

## DEVELOPMENT OF FISHERY MARKETPLACE APPLICATIONS USING PROTOTYPE METHODS

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### KEYWORDS

Fish Cultivator, Application, Kendal

### ABSTRACT

Fish farming is an activity of raising fish or developing fish in a controlled environment. However, if you look at the statistical data, the fish consumption level of Kendal Regency residents is still low, namely 24 kg/cap/year, far below the national fish consumption rate. From the existing problems, fish cultivators, especially those in the border areas of Kendal Regency, mostly sell their fish production outside the area. As a result, the selling price is lower because it is deducted from the transport price. Another problem occurs for cultivators who are just starting a business. Usually they have sufficient capital to build a business, but they do not yet have acquaintances with fish traders who are willing to buy their crops. So they often use social media facilities to offer their crops. Based on the existing problems, it is possible to help solve problems by utilizing information technology. Utilization of a technology in selling fish can help farmers so that sales are more focused and produce good sales, so an application is made that is expected to help overcome existing problems, researchers use the prototype method to find out user needs

### INTRODUCTION

Fish farming is a fish rearing or fish development activity in a controlled environment (Alfiah & Damayanti, 2020). Based on data from the Indonesian Ministry of Marine Affairs and Fisheries in 2018, there was an increase in fishery production which reached 17.22 million tons in 2017. Meanwhile, the consumption of fishery products in Indonesia reaches 46.49 kg / cap / year (Insetyonoto, 2019). This makes it a potential for the Indonesian state to maximize its fishery products. Kendal Regency, which is located in the province of Central Java, has an area that is mostly hilly, where this hilly area is not only used for agriculture and plantations, but also has many freshwater fish farming businesses.

The potential of natural resources in the form of land and abundant clean water is the main support for fish farming activities. People began to flock to build this business (Rahman, Brata, & Pramono, 2019). However, if you look at the statistical data obtained from the official website of the Kendal Regency Marine and Fisheries Service in 2019, the level of fish consumption of residents of Kendal Regency is still low at 24 kg / cap / year, far below the national fish consumption figure.

From the results of direct observations in the field, it was found that the fish farmers, especially those in the border area of Kendal Regency, mostly sold their fish production out of the area on the grounds that these farmers 'only knew' fish traders from outside the area. Similarly, to buy fish spawn, they also mostly buy from outside the area. The result is that the selling price is low because it is cut by the transport price of transporting fish. Another problem occurs with cultivators who are just starting a business. Usually they

have enough capital to build a business, but they don't have any acquaintances of fish traders who are willing to buy their crops. So they often use social media facilities to offer their crops. Social media channels are dominated by new farmers and these are used by fish traders to buy at low prices as well. This goes on continuously throughout the year so that these cultivators find it difficult to get the maximum profit.

Of the several problems above, the main problem is the 'ignorance' of farmers with fish traders. Cultivation products in the form of living things are not like products in the form of objects that can be carried everywhere to be marketed. Marketing skills and extensive connections are needed between farmers as sellers and fish traders as buyers. On the other hand, information technology that exists today has helped humans to be connected to each other in any activity, both social, educational and trade (Rosana, 2010).

In 2017 Vincentius found the same problem, namely the lack of a container to accommodate fish auctioneers in carrying out their activities, so that auction activities were only carried out through social media. The solution provided is to design a system that can be a container in supporting the process of activities (Aprilyanti, 2017).

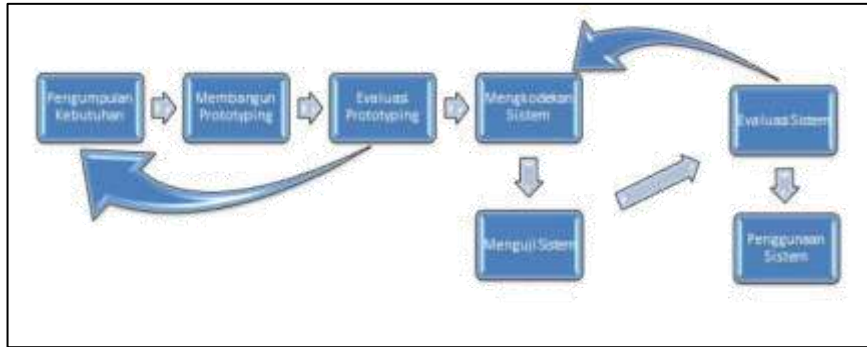
Based on the problems that occur and previous research studies, it is possible to use IT to help solve problems. The use of information technology is not limited to certain areas (Husaini, 2014). This is an opportunity for freshwater aquaculture businesses to use an application that can bring them together with traders. The use of a technology in the sale of fish can help farmers so that sales are more targeted and generate good sales (Biaga, 2022). Not only that, the application created can also be used as a channel to exchange information and knowledge about cultivation. Of course, this is an added value for all its users.

So a system was created in the form of an application that is expected to help farmers in knowing information about current fish processing data, starting from data processing and storage, it is hoped that this application can be a place for distributing useful information for users of the problems faced, so that it can be profitable for users in carrying out the process of buying and selling fish (Alfath, Putra, & Purnomo, 2019)

## RESEARCH METHOD

Data collection is carried out directly in the field with survey and observation methods. The necessary data is in the form of qualitative data that leads to marketing models and sales results every time they harvest. The respondents studied were freshwater fish farmers who were members of fish farming groups under the auspices of the Kendal Regency Marine and Fisheries Service, fish feed sellers and fish traders who used to buy crops from fish farming groups.

The method used to develop the system is the prototype method which consists of the stage of collecting needs, building prototypes, evaluating prototyping, coding the system, testing the system, evaluating the system and finally using the system. In this method, it is possible to repeat the previous stage if it turns out that there are still shortcomings, such as at the prototype evaluation stage, the system developer will show the results of the design to the user first to get feedback. If it needs improvement or addition of features, then the prototype design will be improved and shown back to the user. If the prototype design has been completed, then the next stage continues. An illustration of the repetition of this stage can be seen in figure 1.



**Figure 1 Prototype Method**

The Needs Collection stage is the process of identifying system needs needed by users, starting from defining the format to the software needed.

The Prototype Building Stage is in the form of a temporary system design that focuses on input and output design.

The Prototyping Evaluation Stage is needed to find out whether the prototype design that has been made in the previous stage is in accordance with the needs, if it is not suitable, it will be redesigned, until the customer meets the criteria desired by the customer;

System coding, In this stage after the agreed design, it will be continued to create a program code from the system to be created;

System Testing, after the program code that has been created has been completed, it will proceed to the next stage, namely system testing, in this stage it will be tested for the feasibility of a system that has been created, starting from checking the current running of the system to features and all kinds of things;

System Evaluation, if previously there was an error when the system was run, a system evaluation will be carried out to find the problem point of the system, after which it will be re-repaired so that the system desired by the customer is in accordance with the required criteria;

Using the system, after the above stages are completed, the system is ready to be used by customers (Jaya & Widyawati, 2019).

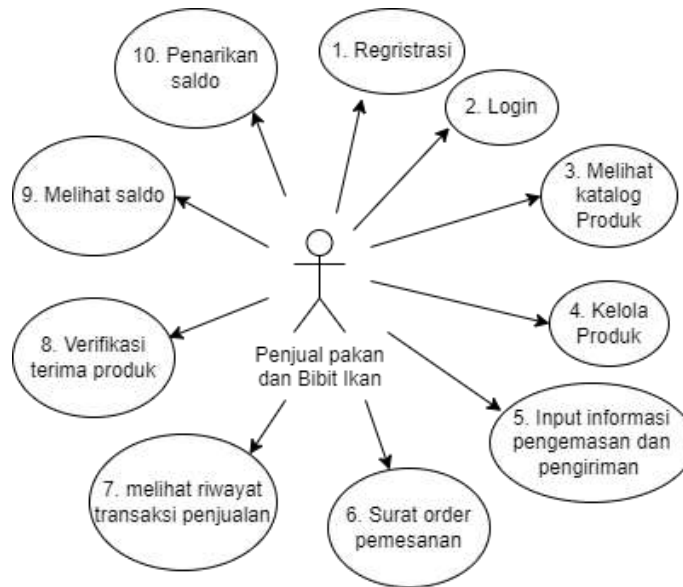
In this step is used to analyze the functional needs of users to find out what are the main functions that are interrelated.

In designing the Pasariwak application, there are 4 accesses, namely customer, sellers of feed and fish seeds, fish farmers, and DKP admins.

(1) Scenario needs part customer: registration, login, view fish product catalog, fish product order, fish product order checkout, fish product order payment, view packaging and delivery information of fish product order, confirm receipt of fish products, view fish product order history; (2) Scenario needs section penjual feed and fish seeds: registration, login, view catalog of feed products and fish seeds, manage feed products and fish seeds, input packaging and shipping information, order letters, view sales transaction history, verify product receipts, view balances, withdraw balances; (3) Scenario of the whole section of fish farmers: registration, login, view catalog of feed products and fish seeds, order feed and seeds, checkout orders for feed and seeds, payment of feed and seed orders, view packaging and shipping information, confirm product receipts, view the history of feed and seed orders, manage fish products, see potential yields, view balances, withdraw balances, input packaging and delivery of product orders, product order letters, verification of product receipts, view the history of fish sellers; (4) Scenario needs of the DKP admin section: login, view the catalog of fish

feed products, see the catalog of fish seed products, see the potential of fish trade (Yoko, Adwiya, & Nugraha, 2019).

Use case diagrams serve to explain each activity in the form of pictures of who are the actors involved in a system (Kurnia & Risyda, 2021).



**Figure 2 Use case Diagram**

Selling feed and fish seeds has an object of activity in the system, namely login (data validation process to the system), here sellers of feed and fish seeds can manage feed products and fish seeds, view catalogs of feed products and fish seeds, input information on packaging and product delivery, order letters, view sales transaction history, verify product receipts, view balances, withdrawal of balances.

## RESULT AND DISCUSSION

This research produced an Android-based information system, the resulting system has the expected interface. So that users can find out the information contained in the Application (Gunawan & Rahmatdhan, 2021).

Stages of building prototyping

1. Login Page



Figure 3 Login Page

This page serves as the first place to access the system.

2. Dashboard Page



Figure 4 Dashboard Page

This page is the main page of the feed and fish fry market, on this page the seller can see a menu of products sold by other sellers ranging from sellers of feed and fish seeds to fish sellers.

### 3. Add Product page



**Figure 5 Add Product page**

The core yard serves as a place for sellers of feed and fish fry to add to their products that they want to sell.

### 4. Product Catalog Page



**Figure 6 Product catalog page**

On this page serves as a place to see the products sold by sellers of feed and fish breeds.

5. Profile Page



Figure 7 Profile Page

This page serves as a place for sellers of feed and fish seeds to see the menu menu that sellers need, from edit profile to shipping.

Testing phase

At this stage the system that has been built, system testing is carried out with 3 testers who conduct testing, to find out whether the system that has been built is as expected. And here are the test results

Table 1 Testing phase

	Participants		
	1	2	3
Login Page	✓	✓	✓
Dashboard Page	x	x	x
Add Product page	✓	✓	✓
Product catalog page	✓	✓	✓
Profile page	✓	✓	✓



From the tests carried out based on the table above, it can be seen that there are 3 people who comment that the appearance of the dashboard page is not appropriate, according to them that the dashboard page of the seller of feed and fish seeds does not need to have a fish product menu page (Qintari, Suratno, & Mauladi, 2019).

Re-coding Peng Stage

#### 1. Dashoard Page View



**Figure 8 New look of Dashboard Pages**

On this page sellers of feed and fish fry can see the products they sell.  
Evaluation stage

At this stage, a re-testing of the revised page is carried out, and the results of the test state that the dashboard page of the seller of feed and fish seeds is as desired.

## CONCLUSION

Based on the discussion above, it can be concluded that the development of this application is expected to be a forum for cultivators in making transactions between sellers and buyers.

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