**A WEB-BASED BARANGAYCOMPLIANCE REPORT  
SUBMISSION FOR DEPARTMENT OF THE INTERIOR AND LOCAL GOVERNMENT, CALAMBA CITY**

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Balacua, Roselyn

Llave, Leo Mark Anthony

Montanes, Hazel

Septimo, Judy Ann

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**CHAPTER I**

**INTRODUCTION**

This chapter presents the introduction, project context conceptual framework, objectives of the study, significance of the study, and also definition of terms used in the study. Technology had become one of the tools that makes things simpler and assists us in coping with the ever-changing circumstances of daily life. This makes available a variety of instruments that can boost and support development as well as facilitate information exchange. The use of the internet and email for communication, word processing, office productivity tools including spreadsheets, as well as electronic recordkeeping databases artificial intelligence, robotics, and keeping for automation had all been some of the ways in which technology had changed and impacted our workplaces. The exchange of information and regular communication had both profited tremendously from the advancement of technology.

The web-based solutions simplify the process of gaining access to real-time information. Paper reports can be replaced by online reports and digital dashboards, which saves a lot of time compared to the traditional method of creating and delivering paper reports. This had the potential to improve the quality and efficiency of decision making across an entire organization. The proliferation of internet-based technologies and applications creates favorable conditions for the establishment of an information management system specifically tailored to scientific research. Research on the impact of web-based management systems on the creation of services had been conducted in a variety of settings, including businesses, government agencies, and academic institutions, as well as nations around the world. At this point in time, a management information system that is web-based is the best choice (Setyawati & Hariri, 2021).

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Over the course of the previous few years, there had been a dramatic shift in communication. People are able to contact with one another and communicate with one another thanks to the many different communication channels that are available nowadays. Since the advent of technological devices such as the computer and the mobile phone, the ease of communication in day-to-day life has significantly improved. The computer was an important and helpful technical development in our culture that makes it easier for us to finish what we need to do. In today's world, computer technology was rapidly advancing and becoming more advanced. Then, every business in our society started making the transition from a manual system to an automated one, which makes our work easier and moves it along more quickly. The computer was an important and helpful technical development in our culture that makes it easier for us to finish what we need to do. In today's world, computer technology was rapidly advancing and becoming more advanced. Then, every business in our society started making the transition from a manual system to an automated one, which makes our work easier and moves it along more quickly.

**Project Context**

The Department of the Interior and Local Government (DILG) offers assistance to state and local governments in attempts to enhance the level of service provided to constituents in terms of both the quality of services and timeliness. The Formulation and Implementation of Local Government Policies (DILG) was responsible for the development of policies, initiatives, and programs that aimed to raise the level of local autonomy. The administrative, technological, and financial capabilities of local governments were given a lot of focus and attention in this study. Integrity, commitment, collaborative effort, and responsiveness were among the basic characteristics upheld by the DILG. Due to the importance of these values, the agency was obligated to devise rational policies aimed at expanding the capabilities of local governments, to perform monitoring and evaluation duties on LGUs, and to offer rewards and incentives.

2

The DILG personnel were responsible for the manual processing of the print and email copies of the compliance report. The DILG staff biggest problem encountered in managing the 54 Barangays Compliance Report, to determine which Barangay were able to pass on time, late or not passed on due time. Since each Barangay need to pass numerous reports like Vaccine Monitoring System (VMS), Enhanced COMS (Barangay COVID Case), CT Monitoring via CQMS, Laguna CT Daily Performance Report and ELCAC Daily Accomplishment Report for Daily submission. Disiplina Muna, Unified Monitoring List, BPLS, PhylSys Weekly Report, Activities Conducted for Demand Generation and Communication of the National Covid 19 and also Vaccine Deployment Plan for the Weekly Report. For the Bi- Weekly were Community Pantry Monitoring and TELPOMS\_ Monitoring of Compliance Report on the Issuance of Permits for the Shared Passive Telecommunications Towers Infrastructure (PTTIs). For the Monthly Report are LCE Visit, VAW and VAC, ARBO, Local Health Protocols, ASF. While for the Bi- Monthly are SAFETY SEAL (LGU ICT) and SAFETY SEAL (DILG ICT). For the Quarterly Report are Motor Vehicle Overloading & Speed Limits & Designation of LEOs( MC 2020-028), Classification of Roads, Setting of Speed Limits & Collection of Road Crash Data (DOTr-DPWH-DILG JMC 2018-001), Establishment of a Network of Cycling Lanes and Walking Paths to Support People’s Mobility, LGU Compliance Report in the Preparation/Updating of CIUPs and CDPs and lastly the Directing all LGUs to Require Contractors of Local Government Projects to Property Inform the Public before Commencement of Road Works. While for the Semestral Reports were BPOC Functionality Report, RPRH Accomplishment Report, BAD BA Monitoring; BA Compliance Report per Barangay, POC Submission of Accomplishment Report in POPSP PCMS to be encoded in PCMS; Submission of POC Secretariat Report in POPS-PCMS (to be encoded in PCMS) Submission of BPOPS Semestral Accomplishment and Monitoring Reports and Kasambahay Monitoring Report therefore the DILG staff challenging to verify or check all the Compliance Reports of 54 Barangay. Because after checking the reports were passed by the barangays, the DILG give points to every barangays who passes, and whoever had the most points will receive a reward.

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The researchers were considering the possibility of creating a tool that will be used of DILG personnel in checking the Compliance Report. The purposed project was to provide a system that will assist in retaining the data and records entered on the monthly submissions, as well as to provide timely reports and computations of each Barangay's filed compliance. In addition, this project will provide the ability to do both.

The primary concentration of this research was on the use of a web-based platform for the submission of barangay compliance reports to the DILG office in Calamba City. The compliance records of the 54 barangays are maintained by employees of the DILG, who were responsible for the maintenance of these records. In addition, it was essential to make sure that during the weekly, monthly, and annual reports, were keeping track of the barangays that had been cleaned up.

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**Conceptual Framework**

New objects were being created and put to use by humans at the same rapid rate that new technologies are being developed. These innovations make the work of human easier and faster to perform. And it had gotten much better as a result of technical improvements such as the capability to send reports and manage in using a spreadsheet.

These days, having or utilizing a computer that was capable of connecting to the internet counts as one of the most fundamental requirements for people. And in comparison to the ways in which people used to communicate with one another before the advent of technology, doing so was not nearly as challenging as it was today. Provides efficient communication together with electronic storage and safety features. This study's objective was to provide a fundamental overview of A Web-based Barangay compliance reports for the Department of the Interior and Local Government (DILG). This conceptual framework illustrates the process that was followed by the system. The IPO model would serve to provide an overarching framework as well as a broad guide for the path the investigation takes.

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**Objectives of the Study**

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The objective of the study was to design and develop a Web-based Barangay Compliance Report Submission for Department of the Interior and Local Government (DILG)

at Calamba, City, Laguna.

1. To determine the current problem of DILG, Calamba City in terms of: Managing data and records based on barangay compliance report submission. Manual checking of the submitted compliance report and; Manual computation for the awarding’s of barangay

2. To develop a system that will: Create a website for DILG Administrator and Barangay Users Provide and prevent DILG administrator from manual reviewing the compliance report that had been submitted and calculating the awards of the barangay Generate reports and awards for the barangay

3. To test the efficiency through ISO 25010.

**Significance of the Study**

The purpose of the study was to develop a web-based system submission of compliance reports and will also include these features. The web-based system, which will maintain the friendliness to user’s despite of the increased efficiency and speed, will allow the DILG personnel to evaluate compliance reports in a more efficient and timely manner. Once the planning and construction of the web-based system had been completed, the following categories of persons will be able to reap the benefits of this study:

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**To** **the** **Personnel** **of** **the** **DILG.** The system would reduce the number of jobs that need to be completed by the personnel. The submission of the Barangay compliance report would be a breeze to handle if you were in charge of it. If the system were in place, the DILG would be able to retrieve and store data in a manner that was both more efficient and effective.

**To** **the** **Barangay**. With the implementation of the new system for the submission of compliance reports, it will be possible for it to function in a manner that is both more efficient and effective.

**Future** **Researchers**. This study has the potential to be used as a reference for the investigation of the next researchers that will be working with.

**Scope and Limitations**

This study will concentrate on building a web-based system in which the user account of the personnel of the DILG will be the one responsible for sending compliance reports to the barangays. From that basic account, the DILG staff will be able to determine which barangays passed on time, which passed late, and which barangays did not pass at all. Moreover, once the professionals from the DILG have opened the account, there will be a dashboard with the daily, weekly, monthly, quarterly and annual reports for the barangays. In addition, there were some reminders provided for the DILG staff allowing the Barangay User rapidly recall which reports need to be handed in by the due date.

In order to assess whether or not the 54 barangays had passed the reports that were due to be given on time, the DILG staff must get together to find a solution to the issues that are experiencing. The staff of DILG having difficulty calculating the points that will be distributed after the end of the year, through because of many barangays.

**Definition of the terms**

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**The** **Department** **of** **Interior** **and** **Local** **Government** **(DILG)** personnel was the client for the proposed system. A barangay chairman or chairwoman was the head of a barangay or the highest elected authority in that barangay.

**Barangay** **Secretaries** were tasked with the responsibility of managing and transmitting the barangay's compliance reports to the DILG, as well as ensuring that all necessary reports are already turned in on time.

**Users** refers to a person who will used the system like the administrator, DILG personnel and Barangay staff

**Task** **and** **Reminder** were two categories of activities that can be found on the calendar. The DILG staff will be notified of these activities as needed, and this information will be shared with relation to any impending reports that need to submit.

**Web-based** **software** refers to a computer application that will assist the DILG employees in processing compliance report submissions in a manner that is both quicker and safer.

**Database** refers to a storage of data to be retrieved during the runtime process of system.

**MySQL** is a relational database management system is used to manage the handling, storing, altering, and deletion of data.

**HTML** is a markup language for creating a web page.

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**CSS** is providing the visual and layout of a system.

**JavaScript** is a language used to create an updating content, control and animate to enhance a HTML.

**Bootstrap** is a used to create a modern websites and web pages.

**CHAPTER II**

**REVIEW OF RELATED LITERATURE AND STUDIES**

This chapter includes the review of related literature and studies which the researchers had gathered necessary data relevant to the proposed system to be proven effective and used to collect in order to support the study.

**Compliance Report**

According to Mittel (2021), a compliance report is the written proof you have to give auditors to show you complies with the rules established by a government agency or regulatory body under a certain legislation. Reports on compliance identify the initiatives that have been successfully implemented and the areas that still require improvement in order to achieve total compliance. Compliance reports can be used to improve choices about risk management, resource allocation, and further compliance procedures in addition to serving as proof for submission. From the study of Cody (2022) he expounded that for various individuals, groups of people, and organizations engaged in activities, compliance can mean many different things. Compliance typically refers to following the laws, rules, guidelines, and codes of conduct that control research. Reporting on compliance might mean various things. In general, the word "compliance reporting" refers to a document that proves you complies with a certain set of industry standards, rules, regulations, and laws established by governments or regulatory agencies. Reports on compliance may give an overview of a subordinate's compliance initiatives or outline the organization's progress on a particular compliance program. Compliance reports may be required or may be used as internal control tools. Compliance reports demonstrate that your company is adhering to a specific regulatory standard's requirements. The consequences of breaking laws, rules, and regulations can include reputational harm, severe fines, and in certain situations, forced closure or incarceration. (Kluwer, 2020).

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Moreover, Kelly (2020) expounds that the simplest explanation is that compliance report shows how effectively a corporation complies—or doesn't —with a law that pertains to its industry. Compliance reports can be mandated by regulatory duty, and if can still be used to inform regulatory reporting. One of the most crucial tasks a compliance officer performs is delivering reports on corporate compliance.

**Compliance Monitoring**

Ozgun, Seven and Inceer (2021) explained that the major element of compliance programs is compliance monitoring, which allows firms to determine whether the compliance program has been put into practice and whether it is workable, responsive, and appropriate for the specific industry needs. To ensure regulatory compliance, a compliance monitor must first check that a company's operations are compliant with local and international laws, rules, and procedures. Schultz (2021) suggested that to make sure that the impacted staff is adhering to all policies and procedures in the manual, compliance monitoring is a constant activity. Its goal is to identify compliance risk problems in an organization's functions or operations. The chief compliance officer and the compliance committee are often in charge of monitoring from within the organization.

Miranda, MacDonald, Yecker, and Ellis (2021) expound that monitoring is essential for governmental organizations to safeguard data from the public sector. The public can suffer greatly when state-sponsored threat actors target government institutions. To safeguard staff members and user data from illegal access caused by state-sponsored attacks, the majority of nations adopt rules and data protection requirements for governmental bodies. From the study of Netdepot (2015) stated that the compliance monitoring is a vital step in the whole network governance process. Sensitive data from your organization will be better protected as a result, keeping it safe from cyber threats both now and in the future.

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**Web-based System**

A Web-based system must be built and deployed over the course of several iterations. The majority of Web-based systems are constantly changing to fulfill user requests and maintain the content updated (Ginige and murugesan, 2017). Based on the study of Offutt (2020), the issue with quality is caused by a number of Web development-specific problems. By combining several unique components from various sources, such as specialized apps that have been specifically created for a given purpose, adapted commercial software components, and third-party goods, developers create Web-based software systems. The advocate wants to create a system that streamlines some of the organization's current procedures. The decrease of paper usage attempts to reduce supply costs. The initiative that will be created intends to support executives' decision-making in the DILG. This should do away with reporting redundancy and lessen the time-consuming manual counting and calculation of the reports. (Ledesma,2013). Unexpectedly, a web-based solution can boost an organization's performance, productivity, and efficiency. Web-based programs don't need to be installed or updated on the desktop because if someone can have accessed using any web browser. Installing web-based programs on a server is necessary; often, the software developer hosts the server (McManus and Trevor, 2013).

Aadamsoo (2020) stated that a system that assists the organization by using the necessary time and minimizing problems. By keeping all documents in one location, the web based system will assist in organizing documentation management inside the organization. The most significant benefit is that it aids in monitoring reports and ongoing projects for clients as well as errors or mistakes that may occur throughout various projects' work processes. As a good web-based system, it allows users to upload, download, and delete files and consistently provides developers with the opportunity to stay in close contact with client needs and project objectives.

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**Barangay Management System**

The barangay management system that enables the citizens and officials of that barangay to effectively manage and handled the important everyday activities. The barangay management system is a web-based system that will transform barangay management from a conventional, centralized organization to one that is more inclusive and citizens-focused. Basically, it seeks to streamline administrative procedures now in place for seeking documents, creating appropriate and precise local statistics and registering complaints (Carpio, 2020).

In the Philippines, the majority of the duties and responsibilities of barangay secretaries and treasurers stated in the Republic Act No. 7160 or the Local Government Code of 1991 requires the usage of computer applications. A legal basis for the need to be proficient in using the computer, the government of the Philippines clearly considers computerization as a useful tool in improving government-citizen services (Medina, et al. 2017).

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Through the computerization of the documents it provides, such as barangay compliance, annual reports, and others, the introduction of modern technology expands the opportunity for barangays to better serve the individual or the citizen. Different certificates, clearances, and reports for the barangay are generated by the system. The following reports can also be generated: accomplishment report, disbursement and requisition report, compliance report, purchase request and order report, etc. (Bautista, 2015).

According to the study of Laravel (2022), a system that aids in a barangay's transactions and administrative processes The barangay management system (BMS) is designed to make tasks inside a barangay simpler and quicker. a company that was founded to help the client achieve process innovation through information technology. Imus (2018), postulated that this program called the Barangay Management Information System has characteristics that enable it to send documents from the barangay hall to the city hall while also recording and managing information.

Magleo (2018), A secure network interface is used by the online Barangay Management Information System for San Carlos City to store, process, retrieve, and update information about the barangays and city hall. It is made to handle a variety of information connected to barangay profiles, constituent profiles, clearances for barangays, disputes or cases involving barangays, barangay activities, and barangay laws as well as the reports that the barangay is expected to provide to City Hall.

Moreover, Soriano (2018) stated that it includes every barangay function, activity, and transaction with the goal of giving stakeholders, including the management of the barangay and city hall, complete and accurate information.

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**Synthesis**

The research literature and studies helped in identifying the similarities and discrepancies that formed the basis for strengthening the system's development. It shows that the modern technology can highly improve a traditional Submission, recording and monitoring for compliance report of Department of Interior and Local Government (DILG). Based on the information that the researcher's gathered from the books and internet, compliance report played an important role in DILG by helping the Barangays deliver more efficient, effective and responsive basic services which is similar to the proposed system.

According to the previous studies, a web-based system can boost an organization's performance, productivity and efficiency which was also similar to the proposed system to lessen the time consuming and calculation of the reports. The researchers wanted to pursue that it should be applied to reduce the problems encountered of DILG staff and every Barangay. When it comes to differences between the related studies and the proposed system was, a related studies allow users only to upload, download and delete files but the proposed system apart from the previous said the users allowed also to edit the submitted reports and calculate the awards of every Barangay that the DILG doing yearly.

Overall, the said pieces of studies and literature will help the researchers study to develop a system in increasing the efficiency and effectiveness of the proposed product.

**CHAPTER III**

**RESEARCH METHODOLOGY**

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This chapter shows the method, designs, and tools that the researchers used to develop the system. This section includes the research design, research locale, data gathering tools, data gathering procedure, population of the study, data analysis plan, and software development methodology.

**Research Design**

For this particular study, the researchers choose to apply the descriptive kind of research. Included in the category of descriptive research were any and all studies that make the claim to present factual information regarding the nature and status of anything, be it a group of people, a number of objects, a set of conditions, a class of events, a system of thought, or any other type of phenomenon that someone might be interested in examining (Sanchez, 2001).

The descriptive method of inquiry entails describing what already exists and often contributes to the discovery of new facts and meanings. Observation, description, and documentation were the three main goals of descriptive research. Aspects of a circumstance in unaltered, natural state. (Polit & Hungler, 1999)

This requires the collecting of data that will provide an account or description of individuals, groups, or situations. The people or individual being studied are unaware, so to act naturally or usually do in everyday situations; it is less expensive and time consuming than quantitative experiments; collects a large amount of notes for detailed studying; and as it was used to described and not to make any conclusions, it was best to start the research with it. These were just some of the advantages of using descriptive research (Vaisalik, 2011). Because it will assist the researchers in gathering all of the material required in constructing the suggested web application and in finding solutions to the current difficulties outlined in the study, the researchers decided to conduct the investigation using the descriptive research approach.

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**Research Locale**

**Figure 2. DILG Locale**

In the Calamba City Hall was where you'll find the Department of the Interior and Local Government (DILG). The researchers were able to get a grasp of what the Department of Interior and Local Government (DILG) and barangay employees do with the barangay compliance report that submitted and retrieve, additionally, how the DILG staff recognize the outstanding barangays.

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Participants in the survey were instrumental in the development of a web-based system that the investigators were able to put together with the help of the participants. This program or system was developed with the intention of providing actual assistance to the workers of the DILG as to checked the Barangay Compliance Report Submission.

**Population of the Study /Sampling Technique**

The population of the study was composed of variety of users, particularly the Barangays staff, the DILG personnel and the administrator who checked and update the compliance reports had to be passed. The Barangay staff responsible to successfully submit all compliance reports required by the DILG. While DILG staff manage and check the compliance reports provided by the Barangay for web based.

**Data Gathering Tools**

The researchers will be able to make the proposed web- based system more user- friendly and more useful to the potential users by making used of the information that will be gathered through interview and questionnaire. This is necessary in order to collect the information that was required for the study

In addition, the researchers made used of questionnaires as a method of data collection. In order for researchers to create questionnaires, sets of questions that will be posed to respondents in order to acquire or collect information that will later be utilized in software evaluation must first be formulated. A questionnaire was described as "a set of questions on a form that was submitted to a number of people in order to obtain statistical information," as defined by the Collins Dictionaries website. The researchers took used of questionnaires' many benefits by using the proposed system. The following describe each of these: (1) extremely cost effective in comparison to in- person interviews; (2) simple to analyze; (3) well- known to the majority of people; (4) decrease bias; and (5) less intrusive than telephone or in- person surveys. When a respondent receives a questionnaire in the mail, he is at liberty to finish the questionnaire at his own pace and according to his own schedule. The research instrument does not interrupt the respondent in any way, which distinguishes it from other research methods (Statpac, 2013).

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These were the instruments that the researchers employed in the process of designing and developing the A Web-based Barangay Compliance Report Submission for Department of Interior and Local Government (DILG).

**Data Gathering Procedure**

The researchers consulted books, conducted searches on the internet, and distributed questionnaires in order to compile all of the data that was required for the study.

The researchers visited a variety of libraries in order to conduct research that was related to the study by reading materials such as books, magazines, journals, newspapers, and other printed materials. This research was done in order to obtain information that was necessary for the development of a web based system. Whenever the researchers are reading a new type of reading material, to make sure to write down any pertinent information that would be required for the investigation. Researching on the Internet was virtually identical to researching in a library.

The researchers conducted an internet search by typing in or searching for keywords that were associated with the study. Next, to opened websites that might have contained information that was associated with the study. Finally, the researchers gathered this information in order to developed the study.

In conclusion, the questionnaire method was utilized by the researchers when assessing the software. The questions were designed with ISO 25010 Software Production Quality as the primary inspiration. The functional suitability, performance efficiency, compatibility, usability, reliability, security, maintainability, and portability of the solution were the requirements that must be met. A total of ten (10) questions will be posted on each criterion. The answers to the questions were determined by the performance on the website. Immediately following the completion of the questionnaire, it was send out to both the users and the IT experts who had provided responses. The questionnaire was answered by the respondents either before, after, or simultaneously with the used of the proposed web-based system. That will respond to the questionnaire by inserting a check next to the column that corresponds to the answer that the will determined based on the assessment using the web-based platform. To compile all of the responses and determine whether or not the respondents were pleased with the operation of the web-based service, a tally was performed on each respondent's responses.

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Those questions on the questionnaires that were developed to answer a variety of questions depending on a variety of criteria. In order to collect all of the information that was required for the study, the questions will be crafted with care. The 124 respondents who were chosen by the researchers provided the responses to these questions.

These respondents consist of 54 Barangay Secretary, 15 DILG users and one (1) DILG IT Expert the respondents will also provide feedback regarding the proposed web based system once it was finished. As a consequence of this, the researchers would be provided with the responses to the questions on the questionnaire in order to facilitate the creation of the web based system. In addition, the Likert Scale was utilized by the researchers in the process of producing the questionnaires in order to devise an efficient questioning strategy for usage with both the Barangay users, Users and DILG IT Expert.

The researchers acquired information regarding the Barangay Compliance report submission for DILG Calamba in terms of the many scenarios that will be gathered. The researchers used libraries and the internet to conduct a research. The data that was collected in this way serves as the foundation for building and developing the web-based platform that had been proposed. And researchers make used of questionnaires to determine whether or not the developed web- based system would fulfill the respondents' traditional submission of Barangay compliance report so that it could be converted into an electronic one.

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**Data Analysis Plan**

After collecting all of the data, the researchers then reviewed and evaluated the results of the data collection process. The researchers determined the average of the responses of the respondents by using the median and the percentage to determine the average, and evaluated the results using the Likert Scale.

In the field of social science research, like scales were one of the scale types that are utilized the most frequently. It gets the name from the psychologist who came up with the idea for it. The Likert scale was often formatted as follows on surveys and questionnaires: Strongly agree, Agree, neither agree nor disagree, Disagree, and Strongly disagree (Babbie, 2001).

The median will be determined now by using these five (5) points on the Likert Scale to determine the scale. These five-point scale were:

**Interpretation Points**

Strongly Agree (SA) = 1

Agree (A) = 2

Undecided (Neither) (U)= 3

Disagree (D) = 4

Strongly Disagree (SD) = 5

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**Software Development Methodology**

Figure 3. Iterative Waterfall Model

**Figure 3.** Illustrates the Iterative Waterfall Model in order to ensure the success of the proposed system, the researchers have decided to implement a software development process known. There were specific needs that need to be met at each stage of the model, and these requirements can be satisfied through elements such as planning, user design, construction, and others. When developing the system, the researchers need to keep the client's requirements front and center. There is a good chance that the end-feedback users will serve as the foundation for the device flow. The procedure of engagement and modification will proceed till the system has finished the job it was given to do.

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The iterative design process was an idea that is easily understood. After performing user research to determine a user need and generate ideas to answer it, you develop a prototype to represent the final product. The functioning of the prototype was next evaluated to see whether or not it actually satisfies the requirement. After analyzing the results of the tests, the design was altered to reflect the new information. After that, you will create a new prototype and continue the process until you were certain that you had created the best product that can be made.

The phase of requirement elicitation and analysis; during this phase, the researchers spoke with 54 different barangays during the course of interviews. The researchers talked about the procedures that are followed in the barangay, such as how the system will assist in submitting the compliance reports, whether or not submit it on time, how to keep track and retrieve the compliance report.  
**Software and Hardware Requirements**

The researchers used the following materials and equipment in order to build and complete the web-based system.

**Software Requirements**

**Visual Studio**. The web-based system that was being developed makes used of this software. The software was the environment in which the developers browse, develop, write, test, and troubleshoot the system. This software was incredibly user-friendly and straightforward to operate.

**CSS**. The web-based system that was being developed will make used of this software. During the process of constructing the web-based system, the software will be utilized to make changes to a variety of aspects, including colors, layout, advanced position of the pieces, fonts, and many more. The layout and display of website pages can be easily controlled with the used of this software.

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**JavaScript**. The coding language utilized in this web based system was an object-oriented one that supports both functional and imperative programming. This was used to provide interactive features to the web-based system, such as buttons and animation, which will be utilized to develop a web based system. This program will be used on both the client-side (where it will be seen) and the server-side in order to create interactive web pages.

**HTML**. It grants developers the ability to divide documents into sections. This piece of software allows for the creation of supplemental materials, and it includes tags for additional features, such as paragraphs in the document that generate sections. This piece of software makes it simple to go to similar pages and websites and to insert links.

**PHP**. PHP had a pre-installed module that can assist with the database connection of the web-based system that had been designed. It was a popular open-source general-purpose scripting language that was suitable for web development and can be integrated into HTML. Additionally, it was a scripting language that can be used by anyone. PHP was run on the server, which implies that it was responsible for the functionality of the web server.

**Hardware Requirements**

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**Table 2. Desktop Specification**

This table 2 shows the minimum requirements for desktop that can be used for the development of this project. The laptop which has an operating system of windows 10 to properly process and code the system was used. The RAM (Random Access Memory) has 8GB (Gigabyte), and 1 TB (Terabyte) of HDD (Hard Disk Drive) to properly run the web based system and developed the project. Intel Core i5 was the processor used in the development of this project in order to properly process the graphics on the system.

**Context Diagram**

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**Figure 4. Context Diagram of Web-based Barangay Compliance Report Submission**

It displays the researchers made used of a context diagram so that could more easily comprehend the particulars and constraints of the system that was going to be created as part of planned research. It highlights the information flow that occurs between the system and the components that are external to the system.

This depicts the complete software system as a unit and hence represents all of the external components that were capable of interacting with the system. The system was placed in the center of this style of chart, and the connected entities, external portions, and surrounding environment surround it on all sides. Displays the context diagram for A Web-based Barangay Compliance Report for Department of Interior and Local Government (DILG). It outlines the architecture of the system from the inside. The information that the Barangay Staff is collecting will be encoded by the system when it had been collected. The DILG Administrator was the only person who had access to, and the ability to access, alter, edit, update, and delete any and all data that was collected.

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Additionally, the administrator was able to set up user accounts for any authorized staff who required access to the system. In addition, the system was able to generate reports on a daily, weekly, monthly, quarterly, and annual basis, making the submission and retrieval of reports to the DILG much simpler and quicker. These reports can be generated in response to requests for barangay compliance reports.

**Data Flow Diagram**

**Figure** **5.** **Data** **Flow** **Diagram** **of** **Web-based** **Barangay** **Compliance** **Report**

**Figure 5** shows the system flow in the data flow diagram above. The Administrator may manage the users and save all of the data to the user's database. The process of user requisition will be received by the administrator, and the choice made by the administrator will be sent straight to the reports. Furthermore, the administrator can manage supplies, whilst the user can only see the inventory's available stocks. The specifics of the supply and the request approved by the administrator will create reports that are available by both the user and the administrator.

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**Test plan**

The researchers relied on a specific kind of software testing known as functional testing to ensure that the system functions appropriately. According to Bose (2021), functional testing was a process that examines whether or not the system was functioning in accordance with the requirements that were set beforehand. Due to the fact that the client was unfamiliar with the proposed system, the researchers utilized functional testing. Additionally, used this testing to confirm that the newly built system performs as planned. The following procedures need to be carried out in order to carry out the functional testing:

The client will be the subject of the system's initial test, which consists of running the proposed system. The barangay official will make use of the new processes in records management and the transaction processing system that has been suggested to the DILG staff. The researchers would give the end-users instruction manuals and run training sessions so that the system could be utilized correctly. In this stage of the process, the researchers will be able to determine whether or not the functions of the proposed system meet the requirements of the client.

The following step was to examine the results that the proposed system generates. At this point, the client and the researchers would be in a position to decide whether or not the suggested system produces the result that the customer was looking for.

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The final step was to report any system bugs that have been discovered. During this stage, the researchers would be made aware of any problems with the system, afterward, the issues or difficulties would be resolved. According to Gill (2021), the advantages of functional testing include the following: it ensures that the client is satisfied, it produces a defect-free system, it ensures that all the requirements should be met, it ensures security and safety, it improves the quality, and it reduces the risks and loss associated with the software. The researchers were able to verify that the system should behave as expected when the features are exercised by the end-user through the use of functional testing. This does not compromise the system's overall quality.

**Evaluation procedure**

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**Figure** **7.** **ISO** **25010** **Software** **Production** **Quality**

In order to study and test the A Web-based Barangay Compliance Report Submission for Department of Interior and Local Government (DILG) of overall performance and features, the researchers utilized ISO 25010 as the analyzing and testing framework. The ISO/IEC 25010 product quality model includes all eight of the quality qualities that were depicted in the graphic that was included with this sentence.

A method for evaluating product quality should always begin with the quality model as the basis. When evaluating the qualities of a software product, the quality model dictates which aspects of quality will be prioritized during the evaluation process. Quality can be defined as the extent to which a system satisfies both the explicit and implicit needs of numerous stakeholders and, as a result, creates value for those stakeholders. The expectations of those stakeholders were reflected in the quality model, which subdivides product quality into characteristics and characteristics within characteristics (functionality, performance, security, maintainability, and so on).

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**CHAPTER IV**

**RESULT AND DISCUSSION**

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In this chapter, it covered the discussion of the findings from the gathered data provided with the information and the findings of evaluation surveys of the suggested system the Barangay Users, who represent the client. The information acquired would help the researchers understand how respondents on the Barangay Users feel about to our proposed system, A Web-Based Barangay Compliance Report Submission for DILG.

Our objectives were to build a system that will make it easier to verify who has submitted a compliance report and to identify which barangay will receive an award and they were no longer manually calculated the points of the barangay.

**Table 3. Likert scale interpretation and distribution of weight**

To get the result, a formula was used, and the Likert Scale table was needed in order to get the weighted mean. The formula is shown below:

The formula to get Where:

WM = weighted mean

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N = total number of respondents

4 = Strongly Agree

3 = Agree

2 = Disagree

1 = Strongly Disagree

the Weighted Average Mean is shown below:

The following figures and tables displayed below were the result of the post survey given by the researcher to the client to assess the functionality, performance efficiency, usability, reliability, and security of the proposed system. The findings were also included with the computed weighted mean and interpretation.

**Table 3. Functionality Stability**

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Legend: 5- Strongly Agree, 4- Agree, 3- Undecided, 2- Disagree, 1- Strongly Disagree

The table 3 shows above was the result of evaluation of the users in terms of functionality of the system. The 48 respondents answer the no. 1 question strongly agreed, while the other 22 respondents agreed with the functional completeness of the system. The no. 2 question, 12 respondents strongly agreed while the 58 respondents agreed with the functional correctness of the system. The no. 3 question, 10 of the respondents strongly agreed, while 60 of the respondents agreed with the functional appropriateness of the system. The performance evaluation was “Agree” based on the weighted mean sum. The final result rated “Agree” in terms of Functionality Stability, indicating that the system functions were appropriate and accordance with the goal and objectives, resulting in correct and accurate results.

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**Table 4. Performance Efficiency**

Legend: 5- Strongly Agree, 4- Agree, 3- Undecided, 2- Disagree, 1- Strongly Disagree

The table 4 shows above were the result of evaluation of the users in terms of performance efficiency of the system. The 48 respondents answered the no. 1 question strongly agreed, while the other 22 respondents agreed with the time behavior of the system. The no. 2 question, 9 respondents strongly agreed while the 61 respondents agreed with the resource utilization of the system. The no. 3 question, 11 of the respondents strongly agreed, while 59 of the respondents agreed with the capacity of the system. Overall, the Performance Efficiency got a scored of “Agree” Due to the speedy spending and receiving of reports, as well as their availability for download and editing.

**Table 5. Usability**

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Legend: 5- Strongly Agree, 4- Agree, 3- Undecided, 2- Disagree, 1- Strongly Disagree

The table 5 shows above is the result of evaluation of the users in terms of usability of the system. The 12 respondents answered the no. 1 question strongly agreed, the 56 respondents agreed, while the other 2 respondents undecided with the appropriateness of the system. The no. 2 question, 8 respondents strongly agreed while the 62 respondents agreed with the learnability of the system. The no. 3 question, 8 of the respondents strongly agreed, while 62 of the respondents agreed with the operability of the system. The no. 4 question, 11 of the respondents strongly agreed while the 59 respondents agreed with the user error protection of the system.

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The no. 5 question, 5 of the respondents strongly agreed while the 65 of the respondents agreed with the user interface aesthetics of the system. The no. 6 question, 10 of the respondents strongly agreed while the 60 respondents agreed with the accessibility of the system. Overall, the usability received a rating of “Agree” indicating that testing largely focuses on a systems usability, that was how easy it was to used, how flexible it was with controls and how capable it was of achieving its objectives.

**Table 6. Reliability**

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Legend: 5- Strongly Agree, 4- Agree, 3- Undecided, 2- Disagree, 1- Strongly Disagree

The table 6 shows above were the result of evaluation of the users in terms of reliability of the system. The 13 respondents answered the no. 1 question strongly agreed, the 55 respondents agreed, while the 2 respondents undecided with the time maturity of the system. The no. 2 question, 18 respondents strongly agreed while the 52 respondents agreed with the availability of the system. The no. 3 question, 10 of the respondents strongly agreed, while 60 of the respondents agreed with the fault tolerance of the system.

The no. 4 question, 13 of the respondents strongly agreed while the 57 respondents agreed with the recoverability of the system. Overall, the Reliability also scored a “Agree “indicating that the capability to keep its level of performance, available, accessible and operational when the system was needed, and for that we got a highest score.

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**Table 7. Security**

Legend: 5- Strongly Agree, 4- Agree, 3- Undecided, 2- Disagree, 1- Strongly Disagree

The table 7 shows above were the result of evaluation of the users in terms of security of the system. The 36 respondents answer the no. 1 question strongly agreed, while the other 34 respondents agreed with the confidentiality of the system. The no. 2 question, 36 respondents strongly agreed while the 34 respondents agreed with the integrity of the system. The no. 3 question, 10 of the respondents strongly agreed, while 60 of the respondents agreed with the non-repudiation of the system.

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The no. 4 question, 8 of the respondents strongly agreed while the 62 respondents agreed with the authenticity of the system. The no. 5 question, 10 of the respondents strongly agreed while the 60 of the respondents agreed with the accountability of the system. Overall, the Security rating was likewise “Agree” got a highest scored for the confidentiality, accountability and integrity which that only guarantees that only those with permission can access the data. Since the reports that barangay users send were confidential, we provided them with an email account that they can used to access the system.

**CHAPTER V**

**SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS**

This chapter contains the summary of findings, conclusion and recommendations.

**Summary of Findings**

The following were the summary and findings that the researchers had come up with regarding the study of the design and development of an A Web- based Barangay Compliance Report Submission for Department of Interior and Local government.

1.The objective of this initiative was to generate barangay reports and awards. The web-based resource will benefit DILG personnel, Barangay officials, and future researchers.

2. A Web-Based Barangay Compliance Report Submission for DILG was designed and developed for Barangay Users and DILG Admin to allow Barangay Users to send or upload the required DILG reports. Additionally, the ranks of the barangays and those who will win prizes may be seen right away for the DILG administration, who may simply evaluate the reports that the barangays had provided.

3. The developers were provided with a solid foundation for interpreting the study by compiling studies with which the display concept was associated or that share specific commonalities. Compliance report, compliance monitoring, web-based system, and barangay management system were the topics of these connected studies.

4. The web-based system was developed using a variety of applications, including Visual Studio, PHP, and MySQL. Before designing the web-based system, the developers consulted with DILG staff regarding the status of Barangay compliance report submission. A Likert scale was employed to evaluate the system's adoption by end users. The web-based system was developed iteratively using waterfall technique.

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5.The outcome of the web-based system development demonstrates that the suggested system was produced in accordance with the objectives and primary purpose of the study.

**Conclusion**

Based on the findings of the study the researchers came up with the following conclusions: After the researchers evaluated the current practices done by the DILG and Barangay Official the researchers conclude that the Barangays Compliance Report Submission were using the traditional way on creating **A Web- Based Barangay Compliance Report Submission.**

The researchers found out that the A Web- Based Barangay Compliance Report Submission officials were mostly having problems in submitting the reports in Barangay Compliance Report Submission.

The advantages, the researchers decided that it was preferable to design and used A Web- Based Barangay Compliance Report Submission. The materials that will be used by the officials will not fade, such as the papers and images or photos that will be attached; all you need was a soft copy of the images you want to include on your A Web- Based Barangay Compliance Report Submission; and it can always update your A Web- Based Barangay Compliance Report Submission zero cost.

On the basis of the results of their different evaluations of the web based system, the IT Experts concluded that the web based system is functionally stable, performance-efficient, usable, reliable, maintainable, and secure.

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**Recommendations**

With regard to the conclusion of the study, the following are hereby recommended:

1. Web- based Barangay Compliance Report Submission Requires a web browser that supports HTML 5 for the canvas element, which was used in the developed of web based system.

2.It was strongly suggested that future researchers add further security measures to the member and administrator module.

3. Future researchers were strongly encouraged to incorporate exciting features such as mobile integration of this A Web- Based Barangay Compliance Report Submission.

4. It was strongly suggested to add more engaging features to the online system, such as the ability for authorities to alter photos or images uploaded for Web- Based Barangay Compliance Report Submission.

5. It was strongly advised to utilize a server-side scripting language such as PHP (PHP: Hypertext Preprocessor) and a client-side scripting language such as JavaScript when evaluating user-provided data prior to putting it in the database.

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