UI/UX Design Development on the Fresh Bocon Web with the Design Thinking Method to Optimize the Fresh Fish Agent Business in Kotanegara Village

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Article Info	ABSTRACT
	Kotanegara Village, fresh fish agents still tend to use traditional methods in carrying out their operations, such as manual recording and word-of-mouth promotions, Manual processes that are still relied on often lead to recording errors, delivery delays, and customer dissatisfaction. This further emphasizes the importance of developing web-based technologies to support their businesses. Limited understanding of technology and lack of access to easy-to-use digital platforms are one of the main factors The application of the design thinking method has proven to be effective in producing interface designs and user experiences that suit the needs of local customers, especially for fresh fish agents in Kotanegara Village. Through the stages of empathize, define, ideate, prototype, and test, this method is able to identify key problems in traditional businesses, create innovative web-based solutions, and test and optimize prototypes until they are ready for implementation. The result is a UI/UX design that improves operational efficiency, provides a better customer experience, and supports the digital transformation of the business, thereby driving business growth and competitiveness of fresh fish agents.

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1. Introduction

In today's era of digitalization, the use of web-based technology has become one of the main needs to support business sustainability, including in the micro and small sectors such as fresh fish agents[1]. The fresh fish agent business has an important role in maintaining the distribution of seafood from fishermen to end consumers, both individuals and wholesalers. However, many businesses in this sector have not fully leveraged technology as a tool to improve operational efficiency and expand market reach. In Kotanegara Village, fresh fish agents still tend to use traditional methods in carrying out their operations, such as manual recording and word-of-mouth promotions, which limit their growth and competitiveness. The phenomenon of lack of technology adoption among fresh fish agent business people in Kotanegara Village shows the existence of a digital divide. Limited understanding of technology and lack of access to easy-to-use digital platforms are one of the main factors. This makes it difficult for business people to compete in the midst of the booming digital market, where consumers tend to prefer fast, efficient, and transparent transactions

through online media. As a result, their revenue potential cannot be optimized to the fullest, even when the local market demand for fresh fish is quite high.

The main problems faced by fresh fish agents in Kotanegara Village include the lack of facilities for promotion, order recording, and inventory management effectively. Manual processes that are still relied on often lead to recording errors, shipping delays, and customer dissatisfaction. In addition, fresh fish agents also face challenges in expanding market reach to a wider area due to limited marketing and communication media with consumers. This further emphasizes the importance of developing technology-based solutions to support their business.

The Design Thinking *method* is a relevant approach to answer this problem. This approach allows the process of developing web UI/UX designs that are centered on user needs, by understanding in depth the problems faced by fresh fish agent business people. The stages of Design Thinking, such as empathy, problem definition, ideation, prototyping, and testing, provide a systematic framework for creating solutions that are not only effective, but also easy to use by users unfamiliar with technology.

By using this method, the resulting web UI/UX design can include important features such as automated stock recording, order tracking, digital payment integration, and marketing features to reach new consumers. In addition, the focus on user experience ensures that the developed platform is easily accessible to fresh fish agents in Kotanegara Village, most of whom may have limitations in digital literacy.

Furthermore, the adoption of web-based technology is expected to optimize the operational efficiency of fresh fish agent businesses, increase customer satisfaction, and open up market expansion opportunities. With a UI/UX design that is specifically designed according to local needs, the fresh fish agent business can not only survive, but also thrive in the midst of increasingly dynamic market competition.

This research aims to answer these needs through the development of web-based UI/UX design using the Design Thinking method[2]. With a focus on the context of Kotanegara Village, the results of this research are expected not only to provide practical solutions, but also to become a reference for similar business people in other regions facing similar challenges.

Through an approach based on user needs and creative problem-solving, this research is an important step to support digital transformation for traditional business people in the fisheries sector. Thus, this research is expected to make a real contribution in supporting the sustainability of the fresh fish agent business in Kotanegara Village and improving the welfare of the local community

2. Research Methods

2.1 Research Time and Place

The research period was carried out for 2 (two) months from September to December. The location of the research is the Fresh Fish Agent, in Kotanegara Village, Madang Suku II District.
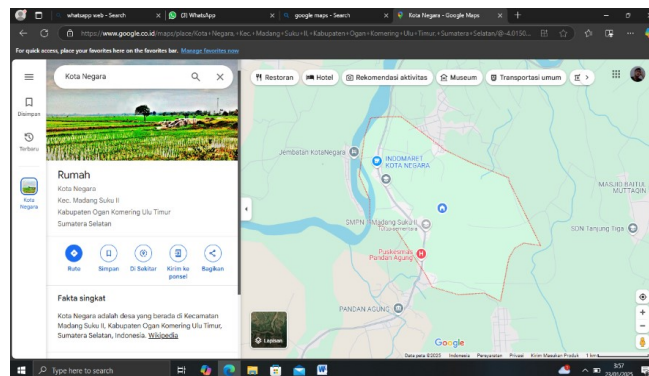

Figure 1. Research Place

2.2 Data Collection Methods

In the discussion of the methodology of this research, there are several data collection techniques that will be discussed in this study, namely:

a. Observation is a data collection technique carried out by researchers directly observing the research area to closely observe the activities being carried out. Direct observation at the Fresh Fish Agent Shop in Kotanegara Village to find out the problems that exist.

b. Literature Study is a data collection technique that is carried out by studying and collecting information from reference sources of books, journals and other sources that are directly related to the discussion of this research

2.3 System Development Methods

Information system development is often referred to as the system development process (*system development).* System development can be defined as drafting a new system to replace the old system as a whole or improve an existing system System Development Methods Available[9]. System development is a system that old processed in such a way or replaced to become a new system and undergo changes in a better and more useful direction. The old system needs to be repaired or replaced due to several things, namely the existence of problems.

The most well-known method is also called *System Development Life Cycle* (SDLC). SDLC is a common methodology used to develop information systems and has several models in the application of the process stages, including Sequential Model or Waterfall model, Parallel Model, Iterative Model, Prototyping Model, RAD (Rapid Application Development) Model, Spiral Model, VShaped Model and Agile Development.

The system development model used by the authors in the research This is a waterfall motel. The waterfall method is a model approach systematic and works in order with the existing stage stages.[10]. The waterfall SDLC model is often called the linear sequential model or the classic life cycle.
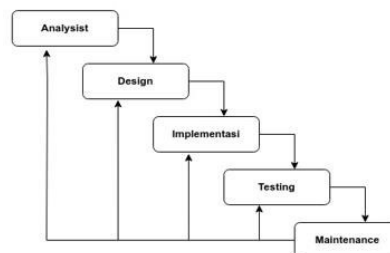
Figure 2. Waterfall Method

a. Analysis
    The process of collecting needs is carried out intensively to specify the needs of the software so that the software can be understood as needed by the user. In this needs analysis, it aims to analyze the needs needed in the design both in the form of documents and other sources that can help in determining solutions to existing problems.

b. Design
    Software design is a multi-step process that focuses on the design of software program creation including data structures, interface architecture, and coding procedures. In addition, design is also a flow of a detailed software and algorithm.

c. Implementation
    At this stage the design must be translated into the software program codes. The result of this stage is a computer program according to the design that has been designed in the previous design stage.

d. Testing
    Testing focuses on the software in terms of logic and functionality to ensure that all parts have been tested. This is done to minimize errors and ensure that the output produced is in accordance with what is cooled. Program testing is carried out using BlacBox Testing in the hope that the design that has been made can run according to desire.

e. Maintenance
    The last stage, the support or maintenance stage, can repeat the development process from specification analysis to changes to existing software, but not to create new software.

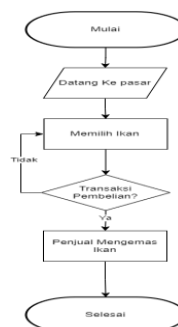## 3. Results and Discussion

3.1 Running image

Figure 3. Running systems

In figure 3. explained the process of buying fresh fish manually where the process is carried out, namely the buyer comes directly to the Fresh Fish Agent in Kotanegara Village. Buyers can directly choose the types of fish as well as the price and weight per kilo. After the buyer chooses the right type of fish, the buyer will come to the admin to make an agreement. After that, the buyer makes a transaction directly to the admin. Payment can be by Cash or Transfer. After completing all transactions, the buyer provides proof of payment and the admin receives proof of payment.

An overview of the running system is:
a.   Overview of the Fresh Fish Purchase system in Kotanegara Village.
b.   There are 2 actors who carry out activities in the system, including the Buyer and the Admin.
c.   Data processing can only be done by admins.
d.   Transactions can only be made directly

3.2 Proposed system

The proposed system overview is an overview of a system where buyers can access online fish purchase websites. Buyers can see the products available on the Fresh Fish Agent website in Kotanegara Village, besides that buyers can also see the details of each fish product, then if the buyer wants to buy the product it will be directed to the cart page, if you want to see the product in the cart then the buyer is directed to log in first, if you already have a user account log in directly, If the user does not have an account, then the user must register/register.

After accessing the cart page, the user is directed to the checkout page and sets the type of fish to be purchased, if the user has been directed to the checkout page which consists of a page consisting of the selection of payment methods, if the buyer has not selected the payment method then the payment status will be pending and the payment page will be displayed, but if the user has already made a payment, the payment status will change to pending admin confirmation and the page will display a View payment page containing the total amount paid and the date of the transaction. If the payment has been made, it will be confirmed by the admin. The following is a purchase of an overview of the system running on the online Fresh Fish Purchase application which explains the system workflow, as follows:

Figure 4. Proposed system

3.3 System design

System design is a design process to design a system or improve an existing system so that the system becomes better and can do the work effectively and efficiently description of the system. In the design of this website, Unified Modeling Language (UML) is used. UML is a visual language for modeling and communicating about systems using diagrams and supporting texts.

3.3.1   Use Case Diagram

Figure 4 below explains the use case diagram in the design of the system that the author created, there are 3 actors who can access the system determined by the account level, including:
a.   Buyer

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Buyers have access to login, register, select products, order product purchases, specify the type of fish and specify the buyer's address and make payments.

b. Admin

Admins have access to login, registration, manage user data, manage order data, manage product data, and transactions.

In this use case diagram, it describes the access that can be done by users, admins and owners, as follows:
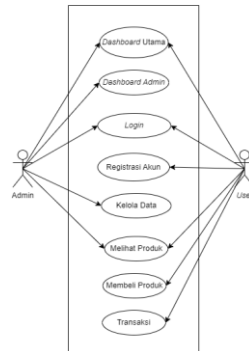

Figure 5. Use Case

3.3.2   Activity Diagram

The following is an explanation of the Activity Diagram on the Fresh Fish Sales Website in Kotanegara Village using the Waterfall Method, as follows:

A login activity diagram is a UML diagram that models the flow of a system's login process, from entering a username and password, validating credentials, to granting access or displaying an error message if the credentials are incorrect. This diagram helps developers identify important steps and optimize the login process efficiently.
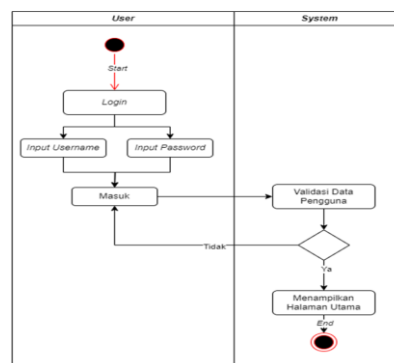
3.3.3   Activity Diagram Login

Figure 6. *Activity login*

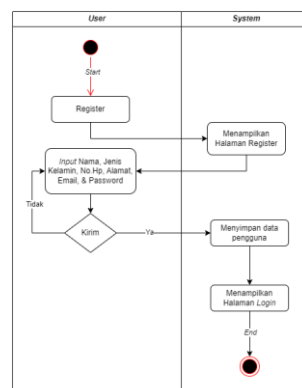### 3.3.4   Activity Diagram Register

Figure 7. *Activity Diagram Register*

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In figure 7. The Activity register diagram is a UML (Unified Modeling Language) based diagram that visualizes the process of registering new users in a system or application. This diagram illustrates the steps from the user filling out the registration form with information such as name, email address, and password, to validating the data entered, creating a new account, and confirming the registration. With activity diagrams, developers can clearly see the flow of activities, identify decision points, and draw up parallel steps to ensure a smooth and secure registration process.

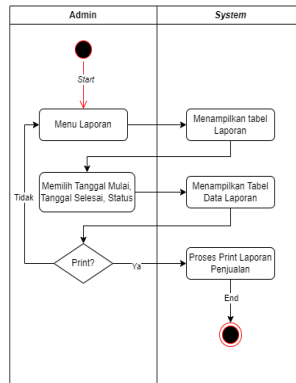### 3.3.5   Activity Diagram Report Menu

Figure 8. Activity Diagram Report Menu

In figure 8 above, the stock menu activity diagram is a UML-based diagram that visualizes the flow of activities in stock management. This diagram illustrates the steps of staff opening the stock menu, adding or updating.
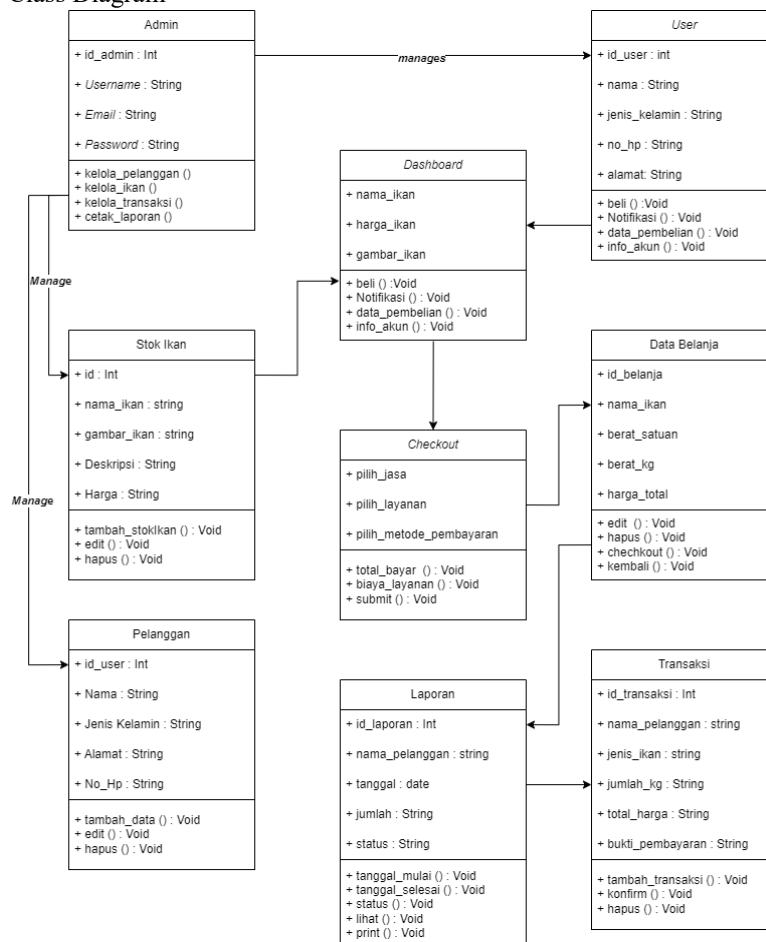
3.3.6   Class Diagram

Figure 9. Class Diagram

Figure 9 above describes the class diagram about the relationship between entities used on the website of the Fresh Fish Agent in Kotanegara Village

3.4 Home Interface Design

At this stage, the process of implementing the web-based Suit and Kebaya Rental Design system in Palembang City is explained. The system that is built will help the public in placing orders and facilitate transactions and software design results for the system that will run or the description that is realized in the flow of the system that will run as follows.

3.4.1   Home

This page has 3 menus that have their uses, namely the login page, buy now, and register.
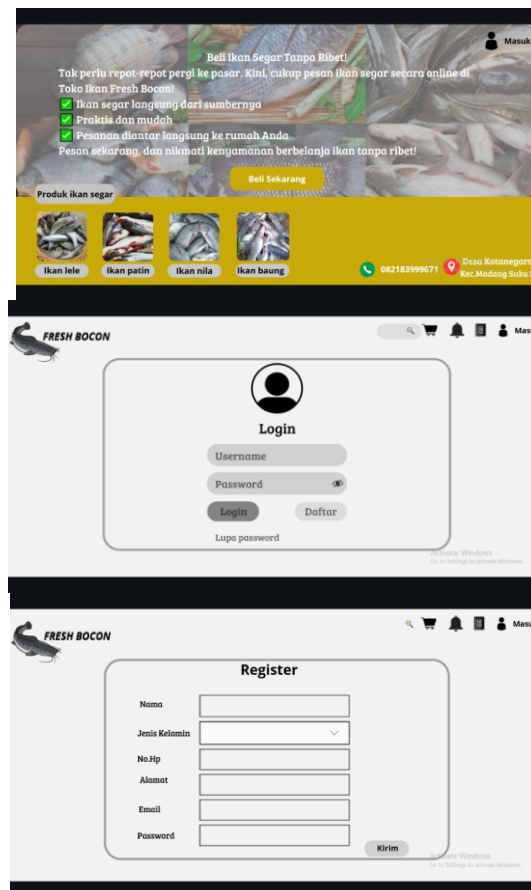

Figure 10. Home

3.4.2   Product Page

This page serves to display the products available on the Fresh Fish Agent website in Kotanegara Village.
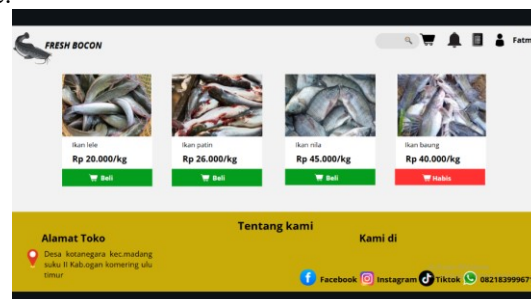

Figure 11. Product Page

3.4.3   Admin Dashbord Page

Figure 12. Admin Dashbord Page

Figure 12 Admin Dashboard Page above The admin dashboard is used to monitor and manage the operation of a system or application.

3.4.4   Customer Data Page

This page serves to add customers to online sales on the Fresh Fish Agent in Kotanegara Village website.
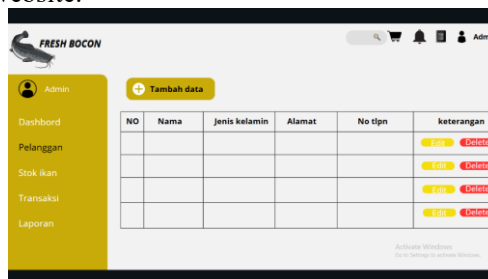

Figure 13. Customer Data Page

3.4.5   Fish Stock Page

Figure 14. Fish Stock Page

Figure 14. The fish stock page above serves to add a fish stock on the Fresh Fish Agent website in Kotanegara Village.
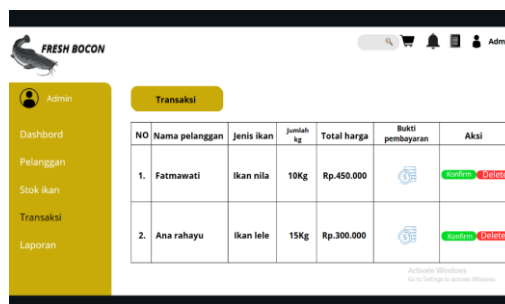
3.4.6   Transaction Page

Figure 15. Transaction Page

3.4.7   Sales Report Page

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Figure 16. Sales Report Page

Figure 16. The sales report page above serves to recap all buyers or fish products that sell well on the Fresh Fish Agent website in Kotanegara Village.

3.4.8   Cart Pages

The cart page functions to display what is ordered by customers on the Fresh Fish Agent website in Kotanegara Village.

Figure 17. Cart Pages

3.4.9   Checkout Page

Figure 18. Checkout Page

Figure 18. The Checkout page above is used to confirm the purchase and the amount ordered on the Fresh Fish Agent website in Kotanegara Village.

4.   Conclusion

Based on the discussion and description of the results of the research in the previous chapters, several conclusions can be drawn as follows:

The application of the design thinking method has proven to be effective in producing interface designs and user experiences that suit the needs of local customers, especially for fresh fish agents in Kotanegara Village. Through the stages of empathize, define, ideate, prototype, and test, this method is able to identify key problems in traditional businesses, create innovative web-based solutions, and test and optimize prototypes until they are ready for implementation. The result is a UI/UX design that improves operational efficiency, provides a better customer experience, and supports the digital transformation of the business, thereby driving business growth and competitiveness of fresh fish agents.

Acknowledgments

From the above conclusion, the author provides suggestions, including:
1.   Digital Literacy Training

Business people in Kotanegara Village are advised to take part in digital literacy training to improve their understanding and ability to use web-based platforms.
2. Sustainable Development
Developed web-based solutions need to be evaluated periodically to ensure their relevance and effectiveness, as well as to accommodate changing business needs.
3. Focus on Digital Marketing
Fresh fish agents can leverage these web-based platforms to expand marketing through social media or integration with e-commerce services to reach more customers.
4. Technology Infrastructure Support
It is recommended to ensure stable internet access and adequate devices to support the optimal use of the platform by business actors and customers.
5. Collaboration with Local Stakeholders
Working with local communities, governments, or business partners can help in expanding reach and ensuring the sustainability of the use of digital platforms.

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