DESIGN OF A CATTLE RECORDING APPLICATION USING THE DESIGN THINKING METHOD

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ARTICLE INFO	ABSTRACT
	Increasing livestock production is inseparable from the use of technology in farming. One of the technologies that can help breeders increase their production is to have good livestock data records, the Karya Bersama farmer group realizes that the use of technology in the livestock sector is urgently needed, namely livestock recording, livestock recording can help breeders store or record livestock properly, by using the design thinking method, researchers can find out the application of recording sheep livestock needed by breeders, especially farmer groups working together.

INTRODUCTION

Livestock is an activity of breeding and cultivating livestock to obtain benefits and results from these activities. The purpose of livestock is to seek profit by applying management principles to production factors that have been combined optimally. Based on the size of the livestock, the livestock sector can be divided into two groups, namely large animal husbandry such as cows, buffaloes, goats, sheep and horses, while the second group is small animal husbandry such as chickens, rabbits, ducks, ducks / muscovy ducks, geese, quails and so on.

Based on data from the Ministry of Agriculture, the sheep population in 2021 is 17,902,991 heads. This number has increased by 379,302 from the previous year, while the population of goats was 19,299,067, up 539,356 from 2020. "The population of sheep and goats tends to increase from year to year because they are the driving wheels of the economy of rural communities," Director General of Livestock and Animal Husbandry Animal Health, Nasrallah. The majority of sheep breeding centers are located on Java Island, especially West Java Province, reaching 68.4 percent in 2021. Meanwhile, the potential to be developed outside Java Island as an integrated farming business is also very large.

With the increase in the number of sheep each year in farmer groups working together, it requires an application that can help these farmer groups in recording sheep livestock, an information system recording sheep livestock can help breeders in recording sheep mating so that inbreeding does not occur, which can lead to sheep production to be less good. This recording system also makes it easier for users, especially breeders, to more easily find out the data of the sheep being raised, such as knowing the type of sheep, age, weight, sex, history of disease, marriage history of the sheep, which have previously been inputted into this information system.

LITERATURE REVIEW

The information system consists of two words, namely system and information. The meaning of the system itself is a set of elements, a set of elements, functional components that are interconnected and interact with each other to achieve an expected goal. A system within an organization that meets the needs of daily transaction processing, supports operations, is managerial and strategic activities of an organization and provides certain external parties with the necessary reports (Mujiati, 2016).

Sheep livestock is well known in Indonesian society, and many are cultivated by small farmers in Indonesia rustic, easy to maintain and easy to sell. Sheep can be developed for the production of meat, skin and fur. In general, sheep farming in Indonesia is still focused on producing meat. The sheep business in rural areas is a very important component, because it can help the farmer's economy, easily used as a source of money when needed. The reproductive cycle is relatively short, and sheep are livestock that are more resistant to various diseases. Sheep are a type of ruminant livestock, have unique characteristics, both in the process of digesting food, producing children (Rusdiana & Adiati, 2020).

A website or site can be interpreted as a collection of pages that display information on text data, still image data or moving image data, animation data, sound, video and a combination of all of them, both static and dynamic, which form a series of interrelated buildings where each connected to page networks (Andriyan et al., 2020). UML (Unified Modeling Language) is a language based on graphics/images for visualizing, specifying, building and documenting an OO (ObjectOriented) based software development system. (Maharani et al., 2017).

Design thinking is a method used to explore user problems and find innovations that suit user needs, so that they can solve user problems. Design thinking is an approach method that is used as a strategic innovation in the design process and approaches users through an empathic process. (Soedewi et al., 2022). This method can be used for strategic innovation in the design and implementation process approach to users through a process of empathy/emphaty (Lahandi Baskoro & Haq, 2020).
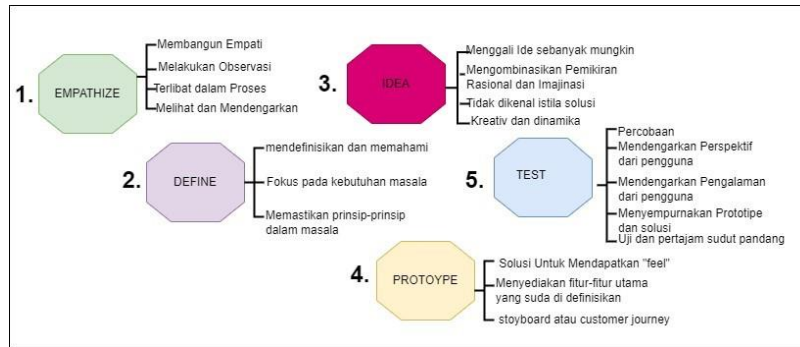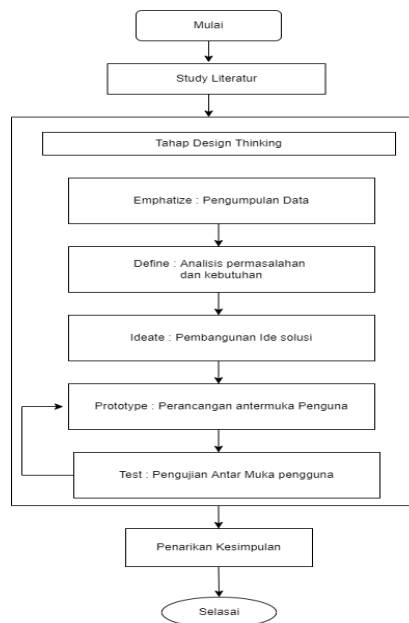

Figure 1. The Design

METHOD

Figure 2. Design of Method

Based on the design thinking method, the author tries to explain it in the framework of the method flow so that the design results are obtained which can overcome the main problems in this study.

In the first stage, namely empathy, interviews and observations were carried out with a sample of breeders from farmer groups working together. To find out the problems that exist from these breeders related to livestock data records. In this research, we found various problems related to livestock data records, while some of the problems found were as follows:

1. Problems Archiving livestock data files is still manual and often lost.
2. The search for livestock record data is slower because many of the files stored are missing.
3. There is no adequate livestock record data, due to a lack of data.
4. Inbreeding often occurs due to lost livestock record data.

In the second stage, namely Difine, the author determines the most important core problem in farmer groups working together, namely livestock recording data is difficult to obtain, due to the sometimes inappropriate preparation of livestock data records. Based on the results of interviews at the empathy stage.

In the third stage, namely Idea, with reference to the previous stage, namely Define, the idea to be made is raised based on the core of the problem, namely the Design of a website-based Sheep Recording Application. In the future, this application can help breeders in farmer groups working together to record livestock data even better and in a systematic way. The idea of designing a sheep Livestock Recording Application is as follows:
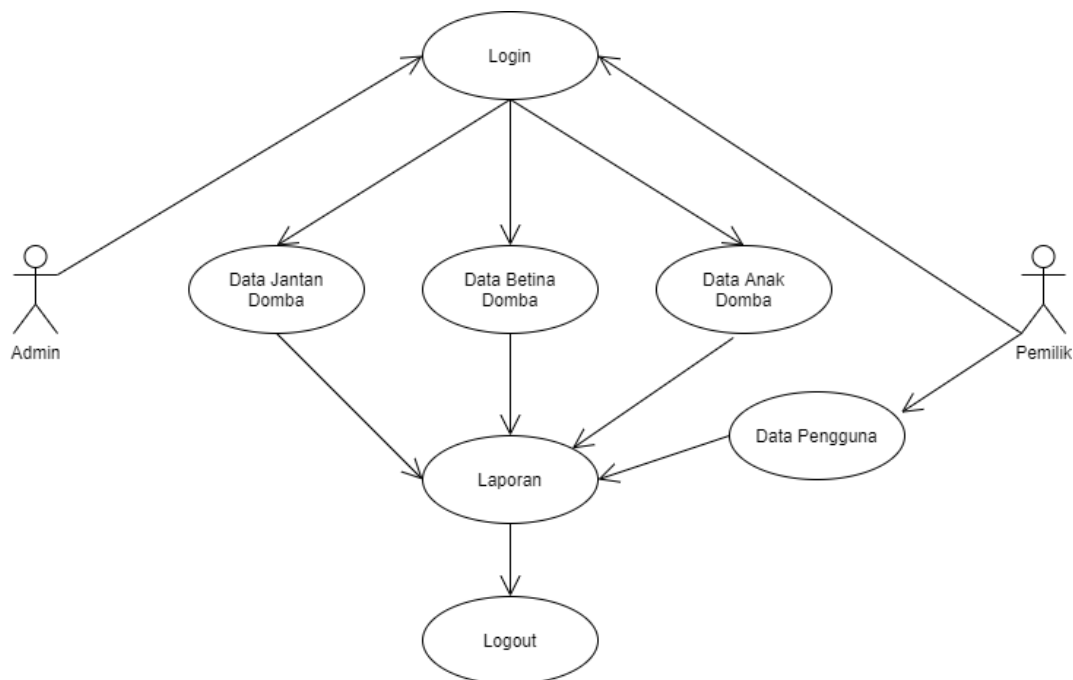
Use Case Diagram

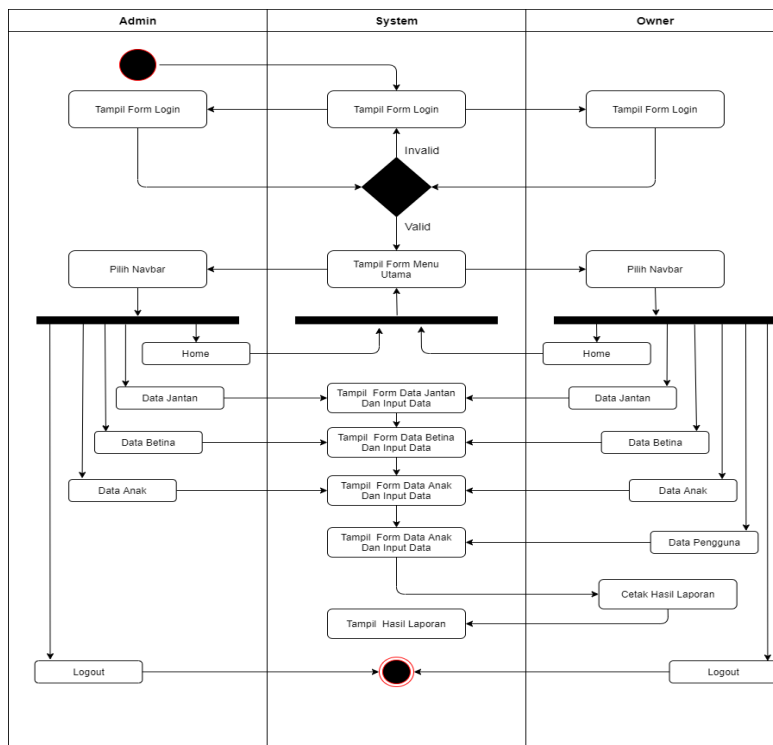**Figure 3.** Use Case Diagram

Activity Diagram

Figure 4. Activity Diagram

System Planning
Login Page
On the page*login*is the first page accessed when the program is run. Here is a layout of the page login:
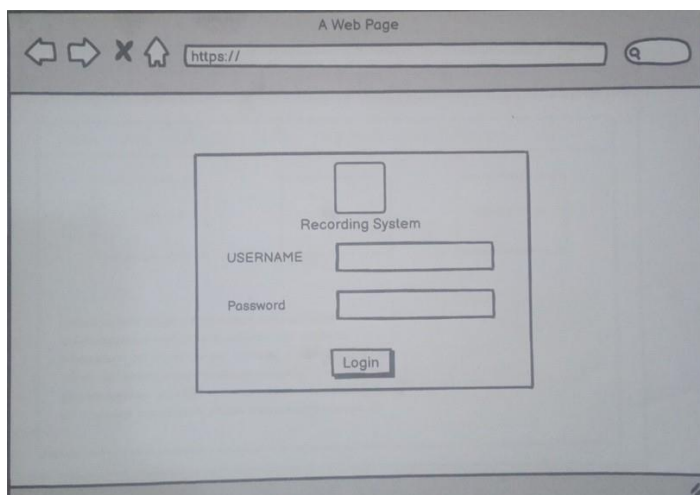

Figure 5. Login Page

Home Page
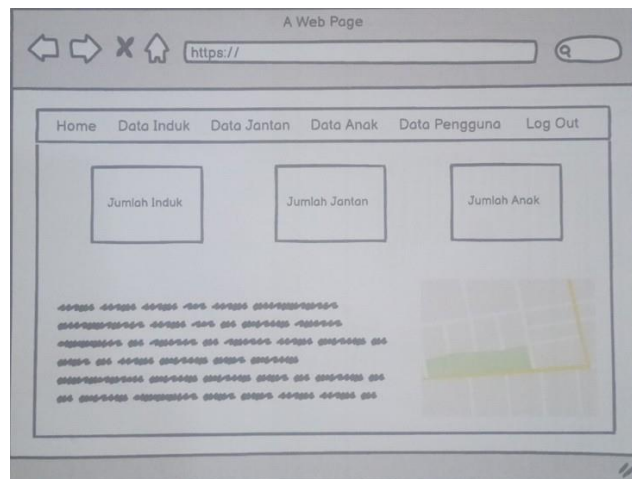On the page*home*is a page that contains various menus. Here is a layout of the page*home*:

Figure 6. Home Page

Data Pages for Rams, Females and Children

The data page for rams, ewe and lambs is a page that can access and add data for rams, females and lambs. The following is a draft of the ram, ewe and lamb data pages:
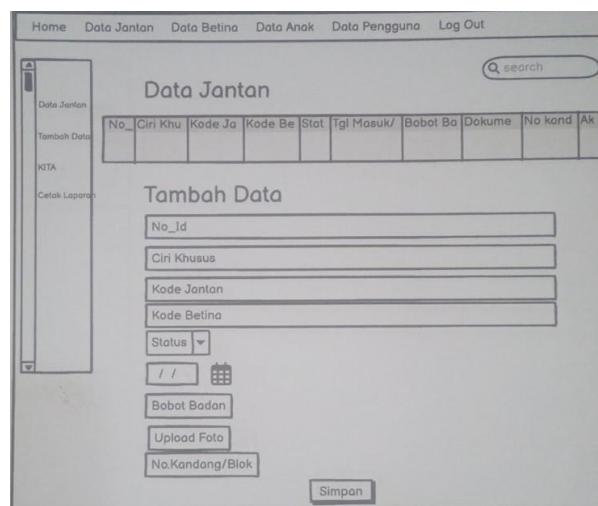
Figure 7. Male Data Page

Figure 8. Female Data Page

Figure 9. Child Data

RESULTS AND DISCUSSION

In designing information systemsrecordingFor this sheep, the system runs using a web-based program that uses PHP as its programming language. This program is made to be easy to use, because the administrator only needs to enter new data into the site and the owner only needs to click to see the appearance of the site that was previously entered by the administrator. Knob already exists according to its structure.

Hardware (Hardware) Specifications

Hardware Requirements in the application of this program the author uses the specifications of the laptop and operating system as follows:
   a. Laptop Type : Toshiba C40 – A
   b. Processor : Intel(R) Core(TM) i5-3317U CPU @ 1.70GHz
   c. Read Access Memory : 4.00 GB
   d. Operating System : Windows 10 Pro 64 – bit

Software Specifications

Software Requirements Software requirements are:

a. PHP
b. MySQL
c. Apaches
d. Sublimetext

Information System DisplayrecordingSheep

Information system displayrecordingThis sheep livestock has a view consisting of login, main view, manage male data, manage female data, manage calf data and user data. As for the menu display–information system menurecordingsheep as follows:

Appearance Login

Screen login have the ability to access website information systems are cording sheep. At login, the admin must access the system using the account and password provided so that it can make data changes on the website application.
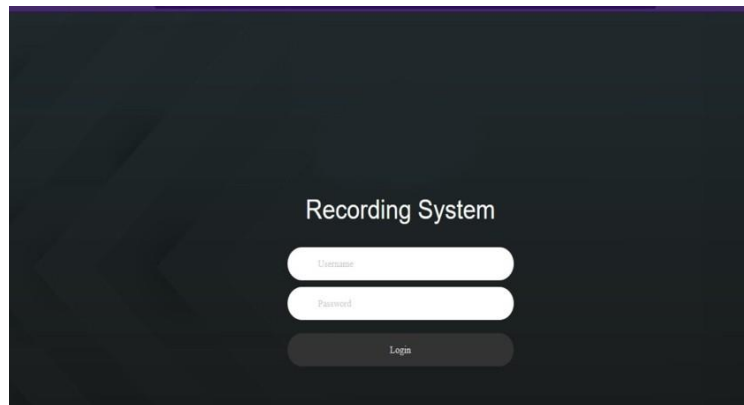
Figure 10. Login Display

Home Page Display

This view consists*form*master data, male data, female data and user data,

Figure 11. Home page

Master Data Display

Appearance*form*master data has functions to save, delete, modify data and information about sheep

Figure 12. Female Data Page

Male Data Display

Appearanceformdata man has functions to save, delete, modify data and information about sheep.

Figure 13. Male Data Page

Child Data Display

Appearanceformlamb data has functions to save, delete, modify data and information about sheep.

Figure 14. Child Data Display

CONCLUSION

From the results of research related to the designer of the Lamb Recording Application using the Design Thinking Method, it can be concluded:

1. The design of this application is made according to the needs of the Karya Bersama Farmers group using design thinking method approach
2. This application is expected to help breeders store/record sheep properly and correctly according to the needs of breeders.

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