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DEPARTMENT OF AGRARIAN REFORM CLIENT SUPPORT SYSTEM

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A BSIT Capstone Project Submitted to the

Institute of Computing and Engineering

Of Davao Oriental State University

In Partial Fulfillment of the Requirements

For the Degree

BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY

MAY 2022

1077B



Republic of the Philippines

DAVAO ORIENTAL STATE UNIVERSITY

Institute of Computing and Engineering



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DEDICATION

This study is wholeheartedly dedicated to our beloved parents, who have been our source of inspiration and strength when we thought of giving up, who continually provide their moral, spiritual, emotional, and financial support. A way of expressing our gratitude for their undying support to us in all aspects amidst of this pandemic Covid19, for always being there and never surrendering on us.

To our good friends and family who helped us to overcome the challenges we experienced, lend us support and words of wisdom to pursue our journey through this course, thanks and God bless you all.

Furthermore, this work is dedicated to our God Almighty. Thank you for your guidance, strength, mental power, protection, and abilities, as well as for providing us with a healthy life. All of these are offered to you.

-The Researchers

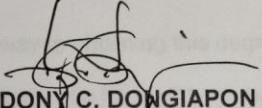
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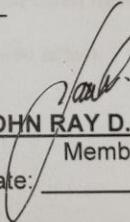
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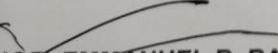

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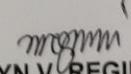

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ACKNOWLEDGMENT

First and foremost, we want to express our gratitude to God Almighty for providing us with the strength, knowledge, skill, and chance to take on this Capstone project and complete it successfully. This success would not have been feasible without his blessings.

We take pride in acknowledging the insightful guidance of our Adviser, Mr. Junee Warren M. Riogelon, for his support and effort in guiding us while taking this project and for his patience that we are so grateful for having him as our adviser. Also, to our Chairman of the Panel, Mr. Dony C. Dongiapon, to our panel members, Mr. Danver G. Palmiano and Mr. John Ray D. Paulin.

We've met a lot of folks on our way to obtaining this degree. We've made genuine friends. To our family, IT classmates, and teachers, who have all become excellent companions and have all made important contributions to this institution while we have been here, for always being there when we needed assistance and for soothing us when we were down.

Thank you very much!

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ABSTRACT

Jezar T. Pernito, Darren Vince C. Pasague, AL Jane L. Waupan, and Rovic Decena.
“DEPARTMENT OF AGRARIAN REFORM CLIENT SUPPORT SYSTEM.” (BSIT Capstone Project).

Davao Oriental State University, June 2022.

Adviser: Junee Warren M. Riogelon

The Department of Agrarian Reform, Client Support System is a study conducted to solve the delay in processing various matters in the office of Agrarian Reform due to the pandemic, Municipality, and City Health Community Standard in entering the border. In order to help the Office of the Agrarian Reform in extending their arms of opportunity and service in helping our local farmers and Suburb people in boosting the agriculture industry and the confidence of our local products to be more competitive in terms of quality over price, and a faster, efficient, smooth, accurate, fewer expenses and safe transaction. This system aims to expand the service and opportunity from the office to suburban municipalities, where programs and opportunities can be seen on the websites and virtual assistance like a private box. It allows the client to create an account, provides a list of requirements for a specified program or transaction, provides legal guidance, provides a timeline for transaction history, provides transaction status, and can submit a temporary soft copy of every requirement to the person on authority. In contrast, this study determined that the department is limiting its service to the public due to a lack of staff for various reasons and community protocol preventing them from accepting numerous clients in a day. This study concludes that developing the web application, the DAR client support system, would bring the department to the next level in providing services. Such use of the said application will reach many people, thus, preventing higher costs and giving people quick access to their requirements.

Keywords: reform, boosting, legal guidance, suburbs, gasp

CHAPTER I

INTRODUCTION

1.1 RATIONALE OF THE STUDY

As the country grapples with the Covid-19 pandemic that has swept the globe, the Department of Agrarian Reform (DAR), in collaboration with other government organizations, is working to identify ways and means to assist Filipinos in surviving the health catastrophe (DEPARTMENT OF AGRARIAN REFORM, 2020). Amidst the pandemic, the office of the Agrarian Reform is still functional, even risking their employees just to serve the best service and extending support to our local farmers, boosting the confidence of our local product to be more competitive and giving livelihood to our less fortunate farmers as well. Moreover, to the side of our farmers it is more difficult for them to process some paper works in the middle of this pandemic due to some Municipalities health protocol with various factors affecting the restriction. Agriculture is the best remedy for increasing the unemployment rate particular to the people living in the province.

In a full compliance with the requirements of the Freedom of Information (FOI), Department of Agrarian Reform (DAR) program of government allow public access to the agency's official documents transactions affirms that we are one with the government in promoting transparency in the department by providing the public and our stakeholders with easy access to information about DAR's programs, projects, targets, and performances. It aims to make public records and information freely available to the public, but with the aim to protect public records on grounds of public interest and full protection to a person's right to privacy. Aside from regularly publishing, printing, and disseminating updated key information to the public, DAR has designated FOI receiving officers and decision makers to accommodate all requests and queries online, forward the same to

concerned offices, respond immediately to queries, compile statistical information, monitor compliance, and provide feedback report to the FOI-Project Management Office.
(Department of Agrarian Reform (MANILA BULLETIN), 2020)

In willingness and initiative of the students of Bachelor of Science in Information Technology of Davao Oriental State University would like to help in extending the service of the Department of Agrarian Reform to our local farmers as a step of boosting our economy. A purpose of this system is to help and contribute the progress of our economy and to our community. This system was built with fashion and dedication to help our people by empowering agriculture to be the remedy of hunger due to pandemic and the increasing rate of unemployment. Moreover, the research of (Balakrishnan, 2018) Agriculture plays a significant role in the Philippine economy. Involving about 40% of Filipino workers, it contributes an average of 20% to the Gross Domestic Product. The neglect of the agriculture sector and the uneven distribution of resources worsened the poverty situation in rural areas.

The Department of Agrarian Reform Client Support System (DAR CSS) is a web-based system that can provide virtual support and assistance to clients. This system allows achieving the Mandate, Mission and Vision of the said department. The system will provide systematic virtual assistance in serving the Filipino people by giving them all the information of all the opportunities of the Department amidst this pandemic, in this way we could help to minimize the close contact from various parts of the province. The system can also provide the list of requirements depending on the transaction you need. Moreover, the system also provides legal advice from the authorized people of the department to do live conversation to the client in a way of video call via messenger or Cellular calls depending on the comfort of the client. The system will bridge the actual processing of every client but virtually due to pandemic COVID-19, to the extent that even

the employee is at work at home, still could serve the client to the comfort of their home. The proponents are looking forward to the system helping the community, enabling progress and making the life of our constituents better amidst the hardship of life due to the pandemic.

The system will bridge the distance between the offices of the DAFR in the name of the community through the use of virtual communication. Also, giving a virtual assistance to offices and departments in the regular workflow of the department, creating greater productivity and connectivity between and among offices and establish a more friendly environment as the new norm to ensure the safety protocols are being implemented by the department in line with the spread of the coronavirus COVID-19 disease.

The DAFR OCS is a web based system that can be accessed by any platform yet to be decided, meet the standard requirements of a smart devices. The system will be implemented under the PHP and Database management system as it is the main component of the system.

The proponents determined that the department are failing their service to the public due to lack of staff via various reasons and constantly problem of providing basic services to numerous clients in a day. In view of helping the department, the proponents came up with a system to fill the said concern by developing the DAFR OCS system will provide the following:

• Increased productivity

> Allow the clients to easily access the

> Provides ease of communication to a limited personnel

1.2 PURPOSE AND PROJECT DESCRIPTION

This study was conducted in order to give solution to the valued costumer in extending the needs of a client in the office of the Agrarian Reform due to pandemic and Municipality/City Health Community Standard in entering the border. Moreover, we made this system to bridge the distance between the offices of the DAR to the home of the client in a way of virtual processing. Also aims a virtual assistance to utilize and integrate technology in the regular workflow of the department, ensure greater productivity and connectivity between and among offices, and establish a more technologically-adept workforce as the new norm to ensure the safety protocols that being implemented by the department, to mitigate the spread of the coronavirus 2019 disease.

The DAR CSS is a web-based system that can be accessed by any platform yet should meet the standard requirements of a smart device/s. The system will be implemented under the PHP and Database management system as it is the main component of the system.

The developers determined that the department are limiting their service to the public due to lack of staff via various reasons and community protocol preventing them from accepting numerous clients in a day. In way of helping the department, the developers came up with a system to fulfill the said concern by developing the DAR CSS.

The system will provide the following:

- Virtual assistance:
 - Allow the client to create an account
 - Provides list of requirements to a specified program or transaction;
 - Provides accessed by any platform.

- Provides a timeline for transaction history.
- Provides transaction status.
- Can submit temporary/soft copy of every requirement.

1.3 OBJECTIVES OF THE STUDY

The main objective of this study is to help the Office of the Agrarian Reform in extending their arms of opportunity and service in helping our local farmers in boosting the agriculture industry and the confidence of our local products to be more competitive in terms of quality over price. The Department of Agrarian Reform Client Support System aims to:

1. to expand the service and opportunity from the office to suburbs municipalities:
 - 1.1 Where programs and opportunities can be seen in the websites.
 - 1.2 Updated requirements can be seen in the website depending on the transaction to be made.
2. to give virtual assistance with Legal Adviser
 - 2.1 Private Chat box
 - 2.1.1 Can chat
 - 2.1.2 Can upload photo/s for temporary checking of requirements
 3. To provide transaction status History
 - 3.1 Can see the transaction history

1.4 SIGNIFICANCE OF THE STUDY

The Department of Agrarian Reform Client Support System, is a web base system that helps to extend the arms of the DAR in giving the opportunities to our agricultural sectors amidst this pandemic. The system is significant in particular to the following:

1.4.1 Office of the Agrarian Reform

DAR is the lead government agency that holds and implements comprehensive and genuine agrarian reform which actualizes equitable land distribution, ownership, agricultural productivity, and tenurial security for, of and with the tillers of the land towards the improvement of their quality of life. The system helps the department achieving the goals in a way of extending the knowledge online amidst the pandemic and to the evolving world of social media.

1.4.2 Farmers

The farmer is expected to increase his productivity and thus his standard of living, whereas the consumer can rely on sufficient supplies at reasonable prices (Hathaway, 1997). Farmers are one of the beneficiaries of this system, one of the characteristics of the system is to post opportunities for livelihood and programs that are beneficial to farmers in boosting the productivity of the local products. They could find an opportunity and program posted in the page to boost the livelihood of local farmers. This system is also customized, enabling to bridge the gap distance where in, they could transact to the office of the Agrarian Reform virtually and without spending financial for transportation and expenses just to visit the office, the system alone can give you a service like in you are in the office yet you are in the comfort of your own home.

1.5 SCOPE AND LIMITATION

This study focuses on helping the Office of the Agrarian Reform in extending their arms in helping our farmers in boosting the quality of the local product in a way of giving the opportunities and knowledge to be more competitive in terms of quality over price. Moreover, the implementation of these applications is bounded with the following scope:

- The system could provide the list of requirements depending on the client's need/s.
- The system supports private chat
- The system could accept temporary checking of requirements via picture upload.
- The system can provide customer service via chat support.
- The web page will show the list of opportunities, livelihood, educational training and more programs offered by the department.
- The system can allow users to create an account

However, the system is limited to several requirements:

- Verifying the authenticity of the documents/requirements
- The system is not accessible offline
- Smart device recommended requirements of the system; (2GB/8GB ROM),

1.6 CONCEPTUAL FRAMEWORK

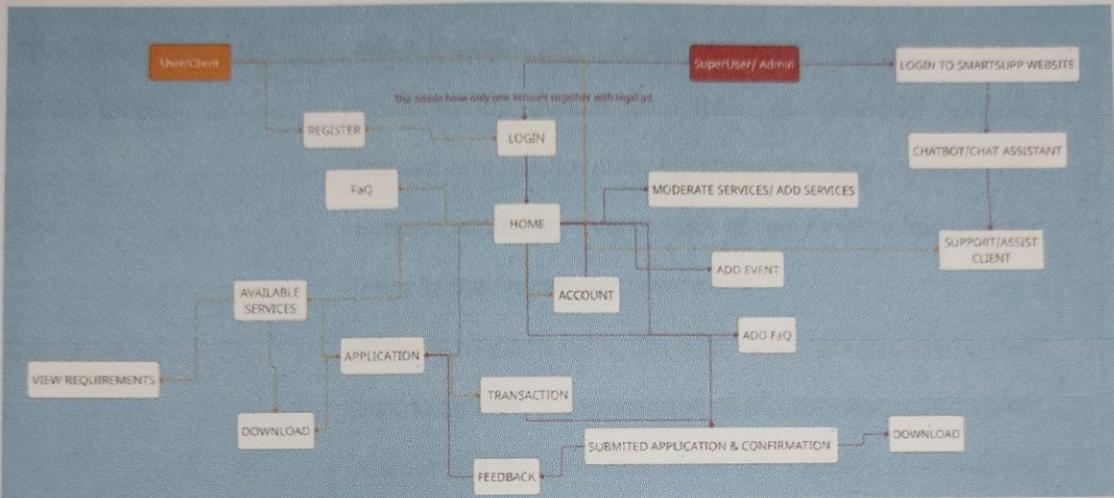


Figure 1

The Department of Agrarian Reform Client Support System, conceptual framework. The figures show the flow of the system that describe all functions and parts of every possible action.

1.7 DEFINITION OF TERMS

Agricultural sectors –	refers to public, private, micro or macro farmers.
Admin User-	refers to the person from the Department of Agrarian Reform who has the authority to see, navigate, manage and perform necessary events such as reply to chat and queries inline to the Departments concern.
Database –	refers to use and store, run queries on data that are needed also to optimized and manage all the important information. Also, it is a main component of the system Department of Agrarian Reform that will be implemented by database.
Expand the service –	refers to extending and bringing help and opportunity as well as the service to suburban municipalities to the people who are qualified and in need.
Online Transaction –	refers to the transaction of an agent from the Office of the Agrarian Reform to a customer from the other municipalities or vice versa via the internet.
Proponents –	refers to researchers and the people behind the scene of this book and system.
Temporary transaction/checking–	refers to initial validating and checking of requirements via sending a photo and to be checked by the legal adviser/s before proceeding to the office of the Department of Agrarian for Final transaction.

Virtual Assistance –

refers to assisting the customers in various ways like phone calls either inbound or outbound, or any ways of assisting the customers by the use of technology (apps, and network service) excluding face to face.

CHAPTER II

REVIEW RELATED LITERATURE

2.1 Technical Background

The developments of the Department of Agrarian Client Support System require the following application and programming languages. Adobe XD is used to build the user interface of the system, after developing the user interface the proponents use the following application to develop the back-end which requires the following application; Visual code, xampp, this helps the proponent to run and code the back-end. The programming language that has been used are HTML5, CSS3, JavaScript, Bootstrap 5, MySql, PHP, for the user interface and functionality of the system. For the user-to-user communication the proponent used a third-party system called the smartsupport it is a website provide a chatbot, it helps the proponents saves time developing a built-in chatbot.

2.1.1 Details of Technology used

2.1.1.1 Visual code

(Microsoft, 2021) refers to Studio integrated development environment is a powerful tool for editing, debugging, and building code, as well as publishing apps. An integrated development environment (IDE) is a feature-rich software development environment that may be used for a variety of tasks. In addition to the usual editor and debugger included in most IDEs, Visual Studio contains compilers, code completion tools, graphic designers, and a slew of other tools to make software development easier

2.1.1.2 <HTML5>

Is a markup language used for structuring and presenting content on the World Wide Web. It is the fifth and final major HTML version that is a World Wide Web Consortium (W3C) recommendation. The current specification is known as the HTML Living Standard. It is maintained by the Web Hypertext Application Technology Working Group (WHATWG), a consortium of the major browser vendors (Apple, Google, Mozilla, and Microsoft) (Wiki 2019).

2.1.1.3 <CSS3>

Cascading Style Sheets Level 3 (CSS3) is the iteration of the CSS standard used in the styling and formatting of Web pages. CSS3 incorporates the CSS2 standard with some changes and improvements. A key change is the division of standard into separate modules, which makes it easier to learn and understand. As of February 2014, the standard is still under development by the World Wide Web Consortium (W3C), but a number of the CSS3 properties have been implemented in the latest versions of some Web browsers (Techopedia 2014).

2.1.1.4 PHP

PHP is a general-purpose scripting language geared toward web development. It was originally created by Danish-Canadian programmer Rasmus Lerdorf in 1994. The PHP reference implementation is now produced by The PHP Group.[9] PHP originally stood for Personal Home Page but it now stands for the recursive initialism PHP: Hypertext Preprocessor.

PHP code is usually processed on a web server by a PHP interpreter implemented as a module, a daemon or as a Common Gateway Interface (CGI) executable. On a web server, the result of the interpreted and executed PHP code – which may be any type of data, such as generated HTML or binary image data – would form the whole or part of an HTTP response. Various web template systems, web content management systems, and web frameworks exist which can be employed to orchestrate or facilitate the generation of that response. Additionally, PHP can be used for many programming tasks outside the web context, such as standalone graphical applications and robotic drone control. PHP code can also be directly executed from the command line.

2.1.1.5 JavaScript

JavaScript is a scripting language. Traditional languages such as C++ are compiled before they're run into executable binary form, with the compiler checking for any errors in the entire program before the process is complete. Scripting languages, by contrast, are executed one line at a

2.1.1.6 Adobe XD

Adobe XD is a vector-based UI and UX design tool and it can be used to design anything from smartwatch apps to fully fledged websites. Let's take a look at what it offers designers and why it's become such a powerful tool in the web design industry.

2.1.1.7 Xampp Server

XAMPP is an open-source software developed by Apache Friends. XAMPP software package contains Apache distributions for Apache server, MariaDB, PHP, and Perl. And it is basically local host or a local server. This local server works on your own desktop or laptop computer. The use of XAMPP is to test the clients or your website before uploading it to the remote web server. This XAMPP server software gives you a suitable environment for testing MYSQL, PHP, Apache, and Perl projects on the local computer (Ganesan P. 2021).

2.1.1.8 MySql

. A Swedish company called MySQL AB originally developed MySQL in 1994. The US tech company Sun Microsystems then took full ownership when they bought MySQL AB in 2008. US tech giant Oracle in 2010 acquired Sun Microsystems itself, and MySQL has been practically owned by Oracle since. In regard to the general definition, MySQL is an open-source relational database management system (RDBMS) with a client-server model. RDBMS is a software or service used to create and manage databases based on a relational model (Boyett. R. 2022).

2.1.1.9 Smartsupp

Smartsupp is a free live chat software that turns visitors into customers. Smartsupp was an idea by a Czech company with headquarters in Prague. The service came in 2014 and currently serves over 50,000 companies worldwide, including small businesses, startups, large enterprises, and e-commerce sites like Decathlon or Pixmania.

It offers a live chat widget that can be customized and integrated with websites, Facebook pages, and mobile apps. Its key features include visitor tracking, engagement statistics, and canned responses (BotPenguin 2022).

2.1.1.10 Bootstrap 5

Bootstrap is a free and open-source collection of CSS and JavaScript/jQuery code used for creating dynamic layout websites and web applications. Being a tool for creating front-end design, it consists of a series of HTML- and CSS-based design templates for different components of a website or application such as forms, buttons, navigation, modals, typography and other interface components with helpful JavaScript extensions. It doesn't matter if you are a beginner to web development or an experienced developer, Bootstrap is a powerful tool for whatever type of website and web application you are trying to build (Norton, S. 2020).

2.2 Review of Related Literature

The Department of Agrarian Reform (Filipino: Kagawaran ng Repormang Pansakahan, abbreviated as DAR or KRP) is an executive department of the Philippine government responsible for the redistribution of agrarian land in the Philippines (Wikipedia, the free encyclopedia, 2021). Moreover, according to (GOV.PH, 2015) The Department of Agrarian Reform (DAR) is in charge of the direction and coordination of the national agrarian reform program. The DAR also formulates and enacts policies, plans, and programs for the distribution and cultivation of all agricultural lands. Addition by them, the following agencies are attached to the DAR: Bureau of Land Acquisition and Distribution, Bureau of Land Tenure Development, Bureau of Agrarian Legal Assistance, Bureau of Agrarian Reform Beneficiaries Development, Bureau of Agrarian Reform Information and Education. According to the study of (Food and Agriculture Organization of the United Nations, 2003), In the Philippines, agrarian reform is attempting to address the centuries-old issue of rural landlessness. The government addressed key national goals, such as promoting equity and social justice, food security, and poverty alleviation in the countryside, through the Comprehensive Agrarian Reform Program (CARP), which began in 1987.

Agrarian Reform Communities (ARCs), or clusters of barangays, were established by the DAR as convergence sites for development activities by all government agencies, NGOs, and other people's organizations. Support services are channeled to the farmer beneficiaries through these clusters, allowing them to play a positive role in the community development process. Farmers are divided into teams and given training on ARB development as well as organizational capability building and strengthening exercises. The DAR strengthens the potential of ARCs to take charge of their own growth in this way.

In addition, the DAR builds relationships between farmers' organizations and agri-business firms to improve access to market opportunities, production inputs, technology, and financial facilities for farmer-beneficiaries in the ARCs (Reyes, 2018).

The CARP, however, has yet to be completed after more than 14 years and is currently beset by major issues, ranging from landlord opposition to a lack of legislative support to significant funding gaps. Moreover, (The World Bank, 2020) Around 750,000 people are expected to gain improved land tenure security and stable property rights through a new project that will facilitate land titles for over 1.3 million hectares of land that was granted as part of the Philippines' Comprehensive Agrarian Reform Program (CARP), this project will provide them the opportunity, on a voluntary basis, to get legal proof and the security of individual land rights. We expect that this will encourage them to invest in their property and adopt better technologies for greater productivity and higher incomes. Many farmers who were granted lands under the country's agrarian reform program have been waiting for individual titles, sometimes for decades.

Agrarian reform is crucial for rural democratization and the fulfillment of basic human rights by the land-dependent rural poor. The possession of enormous swaths of land by regional rural elites serves as their ticket to political government in the Philippines, which is defined by a land-based power system. Through patron-client ties, they are able to maintain their position of power. Agrarian reform was seen as critical to the post-Marcos rural democratization process. And, at least in theory, the passage of CARP was the first step toward such democratization. Under the land-to-the-tiller concept of the 1987 constitution, the scheme required the distribution of all agricultural lands to landless farmers, farm workers, or tenants (Carranza, 2015).

Initially envisioned to restore the human decency and enhance the welfare of the then 10 million-strong rural workforces by transforming them into owner cultivators and

productive members of society, the watered-down CARP/ER and its skewed enactment have therefore exacerbated rural inequalities and stagnant rural life. According to government statistics, there are at least 13 million Filipinos living in rural areas who are poor (compared to 14 percent in metropolitan areas). Agriculture and fisheries employ 61 percent of the country's poor households. Farmers and fisher folk have the greatest poverty rates, at 41 percent and 37 percent, respectively, compared to the national poverty rate of 27 percent (Tadem, 2015).

Department of Agrarian Reform Kagawaran ng Repormang Pansakahan Reducing interpersonal transactions, the Department of Agrarian Reform (DAR) has issued guidelines to implement an on-line processing of agrarian related complaints and petitions to limit the physical movement of the DAR litigants, Adjudicators, and DAR Adjudication Board (DARAB) personnel. (GOV.PH, 2020) Secretary John R. Castriciones said the guidelines would enable the Board members and field adjudicators to act on matters remotely and digitally while it reduces the need for physical interaction with the parties and counsels of record. Under the DAR's 'new normal' scenario, complaints, and petitions, together with other supporting documents, may now be filed through electronic transmission or e-mail before the DARAB provincial and regional offices. The Adjudicator will have to personally evaluate the supporting evidence submitted.

Throughout the country's history, (Lanzona, 2019) agrarian reform in the Philippines has long been a combative issue and one that is often preceded by some form of instability and violence. Used mainly as a tool to garner grassroots support, agrarian reforms were formally institutionalized by setting up regulations on land size and contracts. Despite efforts to integrate the reforms to the markets, including the clustering of small hectares of land into large corporate estates, the benefits of the Agrarian Reform Program remained elusive under conservative demarcations set by regulations, including the

definition of property rights, transformation or maintenance of state structures and the contract limitations to be formed at the production level.

The Land Bank of the Philippines determines the value of the land using various factors that include level of productivity, fair market value, the market value of adjacent lots and tax assessments, among others. Once the price is established, the landowner is paid by the Land Bank. A portion of the settlement is paid in government bonds, while the rest is paid in cash. A 30-year amortization period allows less burdensome payments for farmer beneficiaries and gives them plenty of time to fully develop the land. Support services are an integral component of CARP and a right of all farmer beneficiaries. This is to ensure that the beneficiaries will be able to make the land productive through access to technology, credit and market services. In cases of land disputes, farmers should also be provided with legal support to defend their land rights. (Caranza, 2015).

The Department of Agrarian Reform (DAR) will be utilizing and integrating technology to ensure that social distancing measures are observed as it continues to assist the public on their agrarian reform-related concerns. A Visitor's Access Portal System (VAPS) and Access Portal System (APS) will be established to "ensure greater productivity and connectivity between and among offices, and establish a more technologically adept workforce as the new norm. APS calls are made in real-time, initiating and receiving APS operators are encouraged to interact with each other for concerns requiring immediate attention, such as the chat feature for short messages, or its file transfer feature for faster transfer of online data among offices directed DAR's Management Information System Service to provide the necessary technical support. VAPS frontline operators are required to record the name, contact details, concerns of the PAIC visitor, reasons why concerns were not addressed, and resolution given by the VAPs frontline operator.

They also must inform clients that communications should only be done directly with the frontline office either through landline, mobile call, or email. (Vera-Ruiz, 2020).

The Department of Agrarian Reform's (DAR) (Verdejo, 2021) distribution of idle government-owned lands (GOLs), parcelization of collective certificates of land ownership award (CCLOAs) and zero-backlog case policy programs under the leadership of DAR Secretary John Castriciones are seen to improve the lives of farmers in the countryside. DAR leads the implementation of the Comprehensive Agrarian Reform Program (CARP) through land tenure improvement, agrarian justice, and coordinated delivery of essential support services to client-beneficiaries. Castriciones proclaim that the farmers were empowered and were given support from farm machines, education and infrastructure projects. Empowering farmers is tantamount to strengthening the country's agricultural sector, which ensures the nation's food security and source of income in the countryside. During the pandemic, the country needs to further empower the farmers to strengthen the agrarian reform and the agricultural sector, which is seen as the backbone of the nation.

One of the strategies in the Philippine Development Plan (PDP) 2017-2022 is to attain sustainable production and food availability is to fast-track and complete the parcelization of collectively-titled awarded lands and generation of individual titles. The incomplete land ownership transfers to agrarian reform beneficiaries (ARBs) impedes farmer's productivity, and affects investor's confidence on lands awarded under the Comprehensive Agrarian Reform Program (CARP). DAR responsible for all land reforms in the country, which included agrarian, urban and ancestral domain land reforms. DAR is mandated to lead the implementation of CARP through land tenure improvement, agrarian justice, and coordinated delivery of essential support services to beneficiaries. (GOV.PH, 2021).

The study of (Ballesterose, 2018) the Comprehensive Agrarian Reform Program (CARP) in the last 30 years using the program's theory of change. The accomplishments of CARP in terms of land reformed area and number of beneficiaries for the past 30 years have been substantial. However, there is evidence that the program has been poorly targeted in terms of areas covered and beneficiaries. Among others, the study also notes that while there is weak evidence of overpricing of the land acquired by the government, the delay in CARP implementation is expected to increase the cost of land acquisition due to increased land/zonal land prices as a result of urbanization in the countryside. While the implementation of the program may have been flawed, there is no need to redo the CARP. Instead, government should focus on support programs to modernize agriculture benefitting small farmers, scaling up promising arrangements such as agrarian reform communities, block farming, and agribusiness venture arrangements. On the other hand, issues on land consolidation, land ownership concentration, or land conversions can be better addressed through convergence efforts of land agencies and digitization in land management and administration.

The Department of Human Settlements and Urban Development (DHSUD) said it entered into agreements with the Department of Agrarian Reform (DAR) and 19 local government units (LGUs) to develop housing for farmers (Rosario, 2021). Signed memoranda of understanding with the DAR and LGUs for the housing project. It is part of our responsibility as Rosario stated, to assist informal settler families, particularly the poorest of the poor, and to capacitate them in collaboration with the key shelter agencies so that they can have their own home. This aims to boost farmers' morale and strengthen their emotional attachment to their farms, which will help empower the agricultural industry. This is a collaborative effort. That require the cooperation of local governments and other government agencies. Farmers, according to the DHSUD, The Department of Trade and

Industry and the Department of Social Welfare and Development are also involved in the project, which will provide additional livelihood options for farmers and their families.

The government's Comprehensive Agrarian Reform Program (CARP) and its extension, the Comprehensive Agrarian Reform Program Extension with Reforms (CARPER) had provisions that were generally favorable to their intended beneficiaries. But CARP/ER was also essentially the result of a compromise between pro and anti-agrarian reform blocs in the Philippine Congress and thus also contained provisions inserted by landowner lobbyists that are considered loopholes in the law. The program is further hampered by an ineffectual bureaucracy, rampant land conversions and displacements of peasant communities, incursions of property developers, other rent-seekers, and special economic zones, and the expansion of urbanization into the countryside. (Eduardo, 2015).

The administration of Aquino (Villamora, 2003), addressed the important national goals through the Comprehensive Agrarian Reform Program (CARP), including the promotion of fairness and social justice, food security, and poverty alleviation in rural areas. Agrarian reform has had a huge influence on farmers who have benefited from it. Aside from social justice and peace in the countryside, increased per capita incomes, lower poverty rates, larger investments in physical capital, and higher household welfare and productivity were observed. Despite the several major delays to full implementation, many observers believe that the CARP's overall performance is favorable and encouraging. Through different programs aimed at alleviating poverty, ensuring food security, and empowering people to contribute to the country's overall development, it has undoubtedly helped a major section of the rural population.

In accordance to the report of (DAR, 2020), Despite the ongoing COVID-19 virus pandemic and climate change, the Department of Agrarian Reform Provincial Office of Davao Oriental recently signed a contract with suppliers of farm machinery and equipment under its Climate Resilient Farm Productivity Support Program (CRFPSP) in Mati, Davao Oriental.

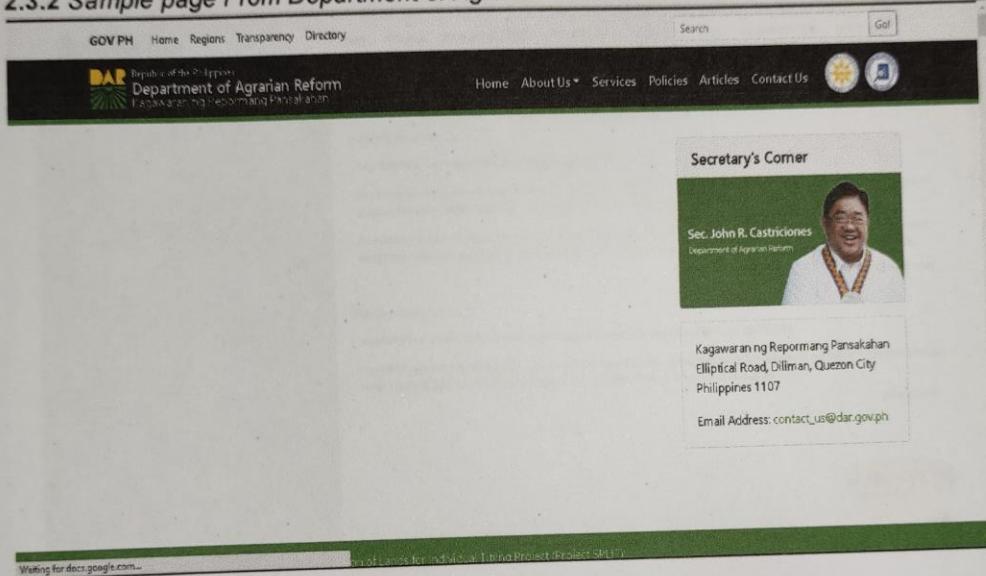
2.3 Related System

2.3.1 Sample page From Canvas Instructure

The screenshot shows a weekly calendar view from June 30 to July 6. On June 15th, there is a scheduled event titled "15 1:59p: Design Session 3 - Design Principles and Patterns". This event is highlighted with a red box. Other events listed include "GREEN SCREEN ACTIVITY" on June 24th and "Homework 2 (Mod12)" on June 25th. The sidebar on the left contains links for Dashboard, Canvas, Groups, and Calendar. The right sidebar lists various courses and their calendar entries.

The Sample page from Canvas Instructure (<https://canvas.instructure.com/>) is a system that provides connection to the student and instructor, which makes things easy and efficient. Providing activities that will guide the student to keep on tract on the deadlines and other events. The Department of Agrarian Reform client support system seeks to provide a stable connection to their clients through communication online and offline.

2.3.2 Sample page From Department of Agrarian Reform



The Sample page from Department of Agrarian Reform (<https://www.dar.gov.ph/>) system provides the following; Events, services description the problem of the system is that the system does not support online transactions. Due to that problem the proponent came up with an idea to develop a system that can assist the clients virtually. The system will be the bridge of technological advancement.

2.3.3 Sample Page from Pag-IBIG Fund

The screenshot shows the homepage of the Pag-IBIG Fund website. On the left, there is a sidebar titled "e-Services" containing links such as Membership Registration, Kasambahay Unified Registration, Housing Loan Payment Verification, Housing Loan Application, Developers' Online Housing Loan Application, Application for Inherited Receipts, Online Payment Facility, MP2 Enrollment System, Electronic Submission of Remittance Schedule, Virtual Pag-IBIG for Member, and Virtual Pag-IBIG for Employer. The main content area features a "LATEST NEWS :" section with two articles. The first article, published on June 08, 2021, is titled "Pag-IBIG MP2, home loans hit record-high in Jan-Apr 2021". It discusses milestones achieved by the agency. The second article, published on April 22, 2021, is titled "Pag-IBIG Fund grants 5,074 socialized home loans to low-wage earners in Q1 2021, up by 25%". It highlights the granting of socialized home loans to members from the minimum-wage and low-income sectors. A cartoon character in a speech bubble at the bottom right says "Hi, click here to chat with us!".

The Sample page from Pag-IBIG Fund (<https://www.pagibigfund.gov.ph/>) web system provides many services, but only cater their members. The difference between the system provides many services, but only cater their members. The difference between the DAR client support system and pag-IBIG Fund, the DAR client support system is open to all inquirers, while the pag-IBIG fund is a closed system.

2.3.4 Sample Page from NBI (National Bureau of Investigation)

The screenshot shows a table listing contact information for the Office of the Assistant Director for Information and Communication Technology Services. The table has four columns: NAME AND POSITION, DIRECT LINES, LOCAL EXTENSIONS, and E-MAIL. The data is as follows:

NAME AND POSITION	DIRECT LINES	LOCAL EXTENSIONS	E-MAIL
Atty. JOSE JUSTO S. YAP Assistant Director	Local Extensions Assistant Director- Staff -	Local Extensions Director - Chief of Staff - Staff -	E-mail: ids@nbi.gov.ph

Below the table, the NBI logo and name are displayed, along with links to various website pages like Home, About NBI, NBI Divisions, Regional & District Offices, Events, Press Releases, Personnel Corner, and Contact Us. Social media links for Facebook and Twitter are also present.

The Sample page from National Bureau of Investigation (<https://nbi.gov.ph/services/icts/>) Web system provide services that have an assign staff that can assist the clients. The similarities between the National Bureau of Investigation and Department of Agrarian Reform client support system almost have the same system flow.

2.3.5 Sample page From DTI (Department of trade and Industry)

The screenshot shows the official website of the Department of Trade and Industry (DTI) for the Region Operations Group (ROG). The header includes the GOVPH logo, a search bar, and navigation links for Home, About, Regions, Overseas, Resources, Partnerships, Good Governance, Foreign Assisted Projects, and Contact. The main content area features the DTI logo and the text "Republic of the Philippines DEPARTMENT OF TRADE AND INDUSTRY Manila, Region, Empire". A sidebar on the left lists regions: Region 1, Region 2, Region 3, Region 4A, MIMAROPA, and Region 5. The main content area discusses the ROG's role in developing programs and initiatives for MSMEs, formulating policies, and centering on micro, small, and medium enterprises. It also highlights the ROG's presence in Visayas and Mindanao, providing support across various regions. A "WHAT WE DO" section is present, along with social sharing icons and a language selection dropdown.

The Sample page of DTI (<https://www.dti.gov.ph/regions/>) web page system can support various regions. Providing regional information with the following; events, career opportunity, and many more. Like with the DAR client support system aims to provide regional services and the availability of the system.

2.4 Synthesis

There are several methods to deliver a service based on the linked system given above, each with a distinct scope, priority, and user interface. Testing the various websites, the proponent was able to come up with a concept, acquire research, and brainstorm. The proponent able to picture out the ideal system. Exact research and data collection enabled the establishment of the Department of Agrarian Reform's client assistance system

CHAPTER III

MATERIALS AND METHODS

3.1 Software Methodology

The system uses *Scrum*, a type of *Agile* methodology, due to its definition as per stated by (Sarangam, 2020) that Scrum is a lightweight framework that helps people, teams and organizations generate value through adaptive solutions for complex problems.

This study used the new form of software development methodology known as the *Scrum*, a type of agile methodology. This attempts to develop the system incrementally by building a series of prototypes and constantly adjusting them to user requirements. It emphasizes continuous feedback, and each incremental step is affected by what was learned in the prior steps of development. The phases of this model include requirements definition, development, testing, delivery, and feedback.

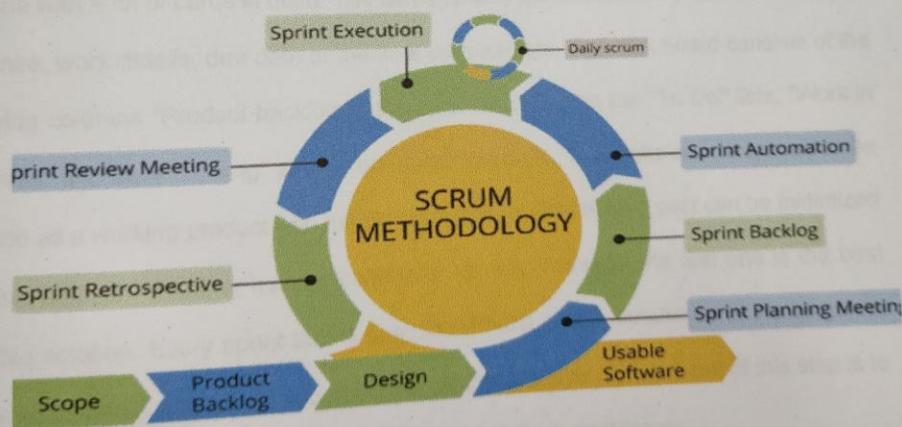


Figure 3.1.1 Scrum Methodology

The proponents use the Scrum Method, which inline to the system created where in the proponents starts to product backlog after the determining the scope of a certain project. The planning is done with the creation of the backlog and list of activities that must be done for breaking down the epics into smaller user stories to make the product backlog. Also, the user stories are made into tasks in the sprint backlog stage. The sprint duration is very important so that the user stories are as small as possible. The typical average sprint duration lasts about 2 weeks. If the sprint duration is small than the advantage is that more customer feedback can be received and most of the errors and bugs can be addressed earlier. If the sprint duration is long then it allows the developer to work thoroughly. The actual user stories are moved as small tasks in the sprint backlog where the actual work starts. This is where the realization of the software application for example the website development begins. To begin with, a task board also called a Kanban board is made with a lot of cards is used. The cards specify the details about the tasks such as assignee, work details, due date or the time duration, etc. The task board consists of the following columns "Product backlog or the User stories", and the "To Do" lists, "Work in Progress" and then "Testing" and "Work done" columns. The tasks completed are to be realized as a working product with full life cycle testing. The testing cost can be minimized with the addition of QA or having fewer user stories, however, the first one is the best possible solution. Every sprint that is completed must be demonstrated to the customer for his acceptance and his viewpoint on the complete solution. The result of this step is to discuss what went well and what can be improved for the next level.

The result of this step is to discuss what went well and what can be improved for the next level. Also, you need to discuss the lessons learned and the pitfalls of any particular issues or problems. Then the next sprint planning has to be commenced based on the knowledge that we have for the current processes and past projects. Star Agile conducts certified scrum master online training for the professionals. Understand the sprint retrospective process.

3.2 MOCK-UP

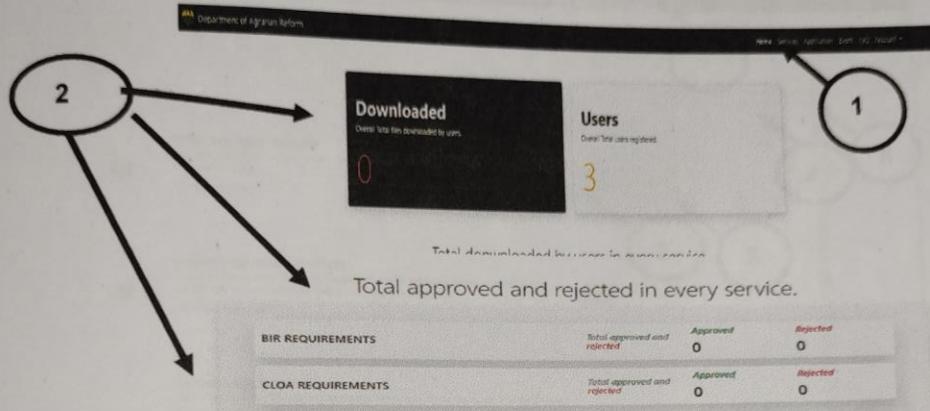


Figure 3.1: HOME PAGE

No.	UI Component	Name	Description
1	Navigation Bar	Home	User Submission, is a one of the features of the system that show the data of many clients submitted to a specific service
2	Field set	N/A	Submission details is a general overview of the data collected submitted by the user/client

Table 3.1: Tabular Description of Home Page

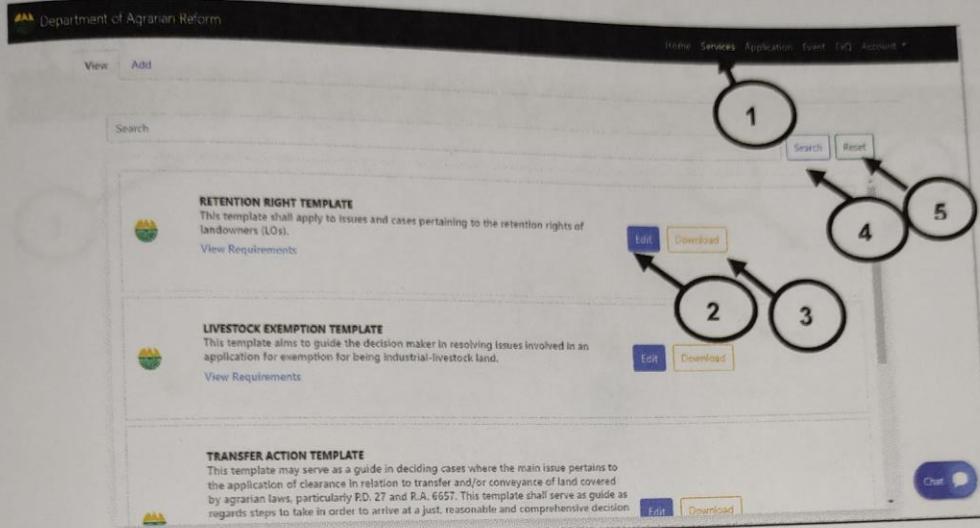
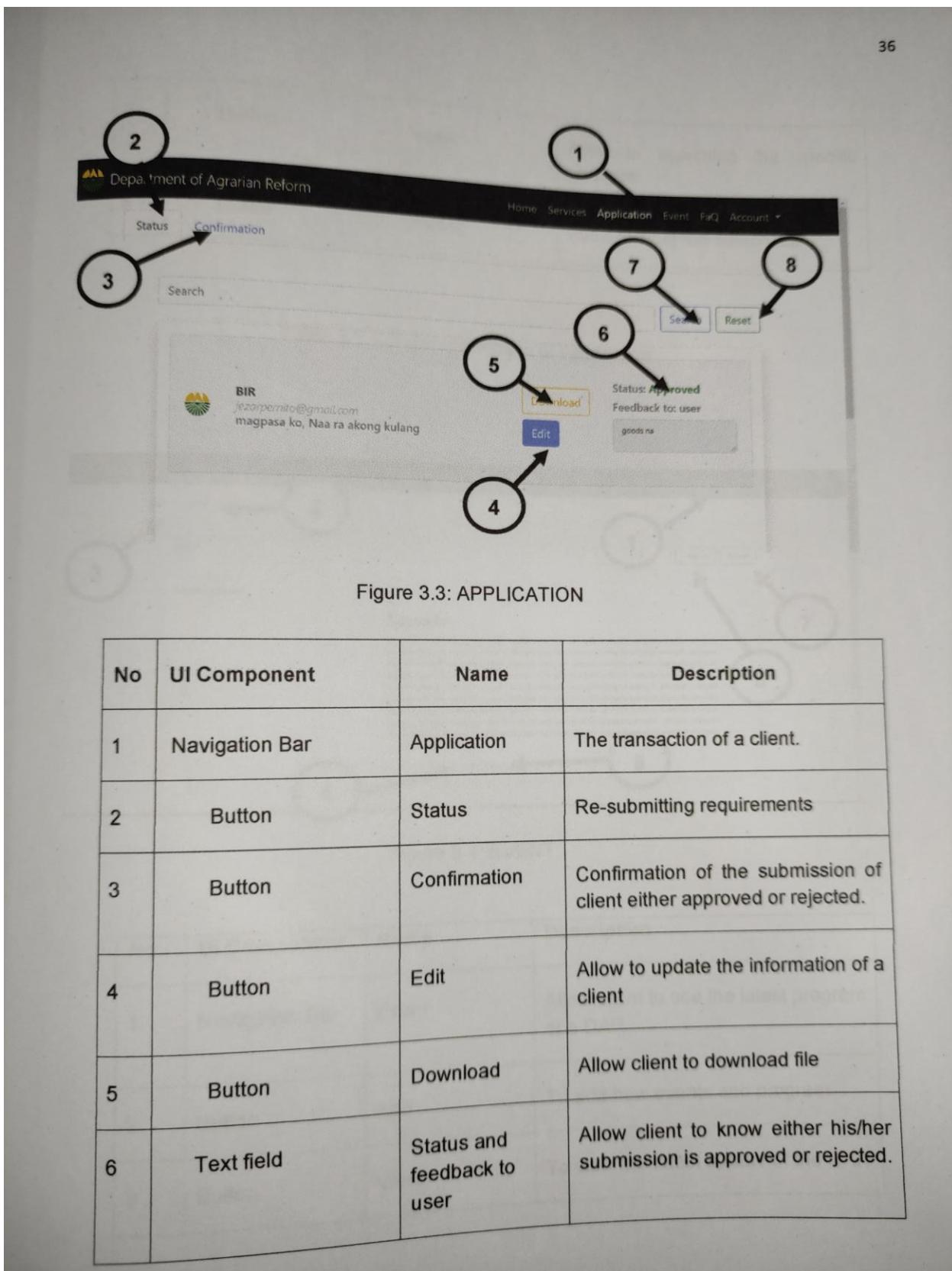


Figure 3.2: SERVICE

No	UI Component	Name	Description
1	Navigation Bar	Service	List of upload requirements, depending on transaction are made.
2	Button	Edit	Updating requirements
3	Button	Download	Allow client to download file
4	Button	Search	Allow in searching the specific services
5	Button	Reset	Allow to clear the search bar

Table 3.2: Tabular Description of Service



7	Button	Search	Allow in searching the specific services
8	Button	Reset	Allow to clear the search bar

Table 3.3 Tabular description of Application

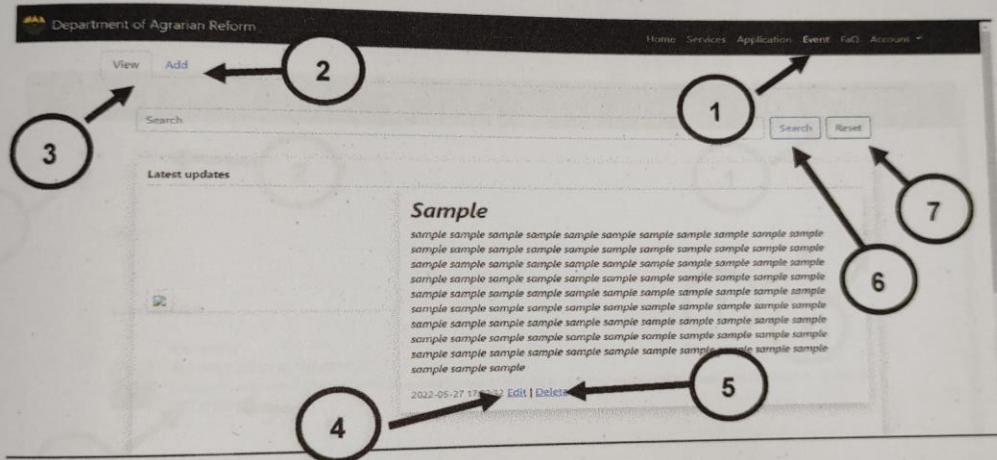


Figure 3.4: EVENT

No.	UI Component	Name	Description
1	Navigation Bar	Event	Allow client to see the latest program of a DAR
2	Button	Add	To add new events and program
3	Button	View	To view the latest update of the DAR

4	Button	Edit	To update event
5	Button	Delete	Deleting the program event
6	Button	Search	Allow in searching the specific services
7	Button	Reset	Allow to clear the search bar

Table 3.3: Tabular Description of Event

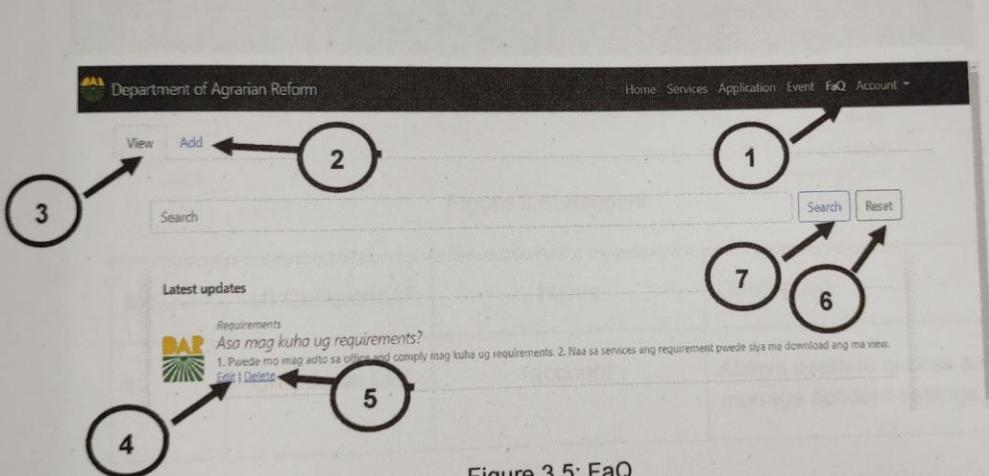


Figure 3.5: FaQ

No	UI Component	Name	Description
1	Navigation Bar	FaQ	Frequent ask question of a client
2	Button	Add	Adding question and ask
3	Button	View	Allow to view client's concern
4	Button	Edit	Allow client to update their concern

5	Button	Delete	Deleting concern can be also deleted at database
6	Button	Reset	Allow to clear the search bar
7	Button	Search	Allow to search different concern

Table 3.5: Tabular description of FaQ

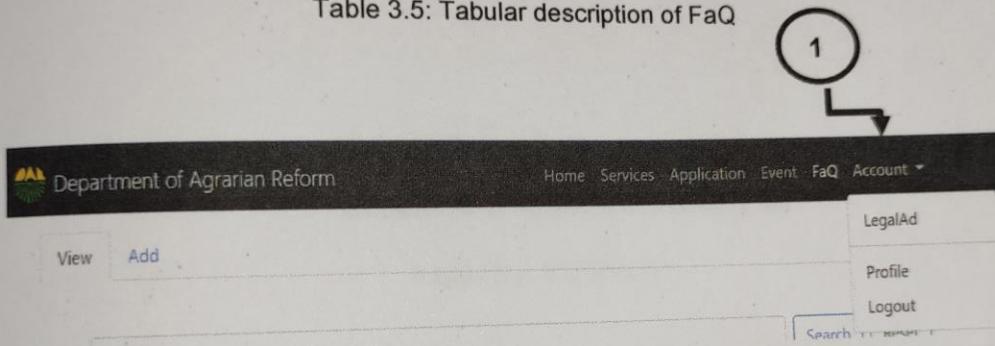


Figure 3.6: Account

No.	UI Component	Name	Description
1	Dropdown List	account	Allows users to access and manage account settings.

Table 3.6: Tabular description of Account

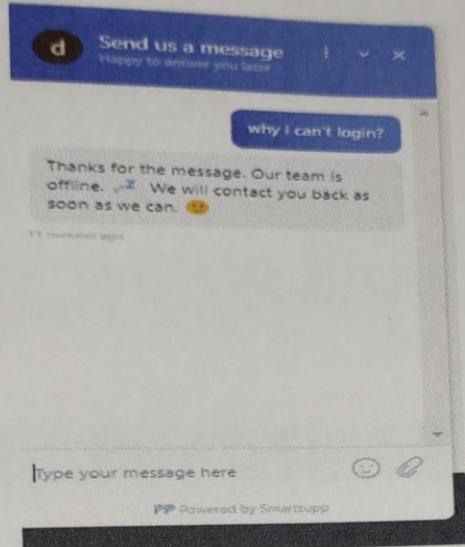


Figure 3.7: CHATBOT

No	UI Component	Name	Description
1	Button	Chatbot	Allow clients to ask for support and assistance

Table 3.7: Tabular Description of Chatbot

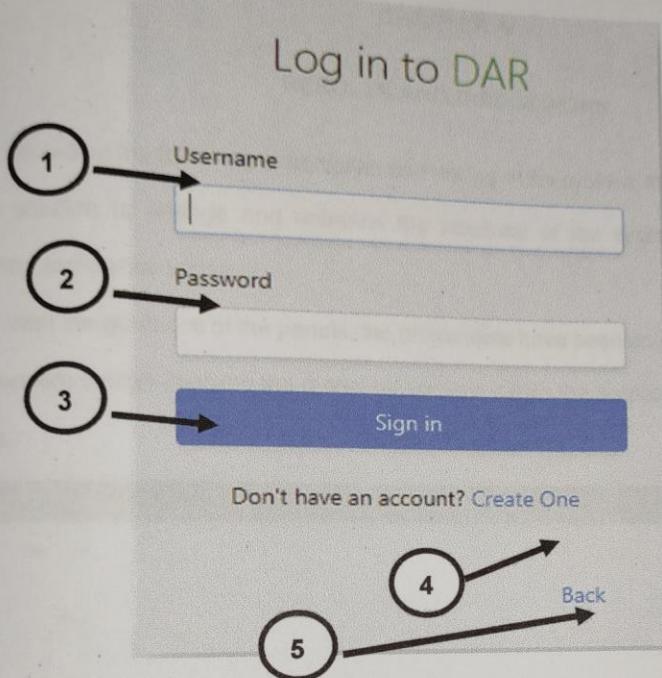


Figure 3.8: SIGN IN

No	UI Component	Name	Description
1	Text Field	Username	Allows user to enter their username
2	Password Field	Password	Allows user to enter password
3	Button	Sign In	Directs user back to the Profile page
4	Button	Create Account	Directs user to the Registration Page
5	Button	Back	Back to homepage

Table 3.8: Tabular description of Sign In

CHAPTER IV

RESULTS AND DISCUSSIONS

Based on the following observation and testing of the system, the proponent comes up with the solution to change and enhance the interface of the system making it more appealing and easier to use.

With the guidance of the panels, the proponents have been enlightened by the flaw of the system design applying the recommendations it help the proponents to improve the system.

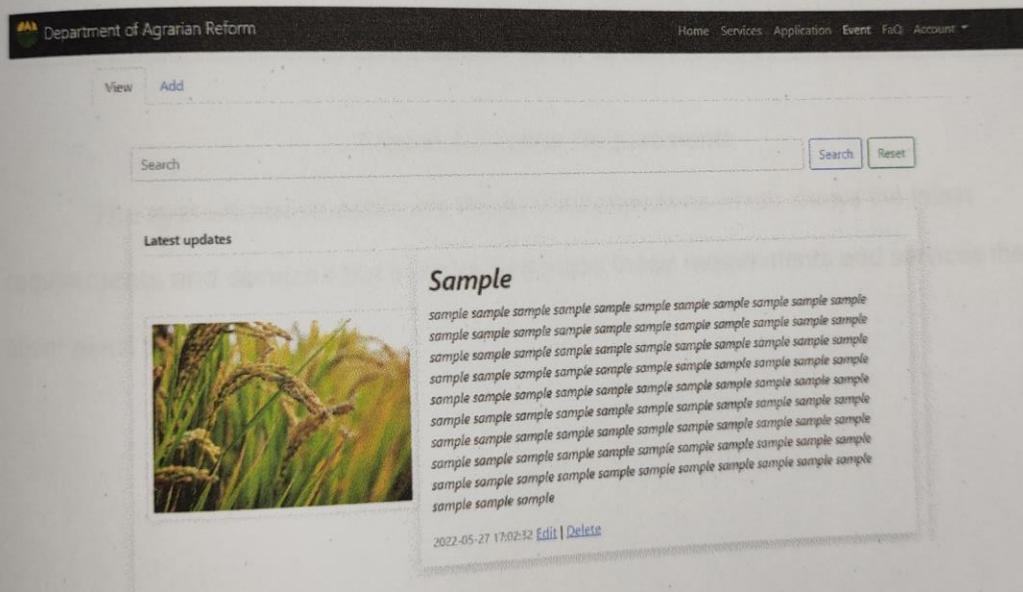


Figure 4.1 Events and Activities

The system above it achieves the first objective it shows the events and activities held by the departments which open up opportunity for our clients.

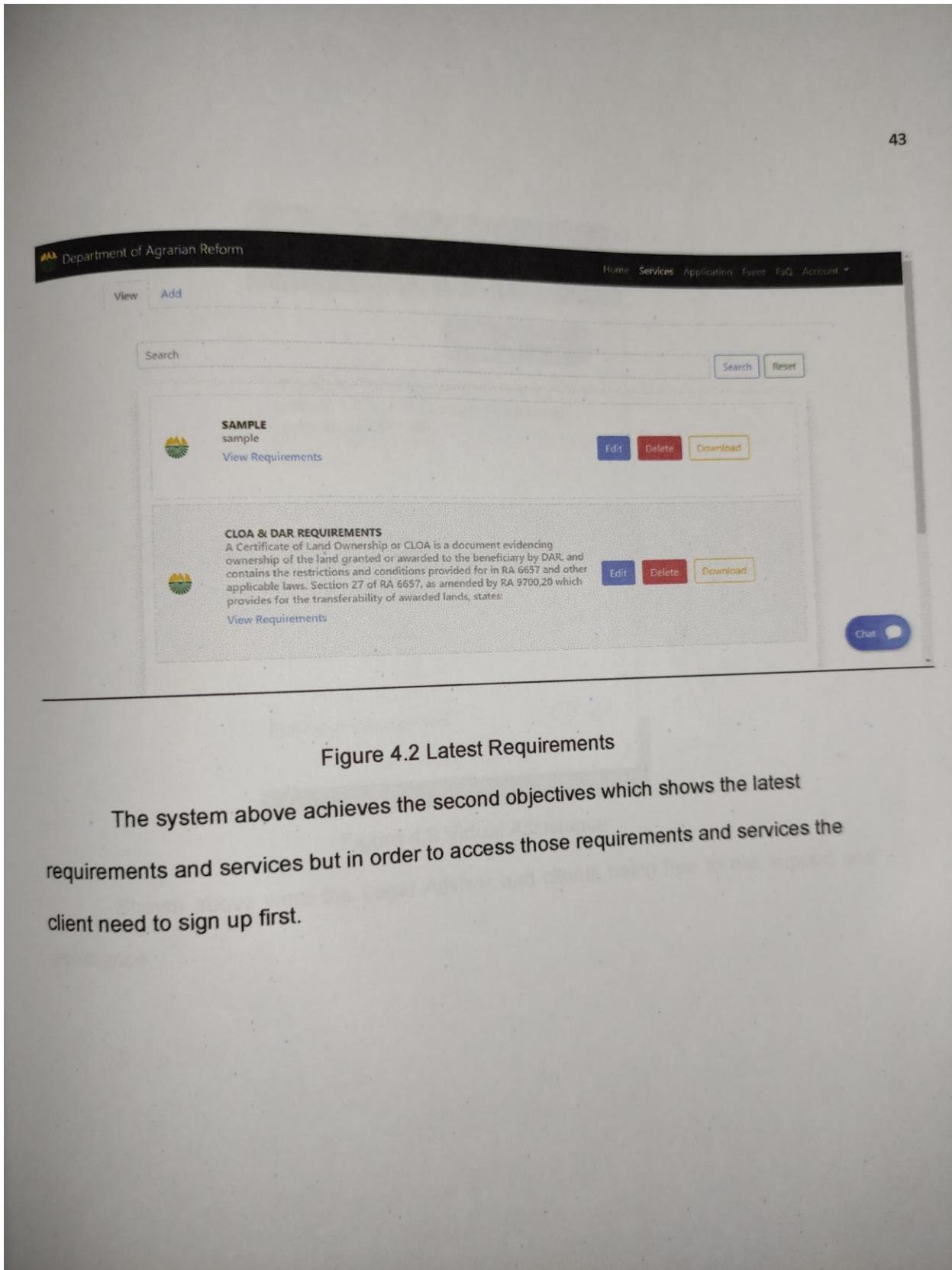


Figure 4.2 Latest Requirements

The system above achieves the second objectives which shows the latest requirements and services but in order to access those requirements and services the client need to sign up first.

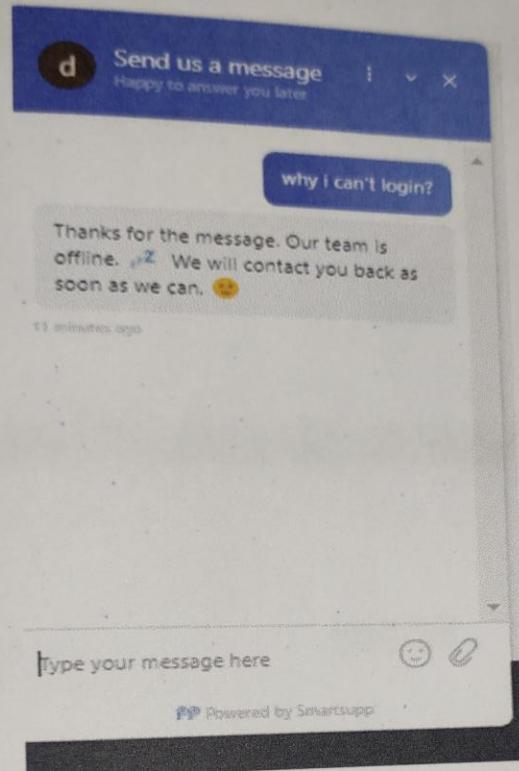


Figure 4.3 Virtual Assistance

Shown above were the Legal Adviser and clients being free to ask support and assistance.

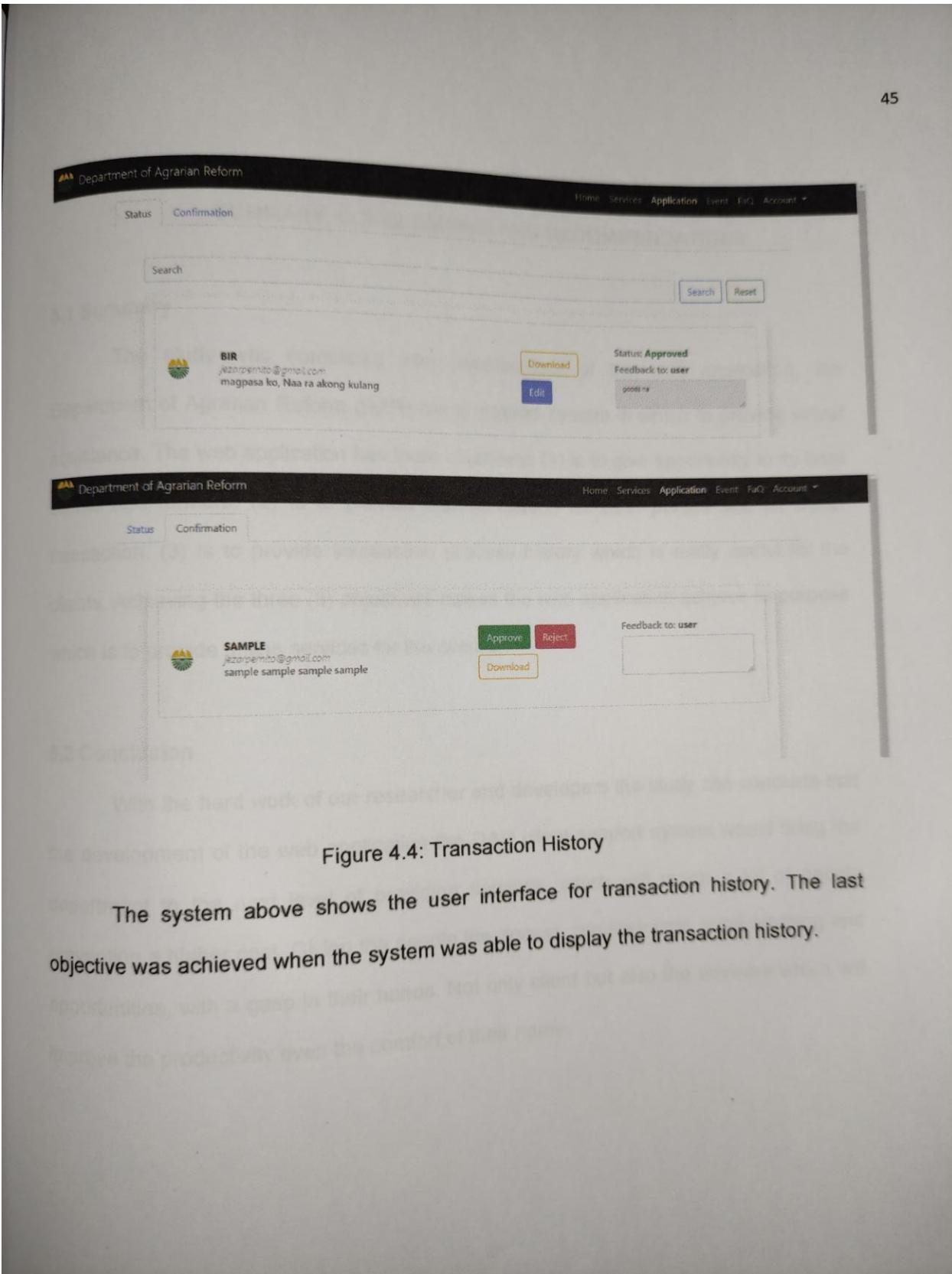


Figure 4.4: Transaction History

The system above shows the user interface for transaction history. The last objective was achieved when the system was able to display the transaction history.

CHAPTER V
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Summary

The study was completed with development of the web application, the Department of Agrarian Reform (DAR) client support system in which to provide virtual assistance. The web application has three objectives (1) is to give opportunity to its local clients and farmers. (2) Is to provide communication for both parties and for better transaction. (3) Is to provide transaction process history which is really useful for the clients. Achieving the three (3) objectives makes the web application achieve its purpose which is to provide online services for the clients.

5.2 Conclusion

With the hard work of our researcher and developers the study can conclude that the development of the web application the DAR client support system would bring the department to the next level of providing services, which will reach a lot of people preventing a higher cost. Giving the people the access, requirements, legal advising and opportunities, with a gasp in their hands. Not only client but also the advisers which will improve the productivity even the comfort of their home.

5.3 Recommendation

Although the DAR client support system was able to perform and function correctly to its specification, the said application is not done yet. Thus, the proponents recommend the following:

- Add better functions on the legal adviser UI for better service.
- Upgrade to a premium web hosting to improve site performance, enhance security, and handle higher levels of traffic.
- Add a priority number generator for meet up transactions.

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JEZAR T. PERNITO

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PERSONAL DATA

Date of Birth : September 10, 1999
Age : 22
Place of Birth : Lupon District Hospital
Sex : Male
Height : 5'6ft
Weight : 76kg
Civil Status : Single
Nationality : Filipino

SKILLS AND INTEREST

- ✓ Technological Skill Advance
- ✓ Communication Skills
- ✓ Flexible

EDUCATIONAL BACKGROUND

TERTIARY

Bachelor of Science in Information Technology
Davao Oriental State University
3RD Year Regular Student
2018-Present

SECONDARY

Crispin E. Rojas National High School
Graduate as Salutatorian (BEC)
2017 – 2018
Academic Excellence Awardee
Journalist of the Year
Leadership Awardee

PRIMARY

Lambajon Central Elementary School
Graduate as with honor
2007-2012

WORK EXPERIENCE

- ✓ Business Process Outsourcing

DARREN VINCE C. PASAGUE

Magsaysay 17 – 4V Brgy. Central, Mati City Davao Oriental

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**PERSONAL DATA**

Date of Birth : February 26, 2000
Age : 21
Place of Birth : Davao Oriental Provincial Medical Center
Sex : Male
Height : 5'6ft
Weight : 70kg
Civil Status : Single
Nationality : Filipino

SKILLS AND INTEREST

- ✓ Computer Literate (MS Office Word, Excel, Ppt, Publisher)
- ✓ Multimedia
- ✓ Hardware literate (Laptop, Smartphone, Printer)

EDUCATIONAL BACKGROUND

TERTIARY

Bachelor of Science in Information Technology
Davao Oriental State University
Guang-Guang, Dahican, City of Mati

SECONDARY

Mati National Comprehensive High School
Mati City, Davao Oriental

PRIMARY

Mayor Santiago Memorial School
Mati City, Davao Oriental

WORK EXPERIENCE

- ✓ Internship assigned in CENRO (Provincial Social Welfare and Development Office) at *Capitol Hill, Mati City, Davao Oriental*,
- ✓ Summer Job Multimedia Artist, PESO Provincial Office
- ✓ Contractual Employee at Saint Camillus Hospital of Mati Foundation, Inc.
- ✓ Layout Artist at CTE Teens & Prints, Nazareno St., Central, Mati City, Dav. Or.

AL JANE L. WAUPAN

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**PERSONAL DATA**

Date of Birth : November 30, 1998
Age : 23
Place of Birth : Davao Oriental Provincial Medical Center
Sex : Female
Height : 5'2ft
Weight : 40kg
Civil Status : Single
Nationality : Filipino

SKILLS AND INTEREST

- ✓ Oriented in Microsoft Office Application such as:
 - Microsoft Office Word
 - Microsoft Office Excel
 - Microsoft Office PowerPoint
- ✓ Layout Printing

EDUCATIONAL BACKGROUND

TERTIARY

Bachelor of Science in Information Technology
Davao Oriental State University
Guang-Guang, Dahican, City of Mati

SECONDARY

Matiao National High School
Mati City, Davao Oriental

PRIMARY

Limot Elementary School
Limot Tarragona, Davao Oriental

WORK EXPERIENCE

- ✓ Internship assigned in PSWDO (Provincial Social Welfare and Development Office) at Capitol Hill, Mati City, Davao Oriental,
- ✓ Summer Job Document Encoder assigned at Tourism, Subangan Davao Oriental Museum
- ✓ Boy Scout Registration and Admission Officer

ROVIC L. DECENA

Purok La Suerte, Sambukan Village, Guang – Guang,
Brgy. Dahican, Mati City Davao Oriental
09352426782

decenarovic473@gmail.com

**PERSONAL DATA**

Date of Birth : July 29, 2000
Age : 21
Place of Birth : Davao Oriental Provincial Hospital
Sex : Male
Height : 5'7ft
Weight : 80kg
Civil Status : Single
Nationality : Filipino

SKILLS AND INTEREST

- ✓ Computer Literate (MS Office Word, Excel, Ppt, Publisher)
 - ✓ Adobe Photoshop
 - ✓ Communication Skills
 - ✓ Layout artist and Video Editor

EDUCATIONAL BACKGROUND

TERTIARY

Bachelor of Science in Information Technology
Davao Oriental State University
Guang-Guang, Dahican, City of Mati

SECONDARY

Davao Oriental Regional Science High School
NHA, Brgy. Dahican, Mati City, Davao Oriental

PRIMARY

Mayor Luisito Garcia Rabat Jr. Memorial School
Madang, Brgy. Central, Davao Oriental

WORK EXPERIENCE

- ✓ Data Encoder of Provincial Assessor at Capitol Hill, Mati City, Davao Oriental
- ✓ Summer Job assigned at Davao Oriental State College of Science and Technology as the Enrolment Facilitator and Data Encoder