



Website-Based Rice Harvest Data Collection Information System

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Abstract. The purpose of this research is to help agricultural institutions get accurate crop statistics and make it easier for farmers to submit crop data. That way farmers do not need to come directly to send their harvest data. The method used in this research is the descriptive method, by reading from various available journals. The results of this study are expected to increase the effectiveness in the delivery of crop data. With this website, the delivery of harvest data from farmers to agricultural institutions will run quickly to shorten the time. In addition, it is hoped that this website can produce precise and accurate data, to be able to answer the availability of rice and indications of a decrease or increase in the number of harvests.

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1. Introduction

In any sector, information is the key to obtaining accurate data, one of which is in the agricultural or agricultural sector [1]. If the data is relevant and appropriate, then it can be said that the information can help agriculture. Information in agriculture helps to take appropriate measures to prepare a harvest strategy for the season or next year, speculating on market changes as well as avoiding circumstances that cause losses. It could be said that the development of agriculture depends on how quickly the relevant information is provided to a farmer. The traditional methods that have been used have not been very effective because they take too long, so that information or feedback from farmers will be too late. Therefore, with the online harvest data collection, it is hoped that it will be able to answer these problems.

The current situation of agriculture in developing countries is quite worrying, this is because data and information sources are scattered and fragmented, and time-consuming to use. This suggests that the potential of the data and information is not fully exploited [2]. Although this information systems research allows for an impact on agricultural ownership because it is important for good policy recommendations, some studies have discussed the relationship between farms and their sources of information [3]. One of the key elements of smart farming is the agricultural management information system [4]. Most of these implementations provide individual monitoring and represent strong investments, many of which farmers cannot spend this short time implementing a website solution for them. Therefore, it is very important to provide an understanding that can be applied by small farmers [5]. Because of its potential to improve agricultural problems in rural areas, it must be routinely evaluated among farming communities [6]. The advantage of this research compared to previous research is that the website user will use concise language also with a simple appearance so that it is easier to understand, considering that farmers are still not used to using websites to carry out this new data collection system.

2. Method

The research method used in this research is a descriptive method, by reading from various available journals. This research is carried out by a collection of data and information that has been obtained through facts stored in the form of documents from various regions as well as through books or reading resources related to the research theme. In designing the system, we use Figma as a web design creation software using iterative development methods. The iterative model can be said to be multi-waterfall. These cycles are divided into smaller ones and each iteration is easy to manage [7]. This iterative development is a rescheduling strategy in which time is set aside to revise and improve parts of the system [8]. The method of developing iterative systems (see Figure 1).

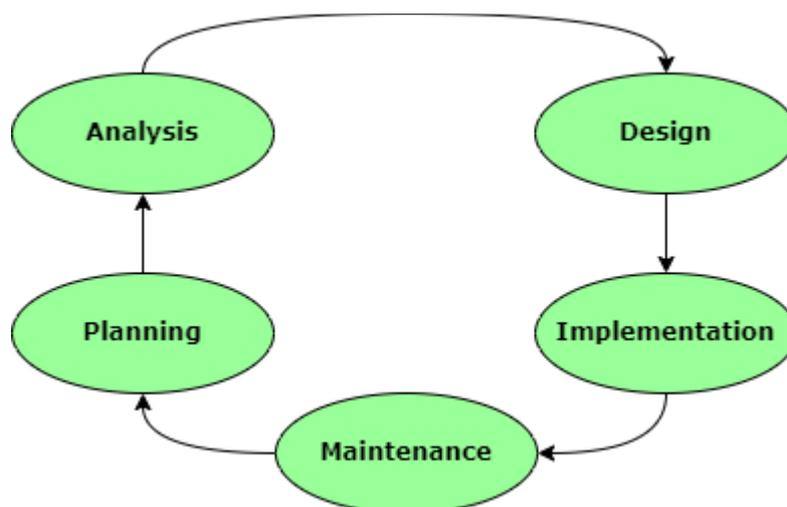


Figure 1. The method of developing iterative systems

The initial stage of this development method, namely Planning, is carried out to plan a system so that it runs well and is structured. Next, namely the Analysis stage. At this stage, an analysis of the user is carried out to obtain information on the needs of the user himself in

running a system. After that, the developer will make an initial design that will be used as a discussion material for users to be developed to make the website better. After the design is made, implementation will be carried out. This is done so that the software is ready for use by users. The next stage is Maintenance, this stage is intended so that developers always meet requests from users.

3. Results and Discussion

3.1. Planning

The initial stage in website-based data collection is the planning of the website to be created. Planning a solution to a problem that occurs in the world of agriculture in a rural area. The structure of the website-based rice harvest data collection (see Figure 2).

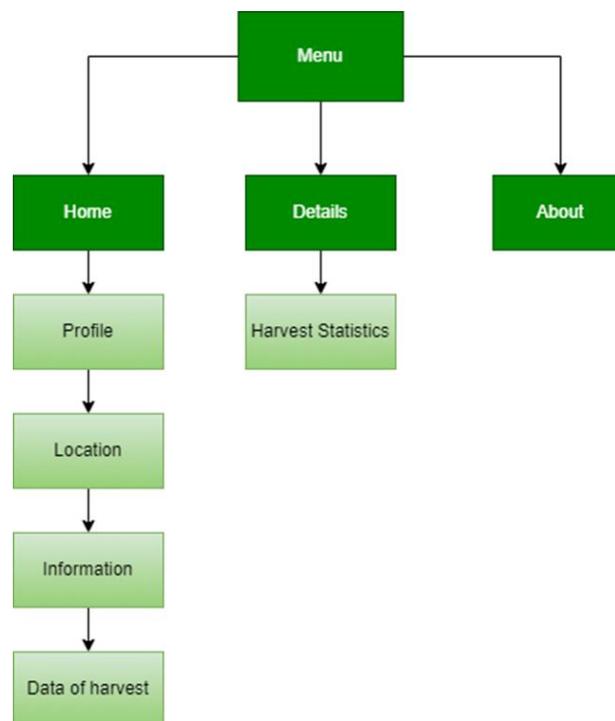


Figure 2. The structure of the website-based rice harvest data collection

Figure 3.1 shows the design of the Web-based Rice Harvest Data Collection menu structure. The home menu which is the main menu contains the profile, location, information, and data of harvest. For the detail's menu, there is only harvest statistics as information on harvest data and is directly conveyed to the user.

3.2. Analysis

This stage of the analysis focuses on the software to be created by the author. To make the data collection process better, the author designs the interface design contained on the website.

1. The web-based crop data collection information system has 2 users, namely:

Table 1. Data Collection Information System

Admin	Farmer
Admins can add, change, and delete crop data.	Farmers can input crop data into the website
Admins can add, change, and remove <i>passwords</i>	Farmers can view and organize the crops they have obtained by category
Admins can add, change, and delete categories	Farmers can view and edit profiles they have
Admins can view data for logging confirmations	Farmers can access the information contained on the website
Admins can view and print reports	

2. There are 2 system needs needed, namely:

System Administrator	Member System
Admins can log in to the website administrator page to manage the data and information that appears on the website and can view incoming data and crop reports	Farmers who have registered can log in with their username and password, if they are not yet a farmer member, they can register to become a member. If they have logged in, members can look through harvest data, and input data

3.3 Design

In the early stages of doing a design, the developer designs the front page of a website. The screen contains logins divided into 2, namely login for farmers and login for agricultural institutions, then there are details containing details of agricultural products, which contains website information, and views of Bandung regency. The design of the website start page has been made as simple as possible so that it is easier for users to understand. The start page is (see Figure 3).

The next view is the login view, the user can log in as a Farmer or log in as Agricultural Institution. Users must enter their email and password to access the website further. Farmers and institutions that will log in are required to already have an account that has been registered first. The login view (see Figure 4).



Figure 3. The design of the website start page

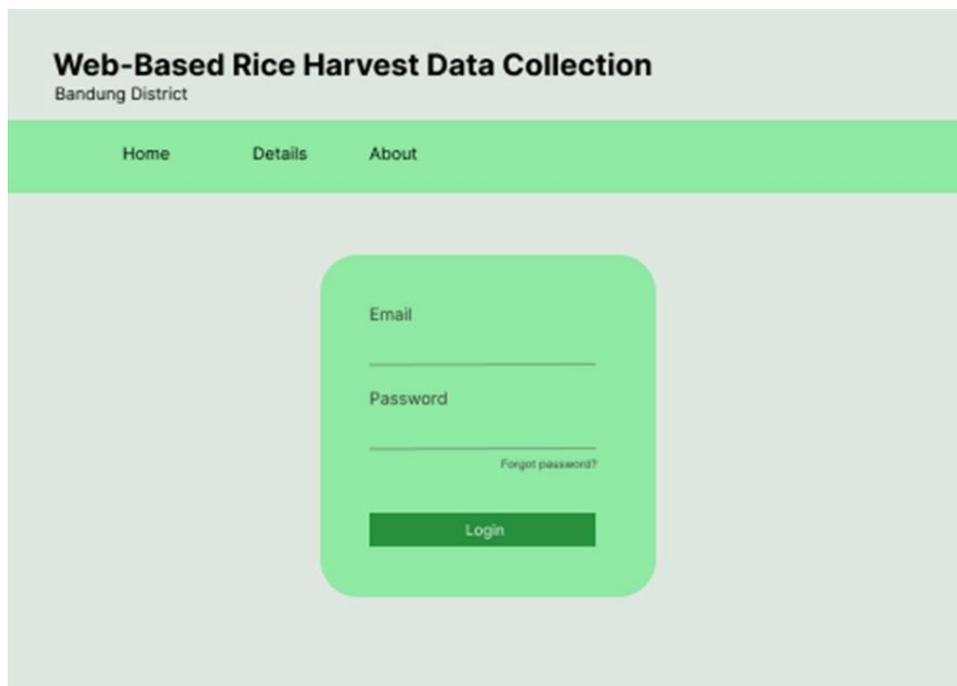


Figure 4. The design of the website login view

The appearance of the initial menu on the homepage, that is, the profile of the farmer. The profile can be accessed and changed by farmers, but agricultural institutions also have access to the menu. So that agricultural institutions can find out who has owned or registered their identity on the website (See Figure 5).

Then, the location menu to find out the Bandung Regency area that has paddy fields. In the location menu, farmers can also add locations that have paddy fields that are not yet known by many people. That way, farmers can add their insights to the rice fields that they have not encountered so far. The location menu (see Figure 6).

The information menu is intended to find out how many farmers and agricultural institutions are in the city/district. The information menu is important for both parties, whether farmers or agricultural institutions so that there is no missed data to create accurate data. The information menu (see Figure 7).

Harvest data is accessed to send information on harvests carried out by farmers and is addressed to agricultural institutions to facilitate and speed up data processing. Because the processing of harvest data will produce useful information for agricultural institutions. Harvest data (see Figure 8).

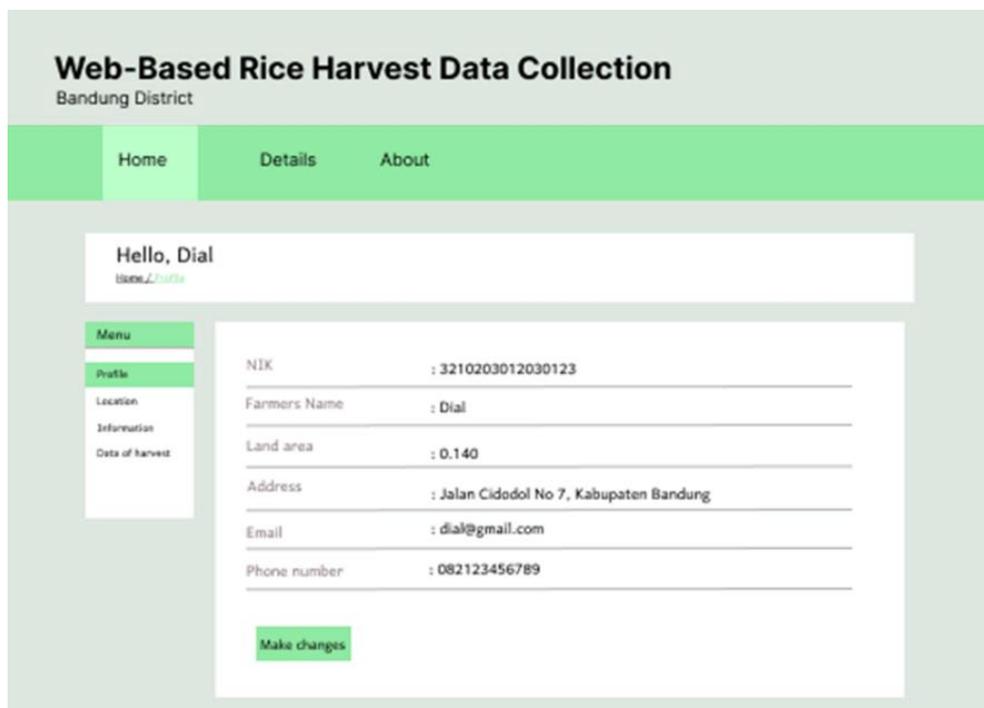


Figure 5. The website home view

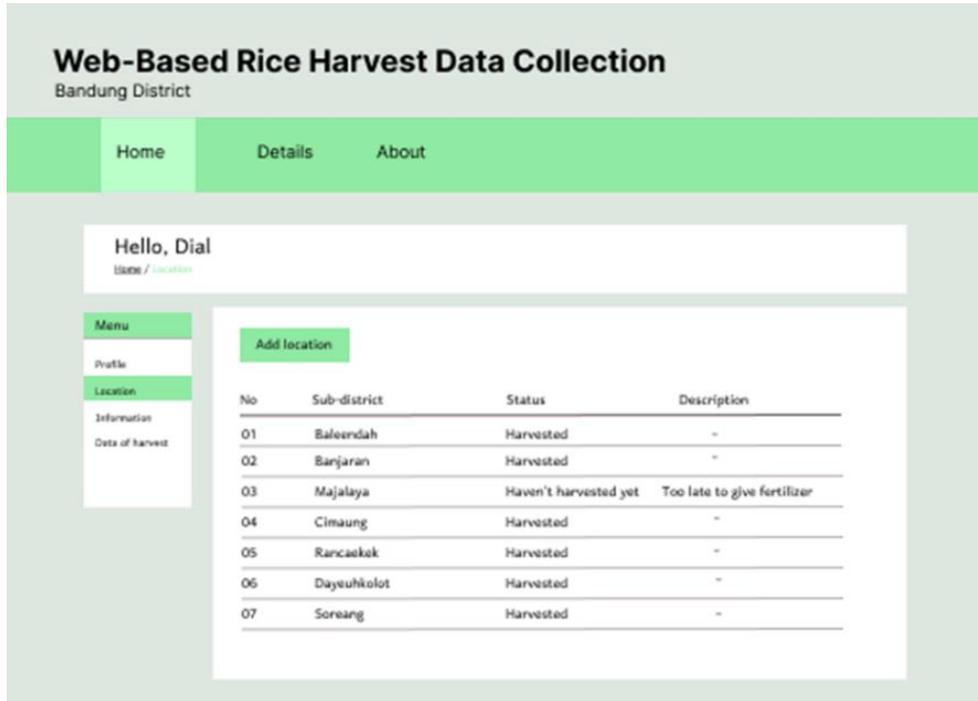


Figure 6. The website location menu view

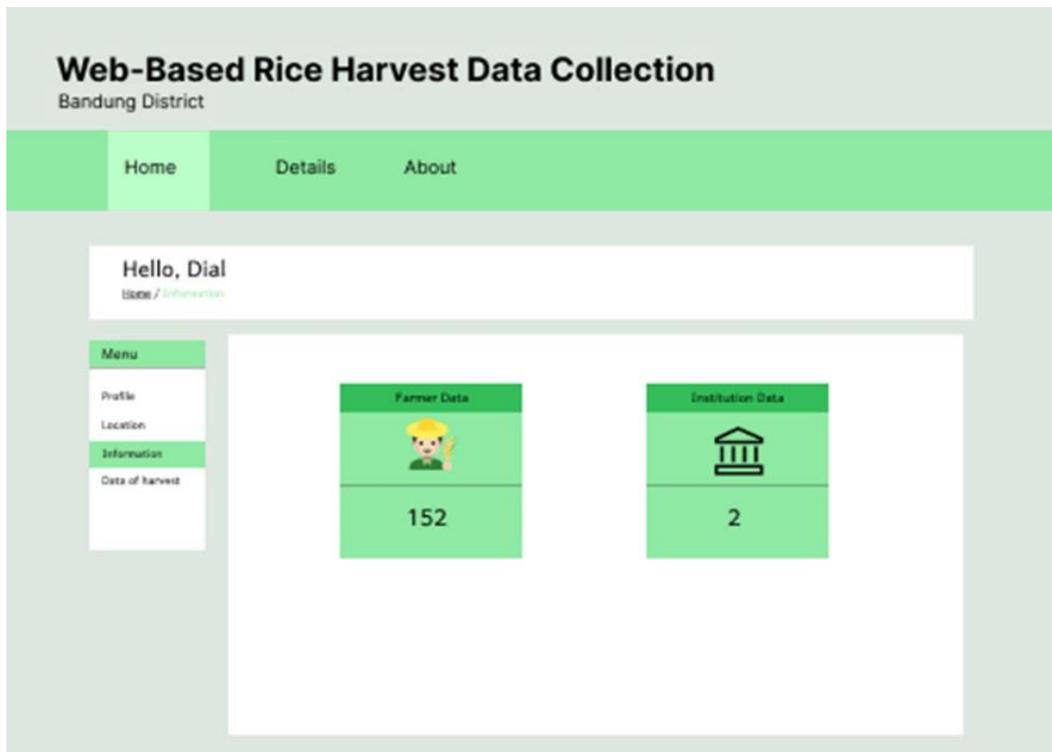


Figure 7. The website information menu view

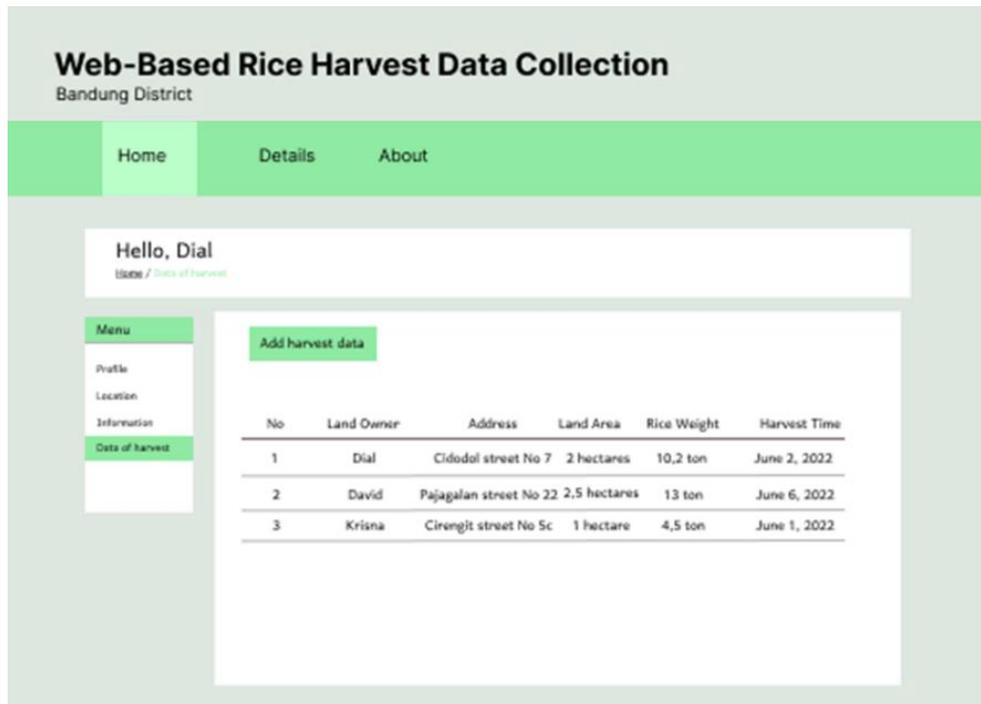


Figure 8. The website harvest data view

Finally, agricultural institutions input and record as accurately as possible annual harvest data. The statistics of harvest data are located in the details. The data is in the form of harvest data per hectare each year to year, intended so that farmers obtain appropriate and accurate data. The details of the Harvest Statistics (see Figure 9).

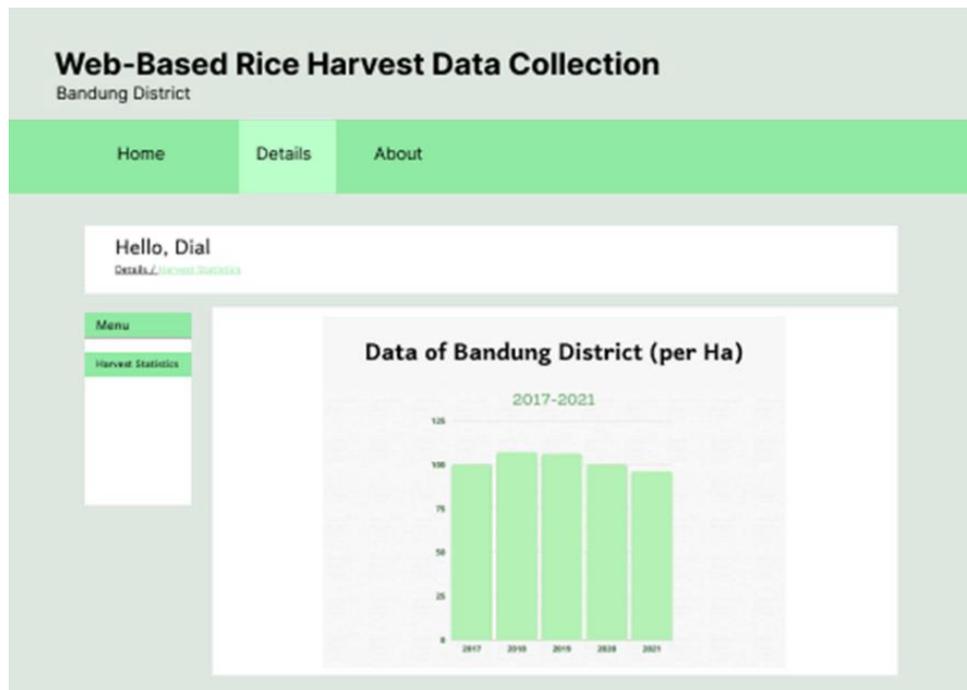


Figure 9. The details of the Harvest Statistics

3.4. Implementation

If the planning and design are mature, then the developer does the implementation (implementation). This is done so that the developer knows the impact and benefits of the website he created for farmers and agricultural institutions. To allow the implementation of systems that support agriculture to go well [9].

3.5. Maintenance

The next stage if the implementation goes according to plan, namely Maintenance, allows for the existence of dynamic modifications of the knowledge structure based on current beliefs for each known fact. The goal is to carry out website maintenance and replacements as needed to match the previous planning. Maintenance is also aimed at reducing costs.

4. Conclusion

The Rice Data Collection website is designed to be the main need for farmers and agricultural institutions to exchange information, especially related to crop data in an area. This website was created to ease the task of farmers in manually submitting harvest data to local agricultural institutions. Agricultural institutions can obtain statistics easily because this web is designed to be as minimal as possible to be practically used by farmers who do not understand technology.

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