INTERACTIVE PEST KNOWLEDGE ONLINE SYSTEM FOR FARMERS

LIM XIN JONG

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

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Alamat tetap: NO 35, Lorong Seri Setali 90, Jalan Air Putih, 25350 Kuantan Pahang

Tarikh: 16/8/2017

(TANDATANGAN PENYELIA)

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INTERACTIVE PEST KNOWLEDGE ONLINE SYSTEM FOR FARMERS

LIM XIN JONG

This report is submitted in partial fulfilment of the requirements for the Bachelor of Computer Science (Database Management)

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY
UNIVERSITI TEKNIKAL MALAYSIA MELAKA
2017

DECLARATION

I hereby declare that this project report entitled

INTERACTIVE PEST KNOWLEDGE ONLINE SYSTEM FOR FARMERS

Is written by me and is my own effort and that no part has been plagiarized without citations.

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(LIM XIN JONG)

SUPERVISOR : _____ DATE : 16/8/2017

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DEDICATION

There are a number of people without whom this thesis might not be written. I dedicated this thesis for who I greatly appreciated.

To my beloved parents, Yuen Pheng and Kean Hwa, who always support me through my upside-down life as a student. People who has been inspirations and source of encouragement to me throughout my life.

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ABSTRACT

Interactive Pest Knowledge Online System For Farmers is a web-based system that helps farmers to identify pest or disease of a plant via two interactive approaches, contextual understanding and image analysis. Currently, when farmers experience any problem for their plant, they always asking around their peers or use trial and error method to find the right cure of their plant. However, the answer that they are asking from their peers might be inaccurate or the trial and error method might not eventually be working out to find the cure. Therefore, Plant Protection Research Institute (PPRI) in Vietnam has provided a Pest Knowledge Bank website which consists of all information related to pest or disease that they have done research. But there is too many information that they need to read and understand. It would be time and energy consuming for the farmer. This system is to help farmer to understand and learn how to control unknown type of pest or disease of a plant. Besides that, it is to develop interactive and intuitive Pest Knowledge Bank web-based application for farmers to improve public knowledge of agriculture towards efficient, secure and sustainable agriculture. Moreover, the system is to help farmers to search related pests or disease with an easier and more efficient way. The system is developed based on the Database Life Cycle methodology which consists of following stages, database requirement analysis, database design, implement and loading, testing and evaluation and maintenance and evolution. This system can be equipped as a reference and contributed in education of agroecology field.

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ASP	-	Active Server Pages
IIS	-	Internet Information Service
DBLC	-	Database Life Cycle
PPRI	-	Plant Protection Research Institute

CHAPTER I

INTRODUCTION

1.1 Introduction

Vietnam is one of world's richest agricultural regions and is the second-largest exporter worldwide and the world's seventh-largest consumer of rice. Therefore, it is important to secure all the plant production to secure food supply in country and national economy. To secure all those plant production, it is essential to keep plant production as lush as possible and away from any pest or disease if possible.

In order to help farmers to have best plant productions in Vietnam, Plant Protection Research Institute (PPRI) in Vietnam has provided a Pest Knowledge Bank website. Thus, farmers in Vietnam can read all related information from this website. However, this might give hard time to farmers since they have to read too many information at once and may end up with not getting the right information that they hope for. As a solution, we proposed an Interactive Pest Knowledge Online System For Farmers in which farmers can seek for solution of the pest that they found and

system will provide related information of that pest. Besides that, the system will utilise image processing technique to analyse an image of affected plant that are provided by farmers and match all the symptoms that are present on the plant with the information stored in database. The system will be utilise language understanding to understand the context sent by the user and analyse it to determine closet kind of pest or disease. The system will list out all the possibilities of fest and disease for the plant and provide suitable pesticides for the farmer.

1.2 Problem statement

According to the observation of information website that is provided by PPRI, all the information on the website is in static format. When there are any changes about any information, it is needed to be done manually by member of PPRI and repeatedly upload the changes to the server. It is not only inconvenience for member of PPRI, but also all the information could be lost anytime. It is due to the data or information are not saved in a database and managed properly.

In the current system, all the information is displayed in a static format. In order to find any information of a related pest or disease of a plant, farmers have to read through all available information of whole website and thinking whether any of them are the one they are looking for. Consequently, it is time consuming for farmers to do all of this and it might not help them eventually as they are not able to find the right pest or disease.

Moreover, without using current system, farmers might experience bigger problem when they are facing a pest or disease of plant that never happened to their plant. It is possible because new type of pest or disease of plant might appear as the climate of plant keeps changing. But with current system, it provides zero help as well

due to member of PPRI might not discover new type of pest or disease. Current system provides zero collaboration opportunity between farmers and member of PPRI.

There is a time when farmers have the image about appearance of pest or symptom of plant but it is not useful for current system because current system only intents to supply information rather than helping farmers to detect related pest or disease. Consequently, farmers have only the option of reading all the information of current system and decide pest or disease are matched.

1.3 Objective

The objective of developing Interactive Pest Knowledge Online System For Farmers are identified based on the review of problem statements. The objective are listed as below:

I. **To help farmer to understand and learn how to control unknown type of pest or disease.**

   Farmer will be able to collaborate with member of PPRI and provide details or pictures of these unknown type of pest or disease for them to carry further investigation or research. Therefore, new type of efficient control measure is able to be invested and help farmer to control pest or disease before it is getting too late.

II. **To develop interactive and intuitive Pest Knowledge Bank web-based application for farmers to improve public knowledge of agriculture towards efficient, secure and sustainable agriculture.**

   Interactive Pest Knowledge Online System For Farmers is a new interactive and intuitive web based-application. Not only it helps member of PPRI to manage the pest and disease knowledge bank in an effective approach, but also interactive