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DESIGNING AN ANIMAL ADOPTION AND SOCIAL MEDIA INFORMATION SYSTEM USING THE SDLC WATERFALL METHOD

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Abstract

Animal lovers are not only known as people who like certain animals because of their uniqueness or cuteness. Behind it all, animal lovers have the privilege that they are called good people. This is not without reason, because of course people who like to keep animals must be full of affection, sensitive and they have a way to be happy. We often have problems if we are animal lovers, we don't know where the nearest vet is, especially if we are a newcomer from a faraway city, where can we buy equipment or pet food, and the worst is if we don't know how to care for animals. our pets, especially when our pets are sick or other examples if we want to adopt animals or want to release our adopted animals to other people through existing social media but we are afraid of being deceived or even our pets will be abandoned. With the rapid development of this technology and with the help of artificial intelligence technology, we want to overcome all these problems, because technological developments have been used in all aspects such as schools, hospitals and so on. No exception in the field of animal and animal husbandry. We want to design an adoption information system using the Software Development Life Cycle (SDLC) method which is divided into several stages such as analysis, design, implementation, verification and finally repair. The author uses qualitative methods to collect data which the author will discuss on the background and stages of system analysis in the waterfall development method, qualitative methods emphasize more on observing phenomena and examining more into the substance of the meaning of these phenomena. The analysis and acumen of qualitative research are greatly affected by the strength of the words and sentences used. The system design we created uses the PHP Programming Language, Javascript and the mysql database, the authors hope that this research can become a reference for other articles in the future.

Keyword: *Artificial Intelligence*, *Information system, Pets, Qualitative Method, Waterfall.*

1. INTRODUCING

The rapid development of technology and globalization encourages us to use technology in various fields, such as education, health, defense, business and so on. Not least in the animal sector, many technologies have been implemented in the animal sector, for example heart detection devices for animals, x-rays and so on. In this case, we want to overcome the problems experienced by animal lovers, namely confusion about how we should care for animals, confusion about buying animal equipment, confusion about finding the nearest medical personnel or veterinarian and so on. In this case, the application of information technology in business is expected to make a real contribution[1]because we want to make an online shop in this application, so that it is hoped that this can help pet shops develop more. We also want to educate animal lovers through this application so that it is hoped that there will be no mistakes in animal care.

The method used in this research is SDLC Waterfall. A systematic and sequential approach to software development from system improvement to analysis, design, coding, testing and maintenance[2]. Waterfall is divided into several phases, namely the analysis phase, the design phase, the coding phase and the testing phase[3]. After we have determined the SDLC method we want to use, we will use a qualitative research method. Qualitative research methods are descriptive and analytic[4]We will collect data on how many animal lovers find it difficult to care for their pets, we use the Google form questionnaire to collect the answers. We'll then convert it to a chart for easier reading and comparison.

In this study, we use the PHP programming language, Javascript for mobile apps and MYSQL database. Hypertext Preprocessor (PHP) is an interpreted programming language that translates lines of code into a program that the computer understands while it is running[5]. This programming language is one of the most popular programming languages, used in many corporate instances and has many active communities. PHP has been widely used in many websites that exist

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today [1].

Mysql is a database software RDBMS or Relational Database Management System as well as postgree database, oracle and so on [6]. MySQL is well known because some of its syntax writing uses SQL to access its database[7]. MySQL also has many active communities in Indonesia so that if we find an error we can discuss it together and it has been widely used by companies to create websites and applications according to their needs [2].

JavaScript is a programming language used to make websites more dynamic and interactive[8]. So apart from that javascript can be used to create a mobile application, we can take advantage of a javascript framework called React Native. This Javascript also has many communities in Indonesia so if we experience difficulties we can discuss together. Javascript has been used in almost all web-based and mobile applications to create a dynamic and attractive display for users.

2. RESEARCH METHODS

2.1 Qualitative Method

In the SDLC Waterfall approach, we want to carry out a needs analysis using qualitative research methods. Qualitative research method is a method for a more descriptive and detailed study[9]. We will analyze the data we obtain and describe it descriptively so that the data is easy to understand. We will conduct research and observe crowds through a questionnaire, and we will convert the results of the questionnaire into diagrams so that they are easy to understand

2.2 Method Diagram

The diagram of the development method used to build the information system in this study is the SDLC Waterfall. The following is a picture and explanation of the SDLC waterfall:

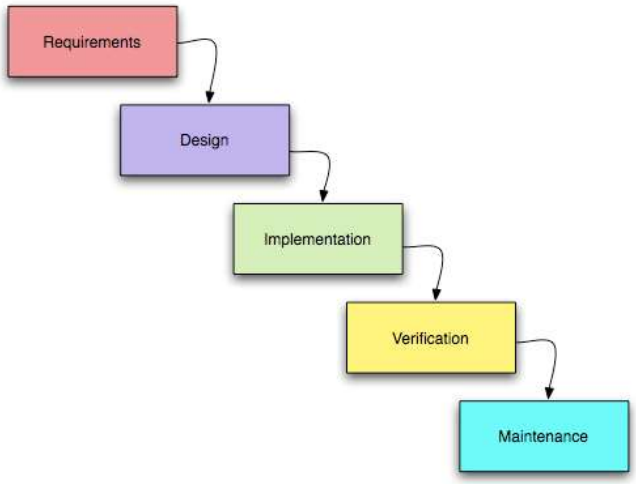

Figure 1 SDLC Waterfall Model

a. Requirements
At this requirements stage we analyze user needs and user problems through a questionnaire that we will provide. At this stage we analyze functional requirements and non-functional requirements[10].
b. Design
In the second stage the design stage is the advanced stage of the analysis stage, at this stage we will present some simple user interfaces regarding the application that we are going to design.
c. Implementation
This stage is the stage where the application implementation process begins. At this stage we will test the system directly to users
d. verification
At this verification stage or commonly called the testing stage, we will carry out testing using blackbox testing.
f. Maintenance

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At this final stage, after the application runs smoothly, we will make improvements and monitor system performance so that the application runs normally without any problems.

3. RESULT AND DISCUSSIONS

3.1 System Analysis (Analysis)

In the old system, users who are animal owners use social media Facebook as a means of communication between users who are animal owners too. Users have to bother looking for animal discussion groups here and there so it's not efficient. So we want to create a platform where it's easier for users to find friends who are fellow animal lovers and also we want to make it easier for users about how to care for animals that are good and right, so as to minimize users as animal lovers making mistakes in caring for their pets. So it is hoped that with the new system that we have designed, coupled with interesting features, users will no longer find it difficult to care for their pets.

3.2 Use case diagrams

We have designed a use case diagram of our software which can be seen in the image below along with an explanation.

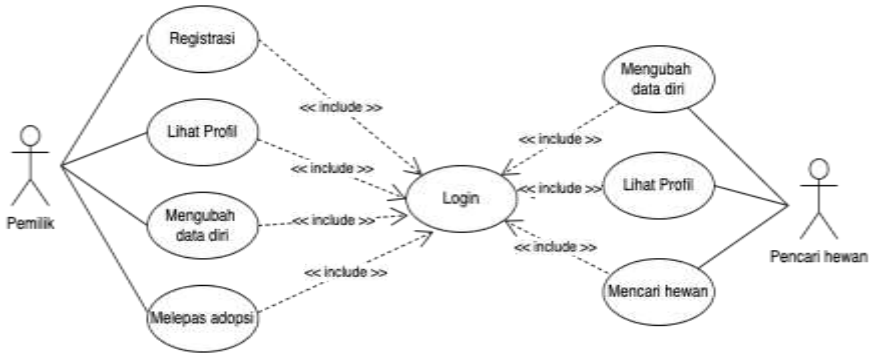

Figure 2 Use Case Diagram

In the use case diagram above, it can be seen that animal owners can register, view profiles, change personal data and release animal adoptions. So if you don't have an account, you can register first. And if you already have a user account, you can change and view their profile. Apart from that, here animal owners can give up their pet adoption by uploading it to the application that we have designed, so that it is easier for animal owners to adopt their animals without being complicated and without confusing the user. On the animal owner's side, they can change their profile and also view their profile. Apart from that, users who are looking for this animal are made easy with this application that we have designed, they can find the pet they want quickly, without the hassle.

3.3 Display system design (design)

Next, we include a low fidelity application design that we have adapted to the previous use case diagram. Low Fidelity itself is a simple prototype design that is still in the form of an application schematic sketch using either pencil or pen and paper or you can use a computer program such as figma. Then after obtaining the mature results of the design, an application prototype was created in the form of High Fidelity [3]. On the first page of the user, owners and pet seekers can view or edit the profile here, if the user wants to edit the profile, the user can press the edit profile button below.

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Figure 3 View profile page

On the second page, animal owners can upload their pets so pet seekers can find them, here users only need to fill in a few columns according to the rules. Users only need to follow the instructions provided. After completing filling in the user can press the submit button so that their post is sent.

Figure 4 Post upload page

And on the last page especially users who are looking for pets, can see the animals that have been posted before, here users can easily without having to bother looking for their pets. In our system we also designed a recommendation system based on the nearest location, so pet seekers can easily find the animal they want.

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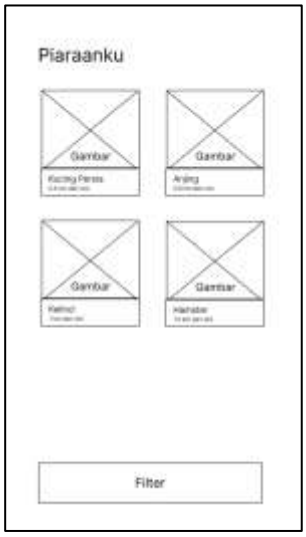

Figure 5 My Pets Page

3.4 Implementation stage (implementation)

Below we include the average answers from the results of our survey to several animal owners and seekers, which we also carried out using the Google form and which we distributed to several existing social media. For tools and materials, we only use laptops and smartphones.

1) Do you find it difficult to post animals on social media like facebook?
   Answer: No, but some of us find it difficult because there are too many features that we don't understand
2) Do you often feel afraid of being deceived by the desired pet? for example in the post it says healthy but it turns out to be sick.
   Answer: yes we feel afraid like that
3) Do you often find it difficult to find the animal you want because of its remote location?
   Answer: Yes, we have difficulties because we often find the animals we want are far from home

We can see based on the 3 questions we asked that the average user has difficulty finding the pet they want. And they are also afraid that they will be deceived by the existing conditions of the animals. Therefore, we created a recommendation system based on the nearest area using the Nearby Google Maps API, so this API functions to find the closest place based on the keywords entered.

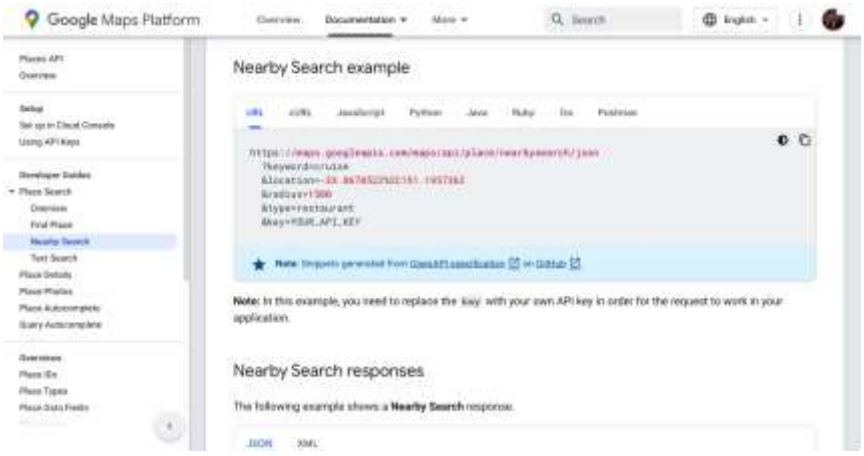

Figure 6 Google Maps API

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3.5 System testing stage (testing)

After the process of making the software, of course there is a stage called testing, that is, we test it directly on the user earlier.Now in this section we will do testing by spreading our application to social media to 10 people along with the questionnaire, to see how useful the system we have designed is and we convert the final result into a diagram. To make it easier for us to see the results we include a bar chart below based on our previous interviews.

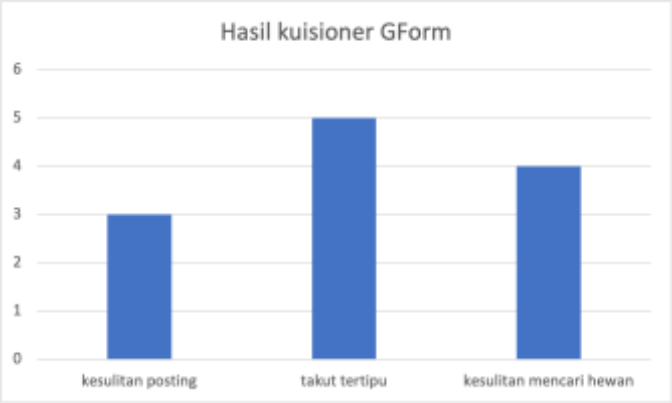

Figure 7 Questionnaire results

Based on the diagram above, it can be seen that there are 3 users who still have difficulty posting their pets. In fact, not everyone immediately understands the new system slowly as if we are learning something new. The two numbers of users who are afraid of being scammed are still high, namely 5 people. Indeed, in this all-digital world, it is normal for people to be afraid of being cheated. Finally, the number of users who have difficulty finding animals is 4.4 out of 10 means that 6 people have found it helpful with the recommendation system that we made using the google maps API earlier. We hope that in the future the system we designed can help many people.

3.6 Repair stage (maintenance)

After we have designed the system that we made, we will continue to make repairs or maintenance on the system that we designed, we will monitor its overall performance. So that this application can help many people, both animal owners and pet seekers. For example, we will update the library that is used, improve the code, and so on. So that this application can work optimally.

4. CONCLUSION

The development of information and communication technology is currently experiencing changes that are so fast, even tend to be radical. Because the jump is so fast that we are not able to follow it. This change also has an impact on the use of communication channels which are also changing from time to time, both in terms of design and the features offered and of course this is very attractive to users of communication channels. With advances in technology, we can access information more quickly and can do it anytime and anywhere without being limited by space and time. Now we have entered the era of information society where our society makes information a necessity, people become consumers of information and also produce information. Our society is willing to spend time connecting with information technology, both through uploading videos on YouTube, writing and responding.

The rapid development of social media is because everyone seems to be able to have their own media, a social media user can access it using the internet network at no cost, is free to modify both writing, graphic video images and various other content models, without expensive tools and is done alone without employees. The principles of the journalistic code of ethics (KEJ) are also prone to being violated so that a lot of information is circulating in the form of fake news (HOAX), hate speech, slander, pornography and information that smells of sara' which is deliberately spread to divide unity and oneness. The use of social media in conveying information certainly has positive or negative influences, depending on the user. However, the facts show that the use of social media as an alternative medium in conveying information has more negative effects on people's lives, moreover our society is too easy to believe in things that are provocative and easily deceived. Submission of information through social media takes place freely without control and tends to go too far, starting from the use of language as well as news content or information that cannot be accounted for,

so that fake news circulating in society is increasingly rampant and the government is usually the target of hoaxes. It is this fake news that makes us animal lovers afraid to adopt animals from other people or release our animals to others. So with this system it is hoped that it can increase the trust of animal lovers in each other.

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