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Requirement Analysis and Digitalization of Seafood Market Management

Marlindawati[1*], Rizqi Dwi Ramadhan[1]

[1]Informatics Management, Vocational Faculty, Bina Darma University

[*]**Email:** [1]marlindawati@binadarma.ac.id, [2]rizqir35@gmail.com

Abstract

Digitalization is the process of transitioning to a digital business and involves using digital technologies to alter a business model and offer new prospects for income and value creation. The study in this paper was carried out to identify the requirement analysis situated in Karang Agung Ilir Seafood District, Indonesia. The local market sells seafood, including prawns, crabs, and squid. Our findings indicated that the fishermen use conventional markets and rely on the surrounding village area or community market with fluctuating cost control. In this view, we have proposed the digitalization of the traditional market to expand the market locations but reduce costs for example transportation costs, increase efficiency, and avenues for revenue regeneration. Digitalization is the process of moving existing processes into digital technologies using the internet with the purpose of information and knowledge dissemination. Our proposed solution has produced a prototype of Seafood Market Management with functionalities of product data entries, product data ordering, and reports on orders and sales of goods that have been computerized. With the searching technique applied to the application, it speeds up the process of searching for data.

Keywords

Requirement Analysis, Digitalization, Information Systems, Seafood Market

Introduction

One beneficial information medium for spreading knowledge is the internet. If there is a connection, anyone can access the internet anywhere 24 hours a day, seven (7) days a week (Duffy, 2000) (Rosmani et al., 2020). A UKM (small and medium enterprise), Seafood Karang Agung Ilir District sells seafood, including squid, crab, and shrimp. The circular market, or other customary village events, is still used in the contemporary sales system.

Customers who come from the surrounding areas are the ones who use the traditional village sales system, also known as the circle market (Zhang & Bi, 2022). Because the village of Karang Agung Ilir sub-district is too far away, consumers from other towns spend excessive money merely to look at the seafood they plan to purchase. Thus, to build systems for information and client sales services, it is essential to research the state of SMEs (Gaffar et al., 2021).

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Using social media and an online sales information system, they are designed with web or internet media in mind to reduce transportation expenses and times while enhancing customer support to boost sales volume and the allure of these SMEs' products (Moghavvemi, 2015).

Methodology

System analysis is carried out to determine the specification of system requirements in building seafood sales information system applications. The system development method used is SDLC (System Development Life Cycle) Waterfall, which is the system development process and the model and methodology used to develop the system (Kyeremeh, 2019).

Analysis of the Running System

Fish A UKM (small and medium enterprise) in the Karang Agung Ilir District sells seafood, including shrimp, crab, and squid. Karang Agung Ilir Subdistrict's seafood sales system still makes use of customary village activities, or what's known as the community market (the conventional approach). Customers who come from the local region are the ones who use the traditional village sales system, also known as the circular market (Wibowo & Damanik, 2019). Because the Karang Agung Ilir sub-district town is too far away, patrons not in the city around it spend excessive money merely to look at the fish they plan to purchase.

Design

The system design process uses several design forms: case diagrams, activities, table designs, input designs, and output designs (Bahill & Madni, 2017; Corter, 2008).

Unified Modeling Language (UML)

Getting a detailed system means providing an overview of the system design that will be implemented and design details, namely making table designs, input designs, and output designs (Singh & Kotzé, 2003). The system design uses the Unified Modeling Language (UML), which consists of Use Case Diagrams, class diagrams, and Activity Diagrams.

Use Case Diagrams

A use case or use case diagram is a model for the behavior of the information system to be created (Singh & Kotzé, 2003).

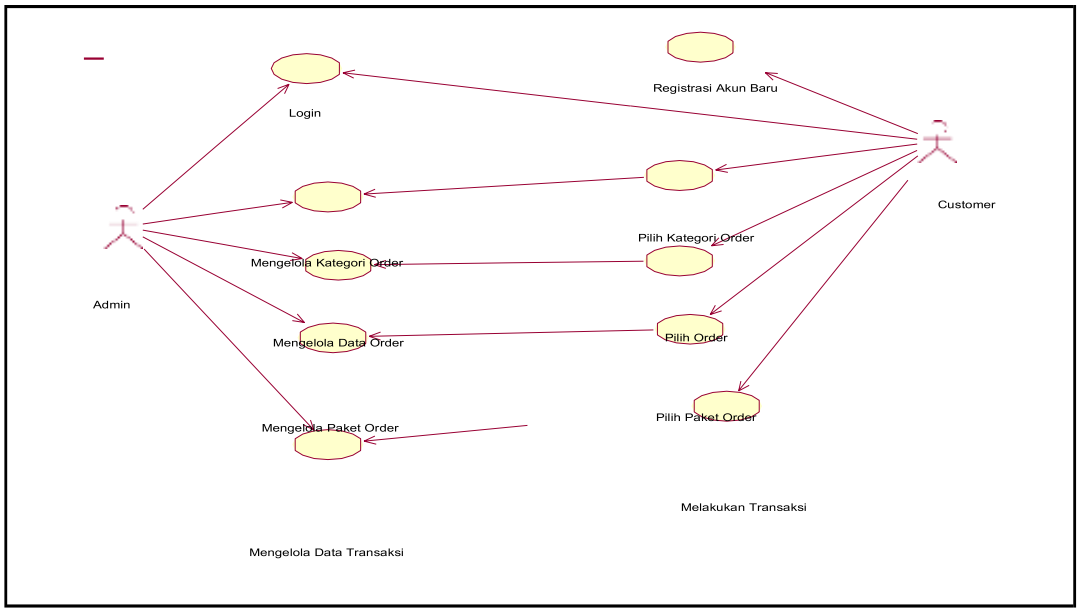

Figure 1. Use Case Diagram

Class Diagrams

Class Diagram is a process of information system activity Task management in sufficient detail to be implemented (Waykar, 2014). The class Diagram explains the activity process of information system activities for seafood sales in Karang Agung Ilir District, where there are eight classes, namely package class, package_relationship class, product class and class categories, class users, class orders, class order_details, class confirmations.

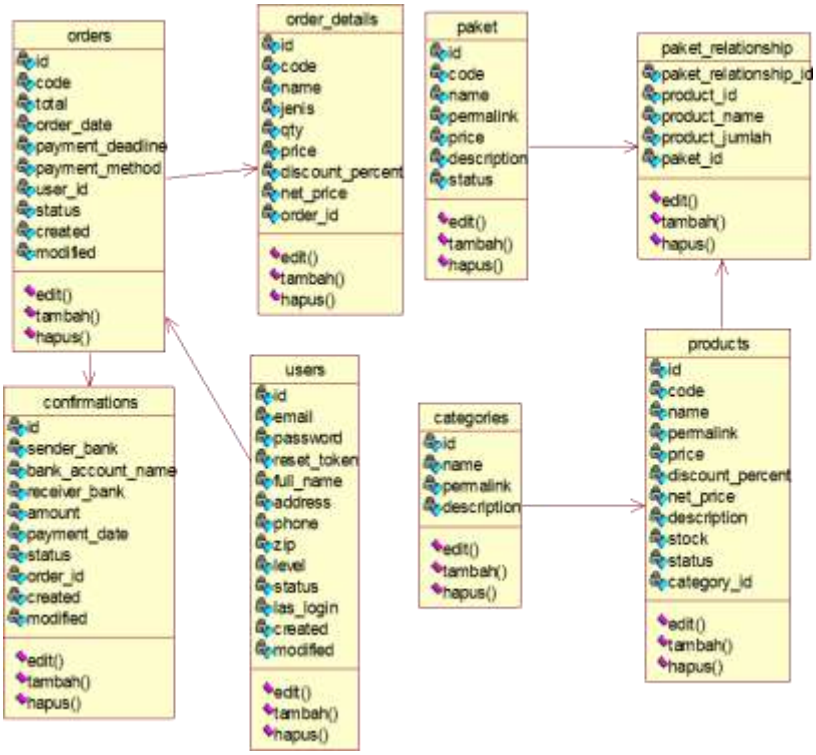

Figure 2. Class Diagrams

Activity Diagrams

Activity diagrams describe the workflow or activities of a system business process or menu in software or applications (Bhattacharjee & Shyamasundar, 2009).

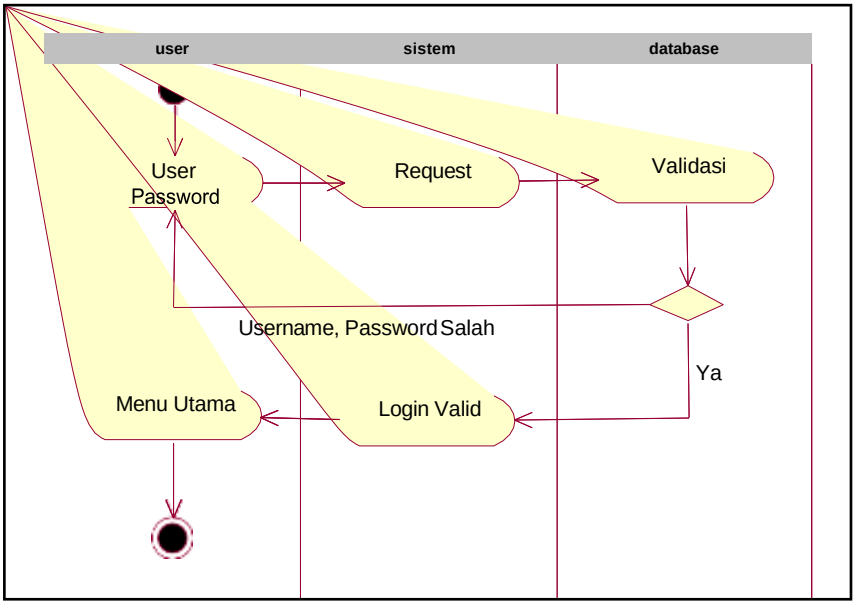

Figure 3. Login Activity Diagram

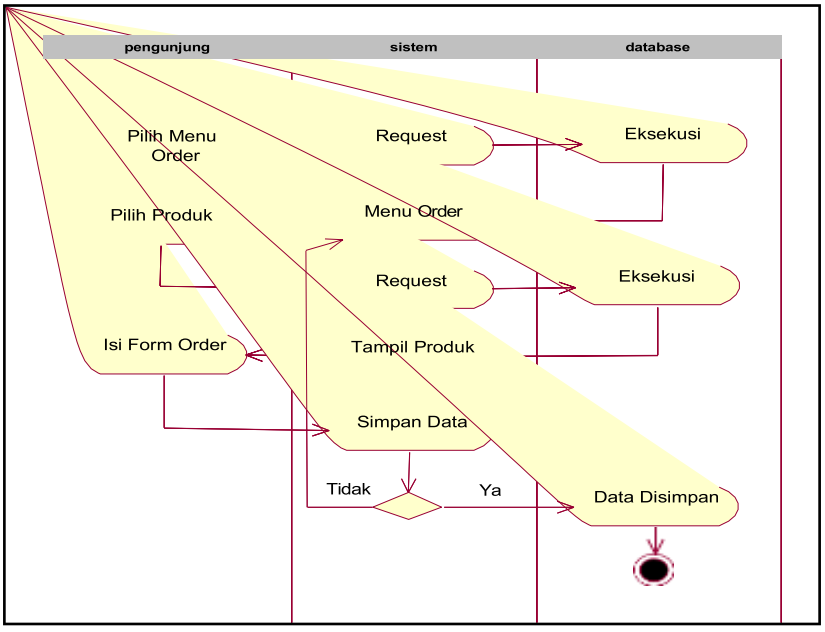

Figure 4. Activity diagram of goods orders

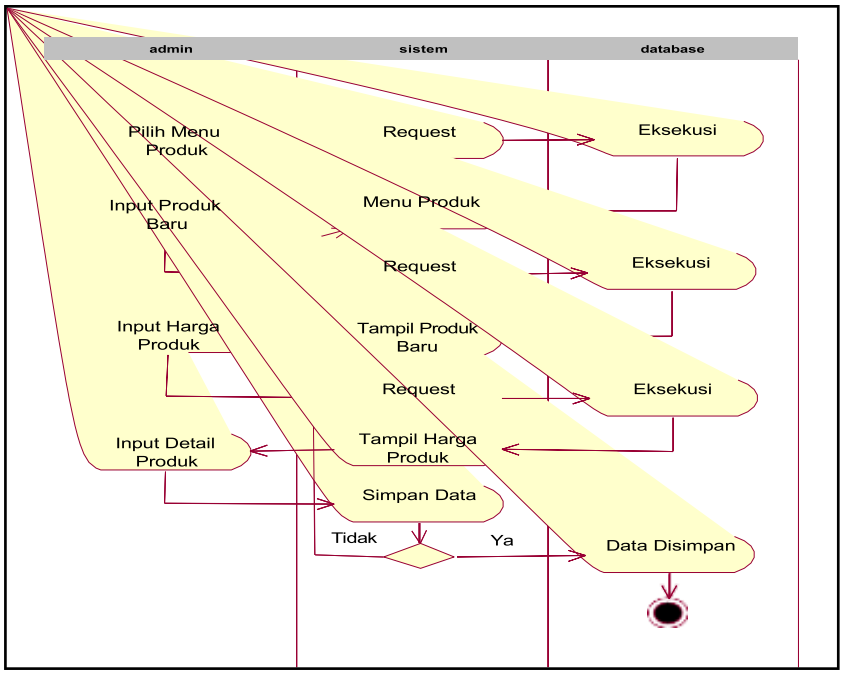

Figure 5. Activity diagram updating goods data.

Results and Discussion

After conducting system requirement analysis, system design and ending with making a natural web-based system, the results achieved by researchers are an application of a web-based sales information system (E-Commerce) in Seafood, Karang Agung Ilir sub-district, using the Macromedia Dreamweaver 8 programming language, to make it easier sales process at Seafood Karang Agung Ilir District.

This system has menus easily understood by admins and customers who will buy seafood through a website created by researchers. The results of the discussion of this system are as follows:

Login Page at Figure 6.
This page will appear when opening the site http:/localhost/tokokita/users/login. Admins and customers use this page to log in to this website, especially customers who have just joined and want to buy a product. You are expected to create an account using an active email so you can log in as a customer.

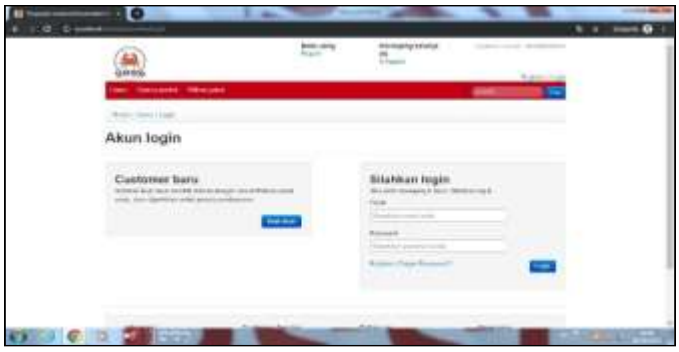

Figure 6. Login Display

Display Create a new account in Figure 7.
This page will appear when we click Create an account and enter a full name, email, password, password confirmation, phone, postcode, and address.

Figure 7. View Create an account

Main Display on Admin in Figure 8.
This page will appear when the admin logs in and enters his email and password. This page allows the admin to view customer data, manage order data, confirm orders, and manage products.

Figure 8. Main View of Admin Login

Customer Main Display in Figure 9.
This page will appear when the customer logs in and enters his email and password. This page allows customers to view and order a product they want.

Figure 9. Main Customer Display

Display After Selecting a Product at Figure 10.
This view will appear when the customer clicks on a product that he will buy and the customer clicks add to cart to continue the order to be added to the shopping cart.

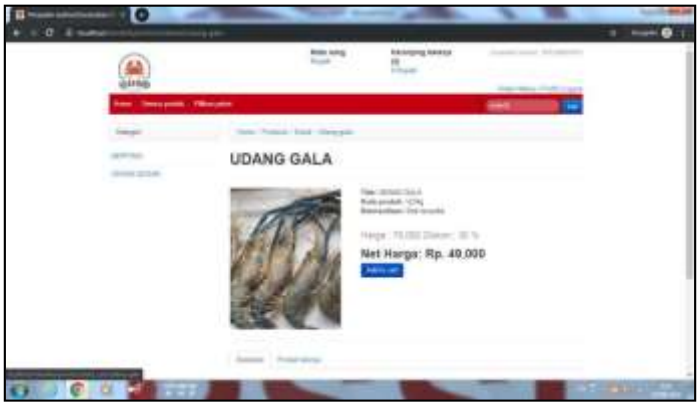

Figure 10. Display after selecting a product

Display Shopping Cart in Figure 11.
After the customer selects the product and clicks the add to cart button, the customer clicks the shopping cart button to continue the order and clicks the check out button to confirm the purchase order.

Figure 11. Display shopping cart

Order Payment Display in Figure 12.
After the customer clicks the checkout button, the customer will confirm the order to continue payment. The admin will email the customer regarding shopping details, account numbers, and payment codes.

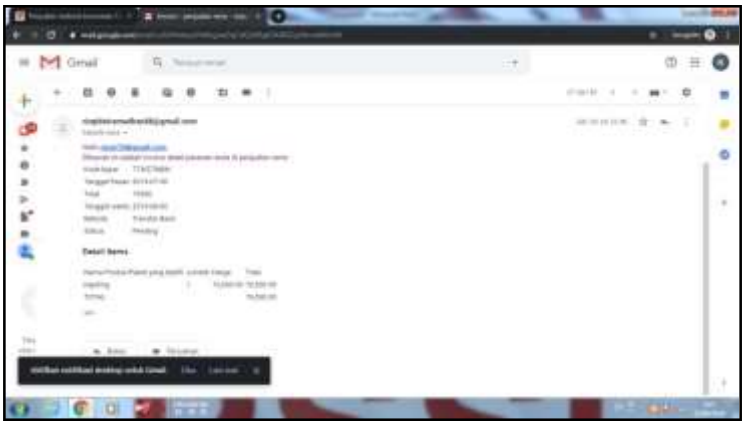

Figure 12. Order payment display

Payment Confirmation Display in Figure 13.
After making a payment via transfer, the customer clicks on the order history to confirm the cost, which the admin will approve.

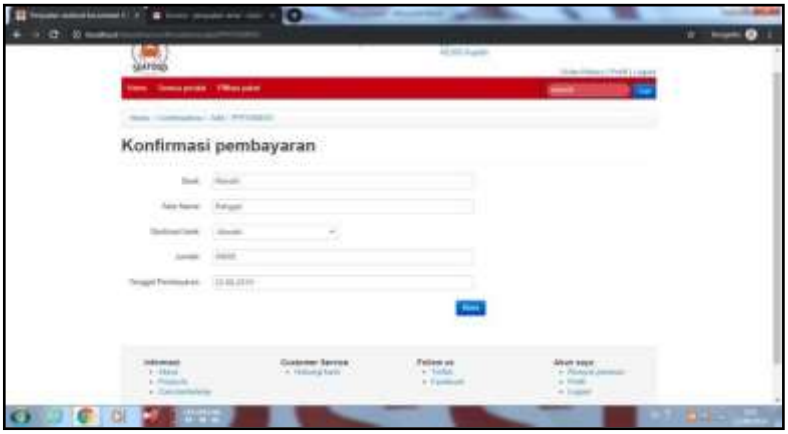

Figure 13. Payment confirmation display

Display Order Confirmation in Admin in Figure 14.
After the customer confirms the payment, the admin will confirm the order. Orders are ready to be sent according to the address registered with the customer when creating an account.

Figure 14. Display of order confirmation on the admin

Conclusion

Our requirement analysis for Seafood Market Management produced the answer on how to use IT technology to digitalize the marketing process. Making sales to clients is made simpler by digitization. It helps the fisherman expand their market and gives them information on orders and sales of goods. Additionally, it enhances data search capabilities so that clients may find the desired product more quickly while placing an order or receiving product information.

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