

# User Interface and User Experience Design of "PAWTEL" Mobile Application for Finding Pet Boarding Services

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## ABSTRACT

Searching for pet boarding services is very necessary for pet owners when they have an urgent need. One solution to make it easier for users to find and order boarding services is the design of the Pawtel mobile application interface through a design thinking approach. This approach is oriented towards the needs of users and the various difficulties faced with a product or service. The data collection method is observational, an online survey, and an interview with qualitative analysis methods that adjust to each stage of design thinking. The results of brainstorming ideas at the ideate stage were sorted using the Eisenhower Matrix, then designing information architecture and flowcharts as materials for designing wireframes and prototypes using Figma. The resulting prototype was tested on 15 testers through Maze, with testing results showing that the appearance and key features of the Pawtel app were excellent. The use of gamification elements in the creation of pet avatars has also been proven to provide an interactive experience and attract users' attention. The test results from Maze show that Maze's usability score is 82, indicating that the Pawtel's application design effectively meets user needs and has great potential to solve problems in finding and booking pet boarding services. So this study proves that the design thinking approach is able to produce products that are the right solution to the phenomenon raised.

## KEYWORDS

Finding  
Pet Boarding  
Design Thinking  
UI/UX

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## INTRODUCTION

Raising animals has become a lifestyle for people from. Pets are animals that are domesticated or trained to be lovingly kept for decorative purposes, status symbols, entertainment, or as a hobby (Hosey & Melfi, 2018). For migrants, raising animals can be beneficial in terms of mental health. Especially in college students who are prone to stress from daily changes, task demands, and changes in grades (Nugroho et al., 2022). Interaction with pets can generate a sense of comfort, safety, and emotional support that can restore feelings of anger, sadness, anxiety, and depression (Zega et al., 2023). In addition to nurturing, not all nomads can bring their pets during holidays or an affair, so they need pet boarding services with certain considerations.

A boarding pet service is an act of someone who another person entrusts to look after and care for the pet they are looking after, where pet boarding service owners and consumers make agreements in advance, such as the duration of animal care, care services, and others (Arrahma et al., 2023). A pet boarding can stand alone or as one of the facilities in a pet shop or pet care center. Both can serve boarding services as facilities with certain service differences due to different focuses. Pet shops focus on selling pet supplies, while a pet boarding is a service facility for daycare and maintenance, such as animal health clinics (Nuurkholillah et al., 2021).

Building on previous research, a design for a visual identity has been developed for a pet grooming service, aiming to differentiate it from other pet grooming services and establish trust in

the brand (Lemuela & Chandra, 2023). Similar to daycare services, other studies show that pet owners' trust in a pet boarding service is influenced by the reputation and perception of the quality of the pet boarding service (Supriyanto et al., 2021). Friendly and responsible service can build a good reputation that can attract customers' trust. Then it is able to reduce bad perceptions, ranging from safety risks, both from transactions and boarding services.

Easy access to find a reputable pet boarding facility is essential. Until now, there has been no research that focuses on the ease of finding and booking boarding services at once. Most of the research for the design of applications and websites is limited to the service of one pet boarding service only, such as the design of information systems and the management of pet boarding services in a pet shop (Prayogo et al., 2024).

The previous research designed an application for finding a limited pet boarding service location in one area (Putri & Manikam, 2021). Meanwhile, according to the results of a mini research conducted through an online questionnaire on 32 respondents who owned pets with domiciles from several different regions, it showed that the majority of respondents did not know the location of pet boarding services with a trusted reputation and only 8 people had ever left their pets at a pet boarding service.

There was a feeling of fear among respondents to leave their pets due to the lack of information related to pet boarding service testimonials. So far, there has been no research on the design of a pet boarding platform that includes reviews or testimonials from pet boarding services. Meanwhile, from respondents who have been in care, there are concerns that pet boarding services are not responsive in providing daily updates related to the news of pets in the pet boarding.

Therefore, there needs to be a novelty to help pet owners get reliable pet boarding services and ease of making reservations. One of the solutions to this problem is the development of user interface (UI) and user experience (UX) design. The user interface is a system that regulates the appearance while facilitating user interaction with the system (Al-Faruq et al., 2022). It aims to improve user experience and functionality by covering all aspects of the display, including layout, colors, graphics, icons, and other visual elements (Rahmat, 2023). Designing an interface that is in accordance with the user experience, namely pet owners, will create satisfaction and comfort in interacting and accessing the display of the application interface design features that are created (Ardikayana & Mailangkay, 2021).

From the above background, the purpose of this research is to develop a user interface design and user experience for a pet boarding search and reservation application called PAWTEL, which can fill the literature gap regarding search as well as the process of pet boarding services. It is hoped that the results of this design can be useful in the design of application interfaces that are oriented to user experience and become a solution to the problems raised.

## METHOD



Figure 1. Design Thinking (source : Medium)

The interface design in this study uses a design thinking approach. Design thinking is a direct and user-centered approach to solving problems to generate innovation and be able to produce its differences and advantages (Gibbons, 2016). Design thinking encourages a broad view to understand what users need in a given situation and what drives their progress. There are 5 stages in the design thinking approach according to Plattner (2010), namely:

1. Emphasize: this stage is to understand the problems faced by the user. At this stage, prepare a research plan including questionnaire questions and interviews for data collection. From the results of the data obtained, pain points and user needs will be analyzed and then used to create user personas, user journey maps, and empathy maps. For interviews targeting the respondent criteria of pet owners, both those who have used pet boarding services and those who have not.

2. Define: this stage sorts data from the empathize stage by making problem statements, compiling affinity diagrams, and how might we questions.
3. Ideate: This stage carries out the process of determining product ideas to be developed by sorting the ideas that appear on a priority scale using the Eisenhower Matrix. The Eisenhower Matrix is a priority scale method proposed by Dwight D. Eisenhower by divides data into four quadrants, namely urgent, important, not urgent, and not important (Gibbons, 2018).
4. Prototype: This stage realizes the ideas obtained from the ideate stage into a form of design that will later be tested directly by potential users. In the prototype stage, the creation of information architecture, user flow, low fidelity and high fidelity wireframes, and flow prototypes using the Figma application.
5. Testing, testing prototypes that have been developed on users directly to get feedback. This stage uses the Maze platform to test the tasks of the prototype features created.

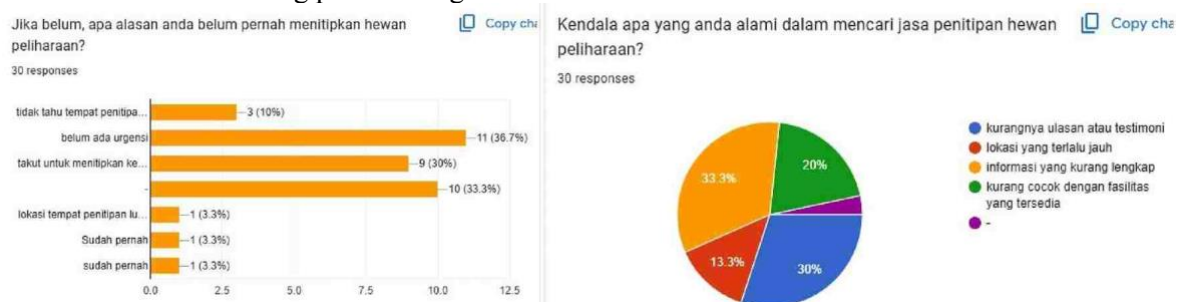
The data collection methods or UX research used include observation, online surveys, and interviews. Observation was carried out by searching for the location of pet boarding services through Google Maps and social media. Searching using these platforms is useful to find out the level of difficulty in accessing the availability of options, locations, and information on available pet boarding services.

The online survey was conducted using the Google Forms, with a minimum of 30 respondents with specific respondent criteria from pet owners. The questionnaire link will be distributed through social media to get respondents from more than one region. Interviews were conducted to obtain deeper data regarding experience and knowledge about pet sitting. The analysis technique used is a qualitative method, by adjusting the data analysis process at each stage in design thinking.

## RESULT AND DISCUSSION

### 1. Empathize Stage

The empathize stage is a stage to understand the need for funds and the difficulties faced by users from a raised phenomenon. From the research plan prepared in advance, the results of the questionnaire research found that 36.7% of respondents had never left their pets because they did not have an urgency. However, 30% of respondents have a fear of leaving their pets with others. The majority of respondents experienced incomplete information constraints and a lack of reviews or testimonials from existing pet boarding services.



**Figure 2.** Chart of Reasons for Never Using and Obstacles to Finding Pet Boarding Services

Observation via an online platform allows you to access boarding services information in any area that you want to explore. The internet has an unlimited nature, so that all forms of information can be obtained by anyone, such as science, news, and accessing social media (Justin et al., 2023). Based on the results of observations, it was found that the options for childcare services that appeared in searches through Google Maps and social media were quite few. Some pet boardings found on social media do not have a location pin on Google Maps, especially pet boarding services owned by individuals who rely on social media alone as a promotional medium.

From the results of the interview, it was found that the pet boarding services used by the interviewees were less active in providing daily updates. Resource persons tend to contact first to get the latest information about the condition of their pets at the pet boarding services. Meanwhile, other



findings are in the form of less transparent service information and a lack of storage options to consider, according to the budget. All of the data findings are then processed into user personas as fictional characters that represent the user.



Figure 3. User Persona

Then, a scenario is created to describe user behavior in the form of user journey maps. After compiling user journey maps, the next step is to create an empathy map. Empathy maps are useful for mapping what users say, think, do, and feel.

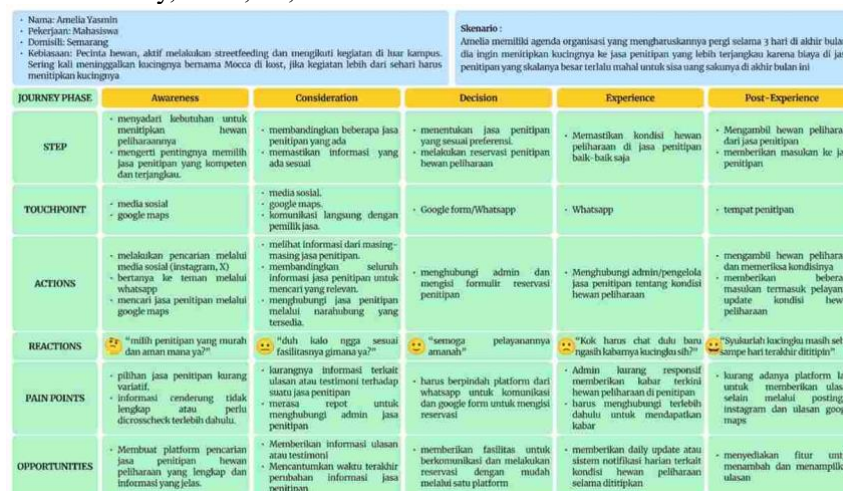


Figure 4. User Journey Maps

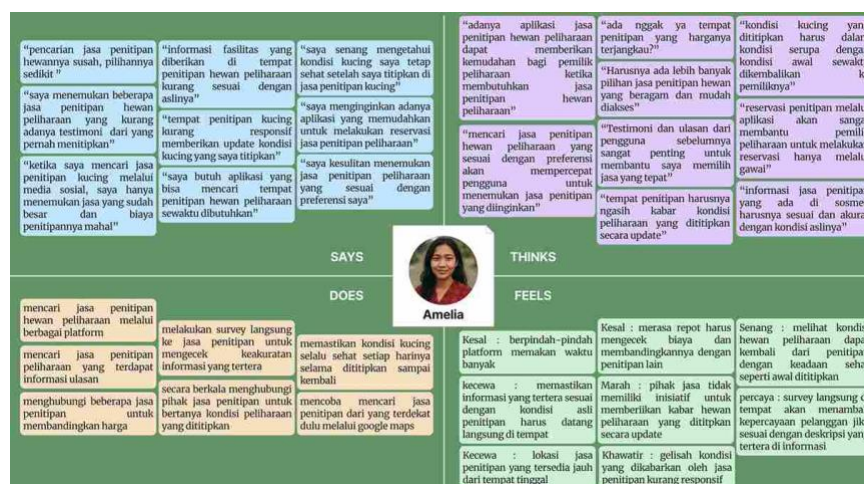


Figure 5. Empathy Map

## 2. Define Stage

Define is a stage to understand what the needs of the user are, based on the results of the previous stage (Hasanah & Grahita, 2024). In the definition stage, the results of the previous empathy maps analysis were described in more detail by determining the pain points experienced by the user. First, before determining pain points, make a problem statement to focus on the main problem that occurs. These problem statements will make it easier to describe more relevant pain points.

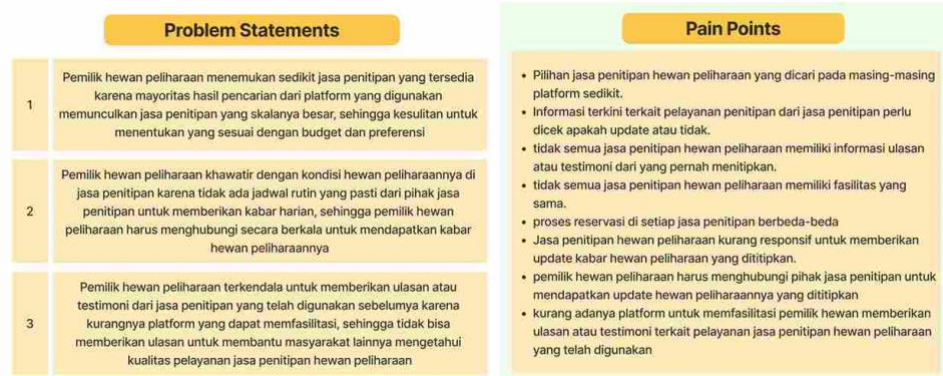


Figure 6. Problem Statement & Pain Points

Each problem statement is then broken down into pain points that contain difficulties, obstacles, and user dissatisfaction in the context of pet boarding services. The pain points that have been described will be grouped using an affinity diagram. Affinity diagrams function to identify pain point categories and group pain points into each category. These categories help to turn pain points into how might we (HMW) question sentences.



Figure 7. Affinity Diagram & How Might We

## 3. Ideate Stage



Figure 8. Ideas from How Might We & Eisenhower Matrix



The ideate stage is the stage where the analysis of pain points and HMW data from the previous stage is used to create various ideas for solutions to the problems raised. HMW's question sentence will narrow the focus of the problem to produce a solution that is right on target and according to the user's needs. In idea creation involves a brainstorming process is used to gather opinions, information, ideas, experiences, and knowledge, with emerging ideas being responded to, supplemented, supported, reduced, or disagreed upon (Kurniawan et al., 2022). The resulting solution ideas are then re-selected to determine which features are considered priority and which can be removed or considered using the Eisenhower Matrix.

#### 4. Prototype Stage

After sorting the ideas of the resulting features, the next stage is to compile an information architecture (IA). IA contains information, structure, arrangement, and arrangement of navigation elements within the application. The preparation of the IA aims to make it easier for users to find content and information in the application.

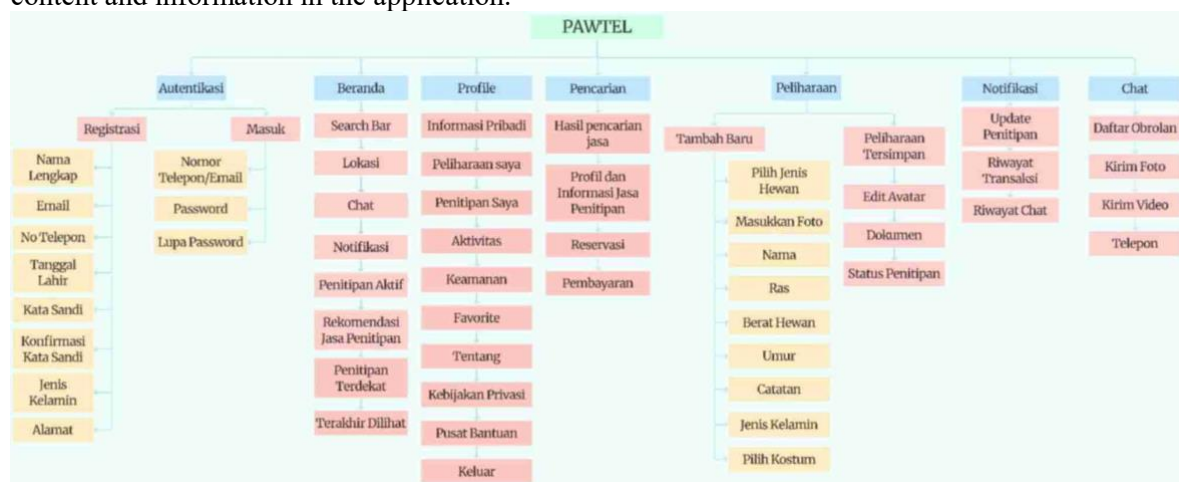


Figure 9. Information Architecture

From the IA that have been prepared, the next step is to create a user flow. Unlike user journey maps, user flow is useful as a visualization of the process that users run from a certain task or feature to the process running to the end.

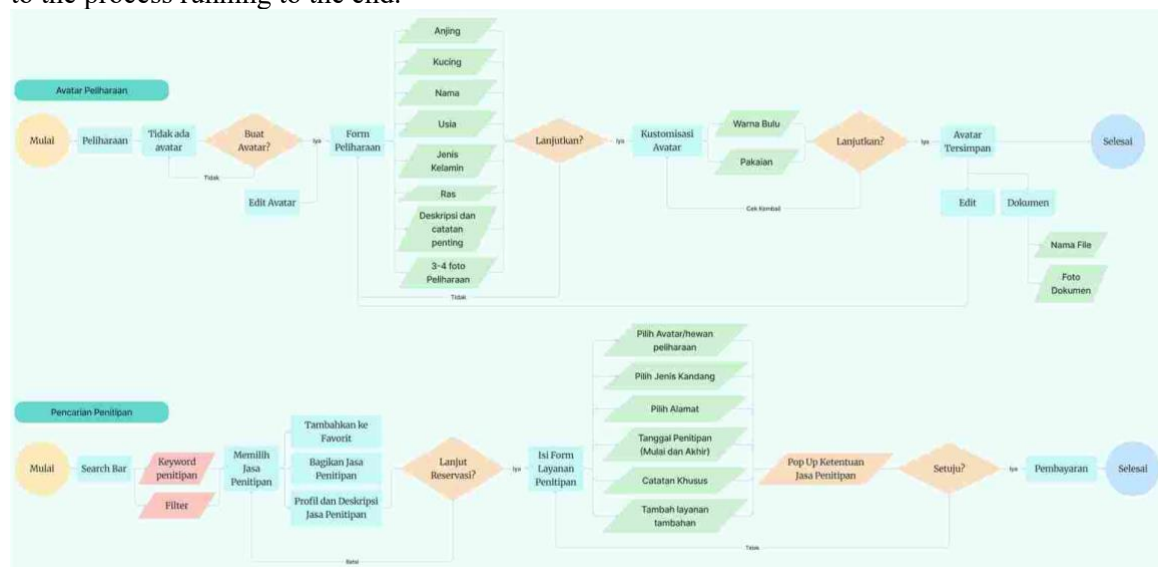
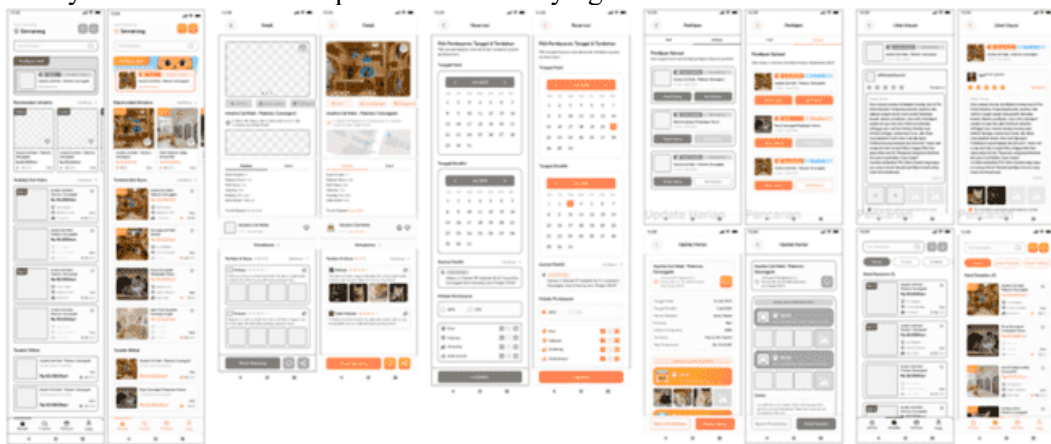


Figure 10. Main Features User Flow

The thing that needs to be done after that is to create a wireframe of the user flow and IA that has been prepared in advance using the Figma application. Wireframes are made first in the form of

a low-fidelity design, which is a visual representation of the interface that shows the layout in simple black and white. Low fidelity wireframe focuses on visualizing the structuring of structure and layout of buttons, menu, and content elements. The next process is to compile a style guide and design system to create a mockup called a high-fidelity wireframe. Hi-fi wireframes help users form a perception of the interface and functional picture of the application design, whether it simplifies the user experience or vice versa.

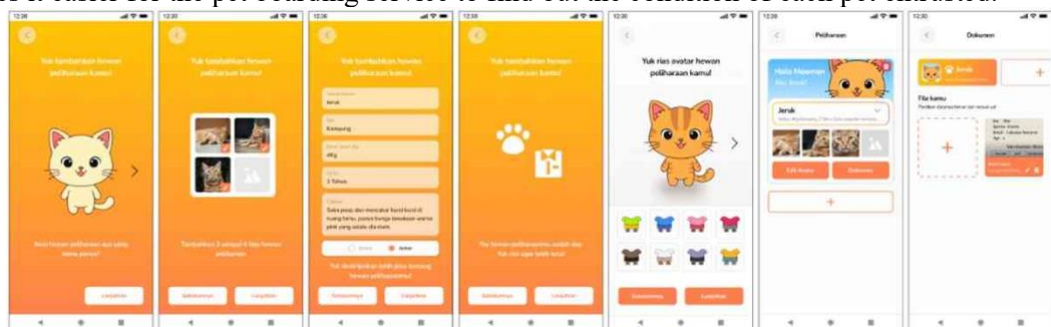
The main colors chosen in the creation of the mockup are orange and a combination of yellow as a gradation. According to a literature study conducted by [Zahra & Mansoor \(2024\)](#), orange gives a positive impression in the form of warmth, high passion, and brightness. The emotions emitted from orange include pleasure, happiness, and anticipation. Combining yellow and orange colors into gradient colors will create an attractive impression and a youthful spirit. The choice of orange and yellow-orange gradation of Pawtel's interface design creates a perception of users who are not only comfortable and trusting, but also motivated by the positive energy it brings. So that the experience obtained by users becomes more pleasant and satisfying.



**Figure 11.** Low Fidelity & High Fidelity Wireframe

At the define stage, there is a pain point where users find it inconvenient to fill out the data of the boarding reservation form. So, at the ideate stage, an idea was generated in the form of a user and pet data synchronization feature so that users only need to choose a date, pick-up location, and payment method. The synchronization of user data comes from filling in the data when registering a Pawtel account.

Pet data filling utilizes gamification by creating pet avatars and filling in data ranging from names to important documents such as vaccine letters. Gamification is the use of game elements to complete various non-game tasks ([Marisa et al., 2020](#)). Gamification has a role to add an interactive impression that can influence the user's suggestion to explore more features and continue using the app ([Widagdo et al., 2024](#)). Apart from being an interactive element, filling in pet avatar data also makes it easier for the pet boarding service to find out the condition of each pet entrusted.



**Figure 12.** Hi-fi Wireframe of My Pet Avatar Feature

After the hi-fi wireframe is completed, the next stage is to create a prototype. The purpose of prototyping is to check whether the design mockup of the designed interface is in accordance with

the user experience and to allow the design can be tried by the user directly. So that it can immediately evaluate the results according to the wishes of the user or stakeholders when a deficiency or new adjustment is required (Farosa & Irfansyah, 2023).

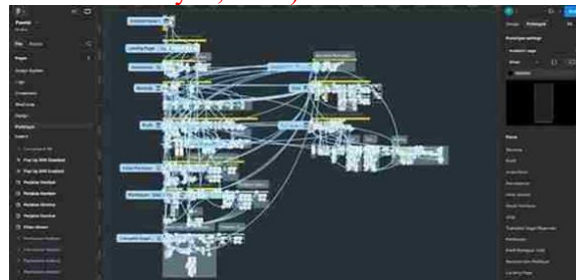


Figure 13. Prototype Pawtel

## 5. Testing Stage

The last stage after the prototype manufacturing process is to test the finished prototype. This test is to determine the effectiveness of the designed prototype to the user's needs and to see how far the user interacts with the prototype design. Prototyping testing is conducted through the Maze platform and post-test questionnaire forms.

The way testing works using Maze is by creating 5 task scenarios from Pawtel's key features for testers to complete. These scenarios include creating a pet avatar, exploring the search for a boarding service, details of the boarding service & reservation process, checking daily updates, and managing My Wallet. My Wallet is the balance of the refund funds from the canceled transaction.

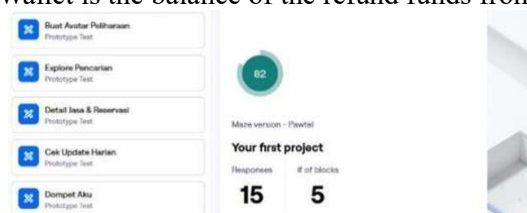


Figure 14. Maze Usability Score Results

A total of 15 testers tested the prototype of the Pawtel application. The results of the usability score maze show that it is 82, or in the high category, meaning that the designed UI/UX design meets the needs of users. For the post-testing questionnaire, there are suggestions to improve the display of the pet boarding service review text, which is too small, and add a weekly sort button to the daily update. The weekly sort button is useful for grouping daily updates per day if you have more than one week of storage.

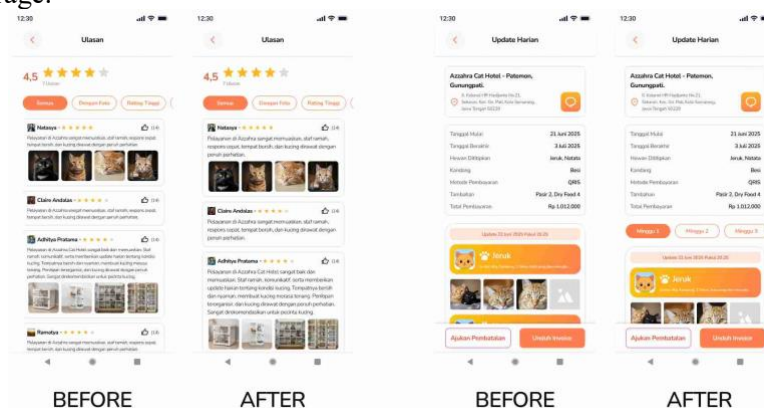


Figure 15. Improvements to the Review Page and Daily Update

For the overall answer to the post-testing questionnaire, all testers think that, in terms of appearance to flow, it is very good. A total of 10 testers chose the most interesting pet avatar creation task from all tasks. Pet avatars are considered unique and attention-grabbing, so they are an advantage



if they are developed into real applications. The integration of gamification elements not only improves the functionality of the application but also creates a richer and more enjoyable experience for users, thus making users more motivated to use the application (Samantha & Anggalih, 2024).

## CONCLUSION

Given the study's findings, it can be said that the Pawtel pet boarding search mobile application's UI/UX design may offer a way to address the issues customers encounter when looking for pet boarding service bookings. The design thinking approach is very helpful in the process of generating ideas to the execution of prototype design. The main features that result include a storage search with a large selection of filters, pet avatars, reservations, and daily updates, as well as a wallet to store your refund balance.

The results of the post-testing questionnaire show that the appearance and flow of the main feature tasks are very good. Feedback for display improvements is only found in the review text, and suggestions for adding weekly sorts on the daily update page. The use of gamification elements in the creation of pet avatars has also been proven to provide an interactive experience and attract users' attention. With Maze's usability score of 82, Pawtel's application design is following user needs and at the same time a solution to problems that occur in searching and booking pet boarding services.

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