SOUTHEAST ASIAN JOURNAL OF SCIENCE AND TECHNOLOGY

Volume 5, Issue 1, 2020
P-ISSN: 2672-2984
E-ISSN: 2672-2992
www.sajst.org

Development of Agriculture Office Farmers' Record Management System for the Municipality of Mangaldan

Jayson E. Tamayo
Pangasinan State University Lingayen Campus
jayson.tamayo2@gmail.com

Abstract – *This project study focused on the development of the Mangaldan Agriculture Office Farmers' Record Management System. It aimed to help people in Mangaldan Agriculture Office in making their works more productive. The Sashimi Model is used as the research design for this study, which comprises four (4) phases –Requirements Gathering and Analysis, System Design, System Implementation, Testing. Also, various techniques were used to define the requirements of the system. The instrumentation and data collection used in gathering data includes Interview Guide, Internet Research, Library Research, and Observation Research. Furthermore, the tools used for data analysis include the Flowchart, Use Case, Entity-Relationship Diagram, Database Schema, Database Instance, and Weighted Mean. Based on the findings, the following conclusions were drawn in identifying the system's traditional process, features, and acceptability test of the Mangaldan Agriculture Office system.*

Keywords *– Farmers' Record Management, Mangaldan Agriculture Office*

INTRODUCTION

Through the use of technology, the economy of the country is moving onward. Most people are using computers to make their work effortless and faster. Most jobs in the country and other countries involve using computers because of their importance in the society that makes IT Profession in demand. It is used to store, protect, process, transmit, handle and recover information. It implies that computers can also be like humans that have intelligence and can work. On the other hand, its brilliance is only artificial because it is just a machine, so it still relies on humans to act upon any task required.

The modern world depends on new technology transition from paper records to electronic forms. It is essential in the development of modern organization and businesses. Continuous development of technology can also change traditional methods of records storage and monitoring. The danger of losing some paper records, considering the cost of copying, traditional methods of monitoring, finding and accessing the record and consequent need to store papers are the primary reasons behind why the organizations and businesses need modernization. Such costs are noticeable and constant component of company budget (Swafford, 2006).

Records management, in the words of the related ISO 15489 standard, is the creation, receipt, maintenance, use and disposition of records. An increasing number of regulations have driven companies to put their records management programs in order. Learn the top 10 best

Volume 5, Issue 1, 2020
P-ISSN: 2672-2984
E-ISSN: 2672-2992
www.sajst.org

practices for ensuring the integrity of your records (Schwartz, 2007).

In today's world computers are very helpful. People use computer to decrease their work and time. With computers, it becomes crucial and very needy for everyone and for some people. It's like their heart beat. Everywhere and everyone are seemingly attached with computer in their daily life. Computer is used to share useful information (Ambrose, 2011).

The computer is one of the most brilliant gifts of science. This technology was formerly developed by Charles Babbage. Most countries have developed fast due to computerization. Writing a program is necessary for a computer. Speed, accuracy, reliability, and integrity are the main characteristics of a computer. Many of the usual activities today at home and in business are done by computers. The computer has proved a friend and servant of science, technology and industry. Most offices, shops, factories and industries use computers. The computer is a boon to all. Telecommunication and satellite imageries are computer based. Computers have completed the world a global village today. It can perform over a million instructions per second without committing and inaccuracy. It can carry our calculations in just a few minutes that would need days if carried out manually. It helps us in solving many complicated problems of multiple calculations. Computer has a huge memory. It can hold large amount of data. The software technology has seen a spurt of development and firms like Microsoft have recognized themselves as market leaders, pioneering the IT revolution world over. It has provided us with effectiveness and accurateness in our work. Software acts as the medium through which communication and distribution of information are carried out (Rajkoomar, 2012).

The records of governmental agencies capture information used to protect the rights and interests of governments, businesses and citizens and to preserve history and culture by documenting information about noteworthy people, issues, places, and events.

Everything in this world has been changed from plain to the most complicated where everything is being automated. Many business establishment use computer for decision making because consistency and accuracy they can obtain in manipulating every information or data they encode. Other organization at present, usually depend on computer capability in record keeping performing assessment, retrieving different files and accepting many activities of simple or organization. Record Management is a must-have purpose of companies, nonprofit organizations, government agencies, social agencies, medical, commerce, financial, schools, colleges, and universities and all other types of entities that generate information that requirements kept for a defined amount of time. Individual households also need to carry out good records management. Records management is also a systematic, organized, planned and restricted process managing or tracking the life cycle of records. A record can be substantial paper object or it can be in digital or electronic form. Records can be kept on financial, medical, informative, formal documents, office documents, payroll, government forms and emails among hundreds of other types of records. Records management addresses the three phases of the life cycle of records; the creation or receipt of a record; the maintenance, safe storage, retrieval, or general use of a record; the disposal of a record (Lever, 2009).

Records Management is a very important process every organization's

Volume 5, Issue 1, 2020
P-ISSN: 2672-2984
E-ISSN: 2672-2992
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needs. It refers to the whole range of functions concerned in creating and managing records all through their life cycle. It includes: creating or capturing adequate records; maintaining them in trustworthy record management systems for defined rules; maintaining and providing information about records holdings; documenting record keeping practices and actions. In recent years, attention has shifted to the need to create reliable records in electronic form, and records management is understood more broadly to mean the overall management of records from their initial creation to final disposition. The term is now often used interchangeably with recordkeeping. Records management has to do with making sure records are organized, protected and controlled so that it can be effectively used over time. Its purpose is to ensure that: the integrity of the records is maintained as long it is required; related records are meaningfully linked; Record can be easily located and retrieved; access to records is controlled and authorized; the most appropriate methods of capturing and maintaining records are used; records are systematically retained for pre-defined periods of time and disposed of according to approved records schedules; information about the records kept by the organization is maintained for internal and public uses; records management actions – including retention and disposal of records – are documented for audit and accountability purposes; and records of continuing value to the organization and society can be systematically identified at the earliest stage, and their preservation planned and provided for (Manitoba, 2010).

Most of these records are useful for a relatively short period of time and can then be destroyed. Some of the records will represent the agency's business record and need to be maintained for stewardship and public accountability purposes. Some records need to be preserved for many years, and a few should be preserved permanently to maintain the historical record. The challenge for public officials is to manage each of these types of records, making sure that those records with important information are preserved, while records that are no longer valuable are disposed of in an appropriate and legal manner (The National Electronic Commerce Coordinating Council, 2004).

The Record Management System continues to become more and more complex as new technologies come out and government institutions change the way they accomplish the needs of their clients and the demand from the public. That's why it's important to consider new and alternative ways to manage information through the use of a system.

Over the past years, government offices have been significant in changing the perception of record management of government and to provide a modern, well-equipped and efficient service to government departments and agencies.

For further evidence, the United States Accountability office implemented records management system for their department. When NARA (National Archives Committee on Oversight and Government Reform) surveyed federal senior managers about the implementation of their records management system (RMS), 80% of managers saw records management as a useful tool of mitigating risk (Melvin, 2004).

The RMS also helped the school a lot in creating a clean, readable and neat file since manual RMS causes some struggle for the readers because some words are not written legibly (Coleen, 2010).

It was seen the few years that since manual system jobs remain to be tedious and

Volume 5, Issue 1, 2020
P-ISSN: 2672-2984
E-ISSN: 2672-2992
www.sajst.org

time-consuming especially on those fantastic growth in the paper work processing that has been required. Tedious data encoding is required in the production of paper works resulting in the waste of too much time and effort and the omission of errors. This seemingly over growing burden of paper works has cause grave concern and has motivated the substitution of computer for clerks to obtain the cost benefits of paperwork mechanization. Although there have been quite successful in reducing the unit cost of such processing and also in efficiency handling volumes of processing that would be almost impossible to cope with manual methods (Ignacio, 2009).

Record Management is an important practice in any organization which more often than not are treated as a minor task that requires little focus or attention. Often handled by Human Resources or the finance/accounting department, Record Management ensures that any and all information and documents of a company is up to date, accurate and is compliant to all laws and regulations of the Philippines (Paperless Trail Inc., 2010).

Records and filing management is of critical importance to the efficient functioning of any organization. Being able to quickly obtain the needed records will greatly improve the operations of any firm. It is evident everyday: information technology is changing the way people work and is transforming the global market place. Organizations are moving quickly to embrace and employ technology to ensure their competitive edge and improve efficiency, yet oftentimes without adequate regard for the records and information management needs and issues that accompany the technology. Information technology intervention in managing records is a challenging task (BusinessCoach, Inc., 2011).

The Municipal Agriculture Office in Mangaldan conducts manual processes in collecting the data of farmers. Initially they collect the master list of farmers from the President of each organization in every barangay. After collecting the master list per barangay, that's the time they schedule the registration of members. The first barangay on the schedule list will be also the first destination of the assigned agricultural technologist to start the registration of farmers. In case the person who wants to register as a farmer is not familiar with the agricultural technologist, the agricultural technologist will contact the president of the association in the barangay for the confirmation or verification. The problems encountered in the existing process are as follows: time consuming in finding records, inaccurate or inconsistent results due to human error, and tedious task on the part of the agricultural technologist in generating reports periodically on production per area planted by province, by municipality, by ecosystem, and by seed type. The report list or information of registered farmers is submitted to the Department of Agriculture every semi – annual.

And during an interview with Sir Dexter, one of the agricultural technologist, stated some of the problems such as security of records, difficulty in handling large number of records and the lack of data management such as back-up mechanisms. Along with these, the Municipal Agriculture Office (MAO) has to manage the records of about 2,600 registered farmers. Therefore, Record Management System is essential in managing government organization records such as the MAO. The developer came up with the Mangaldan Agriculture Office Farmer Record Management System to contain registered farmers' descriptions in the municipality.

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Volume 5, Issue 1, 2020
P-ISSN: 2672-2984
E-ISSN: 2672-2992
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The developer considered the view that a computerized system can handle the records well, hasten the generation of reports, ease the searching and retrieving of farmer's information, and store a large amount of data more efficiently and effectively than the manual system.

The use of this system will make an impact on society. Data can be more secured than the manual system that anyone can intentionally get information without permission. The system can make information more reliable. Summing up all the problems encountered by the agricultural technologist, the developer came up with the Mangaldan Agriculture Office Farmers' Record Management System, which will handle well the records of registered farmers.

METHODS

The developer used the developmental-descriptive research in this study. The body of research literature that directly pertains to instructional development is known as developmental research (Richey and Klein, 2005). Developmental research is a study focused on the progressive changes that occur as an organism develops. There isn't any way to reverse the changes that happen when you grow up. You can't take an older person and hit the reset button to revert them back to childhood to see how raising those in a different time will change who they are (Kowalczyk, 2014).

Descriptive research is used to describe characteristics of a population or phenomenon being studied. It does not answer questions about how/when/why the characteristics occurred. Rather it addresses the "what question" (Shields and Rangarjan, 2013). Descriptive research is also called Statistical Research. The main goal of this type of research is to describe the data and characteristics about what is being studied. The idea behind this type of research is to study frequencies, averages, and other statistical calculations. Although this research is highly accurate, it does not gather the causes behind a situation. As the name implies, descriptive research methods are used when the researcher wants to describe specific behavior as it occurs in the environment. There are a variety of descriptive research methods available, and once again, the nature of the question that needs to be answered drives which method is used. It is used to obtain information concerning the current status of the phenomena to describe "what exists" with respect to variables or conditions in a situation (Clause, n.d.).

The Sashimi Waterfall approach, the whole process of software development is divided into separate phases. In Sashimi Waterfall model, typically, the outcome of one phase acts as the input for the next phase sequentially. The phases in the sashimi waterfall model used are; Requirement Gathering and analysis, System Design, System Implementation, and Testing. In response to the perceived problems with the traditional waterfall model, many modified waterfall models have been introduced in order to address the feedback between phases, rather than being a simple linear model, it needed to be an iterative model. To facilitate the completion of the goals, milestones, and tasks, it is normal to freeze parts of the development after a certain point in the iteration. Verification and validation are added. Verification checks that the system is correct. Validation checks that the system meets the user's desires.

The developer chose the sashimi Waterfall methodology in a reason that the phase in the model are permitted to overlap.

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P-ISSN: 2672-2984
E-ISSN: 2672-2992
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Multiple phases can function concurrently, which can help to remove defects in the system while developing. At the same time, making changes to the basic design is also possible, as there are a number of phases active at one point of time. In case there are any errors introduced because of the changes made, rectifying them is also easy. This helps to reduce any oversight issues.

Sources of Data

The primary data source was gathered at the municipal agriculture office thru Ms. Vanessa P. Junatas, an Agriculture Technologist. The developer was able to determine the existing process of the selected government agency. In gathering information, the company was able to provide the needed information and materials that will be used in developing the desired system. The developer used the interview guide to acquire knowledge from the resource persons relative to the study.

The secondary sources of data are from the different printed material such as related thesis studies, published articles, and some data from the internet, which is E-books where the developer can research and identify some features that can be used to improve the system.

Instrumentation and Data Collection

The following tools are used for data collection in this study.

Interview Guide. Interview guides are merely a list of questions used to guide a qualitative interview (Hamzah, 2009). An interview guide, or aide memoire, is a list of topics, themes, or areas to be covered in a semi structured interview. This is normally created in advance of the interview by the researcher and is constructed in such a way as to allow flexibility and fluidity in the topics and areas that are to be covered, the way they are to be approached with each interviewee, and their sequence (Mason, 2004).

The developer conducted an interview in the Municipal Agriculture staff that that will soon to be the user of the system. Some of the questions asked were the existing process in monitoring and management of records of the farmers in Mangaldan. The developer also ask some preferred features of the system they need.

Internet Research. The World Wide Web is an extraordinary resource for gaining access to information of all kinds, including historical, and each day a greater number of sources become available online (University of Colorado Boulder, n.d). Internet Research or also referred to as Online Research methods are ways in which researchers can collect data via the internet (Reips, 2012).

The developer use the internet to collected and searched data in a fast way and in a broad way of searching some articles, journals, e-books, and other related topics that is very helpful for the developer. It saves time in searching rather than applying the manual way of searching related topics in the study.

Library research. Library research is a form of structured inquiry with specific tools, rules, and techniques (George, 2008). A library is attached to a higher education institution which serves two complementary purposes to support the school's curriculum, and to support the research of the university faculty and students (Curzon, 2009).

The developer research from the materials available in the library such as, manuscripts, articles, and books that is related to the study that helped the developer to understand the study well.

Observation Research. Observation, particularly participant observation, has been used in a variety of

Volume 5, Issue 1, 2020
P-ISSN: 2672-2984
E-ISSN: 2672-2992
www.sajst.org

disciplines as a tool for collecting data about people, processes, and cultures in qualitative research (Kawulich, 2005). Observations can be conducted on nearly any subject matter, and the kinds of observations you will do depend on your research question (Driscoll, 2011).

The developer observe the actual operation of the department. Manual processes are carefully observed to convert it into automated. By observing their operations, the developer related those processes to the capabilities of the system developed. Observing is one of the most accurate way that the developer can understand the processes happen in the field.

Tools for Data Analysis

Flowchart. A flow chart is a graphical or symbolic representation of a process. Each step in the process is represented by a different symbol and contains a short description of the process step. The flow chart symbols are linked together with arrows showing the process flow direction (Hebb, 2014). A flowchart is a document that describes a process using standard graphic symbols. Though widely used in software development (Barett, n.d).

This tool was used by the developer to determine the flow of the process of the system. This will serve as a guide for the developer to organize how the system operates. The different shape helps the developer know the process of the system.

Use Case. The purpose of a use case is to define a piece of coherent behavior without revealing the internal structure of the system. The use cases do not mention any specific algorithm to be used or the internal data representation, internal structure of the software, etc (Kharagpur, n.d). A use case is a functionality the users need from the system. A use case diagram depicts the relationships among the actors and use cases. It is usually used for requirements analysis. The components in a use case diagram include: actor, use cases and associations (Sagar, 2013).

The Use Case tool has helped the developer to represent the accessibility and what system functions are performed of the users. It also helped the developer to identify, clarify and organize system requirements of the said study.

Entity-Relationship Diagram. ERD is a data modeling techniques that was used to create a graphical presentation and present the relationship between entities with the system (Smith, 2010). An entity-relationship diagram is a specialized graphic that illustrates the relationships between entities in a database. Entity-relationship diagrams often use symbols to represent three different types of information. Boxes are commonly used to represent entities. Diamonds are normally used to represent relationships and ovals are used to represent attributes (Chapple, 2014).

Entity-Relationship diagram was used by the developer for data analysis to show the relationship between entities in the database of the system. This tool can give views to the developer on how the system flows.

Database Schema. A database schema is a collection of meta-data that describes the relations in a database. A schema can be simply described as the layout of a database or the blueprint that outlines the way data is organized into tables (Chapple, 2014). In a relational database, the schema defines the tables, the fields in each table, and the relationships between fields and tables (Beal, 2014).

This tool helped the developer to represent the graphical representation of the database structure of the system. By this tool, the developer visualized the structure of the database being used by the system.

Volume 5, Issue 1, 2020
P-ISSN: 2672-2984
E-ISSN: 2672-2992
www.sajst.org

This helped the developer to know the data types appropriate for the input of the user.

Database Instance. The term instance is typically used to describe a complete database environment, including the table structure, stored procedures and other functionality. It is most commonly used when administrators describe multiple instances of the same database (Chapple, 2014). A database instance is a set of memory structures that manage database files (Oracle, 2013).

The developer used this tool to help them understand the complete database environment of the system and visualize the currently existing content, relationship, and the attributes. It represents the actual data in the database.

Weighted Mean. Weighted Average is one of the most straightforward and reliable means of calculating an average of several numerical values while taking into account possible variations (Mikoluk, 2013). The weighted mean is similar to an arithmetic mean, where instead of each of the data points contributing equally to the final average, some data points contribute more than others. If all the weights are equal, then the weighted mean is the same as the arithmetic mean (Chandoo, 2010). A weighted average or weighted mean is an average which is obtained by combining different according to the relative importance of each (Eurostat, 2011). Weighted Mean is a measurement of central tendency. It represents the average of a given data. Weighted mean is similar to arithmetic mean or sample mean. Weighted mean is calculated when data is given in a different way than in arithmetic mean or sample mean (TutorVista, 2014).

The developer also used weighted mean as a tool to test the acceptability of the system developed. This tool helped the developer to know the effectiveness of the system being implemented. This will serve as a proof that the system has helped the agency in their work.

Likert Scale. This tool for data analysis will provide the responses when collecting data from respondents of the system that will be developed.

The following 5 – point Likert Scale will be used to interpret the result of the Usability Test.

Table 1. Five-Point Likert Scale

Scale Value	Range	Description	Interpretation
5	**4.23 – 5.00**	**SA**	**Strongly Agree**
4	**3.42 – 4.22**	**MA**	**Moderately Agree**
3	**2.61 – 3.41**	**U**	**Undecided**
2	**1.81 – 2.60**	**D**	**Disagree**
1	**1.00 1.80**	**SD**	**Strongly Disagree**

RESULTS AND DISCUSSIONS

Traditional Process of Recording the Farmer's Records in Mangaldan Agriculture Office

The Mangaldan Municipal Agriculture Office used manual process in recording the records of the farmers and it starts with securing all the needed requirements. First, they set a date for the interview of farmer in every barangay. Once the date is already scheduled, they go on the first barangay who is scheduled for that day for the interview and registration of the farmers. In verifying the identity of a farmer, the agricultural technologist will have to contact the president of the said barangay in case the agricultural

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Volume 5, Issue 1, 2020
P-ISSN: 2672-2984
E-ISSN: 2672-2992
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technologist is unfamiliar to the farmer who wants to register. And if they are already registered, they can now avail the programs of Agriculture Office.

The benefit of registered farmer is that they will be prioritized in the program list of the Agriculture Office. The personnel spent more time in finding some records of the farmers. The Agriculture Office personnel experienced hard times for keeping all the agricultural records because filing these papers consumed a lot of space. All the records of the farmer are kept in a cabinet. It will not be easy for the personnel to find a particular record of a farmer especially when there is a lot of file stock in the cabinet. To retrieve a particular file or record, the agricultural technologist who is assigned will need more time to get the file in the cabinet.

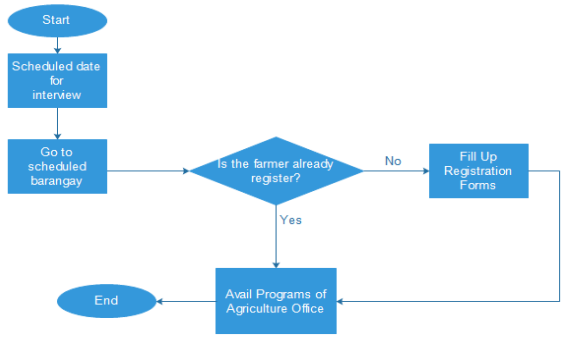

Figure 4.1 Flowchart of traditional process of Agriculture Office Farmers Record

First, the Agriculture Office set a date for the interview of farmer in every barangay. Once the date is already scheduled, they go on the first barangay who is scheduled for that day for the interview and registration of the farmers. And if the farmers are already registered, they can now avail the programs of Agriculture Office. If not, they have to register first before they can avail the programs of Agriculture Office. The benefit of registered farmer is that they will be prioritized in the program list of the Agriculture Office.

Management System for the Municipality of Mangaldan

Availing Programs of Agriculture Office. Mangaldan Agriculture Office has programs to offer to those farmers who are already registered. The Programs offered by Agriculture are the following: selling crop seeds in a half prize, free giving of machineries in their organizations like water pumps, Giving of free animals, checkup, free vaccination and giving of medicines for the animals, checkup and fertilizers for the plants, and many more. These programs can only be avail by the registered farmers and availing those products is first come first serve. But for applying loans for corn crops, they gave a form to be filling up by the farmer.

In availing programs of Agriculture Office, if they are already registered they can now avail the programs and choose the programs they wanted. But if they are still not registered; they are mandated to register first to avail the programs of Agriculture Office.

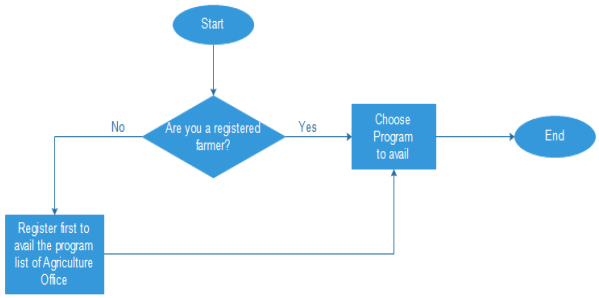

Figure 4.2 Flowchart of Availing Programs of Agriculture Office

Hardware and software requirements of the system

In order to run the Agriculture Office Farmers Record Management System for the Municipality of Mangaldan, there are some

Volume 5, Issue 1, 2020
P-ISSN: 2672-2984
E-ISSN: 2672-2992
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sorts of requirements that must be considered.

Hardware Specification. This refers to identifying the minimum hardware requirement to run the system. Table 4.1 shows the recommended requirements for the hardware of the developed System.

Table 4.1 *Hardware requirements of the System*

Hardware	Recommended Requirements
CPU	1.7 GHz or higher
RAM	1 GB or higher
HDD	30 GB or higher
PERIPHERALS	Mouse, keyboard

Hardware requirements of the developed system includes CPU that needs to have at least 1.7 GHz to handle the entire system, a RAM of 1 GB or higher for faster processing, a Hard Disk Drive (HDD) of 30 GB or higher for storage and peripherals of mouse and keyboard for interaction between the system and user.

Software Specification. This refers to the minimum software requirement of the system. This should be met to completely run the system. The software specification includes the computer operating system. Table 4.2 shows the software requirements of the computer used in the development and deployment of the system.

Table 4.2 *Software requirements of the System*

Software	Recommended Requirements
Operating System	Windows 7 or higher
Programming Language	VB 10.0
Screen Resolution	1366 x 768 or higher
Database	MySQL
Server	WAMPP

For Software requirements, an Operating system of Windows 7 is needed but Other Operating System such Windows 8 will also do since the system is developed using VB 10.0 programming language. And for the storage of data, a database using MySQL is needed and a server software such as WAMPP.

The Features of the System

From the related and benchmarked studies undergone, the following were the features of the Mangaldan Agriculture Office Farmers' Record Management System.

Security Mechanism module. The developed system includes login feature that allows users to authenticate first before accessing the system. This is to protect the system from any unauthorized users.

The login form will appear after the application was loaded. There are two types of users for the restriction which is Admin and User. Admin can have the overall access of the systems, while the user can only view the records only. This form asks for the username and password from the user. To successfully access the system, the user must have a valid username and password. The user types the username and password on the corresponding field. After the user has input the username and password, the user then clicks on the login button for the user to successfully login and access the system. On the other hand, if the user clicked on the cancel button, the login form would close and the application ends. The primary use of this form is for the user to successfully access the system as well as to secure the information within the system.

Volume 5, Issue 1, 2020
P-ISSN: 2672-2984
E-ISSN: 2672-2992
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Main Form module. The main form illustrates the main page of the system. This was used to navigate other forms as well functionalities of the Agriculture Office Farmers Record Management System. The main form contains the necessary menu buttons.

The Main form of farmer's record management system shows different interactive buttons which provide different powerful functionalities to provide the expected processes. In this form, you can also see the system logs of a user. It also shows you the current time and date in this system. The main form contains Menu Buttons namely Records, Settings, User Manager and at the right side, there is a button named calamity reports. Records button is where you can find the Records of the farmers such as farmers personal information, crops they planted, farm machineries they owned, animals they have and viewing of reports such as Master list, loan, vaccination service and reports of crops. Menu button Settings is where you can find the setting of servers that enables you to choose server which the database come from. Menu button User Manager is where you can find the users information and user logs. User logs indicate the users' time in and time out. And last calamity reports button is section where you can update the crops planted by a specific farmer if his/her crops he/she planted is affected by a typhoon.

Records module. The records button illustrates the records of the farmers in the system. This section allows you to add and edit new farmers. The records button contains the necessary information to be filling up.

The Records section is where you can add new farmer together with their personal information, crops they planted, farm machineries they have, farm animals they have. In this section, there are also functional buttons such as print, master list, loan, vaccination services, reports, others and home. Print button allows you to preview the User profile at the same time, allow you to print it. Master list button is the section which shows you the list of the registered farmers and allows you to search specific registered farmer. Loan Button section is where registered farmer can apply for loan. Vaccination service button section is where you can see the records of the registered farmer who avails the vaccination program. Reports button section is where you can see and view the registered farmer who planted rice and high value commodities. This section allows you also to filter the data needed at the same time enables you to print data needed. In button others, is the section where you can add new programs. Home button section enables you to go back from the Main form.

Setting module. The Menu button setting illustrates the data settings of the server in the system. This section allows you to choose server IP address. Plate 4.4 shows the server settings of the developed system. Server setting enables you to choose server which the database come from. In this section, they can share the system with the use of Server IP address.

User Manager Form module. The user manager form illustrates the user form of the system. This used to create new user that can access the system. The user manager form contains the user profile. The User Manager form of farmer's record management system shows the different users who already have an account. The user manager form contains the information of the user. Once you already have your account, you are now permitted to access the system with the use of username and password you created.

SOUTHEAST ASIAN JOURNAL OF SCIENCE AND TECHNOLOGY

Volume 5, Issue 1, 2020
P-ISSN: 2672-2984
E-ISSN: 2672-2992
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Master List module. The button Master list under menu button records is the section shows you the list of the farmers that are already registered.

Master list module shows all the farmers who are already registered in Agriculture Office. In this section, admin is allowed to add farmer's information, update Farmer's profile, updates crop, farm machineries, farm animals, add new farmer and print farmer profile. Before you can see the list of the registered farmers, you need to click the search button first. And to view or print the farmer's profile, just click the button print.

Loan module. The loan button module under menu button records shows the list of those who avail the program loan. In this section, there are fields needed to be able to apply for loan.

Loan module shows all the farmers who avail the loan program of Agriculture Office. All the farmers who are already registered are entitled to apply this program.

Vaccination Service module. The vaccination service module under menu button records shows the list of those who avail the program vaccination service.

Vaccination service module shows all the farmers who avail the vaccination service program of Agriculture Office. All the farmers who are already registered are entitled to apply this program. In this section, there are fields that need to be filling up to be able to apply this program.

Reports module. The reports module under menu button records is the section where you can see the reports of list of the farmers already registered, loan reports, vaccination reports and crops. Reports module is the section where you can view and print the reports of different section of module such as Master list, loan, and vaccination service. In this section, you can also view and print the reports of farmers profile and the crops they planted. You can also filter the records that you only wanted to see. For example, you only want to view and print the farmers who only planted specific high value commodities.

Calamity Report module. The calamity report module under main form shows you the farmers affected by a typhoon. Plate 4.8 shows the Calamity Report screen shot of the developed system. Calamity report module shows the typhoon names, crop affected state of crop development, total damage, partial damage, area affected and total amount or value of money wasted. In this section, it is use to update the affected crops, area and amount or value of total losses. You can also add new typhoon and if in case the name of new typhoon is same from the old one, they will now be identified according to the date the typhoon was landed and affect the crops. And the report that will be generated in this module will be passed to the Provincial Office.

Acceptability of the System

The following were the results of the survey done by the developer in evaluating the Mangaldan Agriculture Office Farmers' Record Management System.

Acceptability Test According to Design. The structure and appearance of the system was evaluated in the acceptability test of the system.

Table 4.3 *System Evaluation According to Design/Layout*

DESIGN	WM	Description
1. I liked the	4.50	Strongly
2. The interface of	4.00	Moderately
3. The system has a	4.50	Strongly
4. The overall	4.00	Moderately
Weighted Mean	**4.25**	**Moderately**

SOUTHEAST ASIAN JOURNAL OF SCIENCE AND TECHNOLOGY

Volume 5, Issue 1, 2020
P-ISSN: 2672-2984
E-ISSN: 2672-2992
www.sajst.org

The weighted mean was 4.25, parallels with moderately agree; on the acceptability test according to the design. The personnel evaluated the design of the system such as the interface if it is visually impressive to their eyes. The interface is satisfying to utilize and appropriate with the needs of the users. The design and text implemented.

Acceptability Test According to Functionality. The performance of the record management was evaluated in the acceptability test of the system.

Table 4.4 *System Evaluation According to Functionality*

FUNCTIONALITY	WM	Description
1. This system has the functions and	5.00	Strongly Agree
2. The information retrieved by the	4.50	Strongly Agree
3. I found the	5.00	Strongly
4. The system effectively	4.50	Strongly Agree
5. I found the various function in this	5.00	Strongly Agree
Weighted Mean	**4.80**	**Strongly**

The result of the acceptability test was weighted 4.80, matches strongly agree. The system was developed according to what a record management system functions. The components of the system such as save, edit, search, generation of reports and adding new records are included. The searching capability of the system was smart search. The system therefore makes the work of the users as easy as click and drop.

Acceptability Test According to Ease of Use. The performance of the record management was evaluated in the acceptability test of the system.

Table 4.5 *System Evaluation According to Ease of Use*

NAVIGATION	WM	Description
1. It is user friendly.	4.50	Strongly
2. It was easy to find	4.50	Strongly
3. The information (such farmer)	4.50	Strongly Agree
4. Information is	4.50	Strongly
Weighted Mean	**4.25**	**Strongly**

The weighted mean is 4.25, relates to strongly agree. The system was easy to use, easy to find the information they used, the information (such as farmer) provided by the system was clear and the information is layered affectively on screen. It also says that the system is user friendly according to its mean because it's descriptive equivalent fall under strongly agree. Overall, the system was easy to use.

Acceptability Test According to the Satisfaction. The satisfaction in using the system is evaluated in the acceptability test of the system.

Table 4.6 *System Evaluation According to Satisfactory*

SATISFACTORY	WM	Description
1. It felt comfortable	4.50	Strongly
2. I enjoyed	4.00	Moderately
Weighted Mean	**4.25**	**Moderately**

The weighted mean of 4.25 which implies that the users' response as moderately agree. The results states that the users are more than satisfied.

Acceptability Test According to Output. The output of the system was evaluated in the acceptability testing of the system.

Volume 5, Issue 1, 2020
P-ISSN: 2672-2984
E-ISSN: 2672-2992
www.sajst.org

Table 4.7 *System Evaluation According to Outcome/Future Use*

OUTCOME	WM	Description
1. I was able to complete the task	4.50	Strongly Agree
2. The system was able to convince	4.50	Strongly Agree
Weighted Mean	**4.25**	**Strongly**

The weighted mean was 4.25, relates to strongly agree. The reports needed by the farmers were detailed and readable. The work of the agricultural technologist is done easily with the used of the system. With the easy accomplishment of each task leads to the more creation of records. Each regular operation is successful in utilizing the system.

Acceptability Test According to System reliability. The reliability of the system was evaluated in the acceptability testing of the system.

Table 4.8 *System Evaluation According to Errors/System Reliability*

RELIABILITY	WM	Description
1. Whenever I made mistake using the	4.50	Strongly Agree
Weighted Mean	**4.50**	**Strongly**

The weighted mean was 4.50, corresponds to strongly agree. In terms of the system reliability, the system can recover easily after making mistakes and that the error messages clearly inform them on how to fix problems.

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Volume 5, Issue 1, 2020
P-ISSN: 2672-2984
E-ISSN: 2672-2992
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