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WEB – BASED KATARUNGANG PAMBARANGAY PORTAL FOR DILG CITY OF
MATI

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JUNE 2022

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**WEB – BASED KATARUNGANG PAMBARANGAY PORTAL FOR DILG CITY OF
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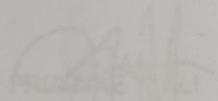
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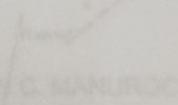
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A BSIT Capstone Project Submitted to the
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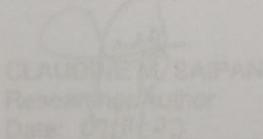
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We, **FRIA MAE T. ALI**, **COLEN C. MANUROC**, and **CLAUDINE M. SAIPAN** affirm that this Capstone/Thesis is our own creation. The majority of the conditions presented herein are unique to us. Borrowed ideas are duly acknowledged and given fair recognition. This study was handled with the utmost care to adhere to internationally recognized standards/policies on academic integrity.

We also attest that this academic requirement has never been submitted for academic credit in this or any other course.

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The BSIT Capstone project herein attached entitled "**WEB-BASED KATARUNGANG PAMBARANGAY PORTAL FOR DILG CITY OF MATI**", prepared and submitted by **FRIA MAE T. ALI, COLEN C. MANUROC, and CLAUDINE M. SAIPAN**, is hereby recommended for approval and acceptance.

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ACKNOWLEDGEMENT

First and foremost, we would want to thank God Almighty for providing us with the strength, knowledge, skill, and chance to attempt and successfully complete this Capstone project. This accomplishment would not have been feasible without His blessings.

Mrs. Lanie B. Laureano, MIT, our capstone project adviser and BSIT Program Head, for her words of encouragement, patience in attending to their needs in this capstone project, and advice in strengthening the contents of this paper;

Mr. Arjay R. Sacay, the chairman of the panel of examiners, together with the members, Mr. Ray John A. Salimaco, and Mr. Demosthenes F. Manguio, for their constructive criticism and recommendations to improve this capstone project.

Mr. Alvin John M. Aligato, our grammarian, for editing the paper to ensure the accuracy of the study's contents and organization.

Our appreciation would be incomplete if we did not appreciate our family, our individual parents for their enthusiasm and love for the both of us, as well as their unwavering support at all times. For always being there when we needed aid and for soothing us when we were down.

Thank you very much!

-The Proponents

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Abstract

Fria Mae T. Ali, Colen C. Manuroc, and Claudine M. Saipan. "Web-Based Katarungang Pambarangay Portal for DILG City of Mati." (BSIT Capstone Project). Davao Oriental State University, June 2022.

Adviser: **Lanie B. Laureano**

Katarungang Pambarangay is an organization formed for each barangay to promote barangay-level dispute settlement and community peace and harmony. As a result, it provides community members with an accessible and effective method of access to justice. Because connected documents and information in barangays are crucial in day-to-day transactions, efficient record-keeping and file organization are required. The researcher created a web-based Katarungang Pambarangay portal for the DILG City of Mati to help the Katarungang Pambarangay Portal improve record-keeping, tracking, accessing, and reporting of instances. This project aims to (1) recording cases reported to the KP, (2) displaying specific cases based on search criteria, (3) generating reports of cases per barangay, and (4) evaluate the web portal using a standardized questionnaire. The system's implementation attempts to change the technique and process that the barangay has been using to keep its files. Furthermore, the system guarantees that all records remain intact in order to retain complete and up-to-date information accessible for verification and monitoring, and it automates the record-keeping process in order to generate efficient and accurate reports. It turns data into a useful format that helps the operator to work more efficiently. The system also ensures that the file is protected and secure because it requires authorization before anyone can use the system. It will act as a file management system for the barangay to retain their records, as well as a summary of reports to the municipality regarding the barangay's state. The findings of user testing have revealed that the system is more productive than the manual approach and so the system may help people complete their duties more easily and quickly.

Keywords: Record-keeping, monitoring, summary of report, file maintenance, and web-based system.

CHAPTER I

INTRODUCTION

1.1 Rationale of the Study

Republic Act No. 7160, often known as the Local Government Code of 1991, mandates the establishment and functioning of the Barangay Justice System. The Katarungang Pambarangay Portal, also known as the Barangay Justice System, is a community-based conflict resolution system run by barangays, the country's fundamental political unit. The Katarungang Pambarangay Portal is the first of its kind in the Philippine judicial system. It encourages barangay-level dispute resolution to foster community peace and harmony while providing community members with an accessible and effective form of justice. As defined by the Local Government Code of 1991 (Republic Act 7160), the Katarungang Pambarangay (KP) or Barangay Justice System is an extra-governmental mechanism aimed at continuing the time-honored tradition of amicably resolving interpersonal disputes in a community without recourse to the formal legal system or aggressive social behavior.

Currently, each barangay has established KP. For each case filed, the cases are recorded in the book of cases which includes information recording, monitoring, processing and data recording. The comments and updates for a specific case will be documented in the casebook. The book will be used for manual searches when there is a question concerning a particular situation. Every month, the KP personnel shall submit a summary of cases and summary of reported cases to the DILG and other offices that needs the reports. With the current scenario, the searching of cases and submission is time consuming and may cause delay. With these, the proponents developed the entitled "Katarungang Pambarangay Portal for DILG City of Mati".

This can be ascribed to the Katarungang Pambarangay Portal and the DILG's superb and effective strategy. It will assist them in completing the task more quickly by allowing them to readily identify, locate, classify, and acquire information on the number of cases. This project is a response to the difficulties stated and an attempt to improve the service quality of the Katarungang Pambarangay Portal.

1.2 Purpose and Project Description

The project is being created to help the Katarungang Pambarangay in charge, and the DILG-City of Mati improve their record-keeping, tracking, and reporting of criminal cases filed at the Barangay Level through the use of an online portal. This project's objective is to alter the manner the Katarungang Pambarangay Portal keeps its files. This will also ensure that all records are current and comprehensive. This study's purpose is to be utilized for verification, monitoring, and reference. It can also automate the record-keeping process, resulting in accurate and efficient reporting and proper automated file management.

1.3 Objectives of the Study

The project's primary goal is to assist Katarungang Pambarangay personnel in conveniently keeping their records and efficiently processing them. The project's specific goals are as follows:

1. Design and develop a web portal that is capable of:
 - 1.1 Recording cases reported to the KP
 - 1.2 Displaying specific cases based on search criteria.
 - 1.3 Generating reports of cases per barangay.
2. Evaluate the web portal using a standardized questionnaire.

1.4 Significance of the study

This research is aimed at a variety of Katarungang Pambarangay Portal for DILG City of Mati, who may benefit from the system. The study's findings will assist the following:

Future researcher - This may serve as a foundation for future scholars who may suggest an analogous method. Future researchers could also use the study recommendations to help them decide what features to add and modify in their system to improve its Functionality.

Katarungang Pambarangay Portal – It will assist them in completing their assignment more quickly and give them with ideas on managing their knowledge more effectively.

DILG Administration – It may be helpful for them to review the summary of reports from each barangay; the findings of this study will provide them with an understanding of what is going on at the barangay level.

1.5 Scope and Limitation

The research covers the testing and creating an effective Web-based Katarungang Pambarangay Portal for the DILG City of Mati that tracks the number of cases in Mati City, Davao Oriental.

1.4.1 Scope of the Study

The study focuses on the DILG City of Mati's Web-Based Katarungang Pambarangay Portal, which focuses on comprehensive data or instances in Barangay. This approach will assist the barangay in identifying the increasing/decreasing number of reported cases.

The information included in the book of cases is the following:

- Created to offer a user-friendly.

- Promote knowledge of the Katarungang Pambarangay with this basic, easy-to-read tool.
- As a powerful alternate conflict resolution method.
- To give a practical overview for the members of the communities.

1.4.2 Limitation of the Study

- This study is restricted to the Katarungang Pambarangay Portal office, the administrator, and the staff, who are only authorized to maintain and update the system records.
- Can only generate report summaries.

1.5 Conceptual Framework

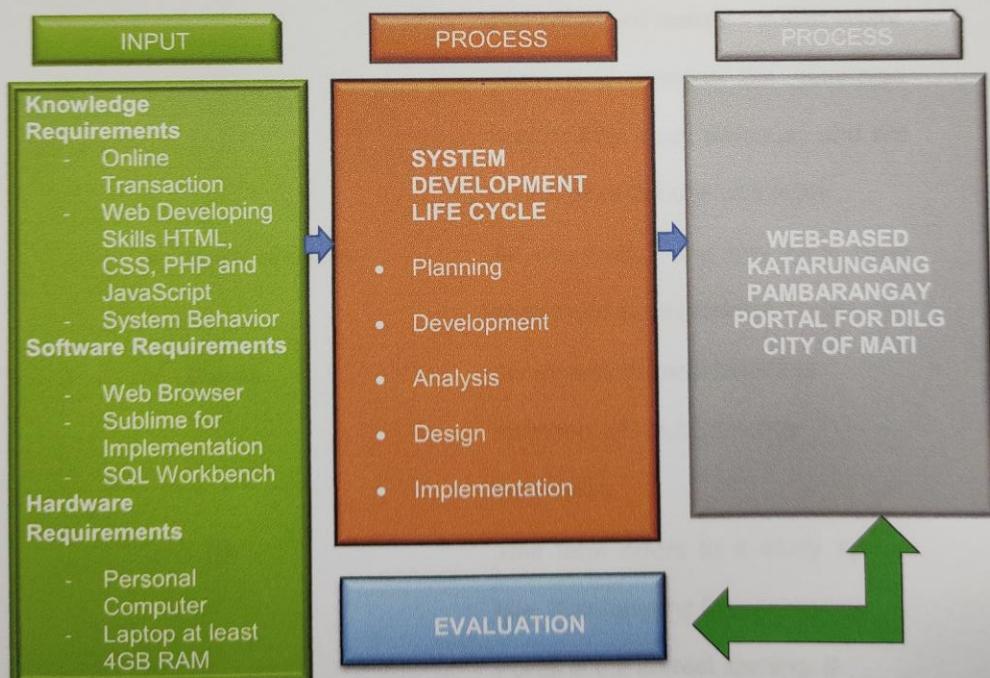


Figure 1.1 Mati City Web-Based Barangay Information System.

The project conceptual framework outlines the process of Web-Based Katarungang Pambarangay for DILG City of Mati. This theoretical framework acts as a roadmap for comprehending the study. To explain the task improvement technique, the estimated structure demonstrates the Input-Process-Output model. This web is likewise governed by the system, comprised of administrators from various nations who have complete authority over the system's content and Functionality.

1.6 Definition of Terms

For a better understanding of this capstone project, the following terms are defined in the context of this study.

- **Administrator DILG** The government must promote peace and order and maintain public safety. They also examine the generated reports from each Barangay and are in charge of the overall system.
- **Book of cases** All information and files have been sorted and are available for reference.
- **Cases** It refers to the problems that members of the community encounter.
- **KPP** This term refers to a study system title. Katarungang Pambarangay Portal is the correct spelling. It advocates for a barangay-level

CHAPTER II

resolution to establish community

REVIEW OF RELATED LITERATURE

peace and harmony.

2.1. Technology

- **Mediation** Refers to the practice of settling and attempting to resolve disputes.
- **Users** Refers to the system users and the Katarungang Pambarangay Portal in Mati.

- **Web-based** Is software that can be accessed via a web browser. This does not need applications. A scripting language is a programming language that allows the user to download, install, or to automate tasks and is scriptable. It also helps people work with most popular operating systems, including Linux, Mac OS, Solaris, Microsoft Windows, MAC OS, and many others. Additionally, most web servers are compatible with it including Apache and IIS. Using PHP allows the proponents to choose our operating system and the web server.

2.1.4.2 MySQL

The proponents also used MySQL, a free and open-source relational database management system. MySQL, like other relational databases, stores information in tables that are made up of rows and columns. Users can define, manipulate, control, and query data using the computer language known as SQL, or Structured Query Language. The best/ popular programming language is this one for creating, managing, and manipulating database content. It is best renowned for

CHAPTER II

REVIEW OF RELATED LITERATURE

2.1. Technical Background

2.1.1. Details of the Technologies Being Used

Developers used the technological tools listed below.

2.1.1.1 PHP

The proponents used PHP in developing our system because it is an open-source server-side scripting language used to build online applications. A scripting language is a program that uses lines of code to automate tasks and is script-based. PHP scripts work with most popular operating systems, including Linux, UNIX, Solaris, Microsoft Windows, MAC OS, and many others. Additionally, most web servers are compatible with it including Apache and IIS. Using PHP allows the proponents to choose our operating system and the web server.

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level programming language. Recently, complex past in time. There is

2.1.1.3 CSS

Colors, layouts, and fonts for cascading style sheets were described using language. It enables the presentation to be customized for various devices, such as large and small screens. CSS is not HTML-specific and can be used in any XML language.

2.1.1.4 XAMPP

It is a well-known cross-platform web server that enables developers to construct and test their programs on a local web server.

The Apache Friends produced it, and the audience can update or modify its native source code. It includes the Apache HTTP Server, MariaDB, and interpreters for several computer languages, including PHP and Perl.

2.1.1.5 Bootstrapping

The proponents created a responsive and mobile-friendly website using the most popular HTML, CSS, and JavaScript frameworks. It has HTML and CSS design templates for typography, forms, buttons, tables, navigation, modals, picture carousels, and more. It is a CSS framework for front-end web development that focuses on responsive, mobile-first design. It offers design templates based on CSS and JavaScript for typography, forms, buttons, navigation, and other interface components.

2.1.1.5 Java Script

The proponents utilized a programming language that followed the ECMAS script specification. JavaScript is a multi-paradigm high-

level programming language frequently compiled just in time. There is also curly-bracket syntax, dynamic typing, prototype-based object orientation, and first-class functions. JavaScript is a text-based computer language that may be used to make web pages interactive on both the client and server sides. Whereas HTML and CSS give websites structure and appearance, JavaScript adds interactive components that keep people engaged.

2.2 Related Literature

The literature review looks at domestic and international research and how they compare to our work. Some studies differ from others.

2.2.1 Barangay Management System (BMS)

This system aids barangay administration by allowing the client barangay to keep their resident records as comprehensive and up-to-date as possible while making them freely accessible for verification, monitoring, and reference. It consists of an Automatic Business Process that enables the processing of Barangay Clearances and other revenue-generating items such as charges. Other Barangay-related tasks, like blotter reports and other relevant services, are also provided. Forms and words used to prepare and publish Barangay Permits and Certifications. Standard-based complies with Local Government Code Section 394, which specifies that each barangay must maintain an up-to-date record of residents for simple identification on the Local Barangay Statistics.

The system maintains the safety and security of the file, and it also requires authorization before anybody can access the system. This ensures that the file is safely saved in the design and generates backup data in the event of a technical breakdown. It can also provide a report on the state of the

Barangay for the municipality. The idea will substantially influence Barangay residents, Barangay staff who run the system, and the Barangay itself. This maintains and updates information while allowing users to search for and view records. Computer-based information retrieval works by utilizing software that can supply an institution with information services (Kazuya, 2015).

Dr. Peter G. Knight (n.d.) found that stored data, that is, its file or Database is typically organized so that individual pieces of data can be retrieved and edited rapidly and without necessarily requiring access to any other part of data in the system. When the management style moves to joint participation of Katarungang Pambarangay, the organization's ability to provide efficient and effective services improves.

2.2.2 The Katarungang Pambarangay Portal

The Katarungang Pambarangay Portal, or Barangay Justice System, has no plans to change the community's traditional method of dispute resolution. Instead, it institutionalizes these behaviors by supporting regular mechanisms for an amicable solution, the outcome of which is more acceptable to the parties. Disputes in the barangays are historically resolved by whoever is the most well-known and respected community member. Elders from renowned families who command tremendous respect from their neighbors were typically appointed community leaders. Furthermore, no specific procedure exists for providing documentation and records of case processes and subs resolution. The leader acts as the witness, ensuring the case is carried out. While traditional customs form the basis of the Katarungang Pambarangay Portal law, or P.D.1508, the substance has been significantly improved.

2.2.3 Mediation

The individual can find the most solace by assisting the conflicting parties in engaging in honest dialogue that results in an agreement. There was some evidence of mediation procedures in the past under traditional leadership. Still, they were through a more systematic technique of "going between" the two opposing sides and producing a lawfully acceptable agreement through the mediation process. As part of this project, the Katarungang Pambarangay Portal was exposed to many lectures and workshops, preparing them to play this role between the opposing groups. During the training, they were taught the following mediation roadmap: 1. 2. Preparation for Mediation. The Mediator Opening Remarks 3. Perspectives of the parties on topics and concerns 4. Issues to be addressed by the mediator in summary 5. Each problem or group of problems necessitates problem resolution.

2.3. Related System

2.3.1 Lupong Tagapamayapa Incentives Awardees

The Lupong Tagapamayapa Initiative (LTIA) is a collaborative DILG-DOJ program that aims to highlight the role of lupong tagapamayapa in communities and their resourcefulness in settling issues under the Katarungang Pambarangay Portal (KPP) or barangay justice system. The DILG Information System and Technology Management Services developed LTIA, a web-based program that enables the encoding, assessment, rating, and selection of LTIA grantees. Given the limit imposed by the pandemic, it is

believed that the LTIA IS will make qualified lupong tagapamayapa evaluation more accessible.



Figure 2.1 Sample Page of LTIA

The LTIA will be utilized during the 2019-2020 evaluation period. Long Tagapamayapa are evaluated using the following criteria: operational Efficiency, effectiveness in achieving the Katarungang Pambarangay Portal interpersonal dispute resolution objective, the Lupong Tagapamayapa's creativity, and resourcefulness, the area of the facility for KPP activities, and financial or non-financial support.

2.3.2 New tracking systems launched

DILG-NCR has introduced two new technologies to help document tracking and locating people deployed in the field. As part of the region's information technology plan execution, the Regional Information and Communication Technology Unit (RICTU) created the Records Tracking Registry System (RTRS) and locator. RTRS intends to safeguard records and offer real-time updates on the office actions on papers received. It also creates printable receipts for documents that are uploaded to the system.

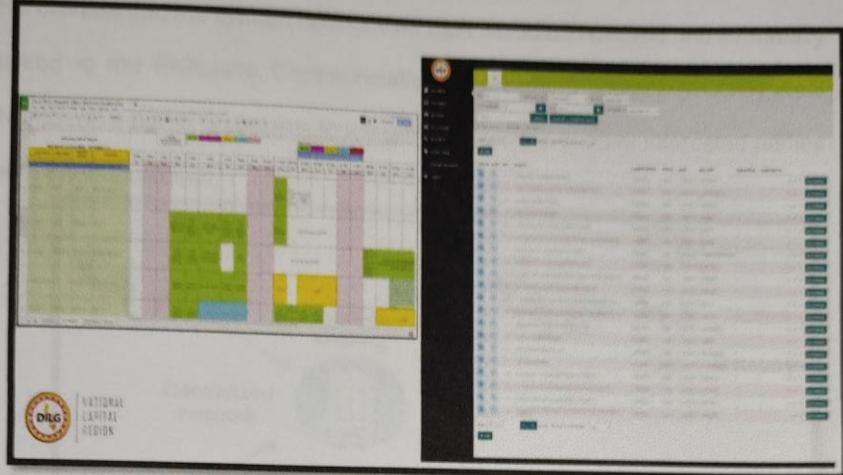


Figure 2.2 Sample page from Tracking System

The RTRS is currently used in the regional and DILG Manila Field Office. Because of the enormous volume of daily papers, said field office was chosen as a pilot among the region's 17 field offices since DILG Manila is the region's largest field office in terms of staff and barangays monitored.

Drugs Board (DCB), Philippine Drug Enforcement Agency (PDEA), Philipino

2.3.3 Centralized Info System

The Interagency Committee on Anti-Illegal Drugs (ICAD) recently launched the Anti-Illegal Drugs Information System (AIDIS). This web-based centralized information system will store relevant information and figures on the illegal drugs problem from various drug agencies, capturing the actual numbers on the government's anti-illegal drugs campaign.

The AIDIS, according to DILG Secretary Eduardo M. Ao, will serve as a national repository and reporting system for illegal drug data. "We can now generate trustworthy data using this web-based online system that we can utilize to map out our strategy and plans to increase our anti-illegal substances effort further," he said.

He claimed that the system harmonized data would be checked and eventually linked to the Philippine Communications Operations Office's (PCOO) Real Numbers, a portal accessible to the general public and other interested parties with internet access.

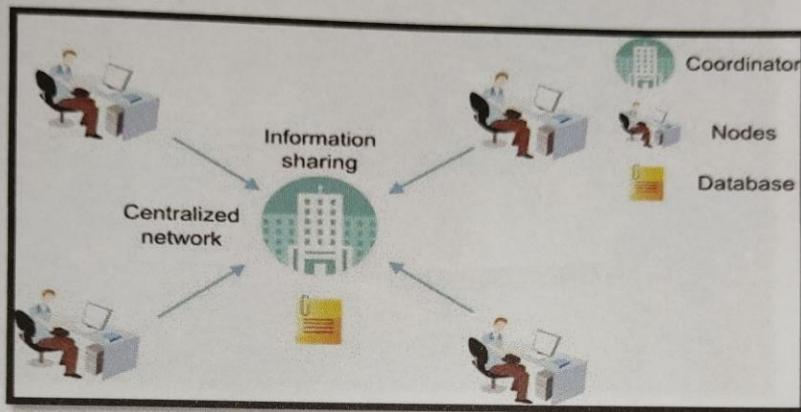


Figure 2.3 Sample page from Centralized Info System

Only authorized users from the various agencies involved in the anti-illegal drugs campaign, including the DILG, Department of Health, Dangerous Drugs Board (DDB), Philippine Drug Enforcement Agency (PDEA), Philippine National Police (PNP), and Department of Social Welfare and Development, will have access to the system (DSWD).

2.3.4 DILG R-3 takes on Google cloud computing

DILG Region 3 has launched I.T. innovations and initiatives like the LGU website construction project, the LGU database system, and the intention to use the Google Cloud online Reporting System, all of which are linked together to build a DILG-LGU Information Portal of Central Luzon on the web. As a result, the region will attain the three E's of management: economy, efficiency, and effectiveness.



Figure 2.4 Sample page from Google Cloud Computing

The activity intends to build an online reporting and monitoring system for DILG Region 3 reports for more straightforward retrieval, aggregation, and submission to the Central Office by the Field and Regional Offices, assuring timely reporting. It also seeks to design, maintain, and establish a database holding information about the LGU that is easily accessible and used mainly by DILG Region 3 staff for operations and technical help to the LGU, among other services.

2.3.5 Document Management System

After a year of successful implementation at the DILG Central Office, the DILG 8 Regional Office began deploying the Document Management System (DMS) on July 20 as the Department gradually evolves toward a new normal in which virtual and paperless transactions are encouraged.

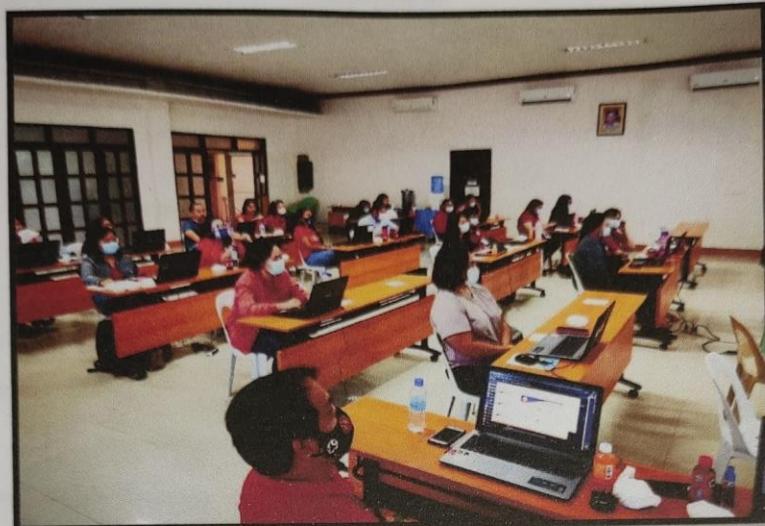


Figure 2.5 Sample from Document System

The DMS is a web application that enables the Department to store, manage, and track electronic documents and paper-based images. Its goal is to eliminate paper-based transactions inside the Department, enhance workflow, boost office productivity and Efficiency, promote transparency, and shorten transaction times.

2.4 Synthesis

According to the connected systems mentioned above, several techniques for implementing data or monitoring through a system. Among the linked methods given, the Document Management System is the most similar to the established system because it employs the same aim for registration to complete the documents. Every action made at a specific moment can now be monitored by management. It is a system that receives, tracks, manages, stores, and reduces paper. Most people can keep track of the numerous versions created and edited by various users. It is a method for automating manual procedures.

CHAPTER III

Users can leverage the system development life cycle to turn a new project into an operating one. The System **METHODOLOGY** cycle, abbreviated "SDLC" is a

3.1. Software Methodology

The SDLC is a process. This process is used to model or plan the work required and non-related activities to deliver a quality system that satisfies the customer's business needs. It manages the decision-making process, advances, and controls.

The overall structure of the produced system will be based on software development methodology. It will be used as a guide by the researchers to follow the entire software engineering process.

The System Development Life Cycle software development technique was employed in the study, as shown in Figure 3.1.

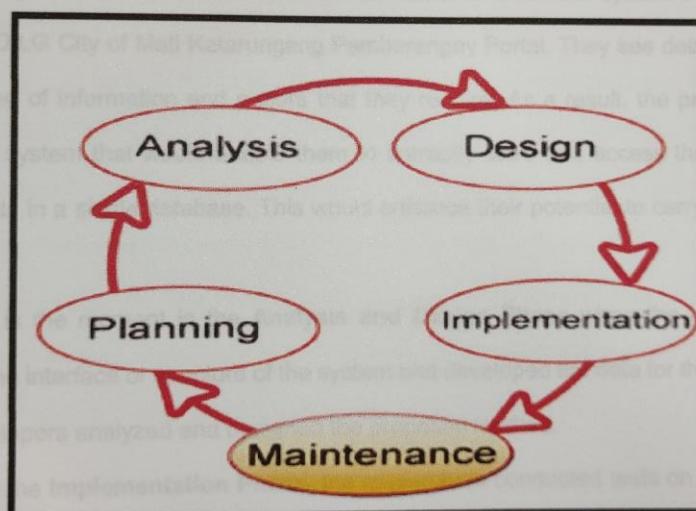


Figure 3.1 System Development Life Cycle (Rastogi, 2015)

Systems development life cycle project management is defined as SDLC conceptual model that covers the processes involved in creating an information system, from initial feasibility studies to application maintenance. Moreover, the product is tested with each other and some important problems. Moreover, SDLC methodology helps the proponents in making the said project with its desired features and functionality.

Users can leverage the system-development life cycle to turn a new project into an operating one. The System Development Life Cycle, abbreviated "SDLC" is a methodically designed multistep iterative process. This process is used to model or give a framework for technical and non-technical activities to deliver a quality system that satisfies or surpasses business objectives or to manage the decision-making process advancement. It also informs users that stages can be repeated at any moment or that a previous step can be revised if the system needs to be adjusted or enhanced.

The proponents, met during the **Planning Phase** to decide how we would begin our investigation. We decided it would be beneficial to make our system compatible with the DILG City of Mati Katarungang Pambarangay Portal. They see delays in the processing of information and papers that they require. As a result, the proponents design a system that would enable them to correctly store and access their critical documents in a single database. This would enhance their potential to carry out their duties.

It is the moment in the **Analysis and Design Phase** when the group has defined the interface or structure of the system and developed the data for the system. The developers analyzed and designed the proposed method.

In the **Implementation Phase**, the researchers conducted tests on Barangay Dahican, City of Mati, and Davao Oriental personnel. They will use the program and respond to the questions and feedback supplied; however, because the application is new, the researchers will first explain and demonstrate how to use it and how it works.

Lastly, the **Maintenance Phase**, the project which help the proponents improve the product's design with each iteration and solve important problems. Moreover, SDLC methodology helps the proponents in making the said project with its desired features and functionalities.

3.2. Requirements Analysis

3.2.1. Documentation of the Current System

The Katarungang Pambarangay Portal roots, like the origins of most traditional community systems in other nations, are unclear; nonetheless, for decades, elders from neutral barangays served as mediators of problems between people of different barangays. This approach was straightforward, yet it was more effective than going to court. The current Katarungang Pambarangay Portal system is founded on these time-honored practices of resolving disputes among family and barangay members amicably without the participation of the courts.

It appears that the current application of knowledge-based systems is primarily for supporting human experts in doing certain activities. The expert system typically serves as a consultant for analysis, monitoring, and diagnosis, with the human expert making the final decision. When there is a question about a specific issue, the book will be used for manual searches. Each month, the K.P. shall submit to the administration and employees of each barangay a summary of instances and a summary of reported cases.

3.3. Requirements Documentation

3.3.1. System Architecture

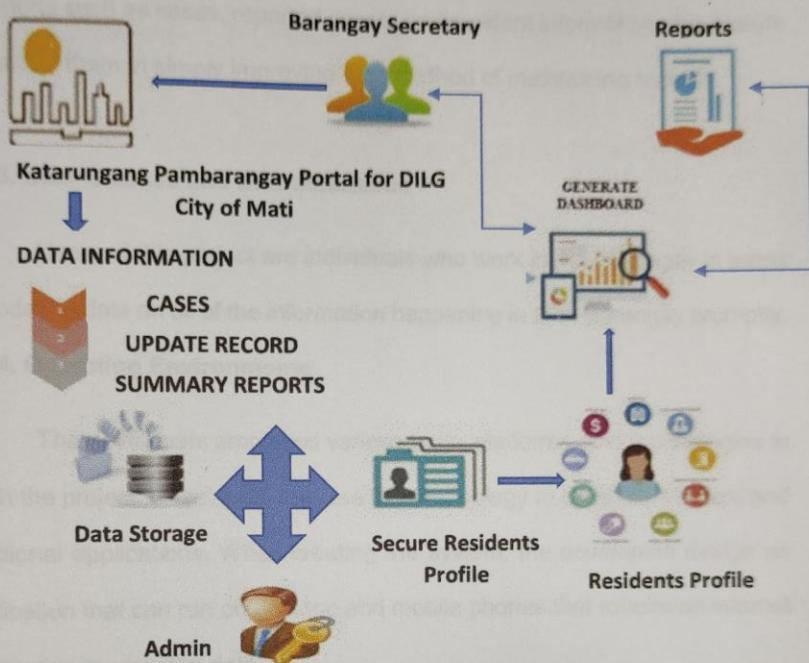


Figure 3.2 Conceptual Framework of the developed system

3.4. Requirements Specification

3.4.1. Product Perspective

The developers' project is not considered new technology, although the components utilized to make it did exist previously. This project was designed to expand and innovate the use of technology and to employ the existing algorithms associated with the task better and more efficiently.

3.4.2. Product Features

The technology enables Barangay and DILG officials to develop and manage results for monitoring purposes. The system may provide a summary of reports such as cases, reported cases, and resident information; this feature will assist them in simply improving their method of maintaining records.

3.4.3. User Classes and Characteristics

Users of this project are individuals who work in the Barangay in terms of updating data on all of the information happening in their Barangay promptly.

3.4.4. Operating Environments

The developers employed various tools, platforms, and technologies to finish the project. Developers can use this technology to construct efficient and functional applications. When creating the system, the developers design an application that can run on desktop and mobile phones that require an internet connection to view the data.

3.4.4.1. Software Specifications

The software specifications needed for the system design and implementation: A Web-Based Katarungang Pambarangay Portal for DILG City of Mati with Control Guide using bootstrapping, a free and open-source CSS framework aimed toward responsive web development.

Table 3.1 Software Specifications of the Developed System

Operating System	Windows 10
Scripting Language	Java Script
Image Editing Tool	Adobe Photoshop CS6

Text Editing Tool	Sublime Text
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3.4.4.2. Hardware Specifications

The hardware specifications required for the system design and development: A Web-Based Katarungang Pambarangay Portal for DILG City of Mati with Control Guide using bootstrapping, a free and open-source CSS framework aimed at responsive web development.

Table 3.2 Hardware Specifications of the Developed Systems.

A Web-Based Katarungang Pambarangay Portal for DILG City of Mati	Memory (RAM): Minimum 1 GB; Recommended 4 GB above
---	--

3.4.5. Design and Implementation

This system was created to assist barangays in completing activities more swiftly and efficiently. The aforementioned web-based system was delivered to the Barangay - appointed personnel, who will only utilize it to keep records within their Barangay.

3.4.6. User Documentation

The developers allow the user to test and learn how to utilize the system. The proponent use of visual content such as images to quickly show

users how to solve their problems. It would help them be more successful with the project.

3.4.7. Other non-functional requirements

The developers of this web-based system deliver reliable information to the user.

3.4.7.1. Safety Requirements

To ensure user safety, supporters confirm that there will be no significant data loss and that the system does not include any malicious or harmful content. The proponents ensure a clear and easy route to emergency exits and equipment.

3.4.7.2. Security Requirements

Even though security is critical in system implementation, the designed system is security-friendly. The system has a login feature that requires users to have a personal account to use it, and it will, of course, have the access code for you to proceed.

3.4.8. Software Quality Attributes

3.4.8.1. Functionality

The system proponents evaluated it to ensure it operates at total capacity.

3.4.8.2. Reliability

It was designed by developers to improve the quality of needs. Users will find it easier to collect all data within their Barangays by using this that it also improves the effectiveness of their work, and speedier.

3.4.8.3. Efficiency

The study supporters used the available resources to make the system work according to the proposal. It is the ability to do things well, successfully and without waste. The proponents avoid wasting materials in doing something producing a desired outputs.

3.4.8.4. Usability

The engineers provide reliable resources by gathering data to assure the system's Usability, and it has an easy-to-use interface. This system is to provide a condition for its users to perform the tasks safety, effectively and efficiently while enjoying the experience.

3.4.8.5. Maintainability

The system developers ensured that the developed method could be readily implemented and used by users. The purpose of this is to improve effectiveness and efficiency of maintenance. Ensuring the safety of maintenance within the system.

3.4.8.6. Portability

The system developers assured that the generated system could run on or be supported by all types of desktop computers that use a web browser.

3.5. Design

3.5.1. Use a case Diagram

Figure 3.5.1 illustrates the administrator and authorized personnel system activity. The administrator has complete access to the system transactions. Only registered users have access to the system.

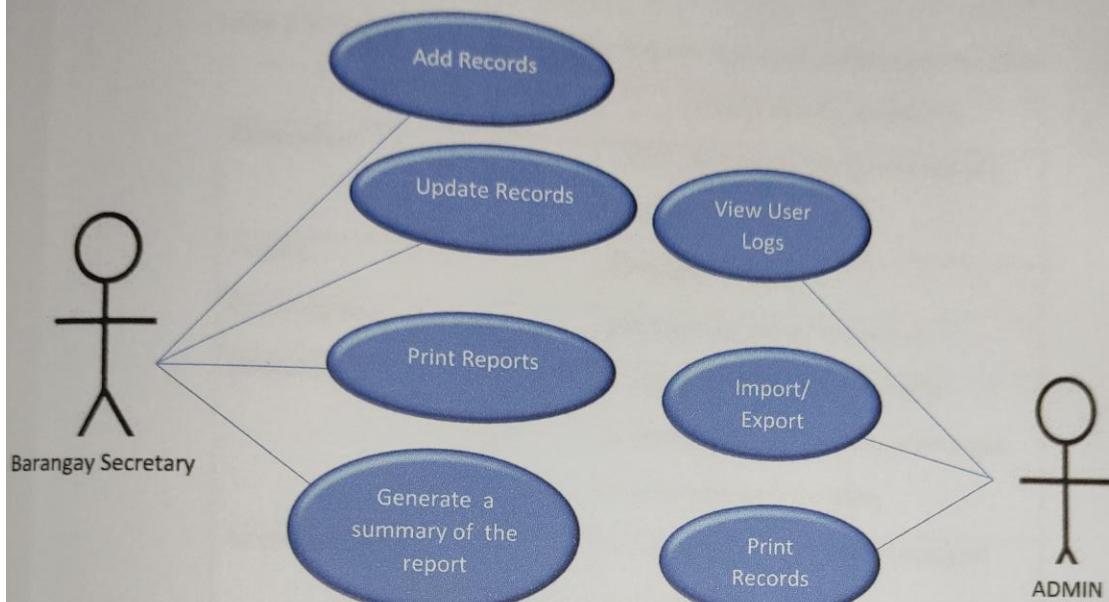


Figure 3.3 Use a Case Diagram

This graphic summarized the system and its users using use cases to depict the user interaction with the system. There are two sorts of users for the application above: DILG Admin and Barangay Personnel. The DILG administrator controls system maintenance, viewing outcomes, and printing records. The Barangay Personnel, on the other hand, can add, update, view, and print resident records.

3.5.1.2 Use Case Description

In accordance with the previous section's use case diagram, the proponents gave descriptions for each case in the form of a table, which is presented below.

Table 3.3 Tabular Descriptions of the Answer Survey Questionnaire Use Case

Use Case	Answer Survey Questions
Description	Users can record data by the use of a system
Actor/s	Barangay Personnel
Pre-condition	User can log in the system
Basic Flow	1. System can reveal the results. 2. Users direct to the dashboard page. 3. User can record a data.
Alternative Flow	3.1 System prompts user to respond unanswered questions. 3.1.1 Some questions are left unanswered.

Shown in Table 3.3 is the use case description of Answer Survey Questionnaire which describes the functionality that consist of detailed, step by step interaction between the actor and the system as well as the outcomes of an action taken by the user.

Table 3.4 Tabular Descriptions of the View Results Use Case

Use Case Name	View Results
Descriptions	User can view her/his previous and recent records
Actors	Barangay Personnel
Pre-condition	User is logged in the system
Post-condition	Systems direct to the results page

Basic Flow	1. System shows all previous and record results 2. User can enter My Profile
Alternative Flow	2.1 If the user input the record, go back to form 2.1.1 Else terminate use case

Shown in Table 3.4 is the use case description of Answer Survey Questionnaire which describes the functionality that consist of detailed, step by step interaction between the actor and the system as well as the outcomes of an action taken by the user.

Table 3.5 Tabular Descriptions of the Manage Survey Questionnaire Use

Case	
Use Case Name	Manage Survey Questionnaire
Description	The Barangay Personnel can edit, replace or delete the survey questionnaire
Actors	Barangay Personnel
Pre-condition	Barangay Personnel is logged in the system
Post-condition	System prompts that the survey questionnaire is successfully edited or deleted.
Basic Flow	1. System confirms that the transaction is successful. 2. System shows all pending records
Alternative flow	N/A

Shown in Table 3.5 is the use case description of Answer Survey Questionnaire which describes the functionality that consist of detailed, step by step interaction between the actor and the system as well as the outcomes of an action taken by the user.

3.5.1 Entity Relationship Diagram

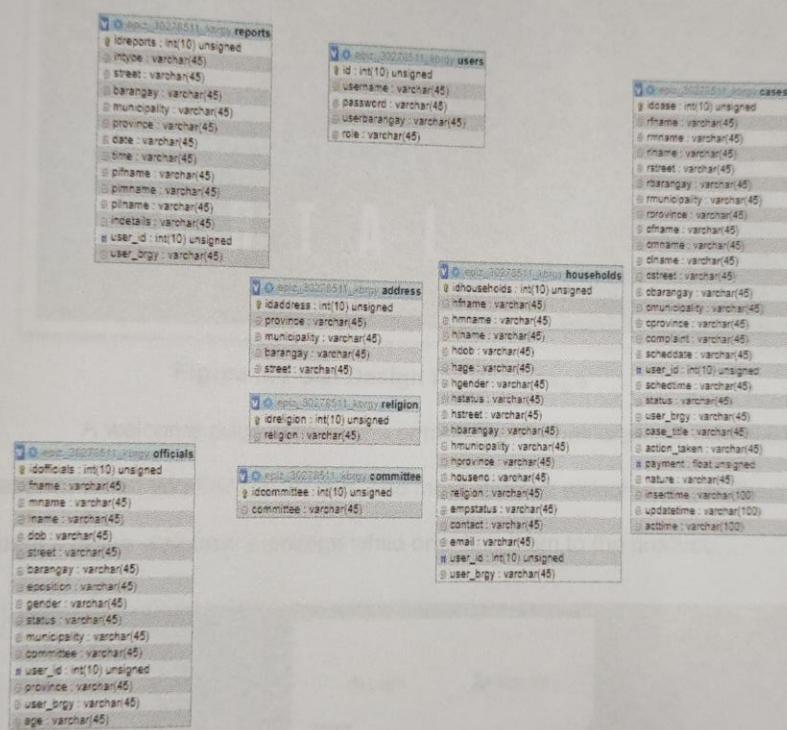


Figure 3.4 Entity Relationship Diagram of Web-Based Katarungang

Pambarangay Portal for DILG City of Mati

Presented in Figure 3.4 is the Entity Relationship (ER) Diagram of Web-Based Katarungang Pambarangay Portal identifier generated by MYSQL Workbench that is then using Crows Foot notation. The ER Diagram above demonstrates the structure of the database of Katarungang Pambarangay Portal.

Portal.

3.5.2. GUI design

The accompanying images depict the design of the given program, as well as its interface.

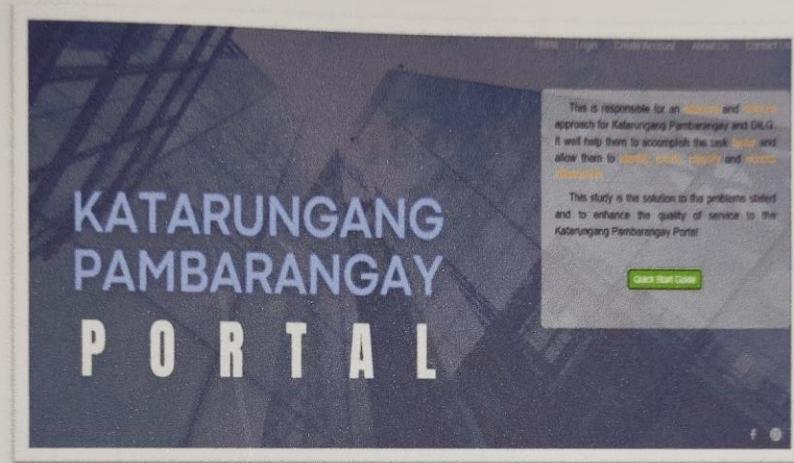


Figure 3.5 GUI Design for Homepage

A welcome page is often one or more web pages or modal overlays that appear when you first run an app. The most effective welcome pages direct the user's to the welcome message while orienting them to the product.



Figure 3.6 GUI Design for Admin Login Page

This is the system login page; if you already have an account, this is the next step after the landing page. This is the account creation page; you must first create an account before logging in. Following that, you can view this system dashboard page.

Table 3.6 Tabular Description Admin Login Page UI Components

No.	UI Component	Name	Description
1	Text Field	Username	Allows user to enter username
2	Password Field	Password	Allows user to enter password
3	Button	Login	Directs user back to the Dashboard Page

Shown in Figure 3.6 is the user interface of the Dashboard Page of an admin.



Figure 3.7 GUI Design for Sign-Up Page

Table 3.7 Tabular Description Sign up UI Components

No.	UI Component	Name	Description
1	Text Field	Barangay	Allows user to enter the specific barangay
2	Text Field	Username	Allows user to enter username
3	Password Field	Password	Allows user to enter password
4	Text Field	Confirmed Password	Allows user to enter confirmed password
5	Text Field	Access Code	Allows user to enter access code
6	Button	Login	Directs user back to the Dashboard Page

Shown in Figure 3.7 is the user interface of the Sign Up page

page

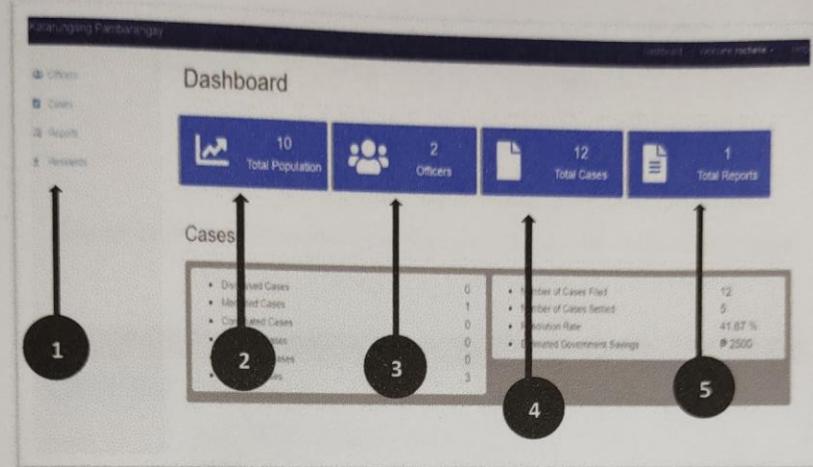


Figure 3.8 GUI Design for Users Dashboard

Every users choose the data they want to see and the dashboard structure and presentation. In summary, each user can see different facts using a single user-defined dashboard.

Table 3.8 Tabular Description of the User Dashboard UI Components

Components

No.	UI Component	Name	Description
1	Sidebar	N/A	Contains a group of navigation links.
2	Sidebar	Total Populations	Allows user to see the populations
3	Sidebar	Officers	Allows user to enter the officers

4	Sidebar	Total Cases	Allows user to enter see the cases
5	Sidebar	Total Reports	Allows user to see all the reports

Shown in Figure 3.8 is the user interface of the User Dashboard page

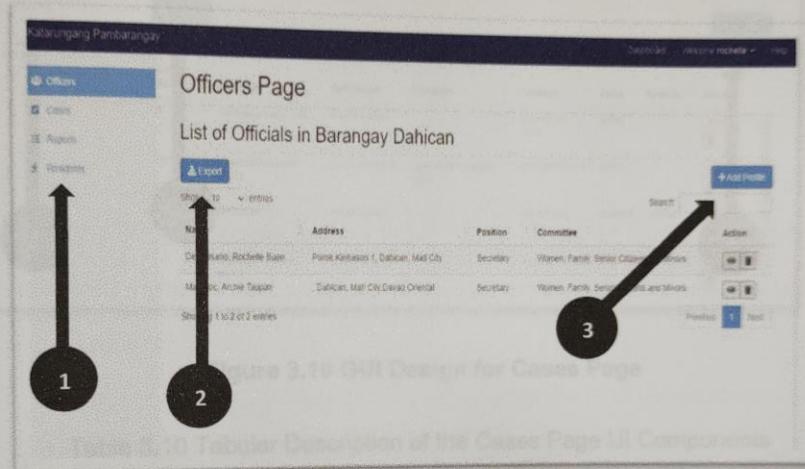


Figure 3.9 GUI Design for Officers Page

Table 3.9 Tabular Description of the Officers Page UI Components

No.	UI Component	Name	Description
1	Sidebar	N/A	Contains a group of navigation links.
2	Dropdown List	Export	Allows user to export the copy of the results
3	Button	Add Case	Allows user to input the case

Shown in Figure 3.9 is the user interface of the Officers Page

Using this form, the administrator will be able to manage the information of the Barangay Officials. An official works in a firm or government and has an office (role or mandate, regardless of whether it comes with a physical working location).

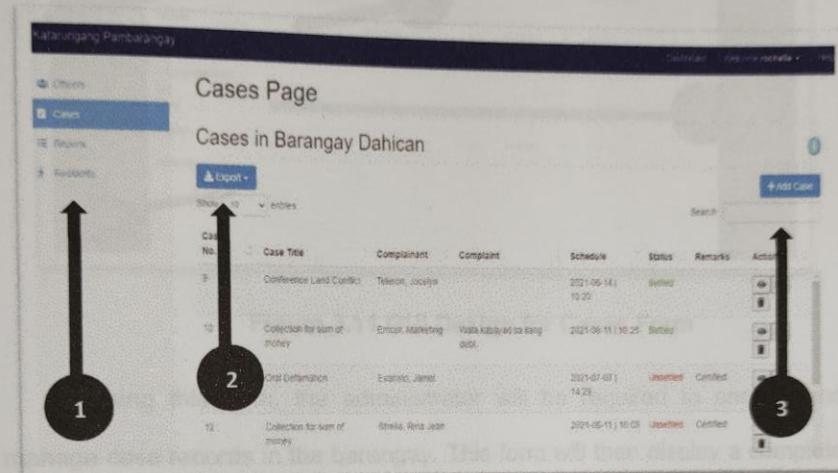


Figure 3.10 GUI Design for Cases Page

Table 3.10 Tabular Description of the Cases Page UI Components

No.	UI Component	Name	Description
1	Sidebar	N/A	Contains a group of navigation links.
2	Dropdown List	Export Cases	Allows user to export the copy of the results
3	Search Bar	Search Criteria	Allows user to search the specific case

Shown in Figure 3.10 is the user interface of the Cases Page

Figure 3.11 GUI Design for Cases Form

Using this form, the administrator will be required to encode and manage case records in the barangay. This form will then display a complete list of case records.

Table 3.11 Tabular Description of the Cases Form UI Components

No.	UI Component	Name	Description
1	Text Field	Full name	Allows user to input user name
2	Text Field	Details of report	Allows user to input the details of report
3	Dropdown	Case Title	Allows user to put the case title of the report
4	Dropdown	Type	Allows user to enter what type of case
5	Text Field	Address	Allows user to enter the address
6	Text Field	Full name	Allows user to enter the name

Shown in Figure 3.11 is the user interface of the Cases Form

Figure 3.12 GUI Design for Reports

Most business users interact with relational databases primarily through forms and reports—forms for data entry and reports for data display. If the type of occurrence were reported, it would be displayed here.

Table 3.12 Tabular Description of the Report Page UI Components

No.	UI Component	Name	Description
1	Sidebar	N/A	Contains a group of navigation links.
2	Dropdown List	Export Cases	Allows user to export the copy of the results
3	Search Bar	Search Criteria for case	Allows user to search the specific case

Shown in Figure 3.12 is the user interface of the Cases Form

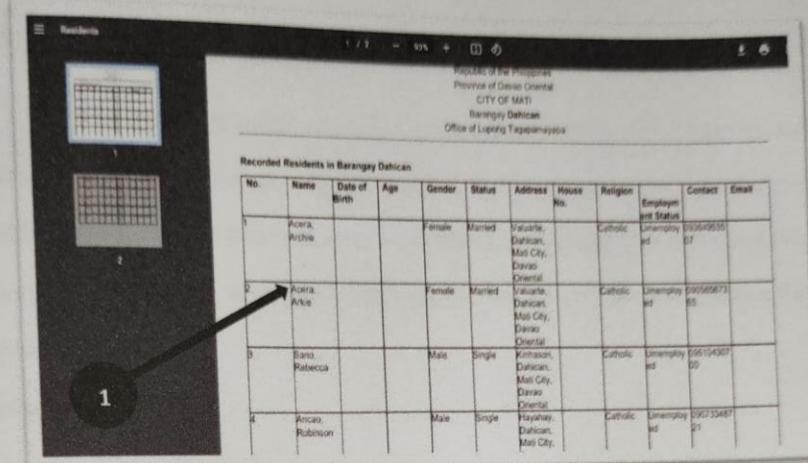


Figure 3.13 GUI Design for Export Cases

Furthermore, if you want a copy of your data, simply click the export option, and this form will appear immediately with all of the data the users imported.

Table 3.13 Tabular Description of the Export Cases UI Components

No.	UI Component	Name	Description
1	N/A	N/A	Summary of reports and cases

3.6. Development and Testing

3.6.1. Data Analysis Plan

The endpoint is the evaluation of the developed system, "Web-Based Katarungang Pambarangay Portal for DILG CITY of Mati." The review of the system serves as the foundation for the analysis. Following data collection, the developers used the Weighted Arithmetic Mean to calculate and analyze the data.

The points that are used:

Strongly agree 5 points

Agree 4 points

Fair 3 points

Disagree 2 points

Strongly disagree 1 point

The following scale is used in interpreting the weighted mean:

Table 3.6.1.1 Weighted Mean Scale

Range	Interpretation
4.51 - 5.00	Strongly Agree
3.51 - 4.50	Agree
2.51 - 3.50	Fair
1.51 - 2.50	Disagree
1.50 below	Strongly disagree

Criteria	1	2	3	4	5
Functionality					
Recording cases reported to the KP					
Displaying specific cases based on search					
Generating reports of cases per barangay					
Reliability					
The system can handle the error.					
The system can handle unexpected errors.					
The system gives reliable information.					
Usability					
The system is easy to use					
The system is user friendly.					
The system is easy to manipulate					
Efficiency	1	2	3	4	5
The system can do real - time process.					
The system can give information about the specific areas.					
The system can give up – to - date information.					
Maintainability					
The system can be tested quickly.					
The system can be easy to set up.					
Portability					
The system can run or support all kinds. of desktop in using web-browser					

CHAPTER IV

RESULTS AND DISCUSSIONS

This section shows the successful completion of the desired feature and functionalities of the proposed project.

4.1 Development of Katarungang Pambarangay Portal

4.1.1 Recording Cases Reported to the KP

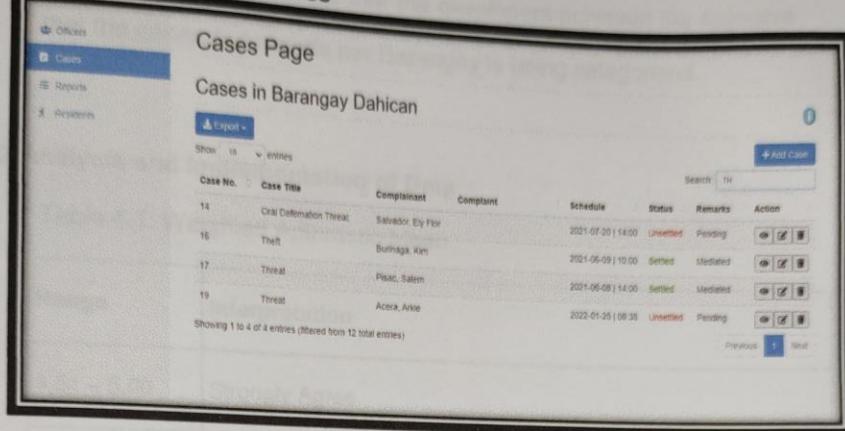
The screenshot displays the 'Cases Page' of the Katarungang Pambarangay (KP) system. The page title is 'Cases Page' and the subtitle is 'Cases in Barangay Dahican'. It features a search bar and a table listing four cases. The columns in the table are Case No., Case Title, Complainant, Complainant, Schedule, Status, Remarks, and Action. The cases listed are:

Case No.	Case Title	Complainant	Complainant	Schedule	Status	Remarks	Action
9	Confidence Land Conflict	Telson, Jocelyn		2021-05-14 10:20	Settled		
10	Collection for sum of money	Emcor Marketing	Viaza Kabayaad sa Ilang	2021-05-11 10:25	Settled		
11	Oral Defamation	Evaristo, Jomel		2021-05-07 14:29	Unsettled	Certified	
12	Collection for sum of money	Stella, Rina Jean		2021-05-11 10:03	Unsettled	Certified	

Figure 4.1 Reported Cases to the KP System

Figure 4.1 above shows that the developers achieved the first objective where the users can record their cases easily to the system. The figure shows the results where the users recorded the data.

4.1.2 Displaying Specific Cases



The screenshot shows a web-based application interface titled 'Cases Page'. The left sidebar has navigation links: 'Offices', 'Cases' (which is highlighted in blue), 'Reports', and 'Residents'. The main content area is titled 'Cases in Barangay Dahican' and contains a table of case entries. The table columns are: Case No., Case Title, Complainant, Complaint, Schedule, Status, Remarks, and Action. There are 12 total entries, but only 4 are visible in the current view. The visible cases are:

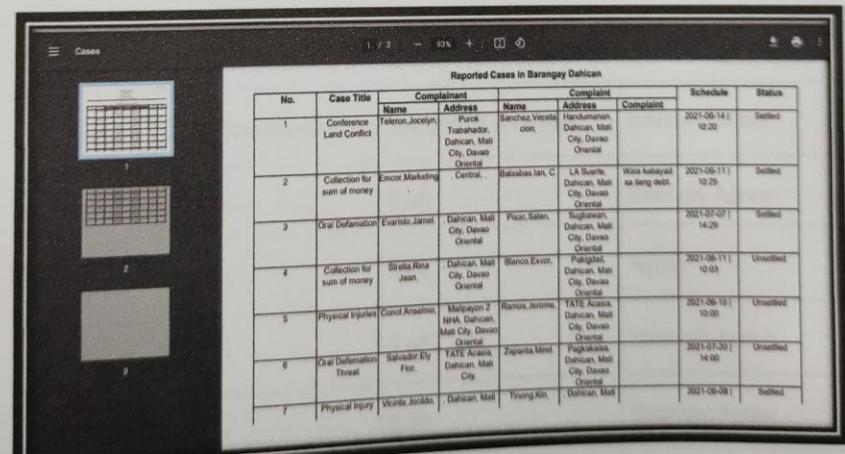
Case No.	Case Title	Complainant	Complaint	Schedule	Status	Remarks	Action
14	Oral Defamation Threat	Salvador Ely Flor		2021-07-20 14:00	Unsettled	Pending	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
15	Theft	Burinska Kim		2021-06-09 10:00	Settled	Meditated	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
17	Threat	Pisac, Salem		2021-05-08 14:00	Settled	Meditated	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
19	Threat	Acera, Anne		2022-01-25 08:30	Unsettled	Pending	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>

Showing 1 to 4 of 12 entries (filtered from 12 total entries)

Figure 4.2 Displaying Specific Cases based on Search Criteria

Figure 4.1.2 above shows that the developers achieved the objective where the users can search specific cases if they want to see them and this table also show the items of cases.

4.1.3 Generated Reports per Barangay



The screenshot shows a report titled 'Reported Cases in Barangay Dahican'. On the left, there is a sidebar with three numbered sections: 1, 2, and 3. The main content area displays a table of reported cases. The table columns are: No., Case Title, Complainant Name, Address, Complaint Name, Address, Complaint, Schedule, and Status. The data in the table is as follows:

No.	Case Title	Complainant Name	Address	Complaint Name	Address	Complaint	Schedule	Status
1	Conference Land Conflict	Teleron, Jocelyn	Puro 5, Dahican, Mall City, Davao Oriental	Sanchez, Venecia, con	Hilario, Dahican, Mall City, Davao Oriental		2021-06-14 10:23	Settled
2	Collection for sum of money	Encor Marketing	, Central,	Balabas, Ian, C	LA Suerre, Dahican, Mall City, Davao Oriental	Waia kabayaan sa ibeng debt	2021-06-11 10:25	Settled
3	Oral Defamation	Evaristo, Jarrel	Dahican, Mall City, Davao Oriental	Pisac, Salem	Dahican, Mall City, Davao Oriental		2021-07-07 14:29	Settled
4	Collection for sum of money	Strella Rina Jean	Dahican, Mall City, Davao Oriental	Bianco, Envir	Pakigdahan, Dahican, Mall City, Davao Oriental		2021-06-11 10:03	Unsettled
5	Physical Injury	Candid Amatino	Mapagyon 2 NHn, Dahican, Mall City, Davao Oriental	Ramos, Jerome	TATE Acacia, Dahican, Mall City, Davao Oriental		2021-06-10 10:00	Unsettled
6	Oral Defamation Threat	Salvador Ely Flor	TATE Acacia, Dahican, Mall City	Zapanya, Mirel	Pagakisa, Dahican, Mall City, Davao Oriental		2021-07-20 14:00	Unsettled
7	Physical Injury	Vicente, Jocida	Dahican, Mall	Truong, Kim	Dahican, Mall		2021-08-09	Settled

Figure 4.3 Generated Reports per Barangay

Figure 4.1.3 above shows that the developers achieved the objective that the generated reports per Barangay is being categorized.

4.2.2 Analysis and Implementation of Data

Table 4.1: Weighted Arithmetic Mean

Range	Interpretation
4.51 – 5.00	Strongly Agree
3.51 – 4.20	Agree
2.51 – 3.40	Fair
1.51 – 2.60	Disagree
1.50 below	Strongly Disagree

Table 4.2: Average Weighted

Indicators	Respondents	Weighted Average	Interpretation
Functionality	1	5.00	Strongly Agree
Reliability	1	5.00	Agree
Usability	1	5.00	Strongly Agree
Maintainability	1	5.00	Strongly Agree
Portability	1	5.00	Strongly Agree
Overall	1	5.00	Strongly Agree

Table 4.2 shows the weighted average of the Functionality, Reliability,

4.2.3 Implementation Usability, Maintainability and Portability

The Functionality weighted average is 5.00 which indicates Strongly Agree based on the scale. It means that the respondent strongly agreed that users could register and sign in, and can record and search for specific cases.

The Reliability weighted average is 5.00 which indicates Strongly Agree based on the scale. It means that the respondent agreed that the website could handle errors.

The Usability weighted average is 5.00, which strongly agrees based on the scale. It means that users strongly agreed that the information is simple to understand and the interface is simple to use.

The Maintainability weighted average is 5.00, which strongly agrees based on the scale. It means that the respondent strongly decided that users could easily modify the website.

The Portability weighted average is 5.00, which strongly agrees based on the scale. It means that the respondent strongly agreed that this system can run using a web browser.

The overall weighted average is 5.00 which means that the respondent strongly agreed that the Web-Based Katarungang Pambarangay Portal is functional, reliable, usable, and Maintainability.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Summary

The Katarungang Pambarangay Portal is an innovation in the Philippine court system. It provides for dispute resolution at the barangay level to create community peace and harmony and to give community members an accessible and effective form of justice. Local issues that fall under the authority of the Katarungang Pambarangay Portal Law must be addressed by Mediation, conciliation, or arbitration by the Lupong Tagapamayapa, the Chairman of which is the Punong Barangay. It consists of an Automatic Business Process that enables the processing of Barangay Clearances and other revenue-generating items such as charges. Other Barangay-related tasks, such as blotter reports and other relevant services, are provided.

The researchers designed the web-based Katarungang Pambarangay Portal for DILG City of Mati to assist them in getting a more effective method of presenting information, as well as being complementary in keeping records and offering good services. As a result, the established system ensures that residents' records are as complete and up to date as possible and are conveniently available for verification, monitoring, data processing, and visualization.

5.2 Conclusion

The data acquired leads the proponents to conclude that the system is fully operational and dynamic. This criterion assumes that it has handled the firm's necessary automation requirements after a thorough system evaluation. The user had challenges and a lengthy method in acquiring, recording, computing, and processing data since officials from Barangay employ a manual-based process for all services to its residents. The researchers conclude that the suggested system, Web-Based

Katarungang Pambarangay Portal for DILG City of Mati, preserves residents' records as comprehensive and up-to-date as feasible and is conveniently accessible for verification, monitoring, and reference.

5.3 Recommendations

The following recommendations are given for future researchers based on the study's findings and conclusions:

- The administrator should educate users on the proper usage of computers and software.
- The proponents developed an information system for the barangay, which must be maintained to maintain and upgrade its functions and ensure its databases' security.
- Terms should be used consistently;
- Report generation should be specified in terms of time and period.
- Increase the number of search criteria for all table results; and
- Include the created date and time for reporting purposes.

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