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UI/UX Design of the Shop Feature on the Seafood by Aruna Website Using the Design Thinking Method

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ABSTRACT

The current Seafood by Aruna website functions solely as a landing page to promote products, with actual sales still conducted through a marketplace. This reliance on a marketplace limits the brand's control over personalization, customer value, shopping experience, and brand identity due to strict platform policies and standards. Additionally, shifts in consumer behavior in the digital era indicate a desire for a more personalized, sustainable shopping experience that meets specific needs, including accurate product information and quality assurance. To address these challenges, this research aims to design an online shopping feature for the Seafood by Aruna website using the Design Thinking method. This approach is applied to understand user needs and address various pain points faced by consumers when shopping for seafood online. The research found that users require accurate delivery, reliable product information, and assurances of product freshness. Testing of the designed features using the System Usability Scale (SUS) yielded an average score of 90.12, categorized as "Best Imaginable." This score reflects that the developed features meet user expectations, thanks to the effective application of the Design Thinking method. The implications of this research suggest that developing a dedicated e-commerce platform enables Aruna to better control all aspects of the shopping experience, enhance customer satisfaction and loyalty, and strengthen its position in the e-commerce market. However, further development is needed to adapt the features to changing consumer behavior and market trends.

Keywords: Design Thinking; System Usability Score; UI/UX;

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1. INTRODUCTION

Seafood by Aruna, a brand under PT Jaring Aruna Dagang Indonesia (Aruna Indonesia), focuses on marketing fish and seafood products sourced from local fishermen across Indonesia, utilizing environmentally friendly methods to ensure the sustainability of the fishing industry [1]. Currently, Seafood by Aruna uses its website merely as a landing page to promote products, while actual sales are conducted through marketplace platforms. Although marketplaces provide broader access to consumers, there are significant limitations in terms of control over personalization, customer value, shopping experience, insights into consumer behavior, and brand identity, as marketplaces have their own policies and standards that all sellers must follow [2] [3] [4].

In the digital era, consumer behavior in online shopping has changed significantly. Consumers are no longer just seeking convenience but also desire a personalized shopping experience, added value as customers,

and quality relationships with brands [5] [6]. Research indicates that a positive shopping experience, particularly through accurate product information regarding freshness, nutritional value, taste, benefits, and safety, can enhance consumer purchase intention [7]. Additionally, there is a growing tendency among consumers to prefer sustainable products, with 8 out of 10 consumers willing to pay more for such products [7]. This underscores the importance of having full control over the shopping experience on a proprietary platform to meet modern consumer expectations and strengthen brand loyalty [6].

To address these challenges, Aruna Indonesia plans to shift its entire sales process to its own system via the Seafood by Aruna website. This move will allow Aruna to control all aspects of the shopping experience, from the initial interaction to post-purchase, which is challenging to achieve when relying solely on marketplaces [3]. With full control over the customer experience, Aruna can offer more personalized services, strengthen relationships with consumers, and ensure the quality and authenticity of the products. Support for this strategy is further bolstered by research showing that consumers are more likely to purchase directly from a brand's website due to confidence in the authenticity and quality of the products [7].

However, to successfully implement an effective online shopping feature on the website, special attention must be given to User Interface (UI) and User Experience (UX) design. UI involves visual and interactive elements that allow users to communicate with the system, such as buttons, menus, icons, and overall layout [8]. Meanwhile, UX relates to users' perceptions and responses to a product, system, or service during and after use [9]. A well-designed UI/UX not only enhances the visual appeal of e-commerce but also facilitates navigation, reduces confusion, and increases user satisfaction, ultimately improving brand perception and customer loyalty [10] [11] [13] [14].

This research will employ the Design Thinking method, an innovative user-centered approach that includes stages of empathy, problem definition, ideation, prototyping, and testing [15] [16]. This method aids in identifying and addressing various challenges users face in the seafood online shopping process, ensuring that the solutions developed are relevant and satisfying [17]. After designing the UI/UX, an evaluation will be conducted using the System Usability Scale (SUS), a tool proven to be efficient in measuring usability and providing an accurate representation of the ease of use of a system [18] [19] [20]. SUS has been widely used and shown to be reliable across various contexts, including software, web pages, and hardware [21].

Previous studies have also demonstrated the effectiveness of implementing Design Thinking and SUS in designing user-focused solutions. For example, research by [22] showed that applying Design Thinking in the UI/UX design of a mobile library application and evaluating it with SUS resulted in excellent usability with an average score of 77.25. Another study by [23] highlighted how Design Thinking can improve the usability of a store management website, with a significant SUS score. With a similar approach, the online shopping feature on the Seafood by Aruna website is expected to meet functional needs and provide a positive user experience, thereby strengthening the brand and supporting the welfare of fishermen and the sustainability of the fishing industry in Indonesia.

This research aims to identify user needs in the online seafood shopping experience, design the UI/UX for an online shopping feature on the Seafood by Aruna website using the Design Thinking approach, and evaluate user ease of use and satisfaction with the design using the System Usability Scale (SUS) to ensure that the design meets modern consumer expectations and supports the brand's position in the increasingly competitive e-commerce market.

2. RESEARCH METHOD

2.1. Literature Review

1) Design Thinking

Design Thinking is an innovative, user-centered method that aims to align human needs, technological opportunities, and business requirements to achieve success [15]. This approach emphasizes deep empathy to understand users' desires, needs, and discomforts, with the goal of gaining a comprehensive understanding of the problems through iterative development [24]. The stages of Design Thinking include:

1. Empathize: Understanding the needs, behaviors, emotions, and perspectives of users through methods such as data analysis, surveys, in-depth interviews (IDI), or focus group discussions (FGD) [25].
2. Define: Analyzing the data collected in the previous stage and defining it into a clear problem statement [26].
3. Ideate: Generating solution ideas based on the problems identified earlier [26].
4. Prototype: The process of turning ideas and explorations into physical forms [26].
5. Testing: Gathering user feedback on the prototype to validate and refine the design [26].

2) User Interface (UI)

User Interface (UI) is a software element that serves as an interface, allowing users to interact with the system through various means such as visual displays, sound, and touch, to ensure a satisfying experience [27].

3) User Experience (UX)

User Experience (UX) refers to the satisfaction users derive from their interaction with a system, focusing not only on comfort and security but also on fulfilling the emotional needs and desires of users in a specific context of use [28].

4) System Usability Scale (SUS)

System Usability Scale (SUS) is an evaluation method used to assess user satisfaction with a system or product. Through ten statement are detailed in Table 1, users provide ratings that measure the degree of strong disagreement to strong agreement [29], are detailed in Table 1.

Table 1. System Usability Scale

No	Statement
1	I think that I would like to use this system frequently
2	I found the system unnecessarily complex
3	I thought the system was easy to use
4	I think that I would need the support of a technical person to be able to use this system
5	I found the various functions in this system were well integrated
6	I thought there was too much inconsistency in this system
7	I would imagine that most people would learn to use this system very quickly
8	I found the system very cumbersome to use
9	I felt very confident using the system
10	I needed to learn a lot of things before I could get going with this system

The SUS score ranges from 0 to 100, which is interpreted in a percentile rank as shown in Figure 1 with:

1. Acceptability Range: Classifies the score into three levels: Not Acceptable, Marginal (low and high), and Acceptable, to measure user acceptance of the system.
2. Grade Scale: Categorizes the system into grades A, B, C, D, and F, with Grade A for scores ≥ 80.3 and Grade F for scores < 51.
3. Adjective Rating: Provides an assessment ranging from Worst Imaginable to Best Imaginable.

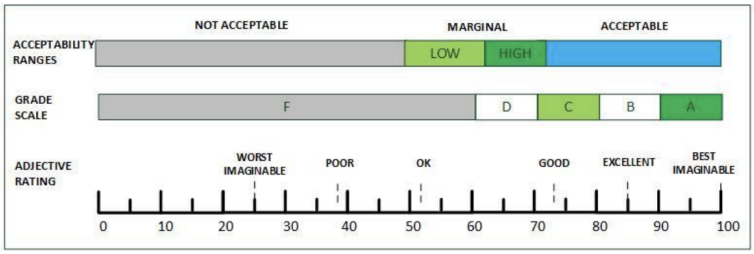

Figure 1. Precentile Rank

The calculation of SUS involves the following steps [30]:

1. Sum the score contributions from each item;
2. The score contribution of each item will range from 0 to 5;
3. For items 1, 3, 5, 7, and 9 (which are positively worded), the score contribution is the scale position minus 1;
4. For items 2, 4, 6, 8, and 10 (which are negatively worded), the contribution is 5 minus the scale position;
5. Multiply the total score by 2.5 to obtain the overall SUS score for a single participant;
6. Divide the total score from all participants by the number of participants to obtain the average SUS score.

2.2. Research Method

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In this study, the research flow is illustrated in Figure 2, following three stages: the Initial Stage, the Development Stage, and the Final Stage.

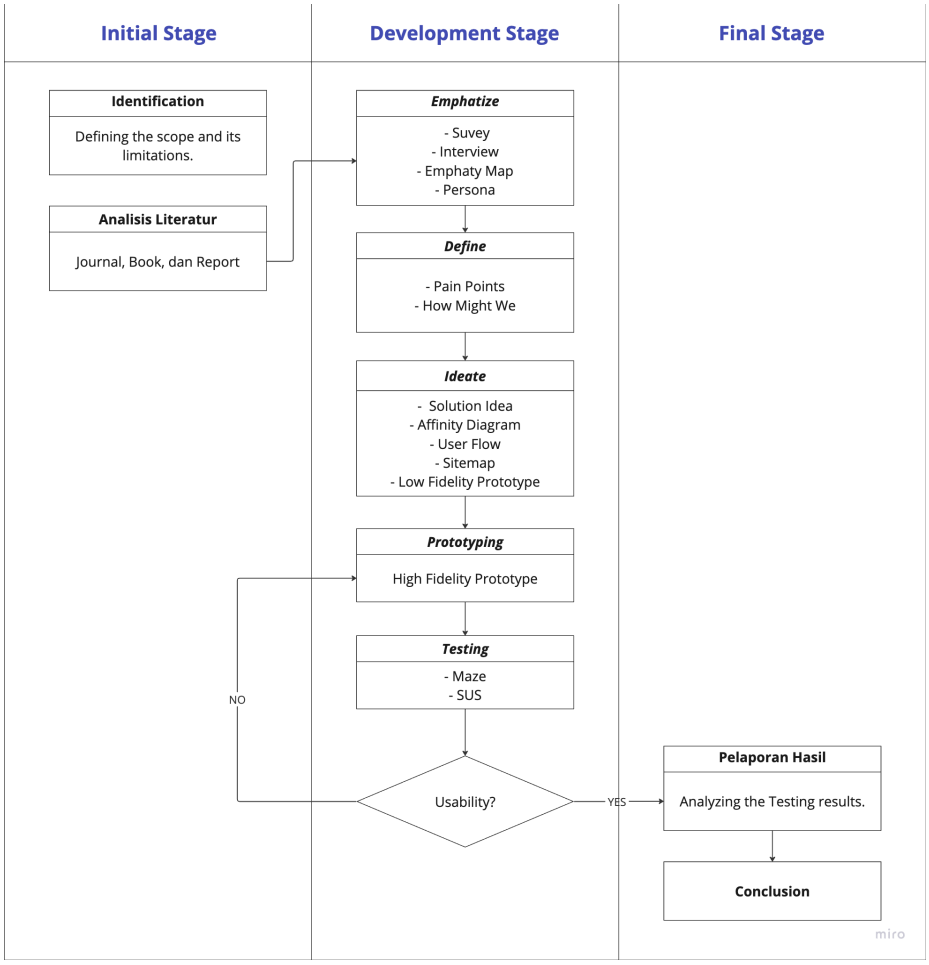

Figure 2. Research Flow

1) Initial Stage

The initial stage of this research involves direct identification and a literature review. The identification process aims to discover gaps between the existing conditions and theoretical frameworks [31] and to collect primary data directly from within Aruna. Meanwhile, the literature review helps in understanding the broader research context and tracking previous developments in the field [32].

2) Development Stage

1. Empathize: In this stage, the researcher conducts surveys and interviews to gain an in-depth understanding of users. The survey is conducted with 105 participants [33], using purposive sampling and distributed through various online and offline platforms. Interviews are conducted with 5 participants to gain deeper insights [34]. The collected data is then mapped using an Empathy Map to assist in decision-making, which is subsequently translated into Personas to maintain a clear focus on the ongoing research.
2. Define: This stage involves defining the data obtained during the empathize stage into pain points and transforming them into "How Might We" (HMW) questions to open up solution opportunities.
3. Ideate: After understanding the users and defining the problems, this stage focuses on generating solution ideas through affinity diagrams, creating user flows, sitemaps, and low-fidelity prototypes.
4. Prototype: This stage transforms the low-fidelity prototype into a high-fidelity prototype that more closely resembles the final product. Figma is used as the design tool in this stage.
5. Testing: In this stage, the high-fidelity prototype is tested using Maze Usability Tools with 21 participants [35], which also includes a SUS survey at the end of the testing. Participants are selected randomly from the data that fills out the survey. The testing results are used to validate the solution and identify areas that require further improvement or iteration.

3) Final Stage

In this stage, an analysis of the usability assessment results for the shop feature is conducted using Maze and SUS to understand the effectiveness and usability of the feature from the user's perspective. Following this, the researcher formulates conclusions based on the analysis, which will highlight the achievement of the research objectives and provide guidance for future recommendations or practical implications.

3. RESULTS AND DISCUSSION

3.1. Initial Stage

Seafood by Aruna is a landing page website designed to promote fishery products sourced from local fishermen and encourage visitors to make purchases through a marketplace. The system's scope is limited by the time and technical resources available, with a focus on designing the shop feature, which includes the stages of ideation, prototyping, and testing. In developing this feature, the Design Thinking method is used to ensure that the solution aligns with user needs.

3.2. Development Stage

Based on the empathize stage that was conducted, the following results were obtained: survey results, interview results, Empathy Map, and Persona:

1) Empathy

a. Survey Result

The survey successfully gathered 105 participants, exploring user demographics as well as desired features and challenges faced. The majority of survey respondents were women aged 20-30 years (Figure 3), unmarried (Figure 4), and students (Figure 5), mostly from Tangerang, Jakarta, and Bandung (Figure 6). Based on this demographic, the UI/UX design must consider an appealing and modern visual design, such as the use of fresh colors, minimalist layouts, and high-quality product photography. More than 50 respondents desired features like Quality & Freshness Assurance, Customer Reviews & Ratings, High-Quality Photos & Videos, Discount & Promotion Programs, and Secure & Easy Payment Methods (Figure 7). The main challenges faced by consumers, identified by more than 60 respondents, include Price & Shipping Costs, Packaging & Delivery, and Product Availability & Consistency (Figure 8).

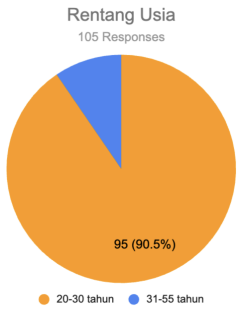

Figure 3. Age Range

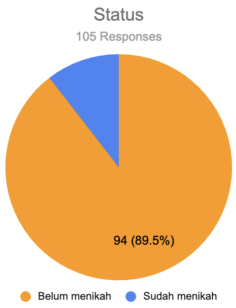

Figure 4. Status

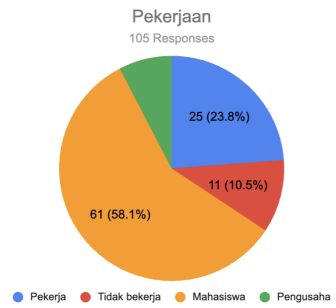

Figure 5. Job

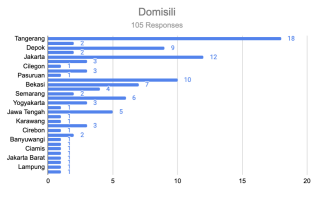

Figure 6. Domicile

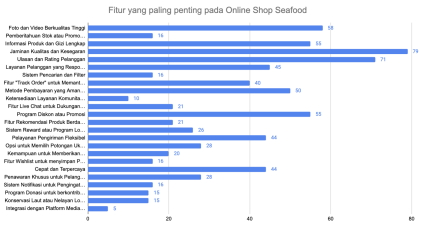

Figure 7. Desired Features

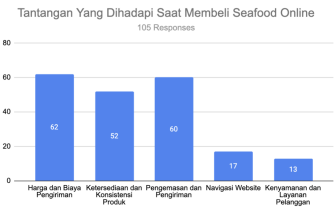

Figure 8. Challenges Faced

b. Interview Result

After conducting interviews with five respondents who have experience shopping for seafood online, the data analysis results are presented in the form of an Empathy Map.

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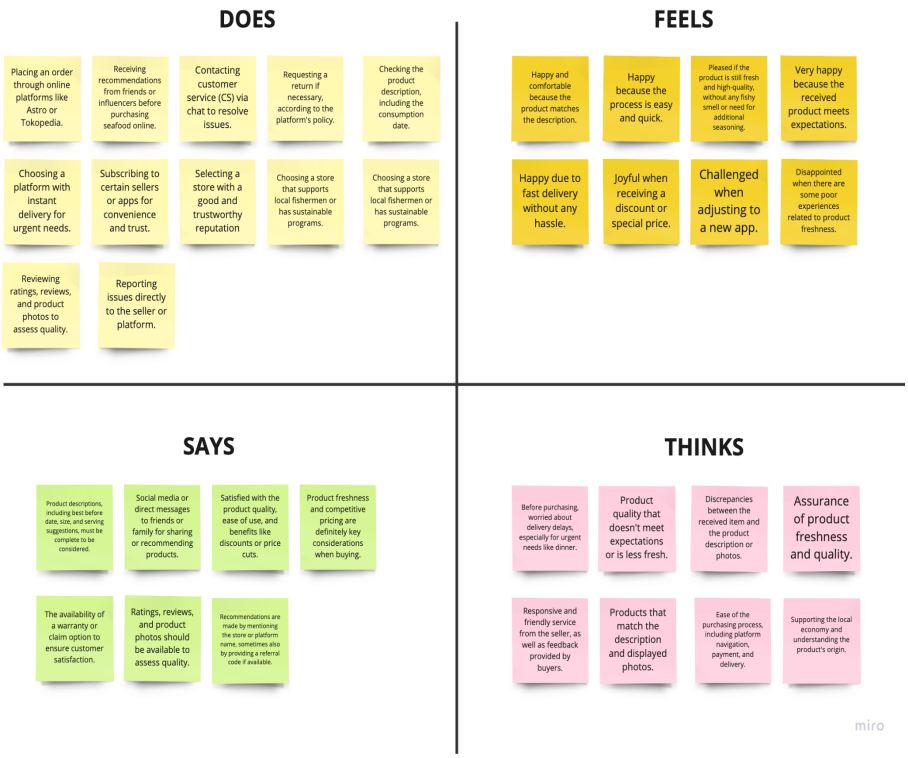

Figure 9. Empathy Map

The Empathy Map results indicate that respondents prioritize trust in the platform, product quality, and ease of shopping. They value product accuracy with descriptions, good customer service, positive reviews, discounts, and fast delivery. However, there are concerns about product freshness and accuracy. These empathy results are then visualized into personas to facilitate understanding of potential users, as shown in Figure 10 and 11.

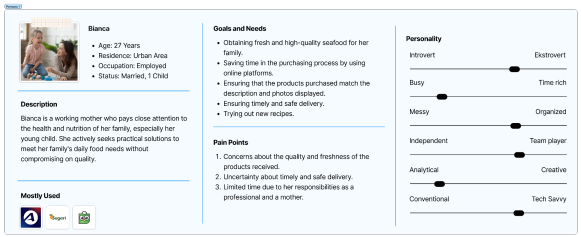

Figure 10. Bianca's Persona

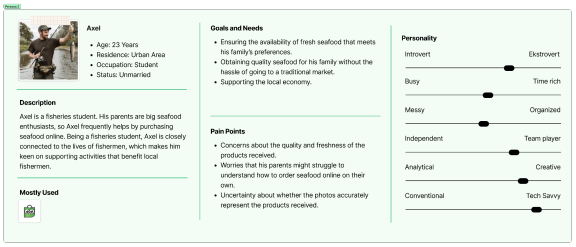

Figure 11. Axel's Persona

2) Define

Based on the Define stage that has been completed, the following pain points and How Might We (HMW) questions were identified:

a. Pain Point

Based on the Empathy Map results, the users' pain points are related to delivery, the alignment of product photos with the actual products, product quality, freshness assurance, and the desire to support the local economy. The paint points are detailed in Table 2.

Table 2. Pain Point

No	Pain Point
1	Delivery delays for seafood can be a cause for concern, especially if needed for dinner or other urgent needs.
2	Concerns about product quality not meeting expectations, including freshness and size discrepancies.
3	The expectation to receive seafood products that match preferences and needs, including supporting the local economy and understanding the product's origin.
4	Discrepancies between the received product and the description or photos displayed.
5	Uncertainty regarding freshness guarantees, especially when purchasing through platforms that lack clear warranty or claim policies.

b. How Might We (HMW)

HMW questions are formulated to guide broader and more creative thinking in seeking solutions to address the identified pain points. The HMR are detailed in Table 3.

Table 3. How Might We

No	How Might We
1	HMW ensure timely seafood delivery to alleviate user concerns?
2	HMW ensure the quality of seafood products meets user expectations?
3	HMW ensure that the seafood products users receive support the local economy and have clear origin information?
4	HMW ensure that the products users receive match the description and photos displayed?
5	HMW provide users with a freshness guarantee for seafood products?

3) Ideate

Based on the HMW questions above, ideas were developed to address user needs and enhance their experience. The solution idea are detailed in Table 4.

a. Solution Idea

Table 4. Solution Idea

No	Solution Idea
1	Implement a live tracking feature that allows users to monitor the courier's location in real-time.
2	Create an instant delivery option for urgent needs with a guarantee of timely delivery.
3	Add a product review feature with photos from other users so potential buyers can see the actual condition of the product.
4	Provide a quick return or replacement option if there is a discrepancy in the product.
5	Include a food safety certificate to offer transparency about product freshness.
6	Add a more detailed review section on the product detail page, including quality ratings from other users.
7	Provide a warranty option on the product detail page.
8	Add information about packaging during shipment.
9	Provide information about the product's origin and the local fishermen who caught the seafood on the product page.
10	Include information about the communities involved in the seafood supply chain.

A total of ten solution ideas were generated and categorized into an Affinity Diagram to identify their similarities and relationships.

b. Affinity Diagram

The results of the affinity diagram consist of eight categories: Delivery, Feedback, Guarantee, Quality & Transparency, and Community & Origin, as illustrated in Figure 12.

Figure 12. Affinity Diagram

c. User Flow

To understand user interaction with the features on the Seafood by Aruna website, a User Flow has been created to illustrate the steps users go through when using the website, as illustrated in Figure 13.

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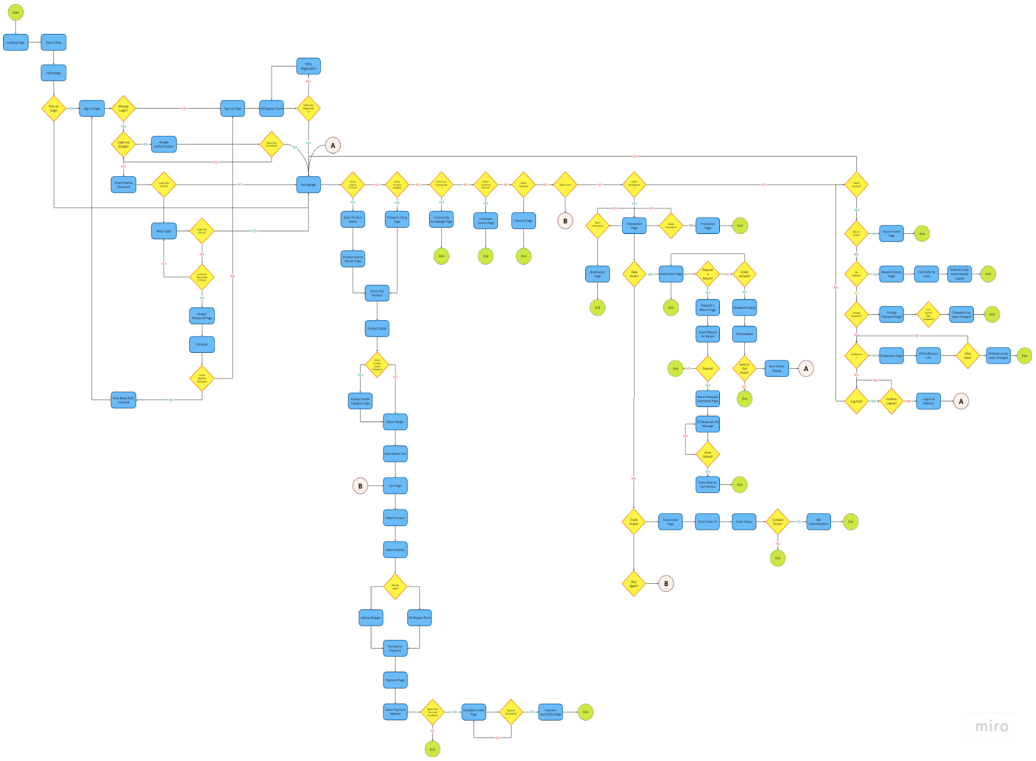

Figure 13. User Flow

d. Sitemap

This Sitemap illustrates the navigation structure of the Seafood by Aruna Shop, starting from the main page (Home) and branching into several categories, as illustrated in Figure 14.

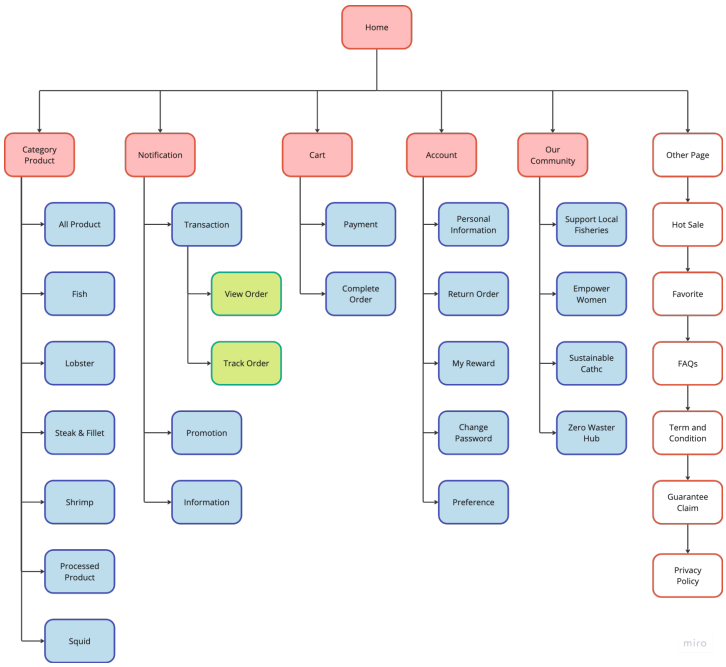

Figure 14. Sitemap

e. Low Fidelity Prototype

A Low Fidelity Prototype has been designed as an initial representation of the proposed solution ideas, focusing on basic structure and layout without delving too much into visual details, as illustrated in Figure 15.

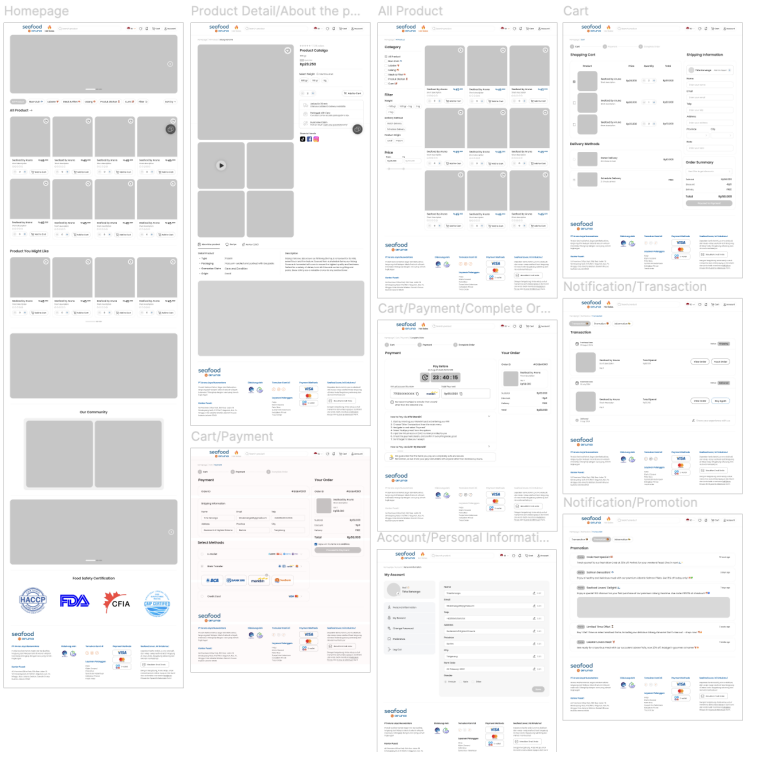

Figure 15. Low Fidelity Prototype

4) Prototype

A more detailed and realistic representation of the user interface and interactions is provided through a High Fidelity Prototype, as illustrated in Figure 16.

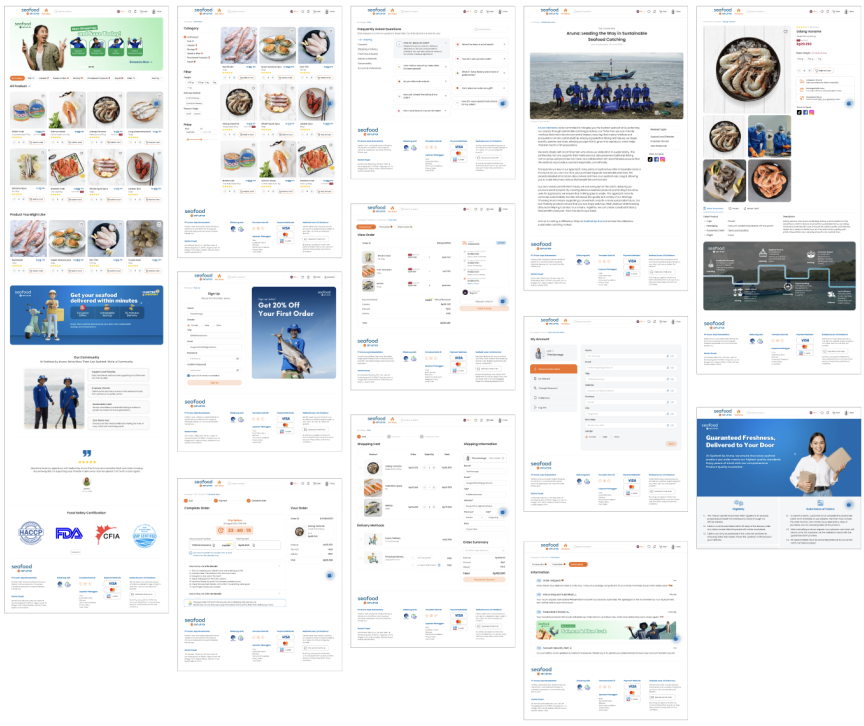

Figure 16. High Fidelity Prototype

5) Testing

Testing was conducted using Maze, involving 21 end-users aligned with the target market of Seafood by Aruna. Each participant was asked to complete a series of predetermined tasks using the following scenario tasks are detailed in Table 5.

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Table 5. Scenario Task

No	Task	Scenario
1	Visit the Seafood by Aruna Shop	You are asked to visit the Seafood by Aruna Shop.
2	Login or Register	You are asked to Sign In or Sign Up.
3	Add Product to Cart	You are asked to find Vannamei Shrimp and add it to the Cart.
4	Make a Payment	You are asked to Checkout using Mandiri Bank Transfer.
5	Track Order	You are asked to track your order using Track Order by entering the Order ID.
6	Receive Order	You are asked to complete an order that has arrived and is marked as 'Arrived' and provide a review.
7	Request a Return	You are asked to request a return due to an incorrect size.
8	Access Community Knowledge	You are asked to access community knowledge about Sustainable Catch.
9	Access FAQs	You are asked to access FAQs about How to Place an Order.
10	Set Preferences	You are asked to set preferences on your account.

3.3. Final Stage

a. Maze Usability Results

Two Mazes were used for testing. In Maze 1 (Figure 17), users were asked to complete five tasks, from visiting the Seafood by Aruna Shop to tracking their orders. In Maze 2 (Figure 18), users were asked to complete five additional tasks, starting from receiving their order to setting preferences on their account. Based on the testing results, Maze 1 received a usability score of 96, and Maze 2 received a score of 88. These scores indicate that the features are easy for users to use.

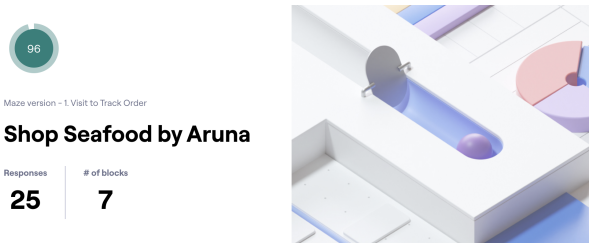

Figure 17. Maze Result 1

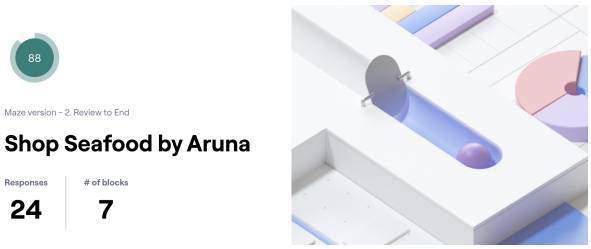

Figure 18. Maze Result 2

b. SUS Results

Based on the SUS survey involving 21 respondents who participated in the testing, the following are the calculated results from the survey are presented in Table 19.

	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	SUM	TOTAL
R1	3	3	3	3	4	3	4	4	4	4	35	87.50
R2	4	4	4	4	3	4	3	4	4	4	38	95.00
R3	3	4	4	4	3	4	4	3	3	4	36	90.00
R4	3	3	4	4	3	3	4	4	3	4	35	87.50
R5	3	3	4	4	3	3	4	4	4	4	36	90.00
R6	3	3	3	4	3	3	4	4	3	3	33	82.50
R7	3	3	4	2	3	4	3	4	3	4	33	82.50
R8	4	2	4	3	3	3	3	3	3	3	31	77.50
R9	4	3	4	3	3	3	4	4	4	4	36	90.00
R10	3	4	3	4	3	3	4	4	3	4	35	87.50
R11	4	4	3	4	2	3	3	3	4	4	34	85.00
R12	4	4	3	4	2	3	4	4	4	4	36	90.00
R13	4	4	3	4	4	4	4	3	4	4	38	95.00
R14	4	4	4	4	3	3	4	4	4	4	38	95.00
R15	4	4	4	4	3	4	4	4	4	4	39	97.50
R16	4	4	4	4	3	4	3	4	4	4	38	95.00
R17	3	4	4	4	3	3	4	4	4	4	37	92.50
R18	3	4	3	4	2	3	3	4	3	4	33	82.50
R19	2	4	4	4	4	4	4	4	4	4	38	95.00
R20	4	4	4	4	3	4	4	4	4	4	39	97.50
R21	4	4	4	4	4	3	4	4	4	4	39	97.50
											757	1892.50
Final Average Score Results												**90.12**

Table 19. Final Average Score Results

Based on the SUS survey results, individual scores ranged from 77.50 to 97.50, with an average of 90.12. This score is categorized as "Acceptable" in the Acceptability Ranges, received an "A" in the Grade Scale, and is classified as "Best Imaginable" in the Adjective Rating. This indicates that the shop feature has excellent usability quality and is very positively received by users.

3.4. Discussion

This research illustrates the effectiveness of the Design Thinking approach and the System Usability Scale (SUS) in enhancing the online shopping experience on the Seafood by Aruna website. Design Thinking, which focuses on understanding user needs deeply, proved effective in creating solutions that align with user expectations, as indicated by a high usability score of 90.12, categorized as "Best Imaginable."

The Design Thinking process involved several stages:

1. Empathize: Surveys and interviews identified key pain points, such as unclear product information, delayed deliveries, and concerns about product quality and freshness. Users expressed a need for accurate product details and reliable delivery options, consistent with findings from previous studies [7].
2. Define: Researchers defined these pain points based on user feedback, including issues like discrepancies between received products and descriptions, and the lack of trust in product quality.
3. Ideate: Ten innovative solutions were proposed to address these pain points. These solutions included features like live tracking for deliveries, instant delivery options, transparent product reviews, product guarantees, and food safety certificates.
4. Prototype and Test: The solutions were implemented in a prototype design and tested using SUS. While the overall usability score was high, testing revealed specific areas for improvement. For instance, Task 10 showed significant challenges, with Screen 3 receiving a low usability score of 22 out of 100. The high drop-off rate of -71 points and a misclick rate contributing -7 points highlighted issues in navigation and intuitiveness. These findings suggest users struggled with navigating this screen, possibly due to unclear design elements or confusion about task completion, as indicated by the heatmap data showing high interaction in non-intuitive areas like breadcrumbs and checkboxes.

By applying Design Thinking, the research successfully addressed user pain points, enhancing usability and improving the overall shopping experience. The addition of personalized features and transparent information further increased customer satisfaction and loyalty, positioning Seafood by Aruna as a competitive player in the e-commerce market. Additionally, the design supports local economic sustainability by emphasizing the importance of supporting local fishermen, aligning with the values of socially responsible consumers.

This approach not only improves the online shopping experience but also reinforces the brand's identity as a socially responsible entity committed to sustainability, ensuring a more competitive stance in the e-commerce landscape. Further iterations will focus on optimizing navigation and the intuitiveness of interactive elements to refine the user experience.

4. CONCLUSION

Based on the research conducted on designing the Shop feature for the Seafood by Aruna website using the Design Thinking method, it can be concluded that the study successfully identified the main user needs for the online seafood shopping experience through the Empathy stage. The research also effectively designed the UI/UX for the online shopping feature by following the stages of Empathize, Define, Ideate, Prototype, and Testing, all aimed at creating relevant and effective solutions. Furthermore, the usability assessment using the System Usability Scale (SUS) yielded a high average score of 90.12, categorized as "Best Imaginable" and "Acceptable," indicating a positive user experience.

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