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Website-Based Online Sales Information System *(E-Commerce)* Case Study Apotek Mihardja Farma

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In the management of sales transaction data, drug inventory, and purchase history using manual systems that are prone to errors and inefficiencies. Additionally, the limited payment methods and lack of comprehensive information about the drugs pose specific challenges. The data collection techniques used in this study include interviews, observations, and literature studies. The system development method employed is Object-Oriented Analysis and Design (OOAD) to model the system's analysis requirements. Thus, a web-based information system is needed to assist in the management of transactions, inventory, and automatic tracking of purchase history, as well as providing complete drug information. This web-based information system is expected to enhance operational efficiency and data accuracy, and provide better services to customers.

Keywords: Pharmacy Mihardja Farma; E-Commerce System; Object-Oriented Analysis and Design (OOAD).

Dalam pengelolaan data transaksi penjualan, inventarisasi obat, dan riwayat pembelian menggunakan sistem manual yang rawan terhadap kesalahan dan inefisiensi. Selain itu, metode pembayaran yang terbatas dan kurangnya informasi komprehensif tentang obat-obatan tersebut menimbulkan tantangan khusus. Teknik pengumpulan data yang digunakan dalam penelitian ini meliputi wawancara, observasi, dan studi sastra. Metode pengembangan sistem yang digunakan adalah Object-Oriented Analysis and Design (OOAD) untuk memodelkan persyaratan analisis sistem. Dengan demikian, diperlukan sistem informasi berbasis web untuk membantu dalam pengelolaan transaksi, inventaris, dan pelacakan otomatis riwayat pembelian, serta memberikan informasi obat yang lengkap. Sistem informasi berbasis web ini diharapkan dapat meningkatkan efisiensi operasional dan akurasi data, serta memberikan layanan yang lebih baik kepada pelanggan.

Kata Kunci: Farmasi Mihardja Farma; Sistem E-Commerce; Analisis dan Desain Berorientasi Objek (OOAD).

INTRODUCTION

1. Background

According to Reody (2020), the rapid development of information technology has significant implications for various aspects of life, including business. Information technology has become an important part of the business world, helping business actors make decisions and develop their businesses. Meanwhile, Suryani and Sari (2020) highlighted that information technology has revolutionized business through *E-Commerce*, which offers convenience, flexibility, wide product choices, competitive prices, and efficiency and effectiveness. The *E-Commerce* trend is driven by increasing internet penetration, the development of mobile technology, and changes in consumer behavior. New IoT and AI technologies continue to support the development of *E-Commerce*, facilitating customers and improving the shopping experience.

Pharmacies are one of the places for pharmacists to carry out health service practices and as a service activity to achieve good health for the community. They are providing quality presentations to support pharmacies by realizing good health improvements in the community. Mihardja Farma Pharmacy, which was established in 2021, is committed to providing the best health services. However, this pharmacy faces several challenges such as slow and inefficient transaction processes, frequent data errors, difficulty tracking drug purchase history, and lack of drug information. To overcome these problems, the adoption of information technology such as a website-based online sales information system *(E-Commerce)* is needed.

Based on the above needs, a website-based online sales information system *(E-Commerce)* was created case study: Mihardja Farma Pharmacy.

2. Problem Statement

Based on the background of the problems that have been described, the problems can be identified as follows:

1. The unavailability of applications, which causes the existing transaction process to be slow and inefficient.Frequent errors in the data search process, which cause frequent data errors.
2. The absence of a system capable of tracking the results of drug purchase history.

3. The unavailability of relevant and informative information regarding the name of a drug product.

3. Problem Limitation

After analyzing the existing problems, the author decided to set specific problem boundaries in order to focus this study. These limitations are as follows:

1. This study focuses on a web-based online sales information system.
2. The information system built discusses the transaction process, including ordering, selling, purchasing drugs, and information about drug products.
3. The E-Commerce information system built provides a digital payment feature (payment type). The information system built is only implemented at the Mihardja Farma Pharmacy in the South Bandung area.

4. Research Objectives

Based on the background needs above, an online sales information system (E-Commerce) based on a website was created with a case study: Mihardja Farma Pharmacy.

METHODOLOGY

1. Research Method

a) Observation
The author conducted direct observation to Apotek Segar to see the flow of the drug sales system that is currently running and noted important things related to the observations made.
b) Interview
The author conducted a direct interview with Apotek Segar regarding the current sales information system.
c) Literature Study
The author conducted a literature study by searching for literature through scientific articles (journals) and books as reference materials related to the sales information system.

2. System Development Method

The method used for system development is the Object-Oriented Analysis and Design (OOAD) method. Object-Oriented Analysis and Design (OOAD) is a method used in designing the social e-Learning system. This method is one of the System design methods that approaches problems from an object perspective, not from a functional perspective like in structured programming. The OOAD concept includes the analysis and design of a system with an object approach, namely object-oriented analysis (OOA) and object-oriented design (OOD). OOA is an analysis method that examines the requirements (requirements/needs) that must be met by a system from the perspective of classes and objects encountered within the scope of the agency. While OOD is a method for directing software architecture based on the manipulation of system objects or subsystems, The OOAD method is a system development that prioritizes objects compared to data and processes.

RESULT AND DISCUSSION

The results section presents the processed data from the final analysis. For example, data on the increase in online sales transactions are analyzed to show trends in operational efficiency. As shown in **figure 1**, these results show a significant increase in the number of transactions, with daily transactions increasing by 45% after the implementation of the online system.

Periode Waktu	Transaksi Sebelum	Transaksi Setelah	Peningkatan (%)
Minggu 1	150	270	80%
Minggu 2	130	220	69%
Minggu 3	170	300	76%
Minggu 4	160	290	81%

Figure 1.
Summary of sales transactions before and after online system implementation

These data indicate that the new system has succeeded in significantly increasing transaction volume, accelerating the service process, and increasing efficiency in sales processing. In the discussion, these results are interpreted based on previous theories and research. The significant increase in transactions is in accordance with research that has been conducted, which shows that digitalization of the sales system can accelerate transactions and increase customer satisfaction. Our research results also extend this research by showing an increase in the accuracy of automatic drug stock recording, which was previously done manually. In addition, the adoption of digital payments through e-wallets and bank transfers, as seen in the transaction data, provides additional

convenience for customers, especially during periods of increased transactions. The findings of this study have significant implications for Apotek Mihardja Farma. By implementing an online sales system, the pharmacy is not only able to increase operational efficiency but also expand its customer base. This system allows customers to make purchases more flexibly and makes it easier to track transaction history. Further implementation of this technology will give pharmacies a competitive advantage amidst increasing market competition.

1. System Implementation

The etymological meaning of the word implementation is implementation, application, and running. While in terms of terminology, implementation is an implementation that leads to activities, actions, actions to achieve a planned activity goal. So, implementation is the application of a system that will be implemented after analysis and planning have been carried out. (A. D. I. Ramdani et al., 2021).

a) Hardware

Hardware is needed to support the implementation of a computerized system. The implementation of hardware that can support the system application to be created is presented in Table 1.

Table 1: Implementation of Hardware

No	Name	Specification
1	Processor	Intel(R) Core(TM) i3-1005G1 CPU @ 1.20GHz 1.20 GHz
2	RAM	4 Gigabyte
3	Hard Disk	512 Gigabyte

b) Software

The software used to run the system was created. In this case, the software used by the author to apply this system is presented in Table 2.

Table 2: Software Implementation

No	Name	Legality
1	Operating System	Windows 11 Home Single Language Windows 7, Windows 10
2	Web Browser	Microsoft Edge Google Chrome, Mozilla Firefox
3	Other Software	Xampp, StarUML

c) Programming Language Selection

PHP is open source. Because the PHP open source code is freely available, it allows the developer community to always make improvements and developments, and find bugs in the PHP language. Open source means that you don't have to depend on a particular company. (e.g., Windows to Microsoft) to launch the next version if something goes wrong. You also don't have to pay for the purchase and upgrade costs, which are usually quite expensive. Stability and compatibility. Currently, PHP runs stably on various operating systems, such as various versions of UNIX (including Linux), Windows, and Macs. PHP is also well integrated with various web servers, including the 2 most popular, namely IIS and Apache. PHP is also equipped with various other supporters, such as direct support for various popular databases, an architecture that can be developed, and a processor that not only uses minimal resources on your computer compared to its competitors, but can also display web pages quickly.

d) Program Testing

System testing is a testing process to find out where the deficiencies in the system are and are in accordance with those described in the previous design. This system testing is carried out carefully so that the results obtained can provide benefits to users.

e) Maintenance

In the operation of the application program, there are often changes to the application or even damage. This can happen because of errors in the operation of the program or there is a request from the user, in maintenance (Maintenance) basically must always be there of course adjusted to the environment where the program is used, to maintain the stability and balance of the program that can produce the information needed by the user.

2. Implementation of Web-Based Online Sales Information System (E-Commerce) Application

a) Login Form Page

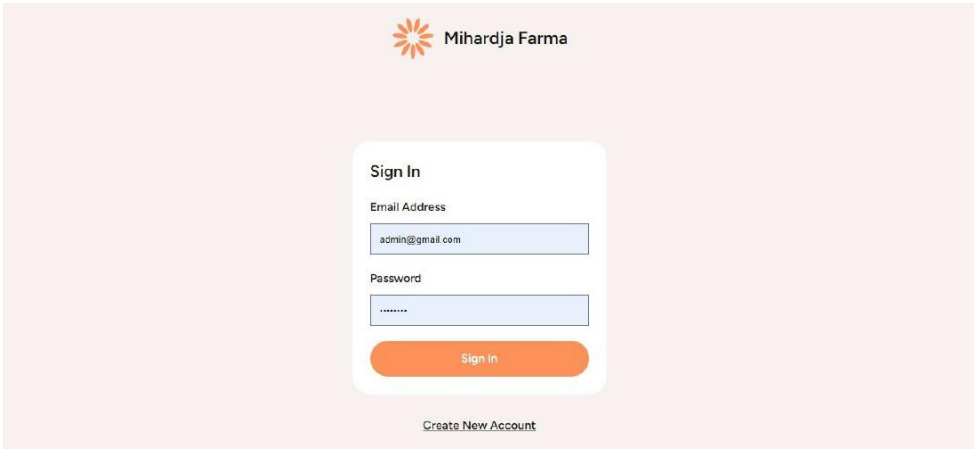

Figure 2.
Login Form Page View

b) Dashboard Page

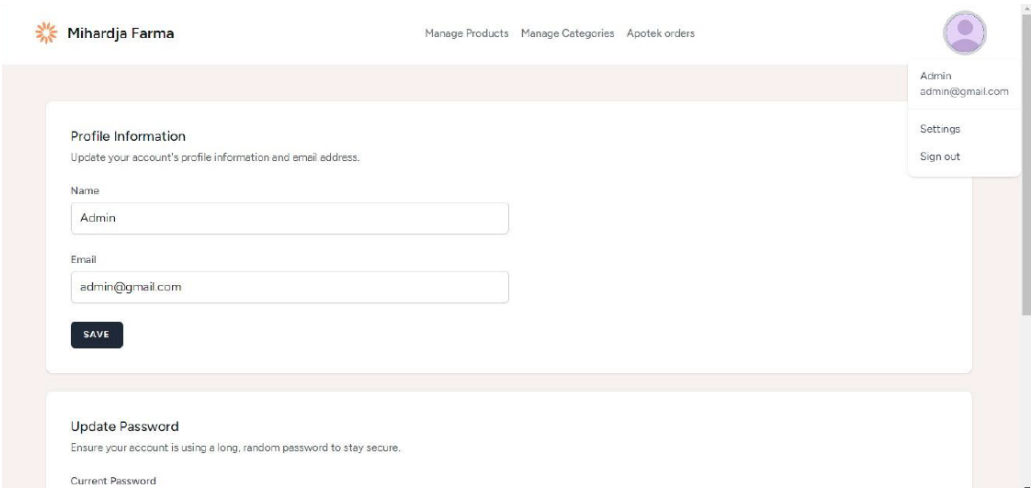

Figure 3.
Dashboard Page View

c) Transaction Data Page

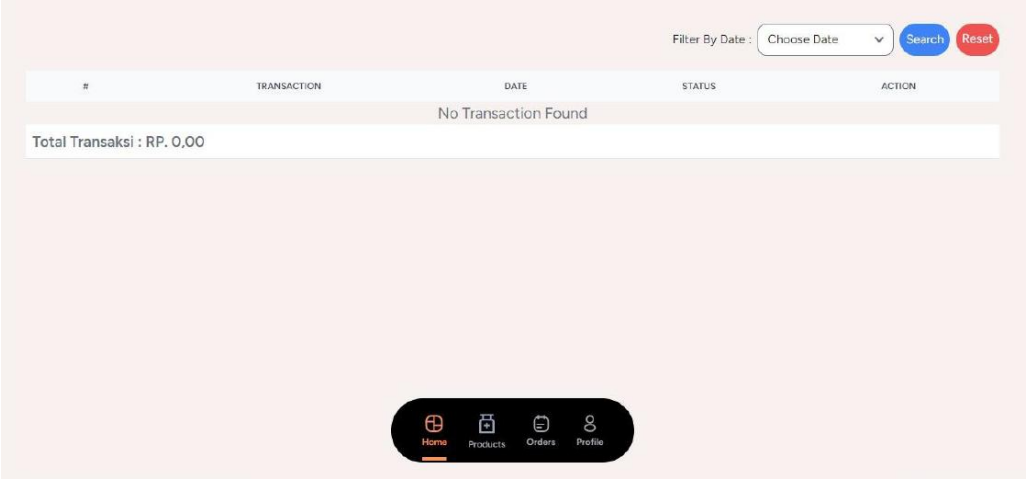

Figure 4.
Transaction Data Page View

d) Transaction Proof Data Input Page

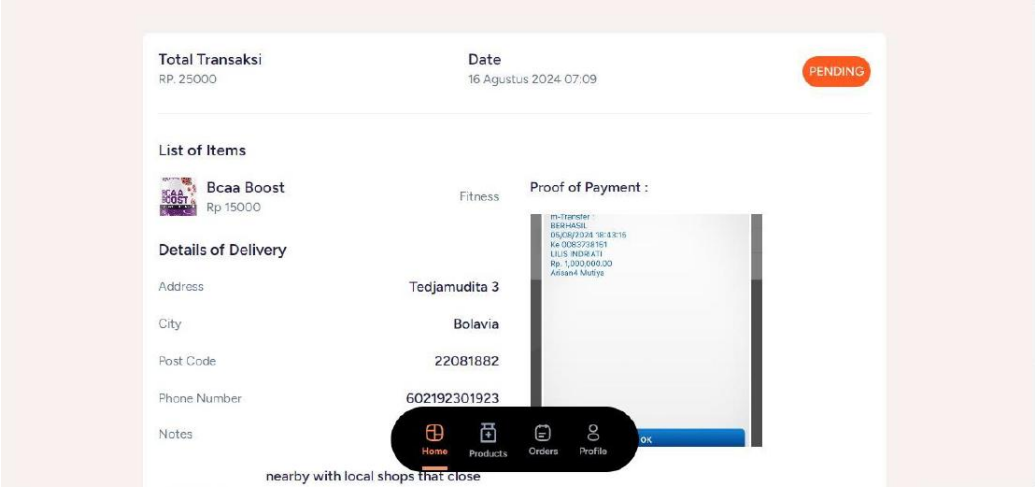

Figure 5.
Transaction Proof Data Input Page View

e) Product Data Page

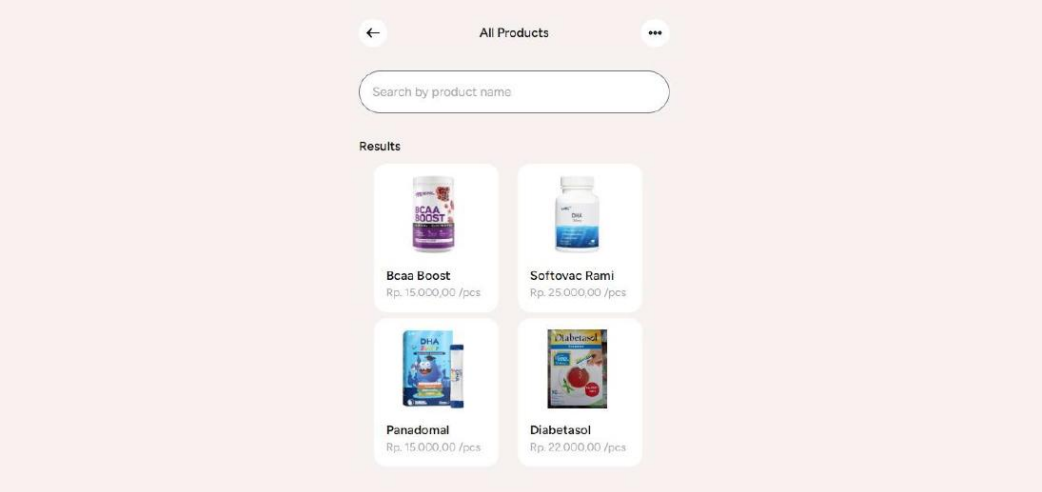

Figure 6.
Product Data Page View

f) Product Management Data Input Page

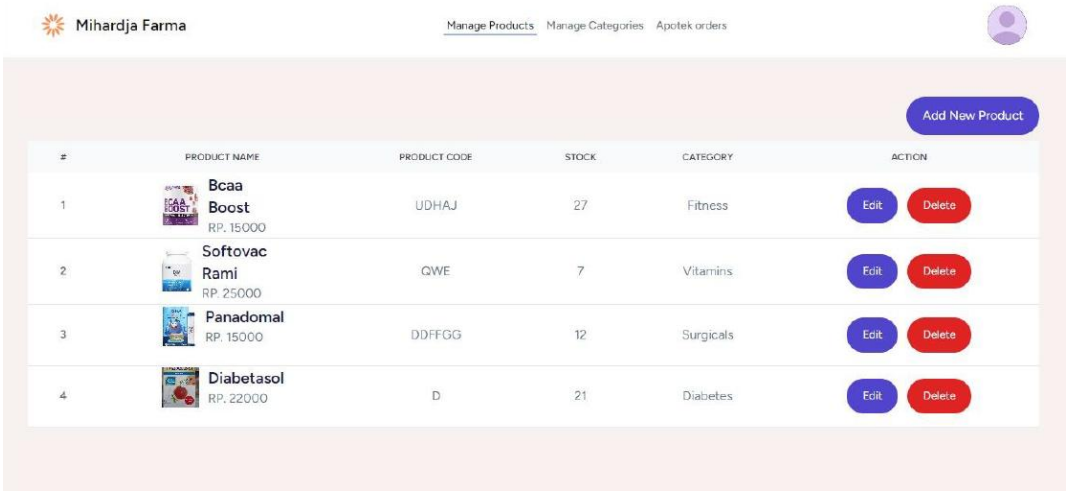

Figure 7.
Product Management Data Input Page View

g) Product Detail Page

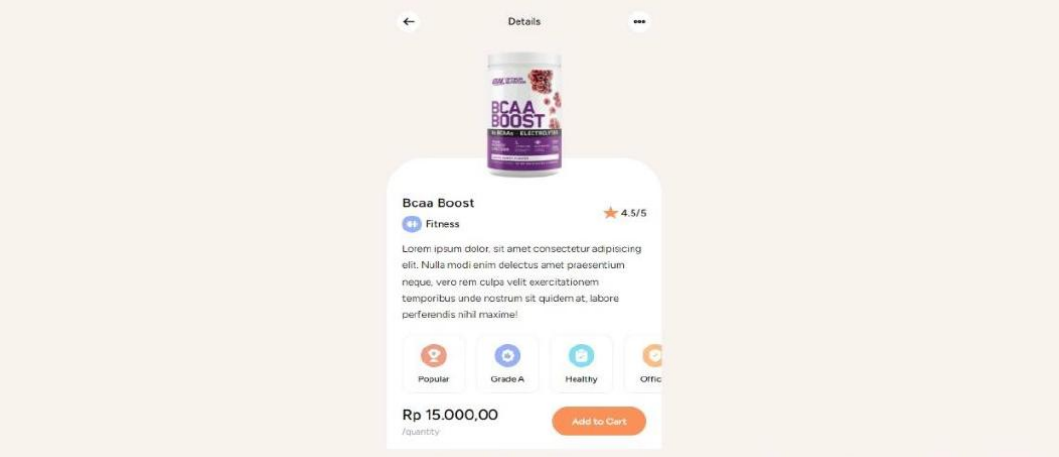

Figure 8.
Product Detail Page View

h) Order Data Input Page

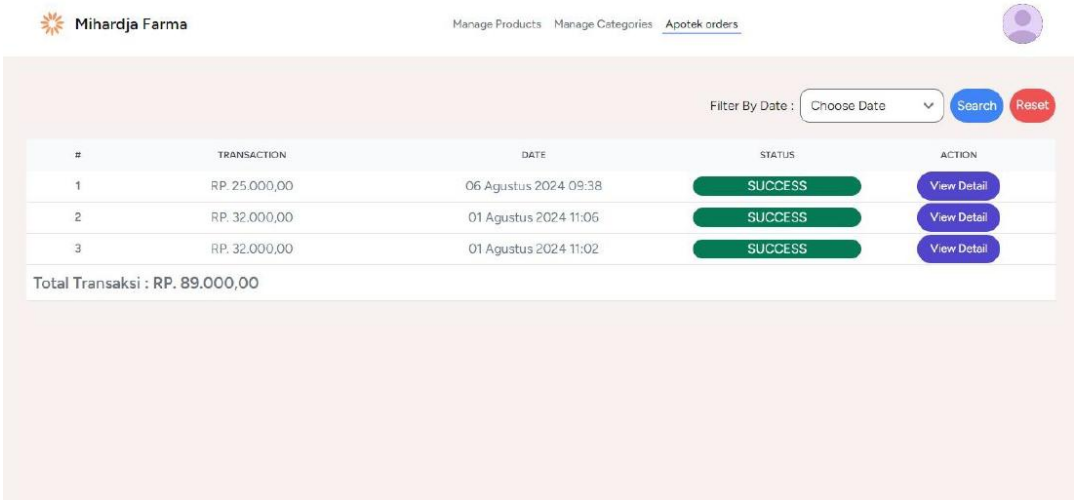

Figure 9.
Order Input Page View

CONCLUSIONS

Based on the results of the research conducted and the discussion of existing problems, the following conclusions can be drawn: This e-commerce sales data processing system is used to facilitate increasing the efficiency of quality information, improve sales data reporting facilitating computerized data processing, can provide accurate sales information to minimize errors and produce fast, precise, and accurate sales data processing.

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