Implementation of Web-Based *Customer Relationship Management* (CRM) at Fishing Shops

Sarmin Hadji Suwarna¹, Abiyoga Ari Nugroho²

¹Dharma Indonesia University
²Dharma Indonesia University
UNDHI Information System, Cikupa, Banten, Indonesia
E-mail; ¹sarmin.hadji@undhi.ac.id, ²abiyogaarinugroho@undhi.ac.id

ABSTRACT

Toko Bahari is engaged in the sale of fishing equipment, which currently still relies on a manual bookkeeping system. This traditional method of recording leads to time inefficiencies, is prone to data errors, and carries the risk of loss or damage to archives. Another problem is the lack of an integrated information system for goods management, resulting in stock imbalances such as overstock and inventory understock. In this digital era, online stores or e-commerce have become an effective solution to expand market reach and increase business transactions. In this regard, the implementation of web-based *Customer Relationship Management* (CRM) is very strategic. A CRM system not only functions as an e-commerce platform, but more than that, it can integrate the entire business process from product management, stock monitoring, to customer relationship management. The implementation of this system is expected to overcome existing operational problems while increasing business competitiveness. With an automated system, business processes become more effective, accurate, and able to support the development of Toko Bahari in a more modern and competitive direction.

Keywords: CRM, PHP, MySQL

ABSTRAK

Toko Bahari bergerak di bidang penjualan peralatan pancing yang saat ini masih mengandalkan sistem pembukuan manual. Metode pencatatan tradisional ini menyebabkan ketidakefisienan waktu, rentan terhadap kesalahan data, serta risiko kehilangan atau kerusakan arsip. Masalah lainnya adalah belum diterapkannya sistem informasi yang terintegrasi untuk manajemen barang, mengakibatkan ketidakseimbangan stok seperti kelebihan (overstock) dan kekurangan (understock) inventory. Di era digital ini, toko online atau e-commerce telah menjadi solusi efektif untuk memperluas jangkauan pasar dan meningkatkan transaksi bisnis. Sehubungan dengan hal tersebut, implementasi Customer Relationship Management (CRM) berbasis web menjadi sangat strategis. Sistem CRM tidak hanya berfungsi sebagai platform e-commerce, tetapi lebih dari itu, dapat mengintegrasikan seluruh proses bisnis mulai dari manajemen produk, pemantauan stok, hingga pengelolaan hubungan pelanggan. Penerapan sistem ini diharapkan dapat mengatasi permasalahan operasional yang ada sekaligus meningkatkan daya saing usaha. Dengan sistem terotomasi, proses bisnis menjadi lebih efektif, akurat, dan mampu mendukung perkembangan Toko Bahari ke arah yang lebih modern dan kompetitif.

Kata Kunci: CRM, PHP, MySQL

*Corresponding author: sarmin.hadji@undhi.ac.id

INTRODUCTION

Online stores or e-commerce have become a vital digital infrastructure that allows business actors ranging from individuals to corporations to reach consumers more widely for promotional activities and transactions. In this context, implementing *Customer Relationship Management* (CRM) is a strategic foundation for building a competitive e-commerce platform. CRM systems not only digitize catalogs and transactions, but more importantly, serve as a tool to maintain and deepen relationships with customers, thereby increasing competitiveness and business sustainability.

The rapid development of information technology requires business people to adopt a more integrated strategy. The application of communication and information technology solutions is designed to enhance business operations, particularly in improving the quality of marketing services and customer support. Additionally, a well-integrated system can provide accurate centralized data, supporting faster and more precise decision-making processes for business owners. The benefits of technology in speeding up and simplifying business activities have been proven in various previous studies, such as the development of school library information systems and performance-based sales systems.

One of the significant breakthroughs in service improvement is the application of the concept of Customer Relationship Management (CRM). CRM enables companies to manage customer interactions in a structured manner, analyze customer behavior, and ultimately deliver a personalized and continuous customer experience. Thus, CRM integration in e-commerce is not just about automation, but about building long-term relationships that benefit both parties (Zulfiandri, 2016). The use of this method in application development has been implemented in previous research with different objects, such as in a cooperative in West Sumatra. CRM is a business that describes a strategy of placing clients as the center of processes, activities, and culture. This concept has been known and widely applied to improve services in companies.

Problem Formulation

Based on the background of these problems, the formulation of the problem in this study focuses on how to implement *Customer Relationship Management* (CRM) in the sale of fishing gear at the Marine Fishing

Equipment Store, how the application of this CRM application can help stores in completing all operational tasks more effectively and efficiently, and how the use of the CRM information system can produce sales reports and customer data quickly. accurate and accurate to support decision-making.

Hypothesis

Based on the problems faced by Marine Fishing Equipment Stores, the hypothesis in this study is that the use of applications built with the PHP programming language can implement *Customer Relationship Management* (CRM) in the sale of fishing equipment, so that it can help stores in completing all operational tasks more effectively and efficiently. In addition, the implementation of PHP-based applications that are integrated with MySQL databases is expected to speed up the data processing process and produce accurate and appropriate reports.

THEORETICAL FOUNDATION

Definition of System

A system is basically a set of elements or elements that are interconnected and work together in an integrated manner to achieve a specific goal. These elements form a smaller subsystem, where each subsystem consists of a group of elements that have a specific function but still support each other in a single system (Ferdika et al., 2017; Sari, 2017).

System Characteristics

A system has several main characteristics, including components or elements, namely parts that interact with each other and work together to form a unit. Systems also have a system boundary that distinguishes between systems and other systems or their external environment. The external environment includes all external conditions, entities, and factors that are outside the system's boundaries but can affect the performance and sustainability of the system. In addition, there is a system interface that functions as a connecting medium between subsystems so that resources can flow properly (Putra et al., 2017). The system also has inputs in the form of energy or data needed for the system to operate, as well as outputs as a

result of the input processing process. Finally, the system has a process or processor that functions to convert input into output according to a predetermined purpose.

RESEARCH METHODOLOGY

Research Framework

In conducting this research, the author uses the research framework as a sequence or process with the aim of making the research carried out more structured, where the research framework carried out is described in Figure 1.

A running system flow is a description that shows the flow of data and processes that occur in the running system until a report is produced, as well as where data is successfully processed, and how to process data and generate reports. With an overview of the flow of the running system, it will be easier to carry out the analysis stage of the running system.
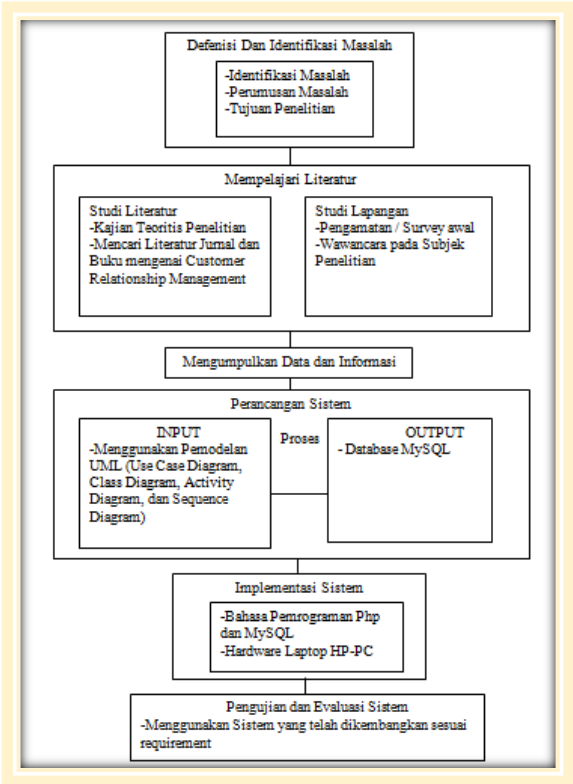

Image 1. Research Framework

ANALYSIS AND RESULTS

System analysis can be defined as the breakdown of a complete information system into its parts, with the intention of identifying and evaluating all the problems and obstacles that occur (Anam & Muharram, 2018). At this stage, it is very important to do it carefully because this stage is a critical stage of the development of a system and this stage is also the basis of the next stage. If at this stage there is an analysis error, then at the next stage it can be certain that an error will occur.

Running System Analysis

Before designing a new system, it is necessary to have an overview of the existing system. This means looking at the shortcomings and weaknesses in the old system. In the old system, all processes still work manually, where the process of recording and storing data still uses *Microsoft Excel,* while the data stored does not use databases, so that data security is not guaranteed. The purpose of system analysis is to optimize the work of the old system, so that the weaknesses that have existed so far can be resolved.

New System Analysis

To overcome existing problems, it is necessary to design a new system to define functional needs. A new system was built to facilitate the data processing process so that it no longer takes a long time and is proposed to be presented in the form of a physical design and a logic design. The proposed system is expected to make improvements to the shortcomings in the old system.

UML

UML (Unified Modeling Language) is a tool for software analysis and design. UML is a language standard that is widely used in the industrial world to define requirements, make analysis and design, and describe architecture in object-oriented programming (Anam & Muharram, 2018).

Use Case

The diagram use *case* will be used to describe the features that can
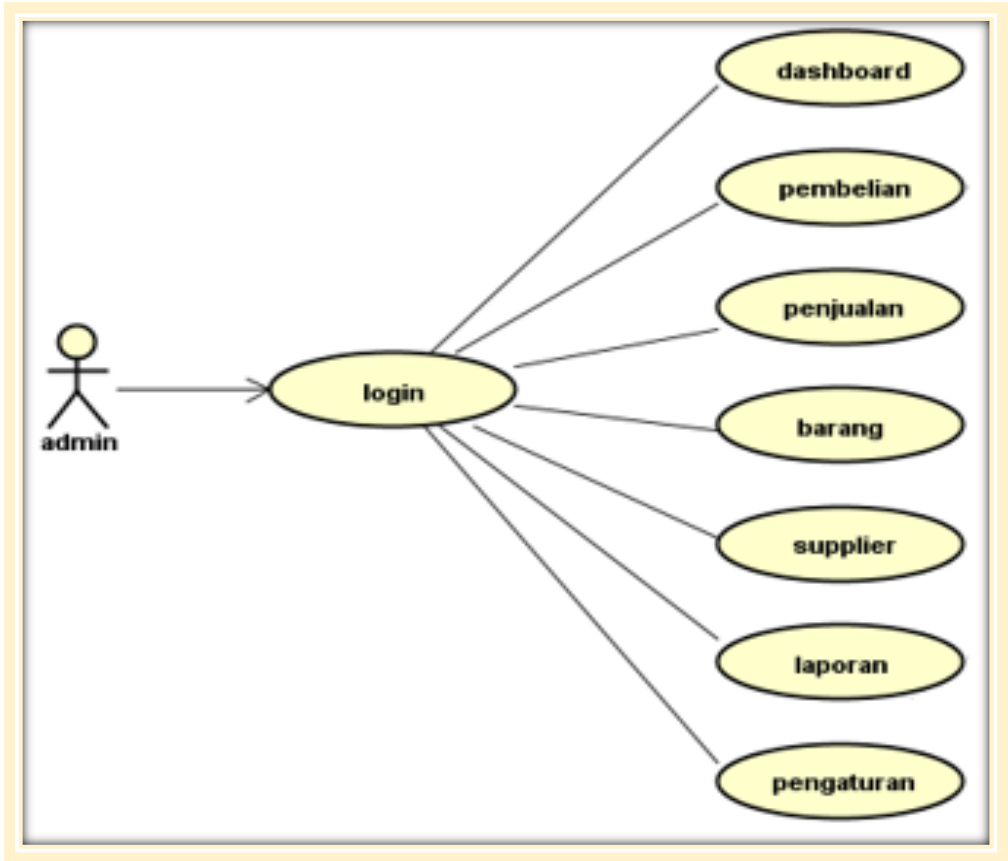
be used by admins. This diagram is also used to verify whether all the functions described in this diagram are *Use case* has been implemented into the system. Models *Use case* serves to describe functional needs and describe behavior (*Behavior*) of the system to be created, and describes an interaction between one or more actors and the system to be created (Sasmoko et al., 2019). *The use case diagram* for this system can be seen in Figure 2.

Image 2. Use case

Class Diagram

A class diagram displays the existence or existence of classes and relationships in the logical design of a system. A class is a specification that, if formalized, will produce an object and is at the core of object-oriented

development and design (Sunardi, 2014). The following is a class of the system to be built, which can be seen in Figure 3.
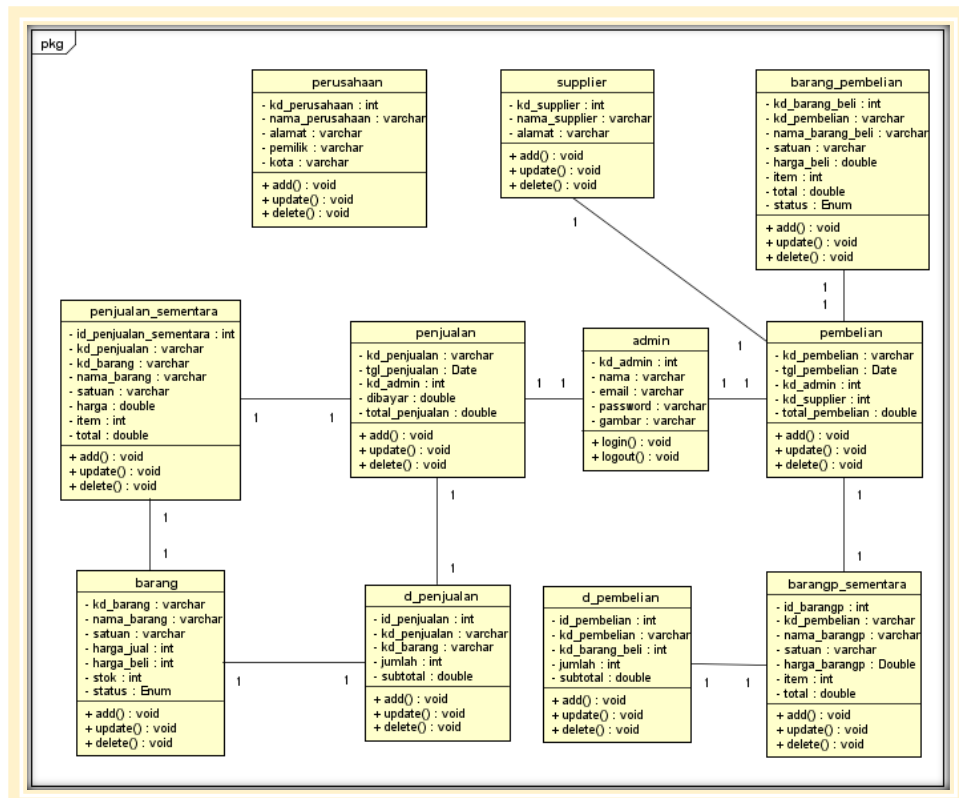
Image 3. *Class Diagram*

Activity Diagram

An activity diagram describes the various streams of activity in the system being designed, how each stream started, decisions that might happen, and how they ended. Activity diagrams can also be used to describe the parallel processes that occur on multiple executions. An activity diagram better describes the processes and channels of activity from the top level in general (Zulfiandri, 2016). Activity diagram or dThe activity diagram describes the activities that the system performs, not what the actors do. The Activity Model diagram can be depicted as shown in Figure 4.
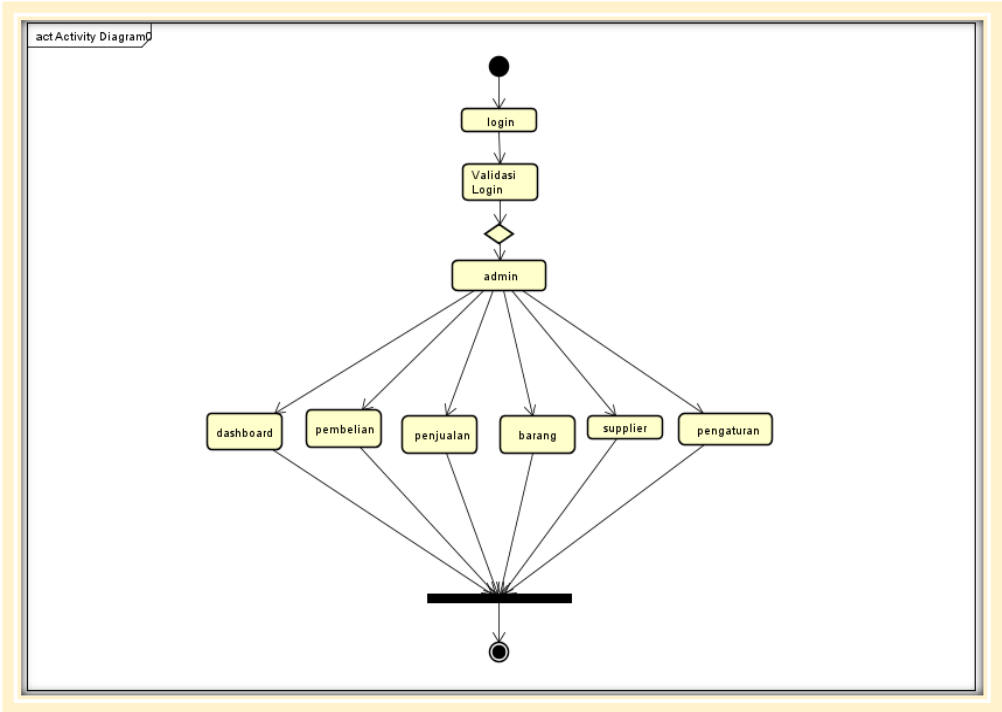
Image 4. *Activity* **Diagram**

System Implementation and Testing

System Implementation

System implementation is carried out to find out how the application that has been built can be implemented into a system (Andrianof, 2018; Gusrianty et al., 2019; Management et al., 2024), as well as whether this application can benefit users, implementation is also carried out to find out the limitations of the system that has been designed and is needed to run this application.

Login

Inside the login, there is a username and password menu. For more details, you can see the following Figure 5:

Image 5. Login

Main Menu

In the main admin menu, there is an entry menu. For more details, see Figure 6. Next:
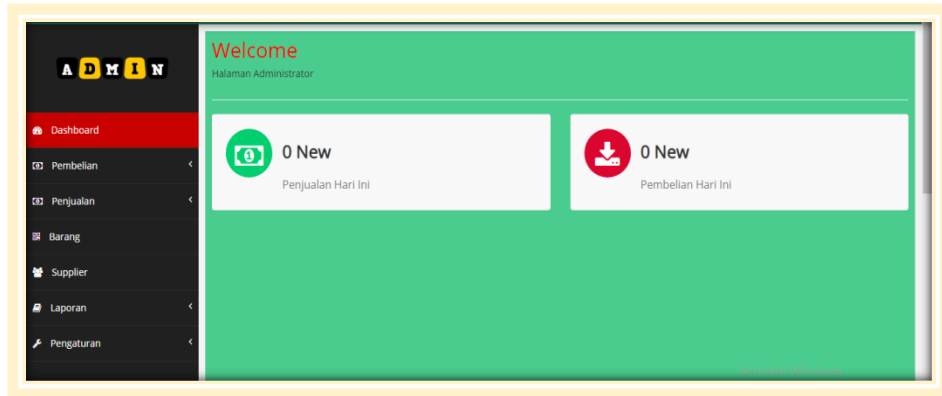
Image 6. Main Menu Page

Purchase Data Input Page

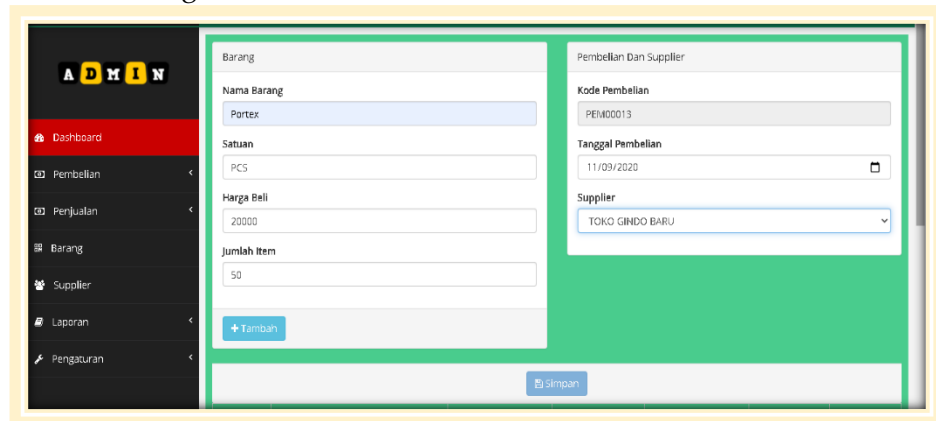On this page purchase data information can be added. For more details, see Figure 7. Next:

Figure 7. Purchase Data Input Page

Sales Data Input Page

On this page, sales data can be added. For more details, see Figure 8. Next:

Figure 8. Sales Data Input Page

Goods Data Input Page

On this page, the data of goods can be added. For more details, see Figure 9. Next:

Figure 9. Goods Data Input Page

Supplier Data Input Page

On this page, supplier data can be added. For more details, see Figure 10. Next:
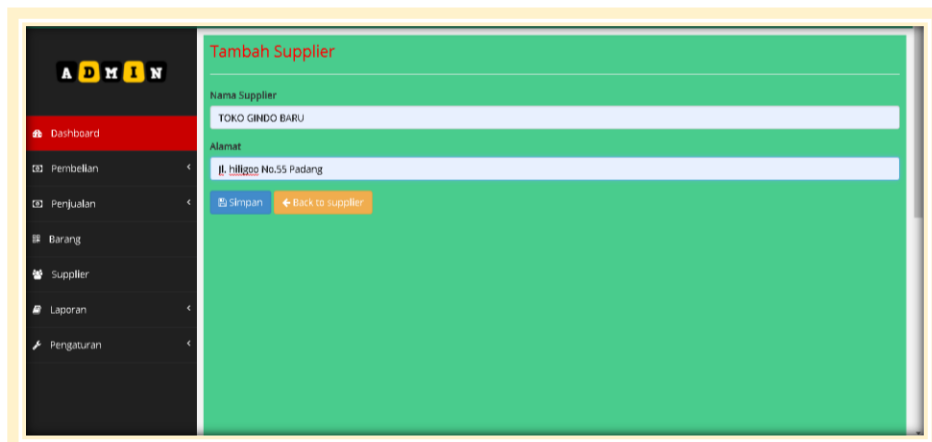
Figure 10. Supplier Data Input Page

CONCLUSION

Based on the description and discussion that has been presented in the previous chapters, it can be concluded that the use of applications built with the PHP programming language is able to implement *Customer Relationship Management* (CRM) in the process of selling fishing gear at the Marine Fishing Equipment Store. The application of this PHP-based application has been proven to help stores in completing all operational tasks more effectively and efficiently. In addition, with the support of MySQL databases, the process of data processing and report generation can be done faster, and generate accurate information.

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