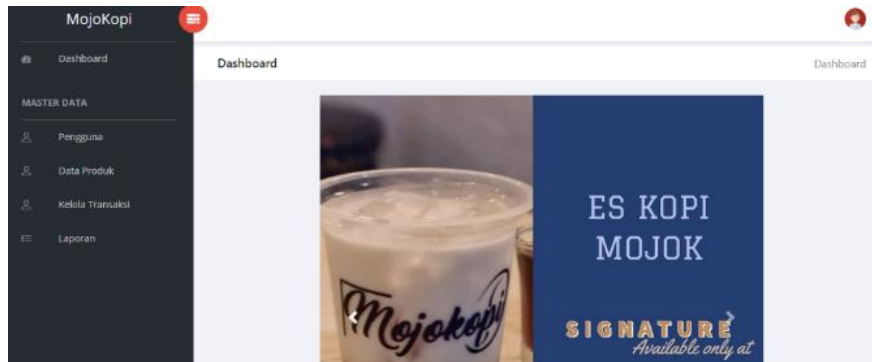


Fig5 Dashboard Page

c. User Page

User page is a page to view the detailed list of registered user data. On this page the admin can process data to add and edit user data.

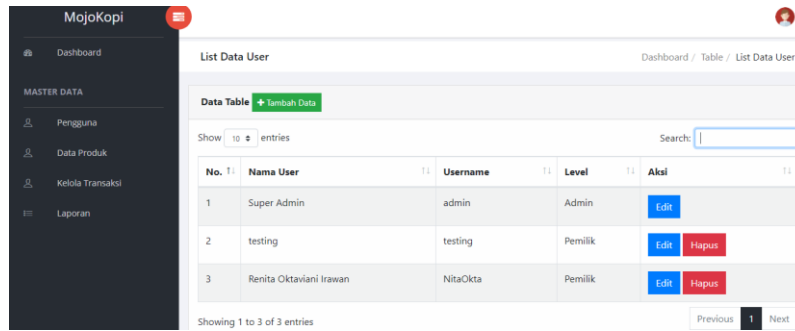


Fig6 User Page

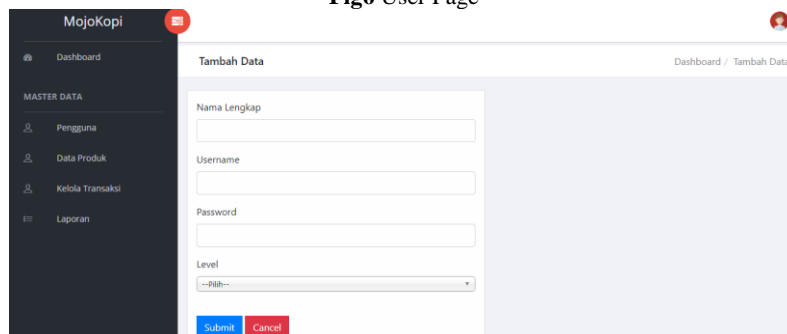


Fig7 Add And Edit User

d. Product Data Page

Product data page is a page that displays product data or available menus. This product data can process data to add and edit product data.

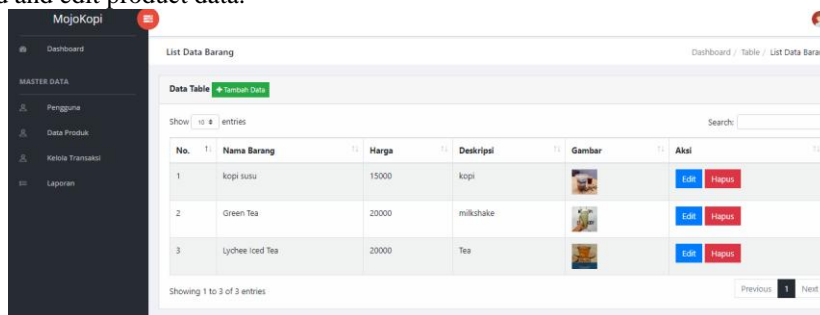


Fig8 Product Page

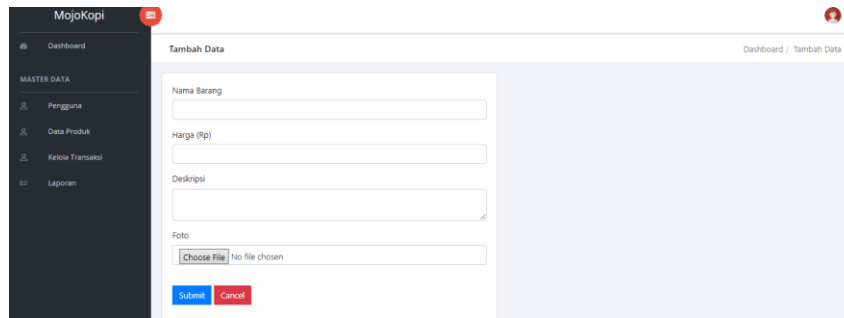


Fig 9 Add And Edit Products

e. Transaction Page

This is a page to see a detailed list of sales transactions that have been made and on this page the admin can also input buyer orders.

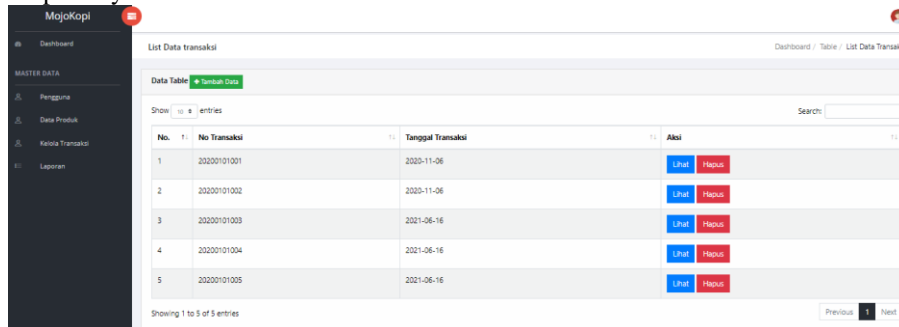


Fig10 Transaction Page

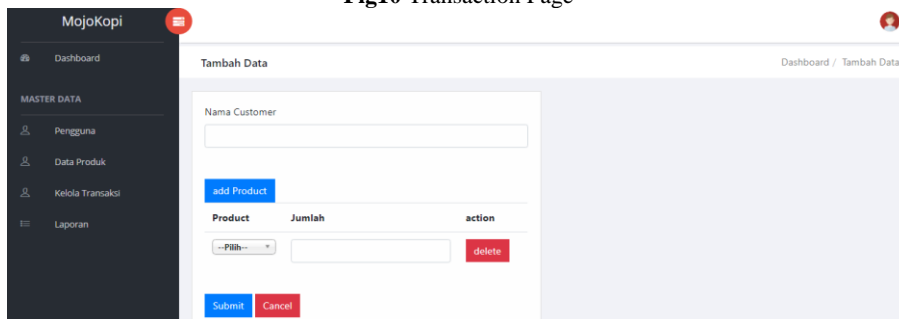


Fig11 Add Transaction

f. Report Page

The report page serves to display the results of reports from sales.

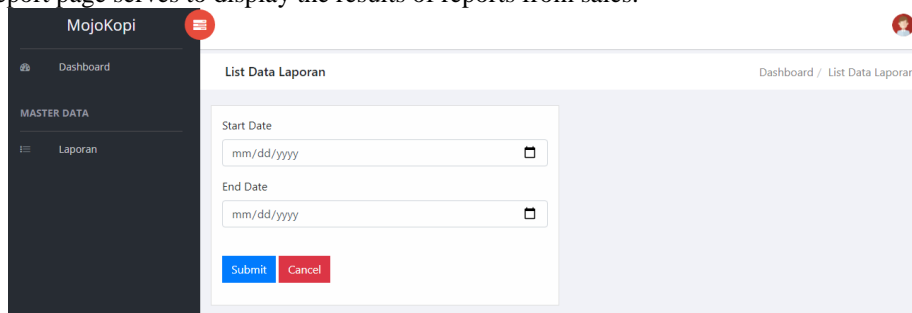


Fig12 Report Page

Print

Generated By System : < 17/06/2021 00:40:16 >

Laporan Transaksi

Periode: 16 June 2021 - 16 June 2021

LAPORAN TRANSAKSI

| No | No Transaksi | Tanggal Transaksi | Nama Barang | Qty | Harga | Total |
|----|--------------|-------------------|-------------|-----|----------|----------|
| 1 | 20200101004 | 2021-06-16 | kopi susu | 1 | Rp 15000 | Rp 15000 |
| 2 | 20200101005 | 2021-06-16 | Green Tea | 1 | Rp 20000 | Rp 20000 |

Fig13 Report results

3.2 Owner System Implementation

a. Login Page

The dashboard page is the main page after logging in from the coffee sales monitoring information system.



Fig14 Login Page

b. Dashboard Page

The dashboard page is the main page after logging in from the coffee sales monitoring information system

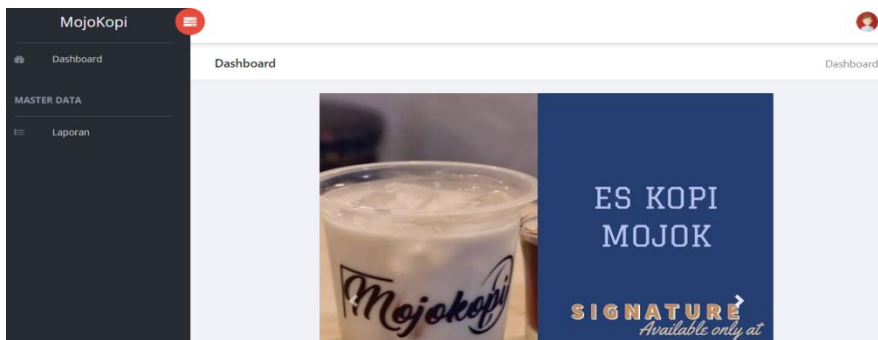


Fig15 Dashboard Page

c. Report Page

The report page serves to display the results of reports from sales.

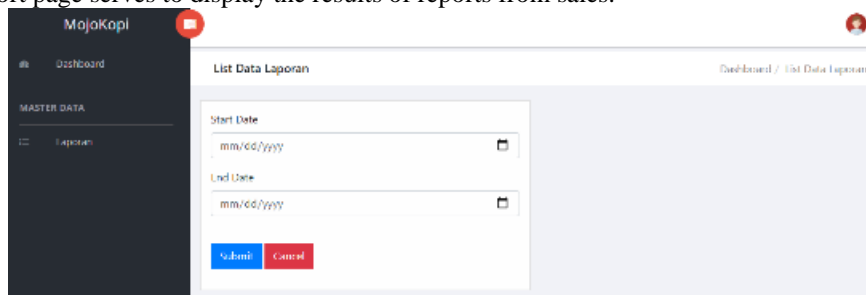


Fig16 Report Page

3.3 Blackbox Testing

In this test application using the blackbox testing method so that it can be tested functionally. Black box testing is carried out based on application details such as the appearance of the application, the functions that exist in the application, and the flow of functions with the business processes desired by the buyer. Black box testing is more about testing the outer appearance of an application so that it is easy to use by users.

The following are the results of blackbox testing:

Table 1
Blackbox Testing

| No | Form | Examiner | Test results | Status |
|----|----------------|---|---|---------|
| 1 | Login Page | Enter Username and Password | Successfully entered the page | Success |
| 2 | Dashboard Page | Can see the entire main page | View dashboard page | Success |
| 3 | User Page | Open the user data menu | Can see the data that has been registered | Success |
| 4 | Product Page | Add users Can edit user Can delete user Open the product data menu Add product Can edit products Can delete product | Can see the requested data | Success |
| 5 | Transaction | Open transaction menu Adding transactions Can delete transactions | Can see the requested data | Success |
| 6 | Report Page | Open the report menu Submit a report on a certain date Show report results | Can see the requested data | Success |

3.4 Moving Average

This study uses data on beverage sales in the last three months of 2021, namely January, February, and March[9]. This data is the result of sales of the best-selling drinks by using the calculation of the Moving Average method, which results in the average sales of the best-selling drinks and produces sales forecasting data in April 2021.

Table 2.
Sales Data Table

| Month | Sales Data | | |
|----------|-------------|-----------|----------|
| | Coffee milk | green tea | Lecy Tea |
| January | 33 | 50 | 67 |
| February | 31 | 62 | 77 |
| March | 26 | 68 | 66 |

Counting coffee milk In April 2021

$$MA = \frac{33 + 31 + 26}{3} = 30$$

Counting green tea in April 2021

$$MA = \frac{50 + 62 + 68}{3} = 60$$

Counting Lecy tea In April 2021

$$MA = \frac{67 + 77 + 66}{3} = 70$$

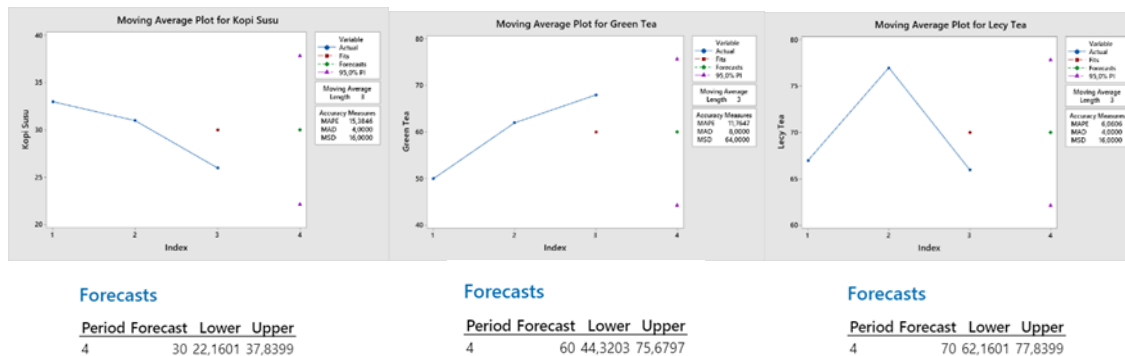


Fig 17. MA Coffee Milk Output

Fig 18. Output MA Green Tea

Fig 19. MA LeciTea output

4. Conclusion

Based on the observations that have been made at the Mojokopi Coffee Shop, it can be concluded that the design of a website-based Mojokopi Coffee Shop sales monitoring application makes it easier for Mojokopi's performance. With this coffee sales monitoring information system, reports can be made and received more quickly by the owner as the owner of Mojokopi coffee and can reduce the risk of data loss due to human negligence.

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