MOBILE WEB TO CONTROL FARMING SYSTEM

(MFS)

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ABSTRACT

In the present modern agriculture continues to grow by leaps and bounds. Many technologies have been developed agricultural systems in the new millennium era. Accordingly, IT technology (network) is also capable of developing modern agriculture with the use of IT systems. In addition, the IT facilities in agricultural systems can make employees work more comfortable and save energy. Peasant farmers Malaysia now many still use the old method and it causes them to need a lot of manpower to manage their agricultural park perfectly. Can they hire too many workers to keep their farms? So I am planning to build a system using technology IT. This is because mobile phone technology has been used extensively. By using a wireless network, all things can be overcome piping where the pipe system can be controlled to open and close the drain pipe for watering and fertilizing plants. Communication between sensor nodes and servers is achieved through wireless modules. The architecture of the whole system shows the advantages of cost, size, flexibility and power it is believed that the result of the project allows the opportunity to perform research and development.
ABSTRAK

Di masa kini pertanian moden terus berkembang dengan pesat. Banyak teknologi yang telah membangunkan sistem pertanian dalam alaf era baru ini. Justeru itu, teknologi IT (rangkaian) juga mampu membangunkan pertanian moden ini dengan menggunakan sistem teknologi IT. Di samping itu, kemudahan IT dalam sistem pertanian boleh membuatkan pekerja bekerja dengan lebih selesa dan menjimatkan tenaga. Petani petani Malaysia kini masih ramai yang menggunakan kaedah lama dan ianya menyebabkan mereka memerlukan banyak tenaga kerja untuk menguruskan taman pertanian mereka dengan sempurna. Mampukah mereka mengupah pekerja terlalu ramai untuk menjaga ladang mereka? Jadi saya merancang untuk membina sebuah sistem dengan menggunakan IT. Ini kerana teknologi telefon mudah alih telah digunakan dengan luasnya. Dengan menggunakan rangkaian wayarles, segala urusan perpaipan dapat diatasi dimana sistem paip dapat dikawal untuk membuka dan menutup saliran paip untuk menyiram dan membaja tanaman. Komunikasi antara nod sensor dan pelayan dicapai melalui modul-modul wayarles. Seni bina sistem keseluruhan menunjukkan kelebihan kos, saiz, fleksibiliti dan kuasa ia dipercayai bahawa hasil projek membolehkan peluang untuk melaksanakan penyelidikan dan pembangunan
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<th>Meaning</th>
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<td>1</td>
<td>MFS</td>
<td>Mobile Farming System</td>
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<tr>
<td>2</td>
<td>RAD</td>
<td>Rapid Applications Development</td>
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<tr>
<td>3</td>
<td>SDLC</td>
<td>System Development Life cycle</td>
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<td>4</td>
<td>SSADM</td>
<td>Structure System Analysis and Design Method</td>
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CHAPTER 1

INTRODUCTION

1.1 Introduction

Project engineering Bachelor chains (mobile farming system) is a system that will be developed to help of farmers to modernize agriculture system and to see how the system can help to save the number of employees of farmers, cost, time and so on. This system can help them to watering or fertilizing their crops just using the phone.

The rear end is a process that users cannot see how it's working with this part, I will help farmers of traditional or modern farmer to find out and check the status of the system whether it works well or not.

This process focuses on farming or agriculture. Using this system, it will explain how system can help farmers to become their complete farming to reduce the cost of recruitment. This transformation services to create a system to facilitate ways for watering, fertilizing crops without using a lot of manpower.

Systems can also be carried at all times by a variety of weather conditions such as rain and heat. By using mobile chains farmers can open and close the anointing water and temper them even if they are anywhere.
2.1 Problem statement

The purpose of this project is to identify problems of farmers who need more people to manage gardens and their plants. However, they face several problems with the current system is done manually. The basic hypothesis is that of farmers can save labor cost and use the money to further expand their farming system portable. It can also prevent workers from being exposed too long in the sun and can save time employees and will reduce energy applied to commute to the garden. The problem with the current system is done manually.

There have 2 problems in the current system will be reduced by using this system:

i. Watering and fertilizer management at the garden

The current system does not have a support system that can guarantee agricultural production will do a good job during bad weather such as rain and drought. Weather conditions such as these employees will be lazy for gardening like watering and fertilizing their crops as they were. The system now has a schedule for watering and fertilizing employees do on a daily, weekly or monthly. It could save their workforce as well as they can activate the system even if they are anywhere. This process is important for ensure their crop is in control despite being anywhere using portable agricultural system.

ii. Requires a lot of workers in every large garden

The current system requires a lot of labor to farm owners who have a lot where people have to go every gardener to open the tap to pour water or for fertilizing. With this system a farmer can reduce the manpower to monitor every farm and can reduce the time for employees to move from one place to another.

iii. Working environment
3.1 Objective

The implementation of this project is expected to reach the following objectives:

- To develop a system to control watering and fertilizer management via web mobile phone
- To reduce the time for staff to manages the gardens and reduce manpower.
- To propose computerize system

4.1 Scopes of Study

- Planning on using simple system and less number of hardware
- Analyze system available to build new system
- Design a web base system and coding to send instruction to GPIO at raspberry pi model B+ and used the relay to control switch.
- Build a complete system with software and hardware
- Testing to system
- Introduce the system to the user
CHAPTER 2

EXISTING SYSTEM

2.1 Introduction

Mobile farming system enhances everyday life of farmers. You would not believe the level of the superior comfort, convenience, control, security and energy efficiency until you have experienced it yourself. The Clipsal range of smart products, it is easy to be energy efficient.

This chapter discusses the research conducted over the past studies related to the project. The materials used in this study include manual piping and liquid fertilizer system manually. Only issues regarding the project sought, collected and analyzed to compare the methods and technology used in addition to finding the best solution to the problem.

Mobile Farming Systems is a creator and manufacturer of commercial and personal hydroponic systems. Our feature product is the Garden Stand, a patio sized hydroponic grow system. No more stooping and digging in the dirt to have a magnificent garden in your back yard. Our systems work with nutrients, water and gravity and will provide you and your family with an enjoyable and rewarding gardening experience without the dirty mess of typical gardening.
The development of mobile agricultural systems are usually based on the life cycle model using mobile chains for gardening has several stages of development and with a set of steps and rules for each level. The tasks involved in each step, the nature of each task, and the order in which tasks need to be done.

2.2 Existing System Description (Mobile Farming System)

The so-called mobile farming system to take advantage of automation technology and modern building techniques to deliver a new level of control of the owner of farmer’s. Farmers can be built from scratch with automation as a key design goal, or built from existing farm during a major renovation. In both cases, mobile farming system offers several advantages over conventional farming.

2.2.1 Advantage of system

i. Convenience

Convenience is one of the biggest reasons that people build and buy mobile farming system. This field gives users remote access to the system, including heating and cooling systems throughout the farm. Integrated watering system allows landowners to gardening or farm manure everywhere easily. All of these agricultural systems technology portable coordinate common tasks.

ii. Accessibility

For farm workers, agricultural system portable display technology facilities. Voice-command system can do things like watering and fertilizing system operates using a mobile. Automation system allows an individual to set a schedule for automatic tasks such as watering the lawn, eliminating the need to perform these tasks remain labor intensive.
iii. Resale

When it comes time to sell mobile farming systems, the seller will have many selling points effectually. Any chance of a portable agricultural system appeal to buyers is given; the seller can explain the system and discuss how it makes life easier. Farms with automated systems have the potential to sell for more than comparable conventional technology of agriculture. Automate farming systems can be a worthwhile investment in improving the market and attract buyers might in the future.

A mobile farming system allows you to save money and save the environment! If you're like me and getting forgetful in my old age of automation system to turn off the equipment for watering and fertilizing are turned on and draw little power. This saves the cost of hiring.

2.2.2 Disadvantage of system

i. Need networking

This system requires a string of internet all the time to the relationship between the spraying systems with portability. It can only work if the string of the internet works fine.

Networking is the process by with interconnected computers and users can speak to each other and transmit data back and forth. It is a great tool, but has disadvantages and vulnerabilities. Some of these disadvantages are viruses, poor system management, and dependency upon the network. Viruses can damage the network causing data to stop flowing; poor system management can cause similar issues. When programs and users depend on the network, when something happens, programs will stop running and the work flow will cease.
2.3 Existing System Description (manual farming system)

2.3.1 Advantage of system

Able to function even if there is no internet network using well able to monitor workforce estates are in good condition.

Helping people get jobs around the farm while helping employees from sleeping during the job.

2.3.2 Disadvantage of system

- Autonomy of the manual system of agriculture is that it cannot work if the employee is not in the field as to install the spraying and fertilizing.
- This system does not give users remote access to the system, an integrated water system and the difficulty of landowners to gardening or farm manure everywhere easily.
- It requires more labor than agricultural systems make easy to monitor the system performed perfectly. Besides, this system makes employees become tired to commute from one farm to another farm. It reflects the many farm owners. Labor difficulties for workers there is very high if not have many employee.
<table>
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<th>Save energy</th>
<th>Easy to manage the garden</th>
<th>Accessibility</th>
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<td>★★★★★</td>
<td>★★★★★</td>
<td>★★★★★</td>
<td>★★★★★</td>
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<tr>
<td>Manual Farming system</td>
<td>★★★</td>
<td>★</td>
<td>★</td>
<td>★</td>
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- ★ ★ ★ ★ ★: very good
- ★ ★ ★ ★: good
- ★ ★ ★: poor
- ★: very poor

Figure 2.1: Average the advantage use system and not use the system
1. Mobile farming system

- That mobile farming system are save cost that mean save cost to manage workers or can reduce number of workers to manage the garden.
- Save manpower to commute from farm to farm to open and close the water spraying system and application run its.
- That system to help the farmers to manage that garden with easy like easy to control the system piping.
- Those accessibility farmers can do that spraying activities in any ware they have. The worker can make observer and just info to farmers about current weather like hot or cool.

2. Manual farming system

- That manual farming system is useless save cost because that need use many workers in the gardens and the need manage many workers in that company.
- It manual system need more manpower to manage that garden to open an close the water spraying system without application run its
- Old system needs hard work to manage that garden and control the system piping and need to waiting until activities finish.
2.4 Step User Mobile Farming System

System using a mobile phone system gives many advantages to agricultural production. It saves energy and time employees in addition to the comfort of the employees.

![Flow chart about the use mobile farming system](image)

Figure 2.2: Flow chart about the use mobile farming system
2.5 Step User Manual System

Manual system does not provide a lot of advantages to agricultural production and it takes a lot of energy and time employees in addition to not give comfort to employees.

Figure 2.3: Flow chart about the use manual system
2.6 Conclusion

In conclusion, this chapter explains the agricultural system of mobile and existing systems. There are comparisons between farming systems and portable systems available and some of them have their own advantages and disadvantages. Based on the explanation and information about this chapter, the project is to improve and enhance the existing agricultural system better than existing devices. By making these portable agricultural systems with multi-function indicator, it will help to reduce the problems of farmers in the use of their many employees, performance, plenty of time to manage the spraying system, flexibility and so on. The new system can be used in two ways either want to do the watering or fertilizer to enable or disable the ejection system. In addition, by making this system, it will save money for agricultural production; especially the payment of salaries for the new system would reduce the number workers on a farm. It will meet the needs of farmers in the era of modern millennium.
CHAPTER 3

METHODOLOGY

3.1 Introduction

This chapter describes the methodology used to conduct this study. Methodology is the study of a systematic process to identify and summarize the set of objectives and methods to edit, compile, and calculate to find a solution. Besides, this objective seeks to create a mobile farming system and each project is to develop, including a discussion of the methodology using a methodology which is used to project the solution tree. This methodology is a process, standards and guidelines to be followed clearly involved in producing a product or software. The present study is composed of compatibility could be in a specified time.

3.2 Project Methodology

In network engineering and project management methodology is a set of practices which can be carried over to create the software. The system mainly consists of two parts: the mobile station and the micro control unit. Portable system is responsible for delivering and direct and control commands to devices and sensors and to get feedback from the system.

The next unit, a microcontroller unit, it is to control the device and process information obtained from the device as well as from the mobile station. Unit microcontroller is the brain of the control system and process information to and from various other units of
All methods in this field are collations device all these about disciplines.

The methodology is very important when developing specific software. It is an indicator that can affect the overall progress of the project. A use of appropriate methodology can guide the developer through the entire work to meet the needs of user. There are many different types of methodologies that have been created by researchers, such as the Rapid Application Development (RAD), it is the software development life circle (SDLC), waterfall model, structured systems analysis and design method (SSADM) and others.

Based on what I have reviewed, I feel RAD is the most appropriate methodology used in the project is a portable agricultural system. This methodology was chosen because it has a lot of my success to the project. This project will probably take quite some time to be completed successfully, which may take 4-6 months to develop. To develop, it carries a 7 phases this is project planning, project analysis, project design, project development build, project test, project implementation and project maintenance deploy.

![Traditional Development](image)

Figure 3.1 show about RAD process traditional development
3.3 System Planning

The System Planning phase starts from defining the problem and scope of the project. This activity is very important in providing the planning phase. Besides, the next step in this phase is to create the project schedule so that the project can be carried out properly. A detailed schedule use with task and the activity of mobile farming system is show in Gantt chart. The Gantt chart will be to apply in Microsoft project and it will be referred through the work and the time it will take. Besides, it is to facilitate and fulfill customer needs fully. The steps taken are;

i. Using a string of technological facilities or research via the internet to get more information about the system to be developed
ii. Use methods of communicating with others to get more ideas and new methods of experienced people as supervisors, lecturers, engineers and others to develop the system

3.4 System Analysis

Definition of requirements is the most important part of this project. Need an explanation of what the system should do. In this case, the software `s overall structure and degree defined and functional and non-functional requirements, what of the technology, the structural design of all the measured data in this case.

The development of a tool using this mobile device will be the beginning of the project by the test plan. Analysis required for this chapter will help to ensure that consumers understand the system requirements either the user or the system side. In this case, the problem must solve the defined project. The latest situation is analyzed, and the goal of this project should be decided.