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# DEVELOPMENT OF A TECHNOLOGY-BASED INTERACTIVE FOR AGRICULTURAL INFORMATION DISSEMINATION IN THE SIDAPDAP SIMANOSOR VILLAGE FARMERS' GROUP

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**Abstract:** Sidapdap Simanosor Village Farmers Group faces challenges in accessing and managing agricultural information efficiently. Limited resources and the absence of a web-based platform hinder the distribution of information quickly and accurately. This study aims to develop a technology-based agricultural forum site to improve the accessibility of information for farmer groups. The method used is the Waterfall software development model, which includes needs analysis, design, implementation, testing, and maintenance. The results of the study indicate that the agricultural forum website can function well and provide convenience for farmer group members in accessing information, sharing experiences, and increasing collaboration between farmers. The implementation of this information technology has been proven to increase the efficiency of the agricultural information system, support sustainable agricultural practices, and encourage the growth of the agricultural sector in the area.

**Keywords:** farmer groups, agricultural information systems, agricultural websites.

**Abstract:** Kelompok Tani Desa Sidapdap Simanosor menghadapi tantangan dalam mengakses dan mengelola informasi pertanian secara efisien. Keterbatasan sumber daya dan tidak adanya platform berbasis web menghambat distribusi informasi yang cepat dan akurat. Penelitian ini bertujuan untuk mengembangkan situs forum pertanian berbasis teknologi guna meningkatkan aksesibilitas informasi bagi kelompok tani. Metode yang digunakan adalah model pengembangan perangkat lunak Waterfall, yang meliputi analisis kebutuhan, perancangan, implementasi, pengujian, dan pemeliharaan. Hasil penelitian menunjukkan bahwa situs web forum pertanian dapat berfungsi dengan baik dan memberikan kemudahan bagi anggota kelompok tani dalam mengakses informasi, berbagi pengalaman, serta meningkatkan kolaborasi antarpetani. Implementasi teknologi informasi ini terbukti meningkatkan efisiensi sistem informasi pertanian, mendukung praktik pertanian berkelanjutan, serta mendorong pertumbuhan sektor pertanian di daerah tersebut.

**Keywords:** kelompok tani, sistem informasi pertanian, situs web pertanian.

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## INTRODUCTION

In today's rapidly developing digital era, information systems play a very important role in facilitating accessibility and efficiency in various sectors, including the agricultural sector (Rafli, et al., 2020). Agricultural information systems have opened up new opportunities for farmers to increase access to important information, utilize relevant data, and increase efficiency in decision-making related to agricultural activities (Kusumah, Ramadhon, & Fajri, 2022). In the context of agriculture, information systems can help farmers access the latest information on weather conditions, climate change, effective farming techniques, price market, And development latest in the agricultural sector (Winarko, Junaidi, & Sinuraya, 2021).

With the existence of an information system it is possible group farmer For manage their data more efficiently and accurately, this information system is specifically designed to help them record information about group members, agricultural land, agricultural activities etc (Zheng et al., 2021). With an information system, data can be accessed, updated, and analyzed easily, thus facilitating better decision making (Setiawan, et al., 2020). In addition to internal benefits for farmer groups, this information system also contributes to the development of agriculture outside the region as a whole by providing useful information to help for farmer others in increase the productivity and quality of their agricultural products (Santi & Guntarayana, 2022).

Group farmer Village Sidapdap Simanosor, located in Saipar Dolok Hole District, South Tapanuli Regency, North Sumatra, is a group consisting of farmers. local Which own role important in processing land agriculture in region As a farming group that focuses on agricultural activities, they face various challenges in managing agricultural related information and utilizing information systems in a way effective. Wrong One challenge.

Which faced is the limited adequate facilities for delivering information related to agricultural information processing (Dewi et al., 2021). Currently, the farmer group does not have adequate access to A platforms, like website, Which can be a reliable source of information. By not existence platform based on website As a means of delivering agricultural processing information, farmer groups have difficulty obtaining the necessary information quickly, accurately and reliably. Limited accessibility and efficiency in the information system agriculture can hinder the potential for growth and development of the agricultural sector in the region(Bahn et al., 2021)

Based on the problems faced to improve the accessibility and efficiency of information systems in farmer groups in Sidapdap Simanosor Village, designing a special website can be an effective solution. This website will be designed with a focus on the needs and requirements of agricultural information systems that are relevant to the group. farmer with interface Which responsive, easily accessible, and focused on the needs and characteristics of farmer groups. With this website, farmer groups can access agricultural information easily.

The urgency of this research lies in the urgent need to improve the accessibility and efficiency of information systems for farmer groups in Sidapdap Simanosor Village. By designing a special website that suits the needs of farmer groups, this research contributes to providing digital solutions that can improve the management of agricultural information in a more systematic and structured way. This website will be developed with a responsive interface, easy to access, and tailored to the characteristics and needs of local farmers, so that it can help them obtain relevant information more effectively.

The novelty of this research lies in the development of a website-based information system that is specifically designed to support farmer groups in rural areas by considering local conditions and user needs. Different from previous studies that focused more on agricultural information systems in general, this research focuses on optimizing the management of digital-based farmer group information at the community level. In addition, this research is expected to be a model for implementation for other areas facing similar challenges in utilizing agricultural information systems.

## METHOD

The waterfall model is a software development process model that follows sequential stages, starting from requirements analysis, design,

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implementation, testing, and maintenance where model This is often referred to as a "linear-sequential" model because each stage must be completed before the next stage begins (Wan Nor Ashiqin Wan Ali, 2023). Model This is one approach to software development that follows a series of linear, sequential stages, similar to a waterfall flowing down from above. to lower. Explanation stages can seen as in:

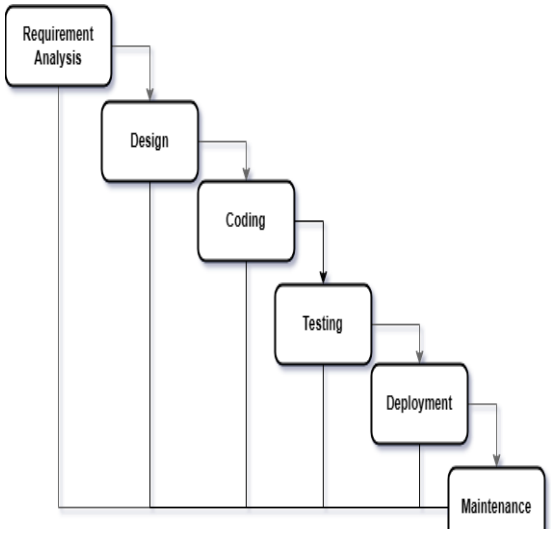


**Image 1. Stage of Research**

1. Requirements Analysis

The first stage is to collect and analyze the needs of the system to be developed. This involves interacting with stakeholders to understand the goals, requirements, and business needs that must be accommodated in the system.

2. Design

Once the requirements are gathered, the team develops a detailed system design. This includes architectural design, user interface design, database design, and other software component designs.

3. Encoding

This stage involves writing software code based on the design that has been created. made previously. The developers work to implement various features and functions required by the system.

4. Testing :

After code written, stage testing started. Various types of testing were carried out For ensure that software runs correctly according to specifications. Testing may involve unit testing, integration testing, functional, performance, And etc.

5. Implementation ( Deployment ):

Once the software has passed testing, it is ready to be deployed in a production environment. This involving installation software on the target system and ensure that the system works correctly in a production environment.

6. Maintenance

After the software is implemented, maintenance and care done for ensure the device soft still walk with well. This involves fixing bugs, improving features and changing as business needs evolve.

**Workflow Forum Agriculture**

Workflow is used to reflect how users will interact with the farming forum system, starting from the home page, creating threads, participating in discussions, managing accounts, and collaborating in user groups (Bradway et al., n.d.). This diagram provides a visual view of the main steps in using the forum system, so that users, including member group farmer, can easily explore and take advantage of all the features Which provided by platform This. This helps minimize user friction and ensures an efficient and rewarding experience in the exchange of agricultural information. With this visual view, users can easily understand how they can maximize the benefits of this agricultural forum system, improving access they to valuable agricultural information, and enhance collaboration within the farming community (Ahmad Zainudin et al., 2021).

**Forum Interface Functionality**

At this stage, the functionality that has been designed in the user interface is translated into real cases, ensuring that all the elements that have been designed work as intended. Here, various features such as question creation, comment submission, user account management, search, and others will be described. Matter This aiming For allows users to interact with the forum smoothly and efficiently, providing an experience for those who wish to participate in the exchange of agricultural information, and ensuring that interface forum agriculture is operating as expected.

## RESULTS AND DISCUSSION

**Functionality Admin Interface**

In this section, we will explain the functionality of the admin interface in the agricultural forum system. The admin interface has

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a role important in manage And supervise the forum in a way overall. A number of functionality contained in the admin interface

**Page Admin Dashboard**

This page is the main interface used by administrators in the farming forum system. It is a control and monitoring center that allows admins to manage and supervise various aspects of the forum. Here are some elements that are usually found on the page.


**Image 2. Dashboard View**

**Page Manage Users**

This page is an interface used by administrators to manage user accounts in the farming forum system. It allows admins to perform various user-related actions, such as editing, or deleting accounts, as well as managing permissions and access rights.

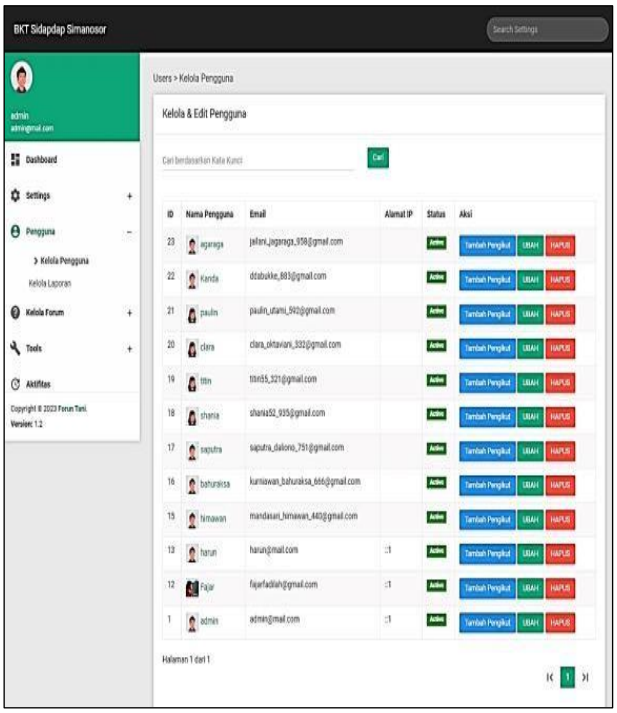


**Image 3. manage users view**

**Page Activities Forum**

This page allows users to view recent activity related to the Q&A forum in the farming system. This helps users to stay informed about questions, answers or discussions. latest Which happen in in community

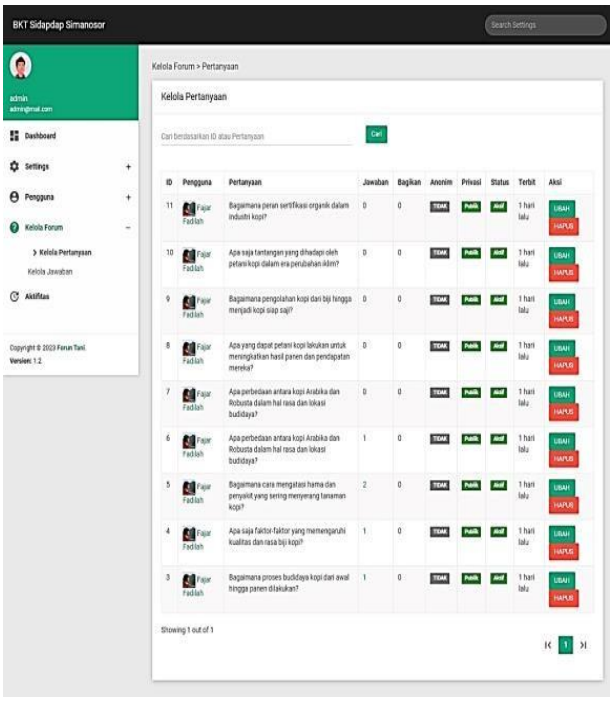


**Image 4. Activities View**

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**System Testing**

System Testing is a very important stage in the development of an agricultural forum information system. At this stage, a series of tests and evaluations are carried out with the aim of For ensure that system (Ilmu et al., 2024). This test aims to verify the key functions in managing questions and answers in the agricultural forum system. The test results can be found in the table below.

| No | Elemen Kunci | Aksi Pengujian | Pengamatan | Hasil |
|---|---|---|---|---|
| 1 | Daftar Pertanyaan dan Jawaban | Melihat daftar pertanyaan dan jawaban terdaftar. | Daftar menampilkan judul pertanyaan, penulis, tanggal, dan aksi yang dapat dilakukan. | [√] Berhasil |
| 2 | Pencarian Pertanyaan dan Jawaban | Mencari pertanyaan dan jawaban berdasarkan kriteria tertentu. | Pencarian berfungsi dengan benar, menghasilkan hasil yang relevan. | [√] Berhasil |
| 3 | Detail Pertanyaan dan Jawaban | Mengklik judul pertanyaan untuk melihat detail lengkap. | Detail mencakup isi pertanyaan, tanggapan, dan informasi terkait lainnya. | [√] Berhasil |
| 4 | Hapus Pertanyaan dan Jawaban | Menghapus pertanyaan dan jawaban. | Dapat menghapus pertanyaan dan jawaban dengan konfirmasi untuk mencegah penghapusan yang tidak disengaja. | [√] Berhasil |

## CONCLUSION

The objective of this research has been achieved, namely building an online agricultural forum system that functions as an effective tool to increase the accessibility of information. And efficiency in exchange data among the members of the Sidapdap Simanosor Village Farmers Group. Through the implementation of this system, the following is a number of conclusion Which can be expressed. The Agricultural Blog Website Operates Well In this study, it can be concluded that the agricultural forum website that has been designed and implemented can function well. Success operational website This already given member group farmer ease of accessing agricultural information, sharing advice, and participating in exchange knowledge, Which all can contribute to the development of agriculture for the Sidapdap Simanosor Village Farmers Group Increasing Access to Information With the existence of an agricultural Q&A forum website, members of the farmer group can increase accessibility to information in the agricultural forum. They can easily access information latest, suggestion, and agricultural responses Efficiency in Sharing Information This website has also proven that efficiency in sharing information between members group farmer can enhanced. With a structured Q&A forum, members can interact with each other, share experiences, and exchange ideas more efficiently.

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