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Agricultural Information System Design For Bojonegoro Regency Using Prototype Method

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ABSTRACT
With the increasingly sophisticated information technology available for the public to access, easier it is for the public to know what is available and what is desired. The use of this information technology has also been used by the public to publicize the potential of a company and institution. Access to information technology on agricultural products is still lacking, which makes it difficult for the Department of Agriculture to market agricultural products directly to the public. With this information system, it is hoped that it will help the agricultural office in the Bojonegoro city area to record the harvests of farmers in the Bojonegoro area precisely and accurately. The making of this information system is assisted by using the prototype method. This research produces an information system that can manage data on agricultural products in the Bojonegoro area which will be managed by the Bojonegoro Food and Agriculture Security Service.

INTRODUCTION

With the rapid development of information technology in the era of globalization, information system technology has an important role in life, especially in business and economics. One example of the important role of information systems technology in business and the economy is the free use of the internet by the public. This allows internet users to easily obtain information regardless of distance and time. With the ease and sophistication of the internet that can easily attract the attention of users, many companies or institutions want to market their services or products to internet users by providing fast, precise and accurate information. (Siringoringo, Sihombing, & Masrizal, 2021)

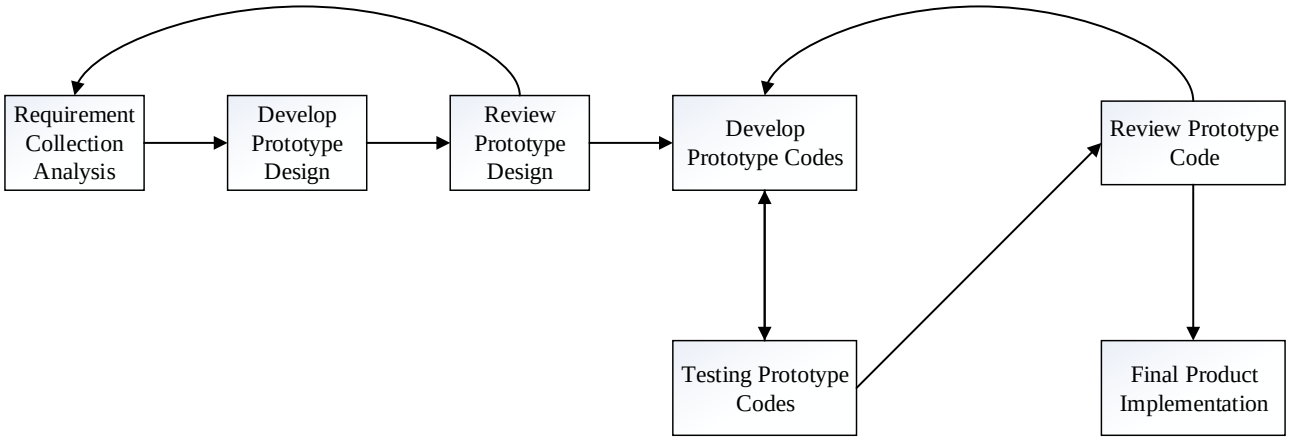
Agriculture is an important economic development activity because it provides one of the basic human needs, namely food (Olivya and Ilham 2017). The lack of access to the Bojonegoro agricultural office to publish farmer profile data and agricultural products results in difficulties for the community to obtain correct and accurate information and to know which areas have the best potential for harvests in the Bojonegoro area. Because information is only spread through face-to-face meetings, this will trigger problems regarding accuracy. scattered information due to a large amount of information and inefficient information dissemination.

One way for a company or institution to market or promote the potential of their company or institution on the internet is through a web profile. Web profiles have been developed to change the pattern of promotion for companies or institutions that used to be done face-to-face to switch to using a website that can be seen and accessed by the wider community (Santoso, Delima, and Wibowo 2019). And in the Web Profile, you can market Vision, Mission, Performance, and Activities as an attraction or advertisement for companies or institutions so that they can attract the attention of web visitors.

From the explanation above, it can be concluded that the following problem formulation is how the Bojonegoro Food and Agriculture Defense Service disseminates information about farmer profile data and agricultural products to the public in a fast, accurate, effective, and efficient manner. This research aims to create an information system for the Department of Food Security and Agriculture of Bojonegoro which helps to disseminate information about farmer profile data and agricultural products to the community quickly, accurately, effectively, and efficiently.

METHODS

The method used for making our agricultural information system is the SDLC Prototype Method. The advantage of using the SDLC Prototype method is that in research the user can evaluate the prototype application design before the application becomes the final product (Siswidiyanto, et al. 2020). The SDLC Prototype method has several stages: needs analysis, prototype design planning, prototype design evaluation, prototype coding design, prototype testing, and evaluation of test results of the final product.



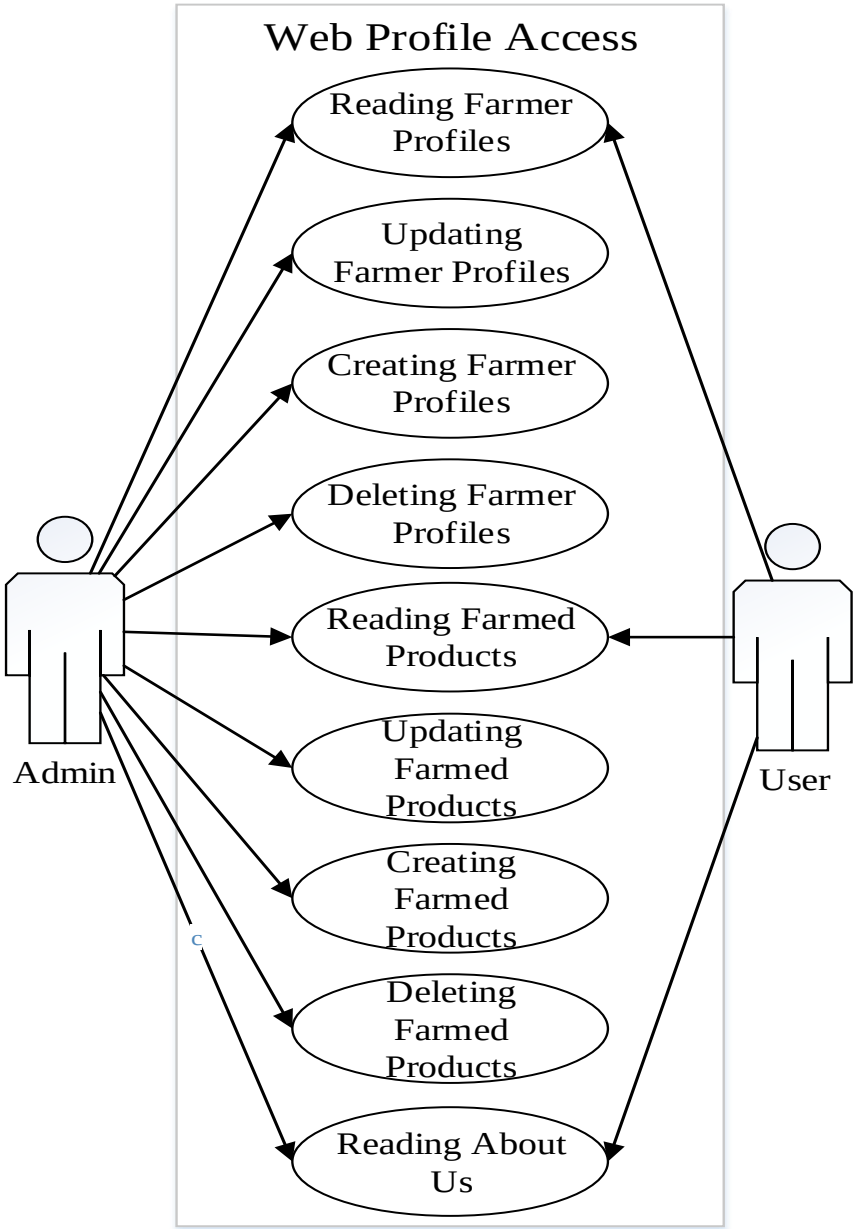
1. **Requirement Collection Analysis**
   In the analysis stage, we design the system using UML (Unified Modeling Language) and will describe the relationship between objects using Use Case Diagrams, Activity Diagrams, and Sequence Diagrams. UML or Unified Modeling Language is a language that uses graphics or images to visualize and document an Object-Oriented software development system (Mubarak 2019).
2. **Develop a Prototype Design**
   In designing the web profile prototype design, we design all page views that will be used in the final product according to the needs analysis.
3. **Review Prototype Design**
   After the design is complete, the user will evaluate the results of the prototype web profile design, and if there are deficiencies or errors in the design, the system design will be corrected and start again from scratch.
4. **Develop Prototype Codes**
   In designing the coding prototype, we use HTML, CSS, and PHP programming languages. HTML and CSS are programming languages that are often used to create document web pages. And PHP is a programming language designed for web development, one of the reasons is its practicality (Samala and Fajri 2020).
5. **Testing Prototype Codes**
   After the coding design was completed, we conducted several tests on the web profile prototype using dummy data.
6. **Review Prototype Codes**
   After testing the prototype web profile design, the user will evaluate the final results of the profile web prototype, and if there are deficiencies or errors in the coding design, the coding design will be corrected and start again from the coding design stage.
7. **Final Product Implementation**
   After the analysis, design, coding, and testing stages, the web profile is ready to be published on the internet. If after some time after publication there are errors or system changes, we will repeat the process starting from the analysis to ensure the application runs smoothly without drastically changing the application (Hermansyah, Wahyuni , and Akbar 2022).

RESULTS AND DISCUSSION

1) System Design

a) Use Case Diagram

Use Case Diagrams are useful as a description of the overall interaction, to facilitate further design (Abdurahim, et al. 2021) Use Case Diagrams serve as a description of the types of interactions that can occur between the user and the system. Here system users are divided into two, namely Admin and normal users who are separated according to the account logged into the system.



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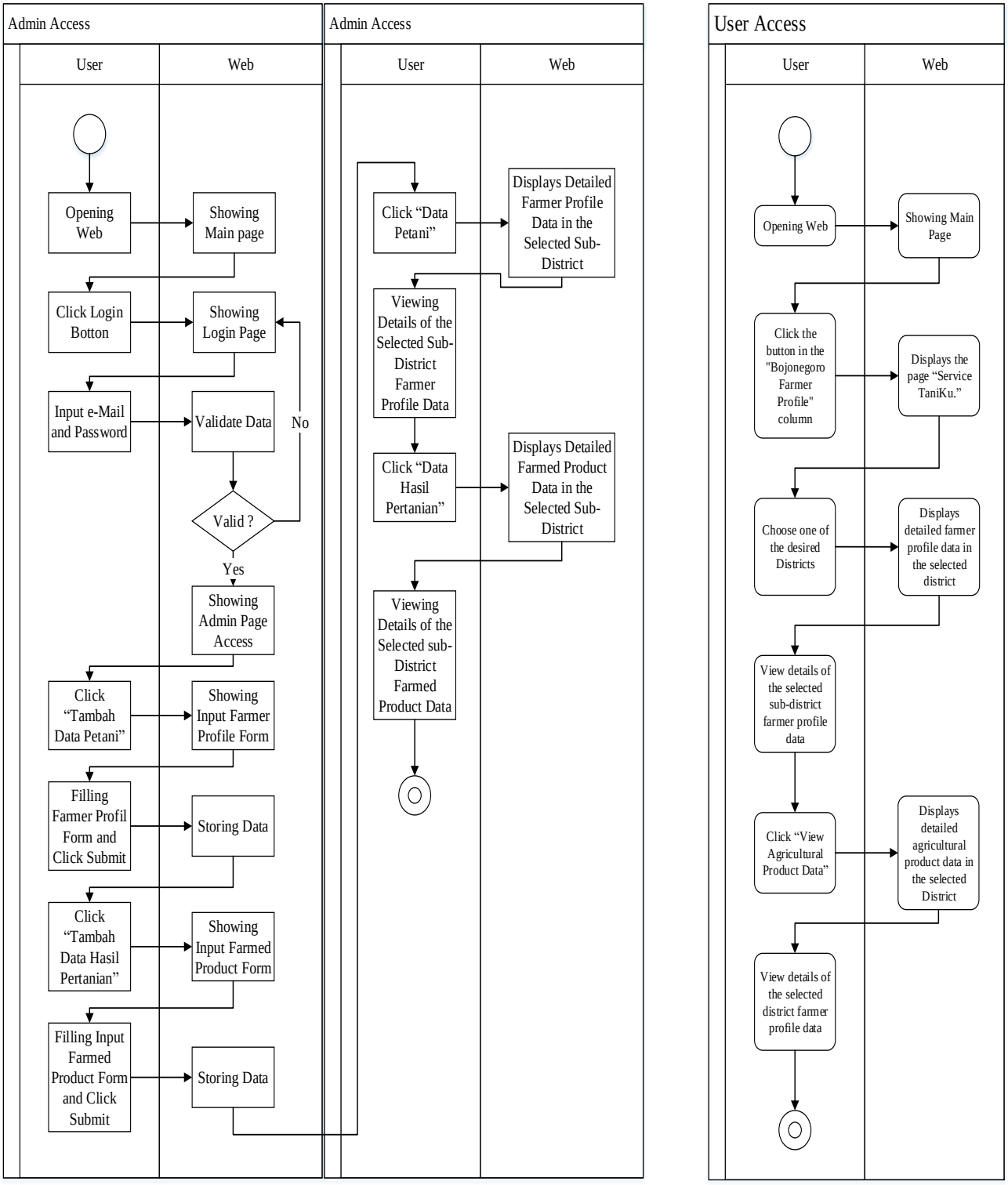
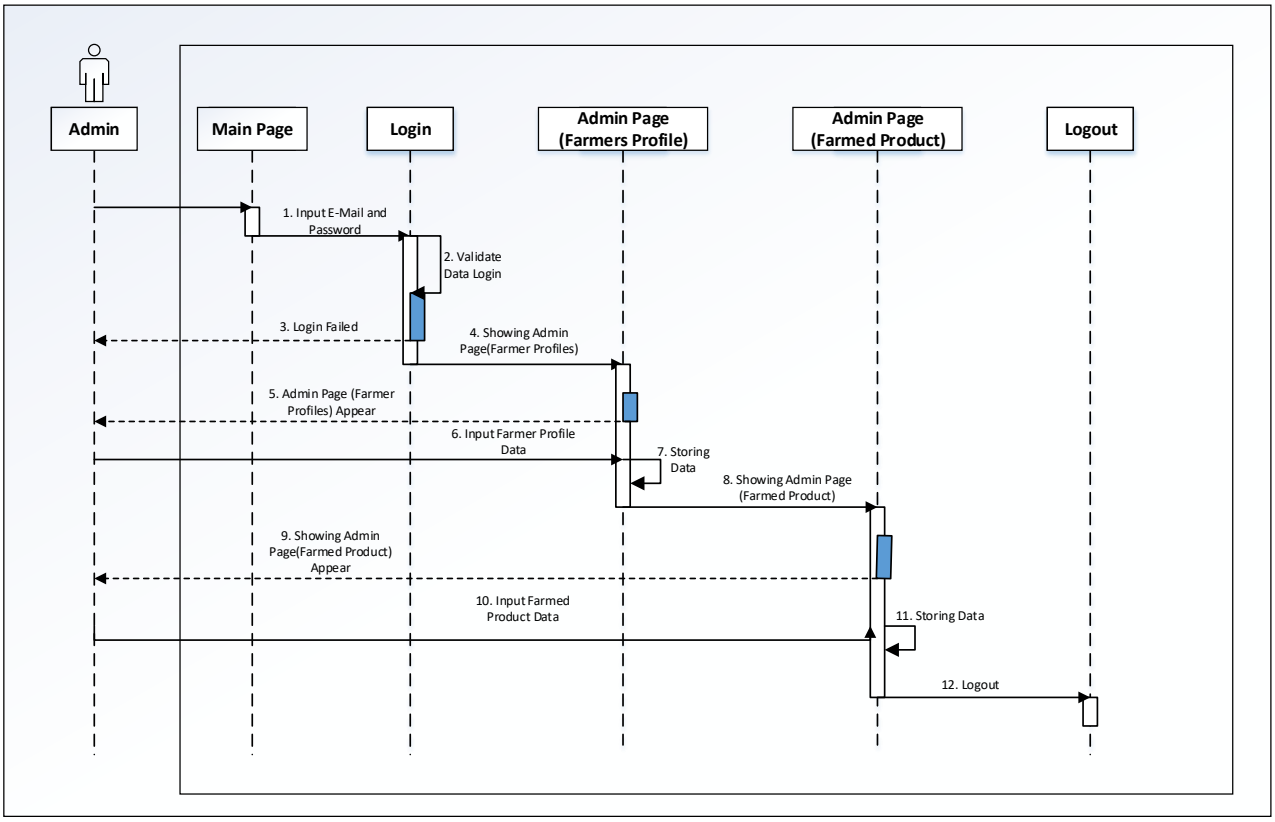
b) Activity Diagram

An activity Diagram is a description of the activity flow of the system contained in the use case diagram (Prihandoyo 2018). The Activity Diagram serves as a detailed description of the interaction between the User and the System in the Use Case Diagram. Here describes the interaction step by step from the beginning to the end of the interaction.



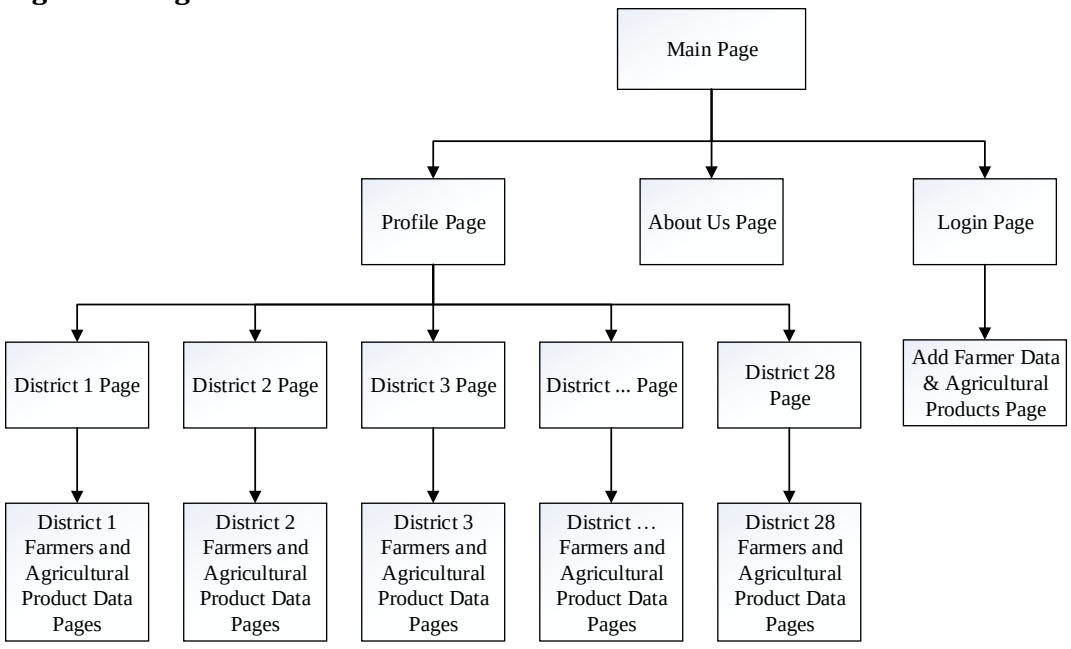
c) Sequence Diagram

Sequence Diagrams describe and display interactions between objects in the system in detail. Here it is divided into 2 dimensions, namely the vertical dimension and the horizontal dimension. In the vertical dimension, it shows the order of time and in the horizontal dimension, it shows the order of objects (Azwanti 2017).



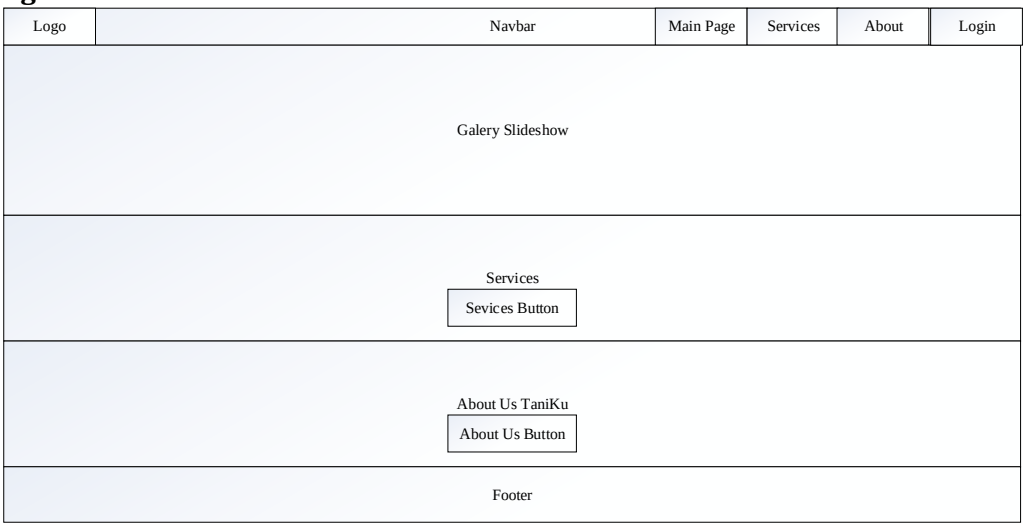
2) Web Design

a) Web Page Planning

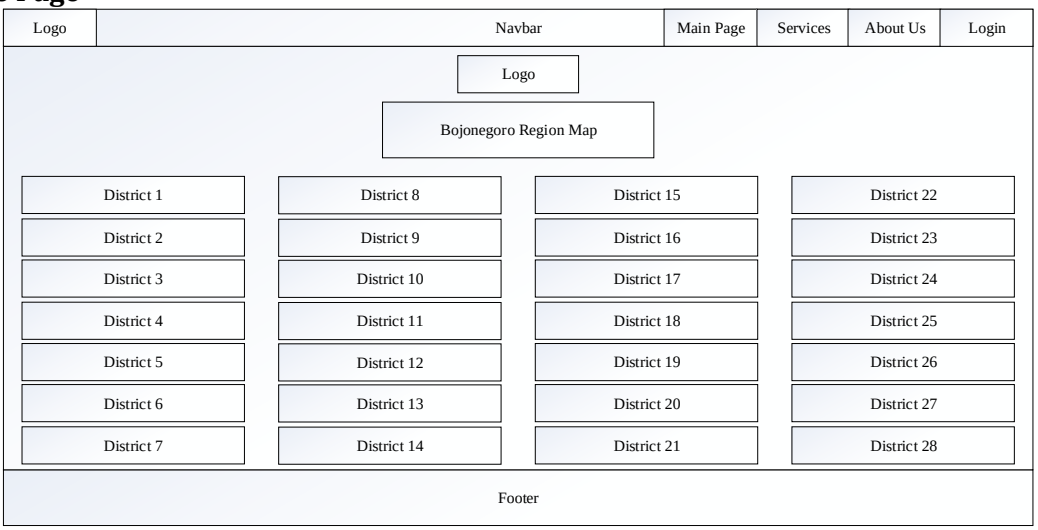


b) Interface Design

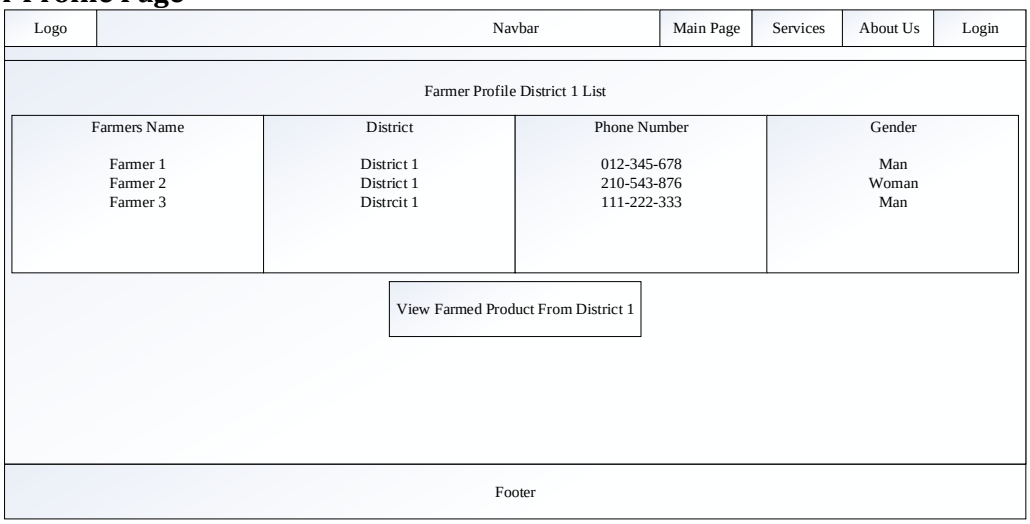
i) Main Page



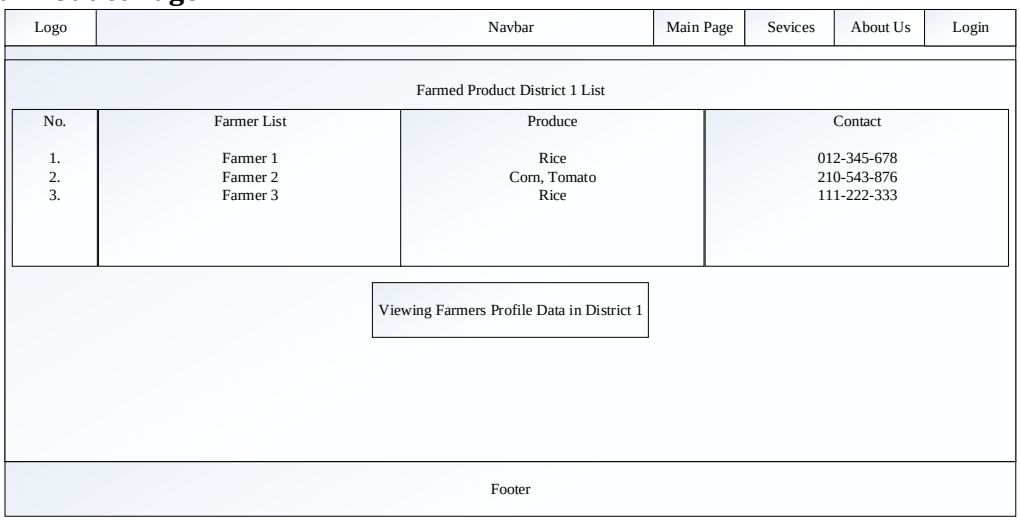
ii) Profile Page



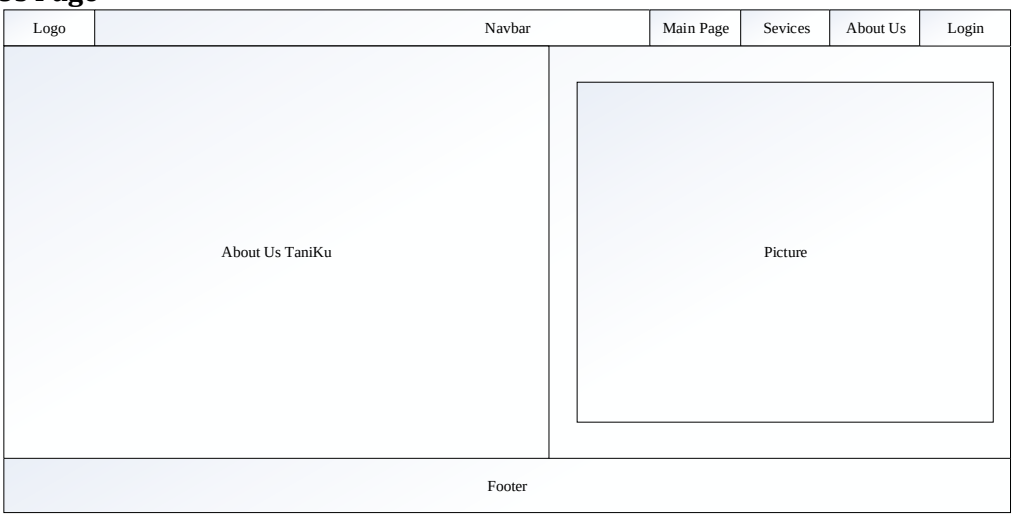
(1) Farmer Profile Page



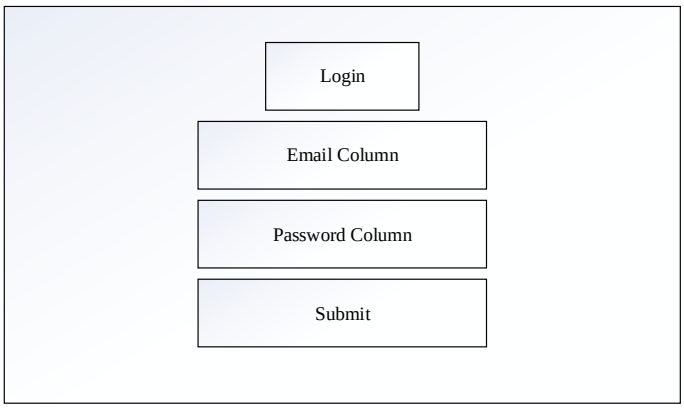
(2) Farmed Product Page



iii) About Us Page



iv) Admin Login Page



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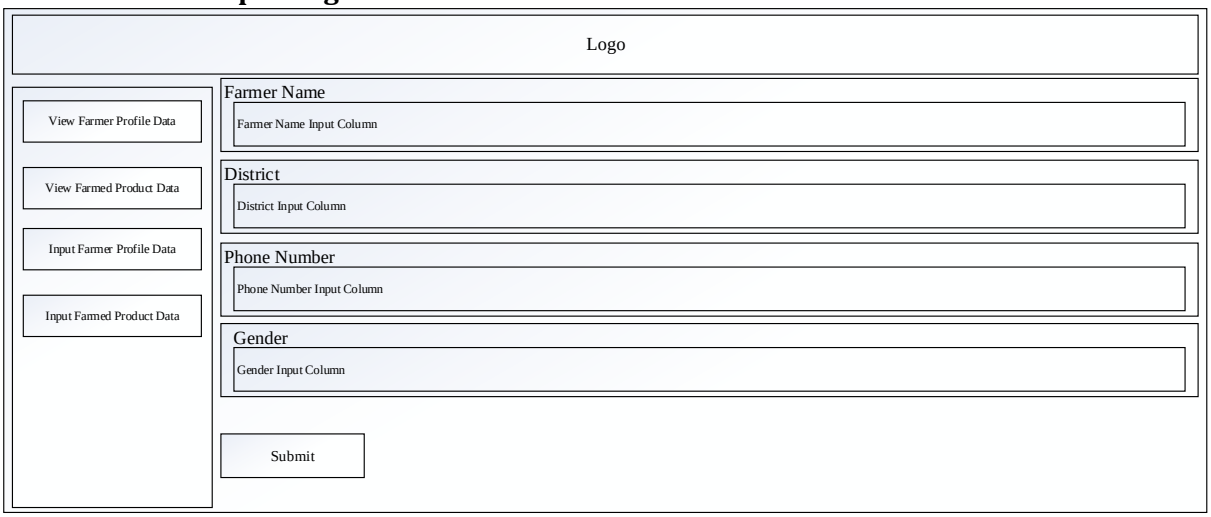
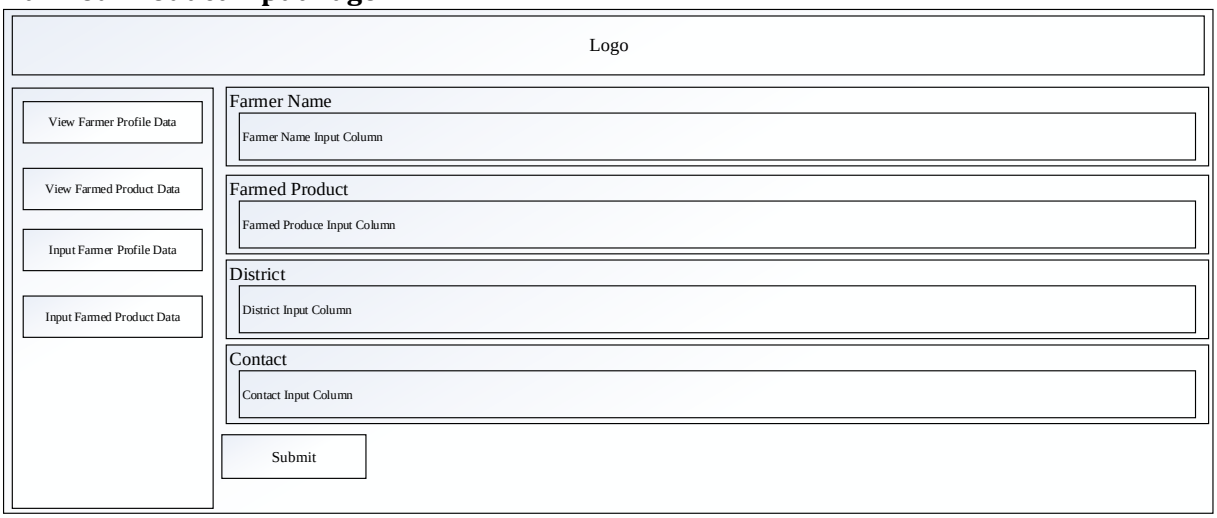
v) Admin Page

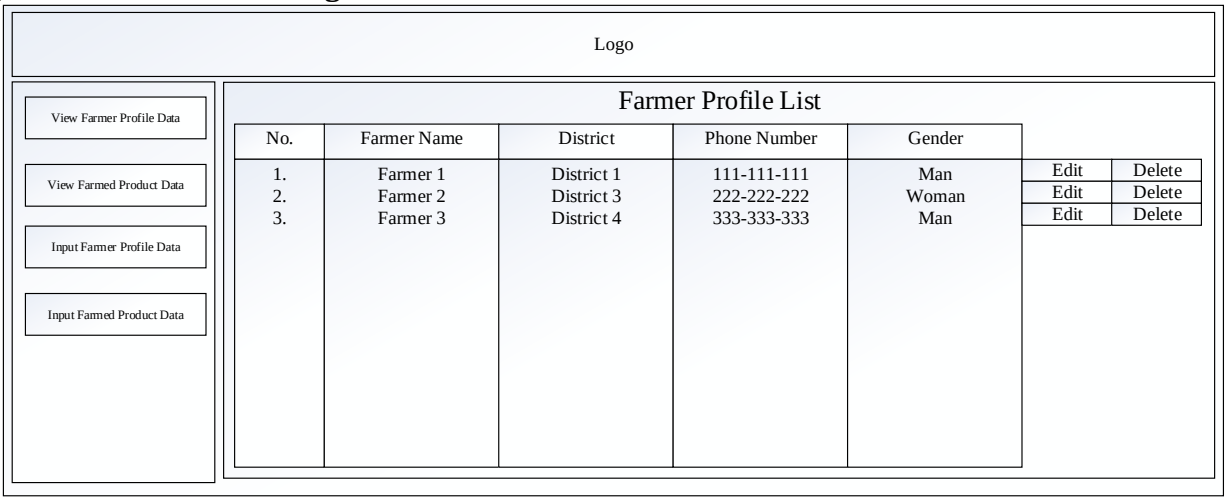
(1) Farmer Profile Input Page



(2) Farmed Product Input Page



(3) Farmer Profile View Page



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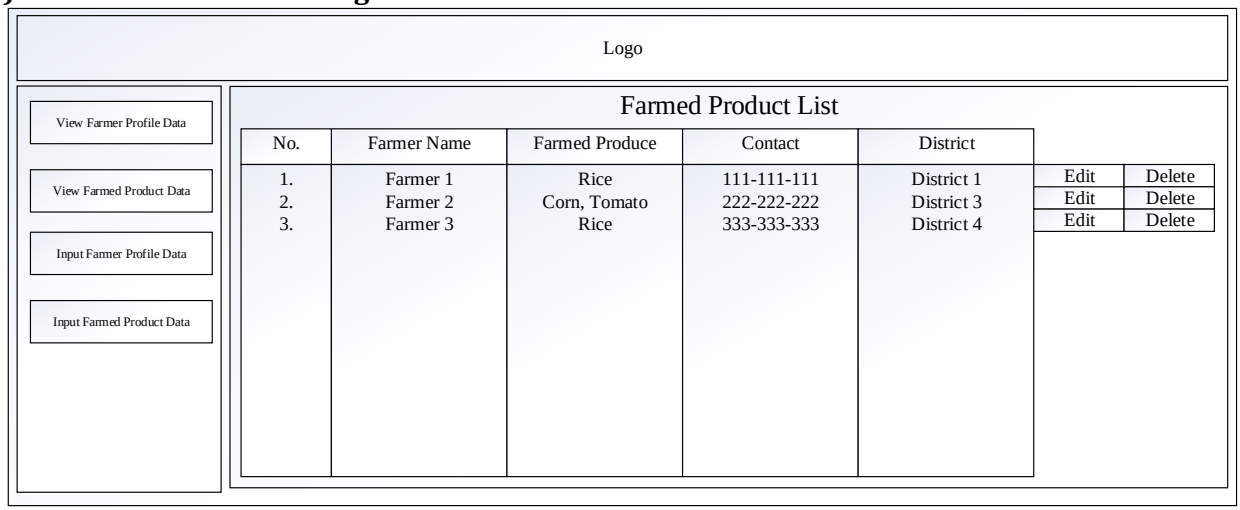
(4) Farmed Product View Page



CONCLUSION

Based on the results of the tests and discussions that have been carried out, it can be concluded that a web profile has been built to assist agricultural businesses in Bojonegoro Regency which will be managed and controlled by the Bojonegoro Regency Food and Agriculture Defense Service.

The suggestions that can be given for this information system is that the creation of this website is still simple, especially in terms of appearance and security, it is better for the new system development stage to be made as attractive as possible and further developed with additional, more complete information so that it can be more useful for profile web manager and user.

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