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Implementation of Website-Based UI UX Using the Design Thinking Method: Case Study at PT Jesinra Makmur Group

Ella Fadila Firdani[*1)], Isa Faqihuddin Hanif[2)], Muhammad Febriansyah[3)], Maulana Yusuf Widsono[4)]
[1,2,3,4)]Department of Informatics Engineering, University of Muhammadiyah Prof. Dr Hamka, Jakarta, Indonesia
[1*]ellafadilaf43@gmail.com, [2]isa@uhamka.ac.id, [3]muhammadfebriansyah975@gmail.com,
[4]yusufwidsono95@gmail.com

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ABSTRACT
In the era of globalization, the imported goods shipping industry is growing rapidly. PT Jesinra Makmur Group, as a provider of imported goods delivery services, needs to ensure that the user experience (UI/UX) on its website platform is optimal. This research aims to redesign the UI/UX of the PT Jesinra Makmur Group website using a Design Thinking approach. The Design Thinking method consists of several stages, namely empathize, define, ideate, prototype, and testing. In this research, researchers will understand user needs, identify problems, generate creative ideas, create prototypes, and test proposed solutions. This research uses the System Usability Scale (SUS) to measure the success of UI/UX design, and a score of 87.75% was obtained, which indicates a high level of excellence. This shows that users feel comfortable and that it is easy to use the website. The results of this research are expected to provide a better solution for PT Jesinra Makmur Group to provide an optimal user experience through their website. By implementing the Design Thinking method, it is hoped that PT Jesinra Makmur Group can improve the UI/UX of their website and provide better service to customers.

1. Introduction

In the current era of globalization, the development and progress of information technology have occurred in recent years at an extraordinary speed. Of course, the ever-increasing need for information has triggered the Industrial Revolution 4.0, which emphasizes digitalization and makes digital production faster and more efficient. With the development of information technology, the Internet has become very important in various societal activities, including business, shopping, health, education and data collection [1]. This has resulted in changes in people's lives, especially in large urban areas. Influence the number of consumers who are interested in online stores that make transactions easy without being limited by time (24 hours) [2]. At this time, websites have become very important for netizens who frequently surf the digital world because they often use browser engines to search for data [3].Websites are one of the popular promotional media today. Websites have unlimited reach in time and space. To obtain a website as an effective medium for conveying information, it is necessary to implement certain strategies so that the website promotion activities carried out achieve maximum results [4]. Creating an application or website design is also necessary to generate ideas. Interface design and user experience design are important stages in the development of software [5]. User Experience (UX) is all aspects related to a user's experience in using a product, how easy it works to understand, how it feels when using the product, and how the user achieves his goals through the product. Meanwhile, one part of the program that comes into contact with and interacts directly with the user is called the User Interface (UI) (Blair-Early & Zender, 2008). In general, UX is how people feel when they use a product or service [6]. The design thinking method is used to solve problems practically and

creatively, focusing on the user. The designer will try to understand the user's needs and develop the most effective solutions to meet those needs. In carrying it out, you have to go through 5 steps, namely empathize, define, ideate, prototype, and test [7].

PT. Jesinra Makmur Group, which operates in expeditions and provides cargo services for import and export, is one of the businesses that uses website technology to introduce its business and services to customers. However, since its founding, the website has not been updated for user convenience or appearance. Apart from that, there is still very little customer information. Because cargo information is very important, especially in knowing the location and status of the cargo being transported, this really hinders business growth in the expedition sector. This research aims to redesign the appearance of the PT Jesinra Makmur Group website using the Design Thinking approach in the UI/UX creation process and the System Usability Scale (SUS) to assess user experience. System Usability Scale (SUS) is the method that will be used in this research. In this case, Usability is the ability of a product or system to be used easily and effectively by users [8]. This approach was chosen because it provides a comprehensive framework for understanding user needs and producing innovative solutions. By following the stages of Design Thinking, it is hoped that more effective and sustainable solutions can be found to improve the user experience on websites.

2. Method

This research uses the Design Thinking Method. Design thinking is a method that focuses on user needs for innovation, so it becomes a good business product because it can provide an effective solution to a problem [9]. This method is used to speed up understanding the needs of potential users through direct experimentation, product visualization, and creating prototype designs. Prototyping is usually used to apply trial and error in real scenarios to calculate estimates of resources spent in the application development process[10]. This technique greatly influences the way decisions are made, which ultimately leads to new and innovative ideas. This method focuses on user experience in addition to what users see and feel when using a product. Design thinking methods include:

Figure 1. Stages of Design Thinking

a. Empathize

Empathize (empathy) is a mechanism for understanding users of the products we design to foster deep user understanding and uncover insights and user needs [11].

b. Define

After obtaining a valid understanding of the problem, the next step is to understand and determine the various problems that have been obtained to become the main concern so that they are resolved properly [12].

c. Ideate

Ideate is the stage of idea development, usually called brainstorming. At this stage, it is hoped that ideas will emerge that can provide solutions to existing problems. It is in this process that drawing becomes creative by formulating many ideas [13].

d. Prototype

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A prototype serves as the preliminary model of a product, designed to identify potential issues early and explore various new possibilities [14].

e. Test

Tests are conducted to gather diverse user feedback on the final designs developed during the prototype phase. Although this is the final stage, the process is cyclical, allowing for repetition and revisiting earlier design stages if issues are identified [15].

3. Results and Discussion

3.1. Empathize

At this stage, the author will compile a questionnaire for active users of online expedition services. The purpose of this questionnaire is to identify problems that occur related to website layout and desired features based on suggestions from users. There are several target user criteria used in this research:

Table 1. User group criteria

No	Criteria
1.	18-45 years old, active users of online expedition services similar to this research.
2.	Frequent and familiar with online expedition websites.
3.	Often shop online and need goods delivered to your home.
4.	Online stores that rely on expedition services to send products.
5.	Individuals who move houses or offices and need expedition services to send goods.

User criteria play a very important role in directing the design of website display development and then identifying problems and opportunities for innovation and improvement. By paying attention to user criteria, researchers can produce better products according to user needs.

Table 2. Questionnaire Questions

No	Question
1.	Do you often use online expedition services to send goods?
2.	How familiar are you with various expedition service websites?
3.	How often do you shop online and need goods delivered to your home?
4.	Have you ever used an expedition service to send products from the online shop that you manage?
5.	What online delivery service do you personally use most often?
6.	Is an attractive and comfortable website appearance very important?
7.	What online delivery services have you never used?
8.	What are the important features that should be used in online shipping expedition services?
9.	How easy is it for you to track the delivery status of items being shipped?
10.	Have you ever experienced problems with online expedition services? If yes, what is the problem

After determining the criteria for the user group, the researcher created a 10-question questionnaire and gave it to 10 respondents. The purpose of these questions was to find out what needs prospective users want, what problems are often encountered in using the website, and what services should be necessary.

3.2. Define

This research uses data obtained from respondents aged 18-25 who often use the Online Expedition Services website. The sample of respondents involved are active users of online goods delivery services. These respondents have been categorized based on age, gender, and website appearance preferences.

Table 3. Grouping based on conclusions from respondents' answers

UI/UX Aspects	Information	Conclusion
Ease of use	The website is easy to use and understand, the navigation flow is clear, and the features are easy to access	A simple and responsive website appearance is very important so that visitors can easily interact with the content. A logical and organized menu structure ensures users can find the information they are looking for without difficulty. The use of clear icons and labels helps communicate function and navigation more effectively. Lastly, an easy ordering process and package tracking will improve user experience and speed up service. All these elements must be designed taking into account user needs and preferences so that the website becomes more efficient and effective.
Clear information	The Website provides complete and accurate information about services, prices, and shipping policies.	Clear and concise service descriptions, transparent and easy-to-understand price information. Shipping policies that are easy to access and understand.
Attractive Design	The website has an attractive and professional design that gives a positive impression to users	Modern and stylish appearance, use of attractive colors and images. The layout is neat and balanced.
Security and Reliability	The website provides a sense of security and comfort for users by guaranteeing data security and privacy.	Strong security system to protect user data, Clear and transparent privacy policy. Responsive and helpful customer service.
Speed and Timeliness	The website allows users to order and track packages quickly and easily	Clear and concise service descriptions, transparent and easy to understand price information. Shipping policies that are easy to access and understand.

3.3. Ideate

The Ideate phase describes the solution needed to evaluate and produce design output. In this research, online expedition services are used as an example to make it easier to create website-based layouts. The design review for this model has been consulted in advance with active users in the marketplace, so the original design is still the same.

Table 4. Solution Description

No	Solution Description
1.	Use of clear icons and labels
2.	Clear and concise service profile descriptions
3.	Logical and organized menu structure
4.	Interesting use of colors and images
5.	Provides various types of online goods delivery service options
6.	Clear and transparent information in goods tracking services
7.	Provides online payment features

3.4. Prototypes

The next step is the prototype, described after the solution is defined at the ideate stage. This process begins by creating a rough drawing or wireframe, which is gradually detailed and then improved to a more thorough and accurate view as the prototype develops. This process allows the team to systematically build and refine the application design, paying attention to every detail, resulting in a

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prototype closer to the desired final version. Researchers create prototypes so that they can be used and experienced directly by potential users.

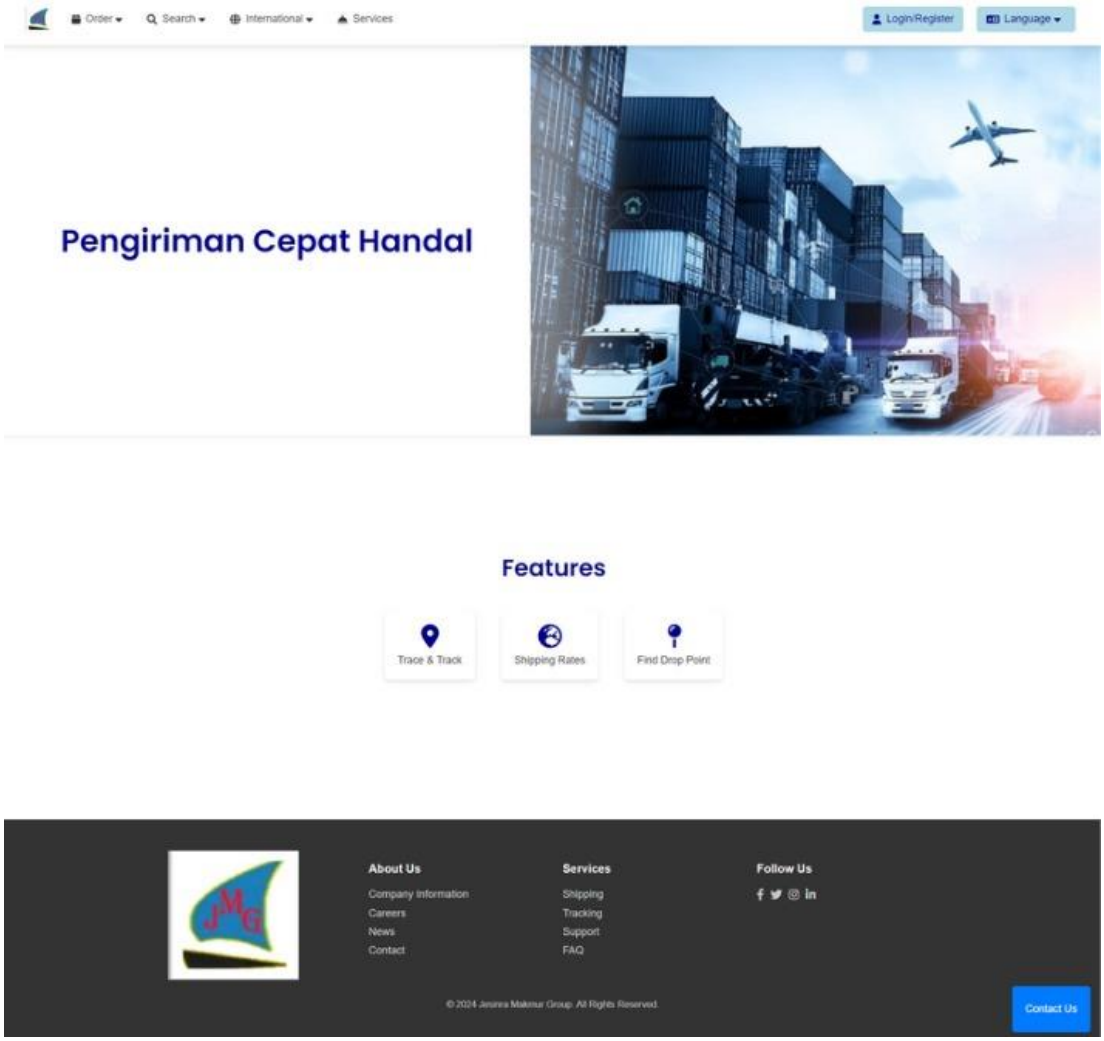

Figure 2. Dashboard View

The dashboard is the first display when a user opens a website. In general, this dashboard contains a logo, name, or image that introduces the application to the user and brings it to the main display. In other words, the dashboard is the home page that displays the identity or brand of the application.

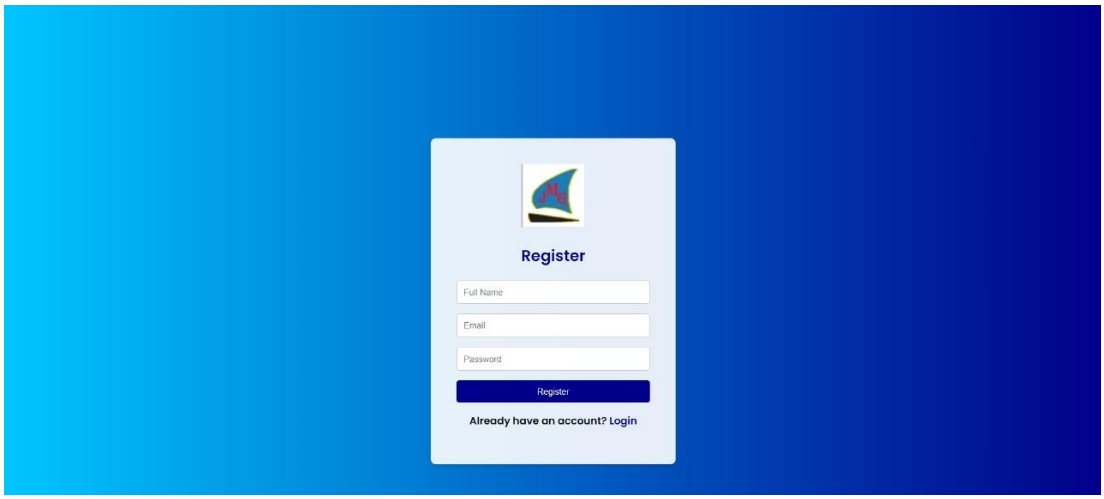

Figure 3. Registration View

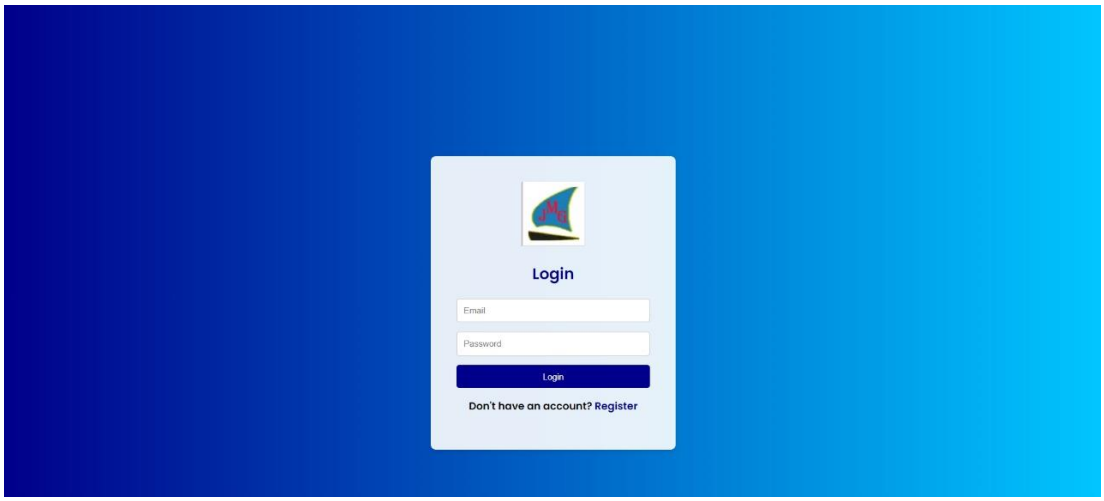

Figure 4. Login View

To enter the registration page, users are asked to create a new account first by entering the necessary personal information, such as full name, email and password.

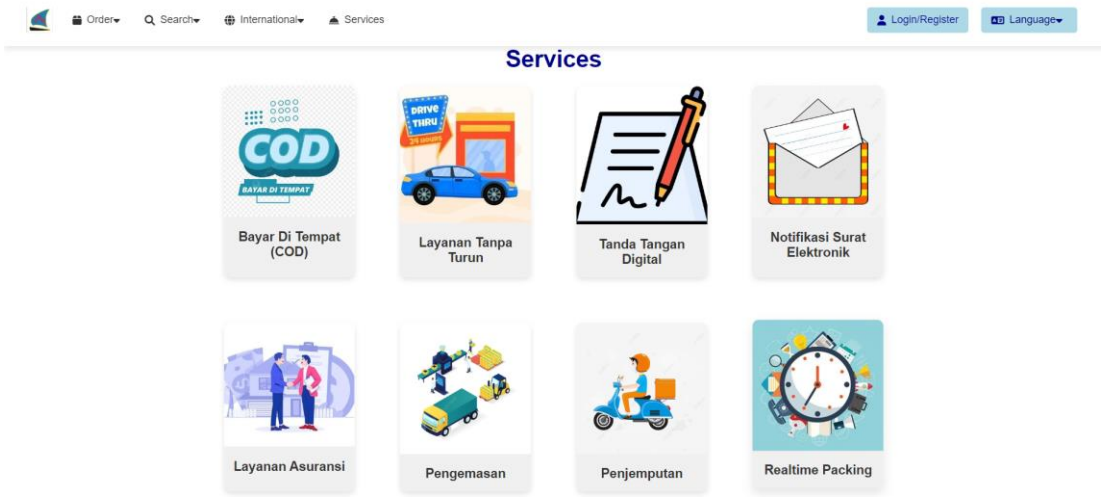

Figure 5. Display of services provided

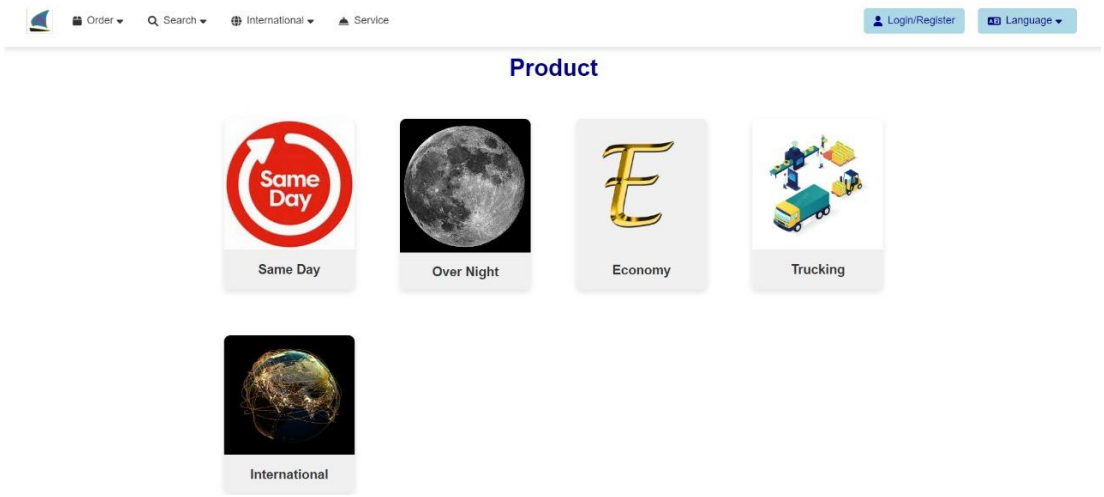

Figure 6. Product Display

Available services pages are parts of a website that provide detailed information about a particular entity, product, service or content. This allows users to understand the subject they are looking for or want to learn more about.

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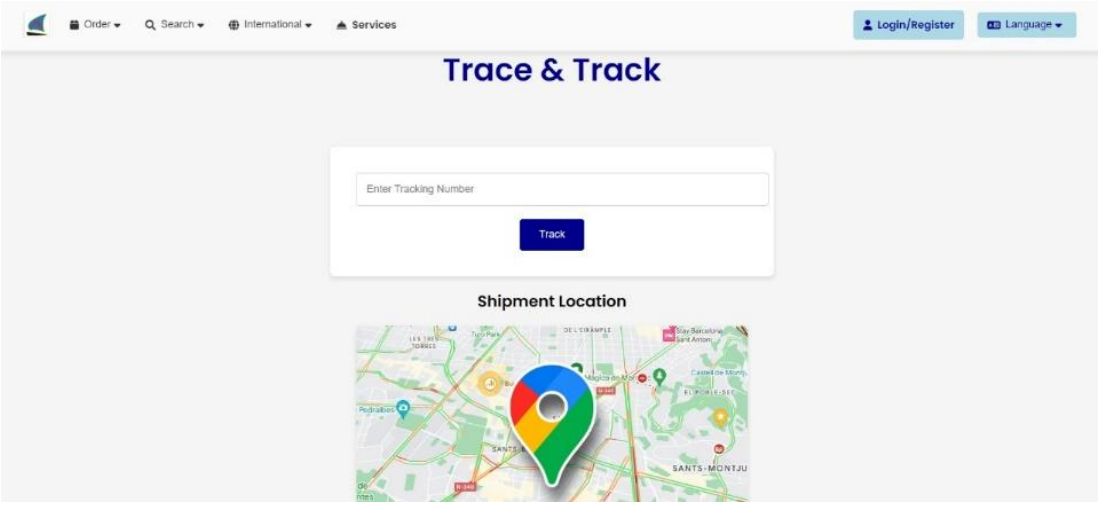

Figure 7. Trace & Track feature

This feature allows users to monitor the journey of packages or goods in real time during delivery. By using a tracking system, senders and recipients can quickly determine the position and status of goods delivery. With trace and track, users can better ensure the whereabouts and progress of goods delivery and plan receipt.

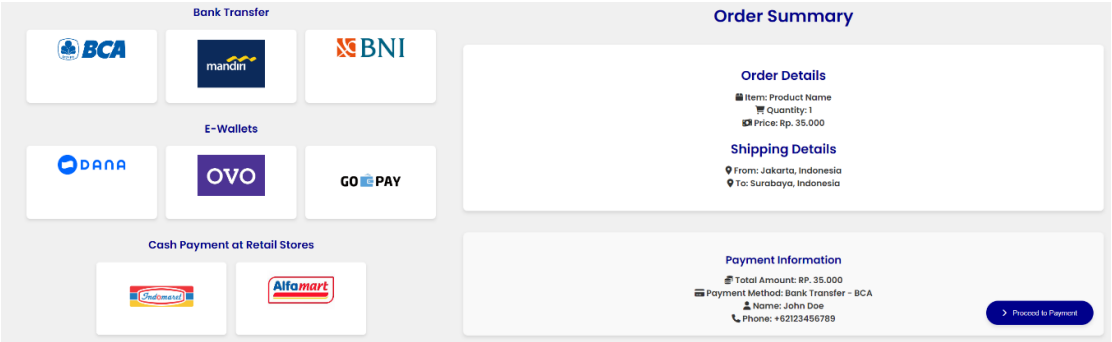

Figure 8. Payment Menu Display

3.5. Testing

The research gathered feedback from 10 participants using a System Usability Scale (SUS) questionnaire and a Figma prototype. Participants were asked to assess their understanding of the prototype through 10 questions. In the testing phase, the design's effectiveness will be evaluated using the System Usability Score (SUS) method. This technique assesses the application's usability and user satisfaction, determining whether the application is user-friendly. User comfort is gauged using the SUS, a scale from 1 to 5, where 1 indicates strong disagreement, 2 indicates disagreement, 3 indicates neutrality, 4 indicates agreement, and 5 indicates strong agreement.

Table 5. SUS Questionnaire Questions

No	Question	Mark
1.	The appearance of this website makes me think about wanting to use it again	1-5
2.	The appearance of this website is complicated to use	1-5
3.	The website appearance is easy to use	1-5
4.	I need help from another person or technician to access this Website	1-5
5.	I feel that the features on this Website work as they should	1-5
6.	I feel there are many things that are not consistent or harmonious on this Website	1-5
7.	I feel like others will understand how to use this Website quickly	1-5
8.	I find this Website very confusing	1-5
9.	I feel that there are no obstacles in using this Website	1-5
10.	I have to familiarize myself first before using this website	1-5

Furthermore, the results of the respondents' responses were calculated using the System Usability Scale (SUS) formula. In the table of questionnaires filled out by respondents, calculations are made to determine the SUS score obtained from each respondent. For odd-numbered questions such as 1, 3, 5, 7, and 9, the calculation method is the result of the respondent's answer minus one. For even-numbered questions such as 2, 4, 6, 8, and 10, the calculation method is five minus the results of the respondent's answer. The SUS score is calculated using the following formula: SUS score=(x+y)×2.5. The x and y values are the total contribution scores of each item (after adjustment if needed). SUS scores range from 0 (very poor perceived usability) to 100 (excellent perceived usability) in 2.5-point increments. The following is Table 6, which is a table that has calculated SUS for each respondent as well as the average SUS value for this prototype:

Table 6. SUS calculation

	From the Result score										Results	Total SUS
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10		
R1	4	4	4	4	4	4	4	4	4	4	40	100
R2	4	4	4	4	4	4	4	4	4	4	40	100
R3	4	4	4	3	3	3	4	3	4	1	33	82.5
R4	4	2	4	2	3	1	3	3	4	4	30	75
R5	4	4	4	4	4	1	4	4	4	4	37	92.5
R6	4	4	4	4	4	4	4	4	4	4	40	100
R7	3	3	4	4	4	3	4	4	4	3	36	90
R8	4	3	4	4	4	3	3	3	3	2	33	82.5
R9	4	3	4	2	4	3	3	3	3	3	32	80
R10	4	2	3	1	4	3	4	3	4	2	30	75
Total average score												**87.75**

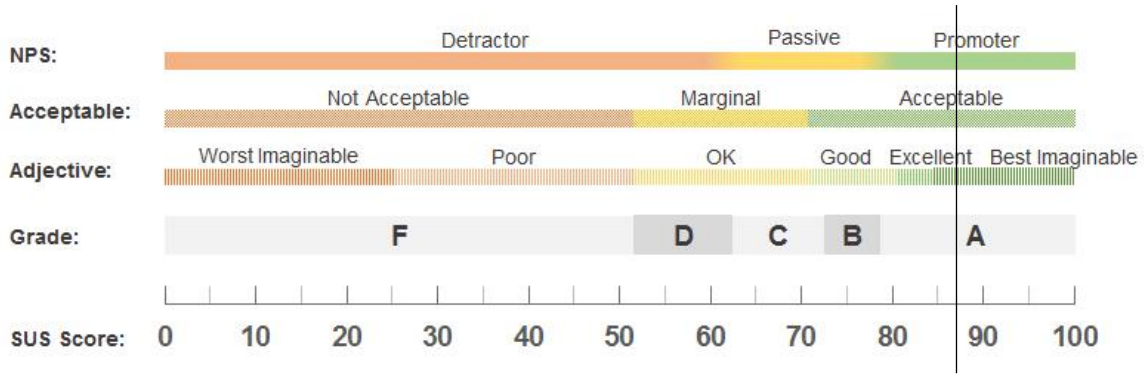

Figure 9. SUS parameters

From research into the UI/UX design of the company website PT. JESINRA MAKMUR GROUP, the final result obtained was that the average SUS score was 87.75. If we look at the adjective rating or aspects in the rating category on the website, the value is included in the "EXCELLENT" category. Therefore, researchers for PT created the UI/UX design of the information system website. Jesinra Makmur Group has catered to users to make ordering delivery services and checking locations easier.

4. Conclusion

Based on research conducted by researchers regarding UI/UX analysis and design on the PT website. Jesinra Makmur Group, using the design thinking method and the SUS usability scale system, can conclude that there is a problem with the website. Where this website has not been updated since the company was founded and has minimal information and features. So, a redesign is needed so that it can keep up with current developments and meet user needs using the method used in the testing stage for evaluation materials on the PT website. Jesinra Makmour Group is a usability scale (SUS) system

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where the average SUS result obtained is 87.75. In the adjective range, it can be concluded that the website design is in the "Excellent" category, with the grade scale obtained being "A-" and the acceptability range obtained is acceptable, which means this website is appropriate and accepted by the respondent.

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