

**BANGBANGAR RESIDENTS RECORD MANAGEMENT AND  
CERTIFICATE ISSUANCE SYSTEM**

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## Chapter I

### INTRODUCTION

#### Project Context

We are living in a world where technology has been changing on how we deal in every day's situation. Technology has been the source of how we live, communicate, work and even learn. Electronic services are fast growing and been in the mainstream in technological development. In line with this, the Internet is one common platform that is being used for operations. In this digital era, record management is greatly influenced by the said technology.

Many barangays have their computer sets (laptop) but these are not used to automate transactions and record management. Instead they are used simply for encoding and printing purposes only.

Bangbangar is a peaceful barangay in the municipality of Burgos, Ilocos Sur with an area of more or less 150 hectares. It is bounded by Barangay Dayanki, Barangay Manaboc, and Barangay Ambugat. Currently there are 346 residents and is headed by incumbent Barangay Captain Rodolfo S. Reyes and his counselors are; 1) Juvenal Corpuz, 2) Henry Dasalla, 3) Adolfo Calibuso, 4) Alexander Garcia, 5) Lilia Reyes, 6) Wilfredo Garcia Jr, 7) Jaime Devenecia Jr.

The records of the barangay are managed and kept by current the barangay Secretary, Mrs. Loida Reyes. The barangay residents' records are written in paper-based files stored in filing cabinets at the barangay hall.



Issuing of certificates requires searching for the name of the person in paper files and then encoding (typing using the typewriter) the name of the person requesting on pre-printed blank certificates. The paper files tend to be unorganized and searching takes time and records may get lost. Because of their manual system, the process of issuing certificates is slow and laborious. The secretary manually handles transactions daily, such as issuing of Barangay Clearance, and Certificate of Indigency. Before the accomplishment of the task the constituents who request must undergo a long process. The same is through with storing of files, accessing of records and updating of data in the records. They use folders and lot of papers for its storage. The secretary encountered difficulties and long procedure in retrieving and recording files.

The problems of record management at Barangay Bangbangar can be eased through the implementation of a web-based records management system. According to Interpoint Company (2015), a Barangay Management System facilitates records management by enabling the client barangay to maintain their resident records as complete and up-to-date as possible and as easily accessible for verification, monitoring and reference purposes based on the available residents' census data kept by the barangay. Data provided by this system in the form of comprehensive reports are invaluable for planning, program implementation and related purposes.

Thus, the researchers developed a web-based system barangay



records management system that will provide safer storage and fast retrieval of files, maintains reliability and accuracy, and faster tracking of files. Proposing software for the records management system is very useful to the staff, from hand written records and manual issuing of Barangay Clearance and Certificate of Indigency.

The proposed system will reduce the hard and longtime procedure and accessing files and records they keep and store. It will be a great help for the barangay secretary to ease her work especially with transactions that the citizen of the said community need. The system can provide efficient, reliable, fast, accurate information to provide good quality service to secure the file of the client and ensures that services and information are given at the right time to satisfy the needs of the client. The system also provides the user efficient working environment and generates more output through a user-friendly interface.

### **Purpose and Description**

The core function of this study is to offer a detailed reliable and secured keeping of all data. Bangbangar Residents Record Management and Certificate Issuance System hope to enhance the way of managing barangay residents' records, and issuing of certificates to citizens who require them. The system benefits the following:

The Residents. This study helps the residents to secure their confidential records in the the barangay. And it can also help the residents get certificates easily.



The Barangay Secretary. This study helps the secretary to have an easier and faster time to locate resident's record, release Barangay Clearance and Certificate of Indigency, and manage records more efficiently.

The Proponents. The proponents can apply and enhance their skills, ideas and knowledge on how to design, analyze, program and develop a system for the intended client.

Future Researchers. This project serves as guidelines to help them design their own project in system development.

#### **Literature**

Barangay is a very essential place where it contains information about the people living there. Some people would seek some information they need that can only be found in the barangay. With only manual processing it would take time to search for information. But with the aid of computers it would greatly improve the time and result you will get compares to manual labor or work done. We were determined to come up with a system that will change all their existing manual system into a very accurate and competent Barangay Information System. With this proposed System, it will help them to save time. This system is much better compared to the one's they're currently using. And manual processing is really inaccurate and time consuming. While on the other hand if they do agree to adapt with the system that we came up with it will practically improve their jobs. They can avoid most of the most common



problems that most people will encounter in manual processing. Due to competitiveness it would be best that every barangay should adapt to this kind of work (studymoose, 2013).

Records Management is an organizational function devoted to the management of information in an organization throughout its life cycle, from the time of creation or inscription to its eventual disposition. This includes identifying, classifying, storing, securing, retrieving, tracking and destroying or permanently preserving records. The ISO 15489-1: 2001 standard ("ISO 15489-1:2001") defines *records management* as "[the] field of management responsible for the efficient and systematic control of the creation, receipt, maintenance, use and disposition of records, including the processes for capturing and maintaining evidence of and information about business activities and transactions in the form of records"(Wikipedia, 2014).

The management of records for an organization applies throughout the records-life cycle. The activities in this management include the systematic and efficient control of the creation, maintenance, and destruction of the records along with the business transactions associated with them. Considered a key component of operational efficiency, record management adds more value to organization's information assets (techopedia, 2013).

Barangay Profiling System is appropriate for the use of barangay employees who have access to profile information of barangay residents for



the direct reports and also departmental organizational staffs that have business need for this information for their business unit. The Barangay Profiling System is responsible for an effective and efficient approach for barangay employees and residents. It will help them accomplish task faster and also it eliminates the need of a large staff. It will provide profile-based information on residents (Scribd, 2015).

Electronic records provide evidence of business activity and can be in any format, including digital format. Today, the vast majority of records are produced electronically or ‘born digital’. According the National Archives of Australia (NAA) electronic or digital records include “word-processed documents, emails, databases and images” (NAA, 2004a). While many records are printed and kept in paper or hard copy format, increasingly business activities are conducted in a purely digital context. As such, organizations need to be able to capture their electronic records to ensure an effective and efficient business environment that can provide evidence of the organizations activities and fulfill legislative requirements. Those electronic records that are identified as being of continuing value need to be managed in such a way that they remain accessible.

Electronic records can be stored throughout an organization in a variety of ways – in databases, on hard drives, in shared folders, in email accounts. In order to effectively manage the electronic records being produced by an organization a method of capturing records using an Electronic Records Management System (ERMS) needs to be implemented.



One of the major issues facing electronic records management is the speed of technological development. Digital technologies rapidly become obsolete which can result in records becoming inaccessible unless a strategy for migration and preservation is developed and adhered to. An effectively implemented ERMS is a key factor in ensuring electronic records of continuing value are kept and archived for future use (wikidot, 2014).

**PHP:** Hypertext Preprocessor (or simply PHP) is a server-side scripting language designed for web development but also used as a general-purpose programming language. It was originally created by Rasmus Lerdorf in 1994, the PHP reference implementation is now produced by The PHP Group. PHP originally stood for *Personal Home Page*, but it now stands for the recursive acronym *PHP: Hypertext Preprocessor*. PHP code may be embedded into HTML code, or it can be used in combination with various web template systems, web content management systems, and web frameworks. PHP code is usually processed by a PHP interpreter implemented as a module in the web server or as a Common Gateway Interface (CGI) executable. The web server combines the results of the interpreted and executed PHP code, which may be any type of data, including images, with the generated web page. PHP code may also be executed with a command-line interface (CLI) and can be used to implement standalone graphical applications. The standard PHP interpreter, powered by the Zend Engine, is free.



software released under the PHP License. PHP has been widely ported and can be deployed on most web servers on almost every operating system and platform, free of charge. The PHP language evolved without a written formal specification or standard until 2014, leaving the canonical PHP interpreter as a *de facto* standard. Since 2014 work has gone on to create a formal PHP specification (Wikipedia, 2014).

WAMP stands for "Windows, Apache, MySQL, and PHP." WAMP is a variation of LAMP for Windows systems and is often installed as a software bundle (Apache, MySQL, and PHP). It is often used for web development and internal testing, but may also be used to serve live websites. The most important part of the WAMP package is Apache (or "Apache HTTP Server") which is used run the web server within Windows. By running a local Apache web server on a Windows machine, a web developer can test webpages in a web browser without publishing them live on the Internet.

WAMP also includes MySQL and PHP, which are two of the most common technologies used for creating dynamic websites. MySQL is a high-speed database, while PHP is a scripting language that can be used to access data from the database. By installing these two components locally, a developer can build and test a dynamic website before publishing it to a public web server (techterms, 2013).

The Website Analysis and Measurement Inventory (WAMMI) measures user-satisfaction by asking visitors to your website to compare their expectations with what they actually experience on the website. It is



based around a standardized 20-statement questionnaire and a unique international database. WAMMI's uniqueness lies in that visitor satisfaction for the site being evaluated is compared with values from our reference databases, which now contain data from over 320 surveys. (WAMMI, 2017).

### **Objectives of the Study**

The main goal of the study is to develop a Barangay Residents Record Management and Certificate Issuance for Barangay Bangbangar, Burgos, Ilocos Sur, to automate and make more efficient the management of residents' records. Specifically aimed to:

- (a) determine the current system of managing the barangay resident record of Barangay Bangbangar, Burgos, Ilocos Sur.
- (b) design and develop Residents Record Management and Certificate Issuance System of Barangay Bangbangar, Burgos, Ilocos Sur.
- (c) test and deploy the developed system.



## Scope and Limitation

The study was conducted during the second semester of academic year 2017-1018 at Ilocos Sur Polytechnic State College. The scope of this system to make an automated system to easily find the records so that it is accurate, complete, accessible and usable moreover, the system will utilize to keep residents' records confidential, provide detailed information about the residents, to update resident's profile, store the entire resident's record and locate resident's record. It also enables easy searching of records. This system also allows other Barangay related functions as those including security such as incident reporting, blotter and other related services.

This system can issue barangay certificates. The secretary can print certificates like Barangay Clearance and Barangay Indigency.

The said system is only limited to the barangay residents' records used needed in producing the Barangay Clearance and Certificate of Indigency for barangay Bangbangar Burgos, Ilocos Sur. Other barangay records are not included in the system.

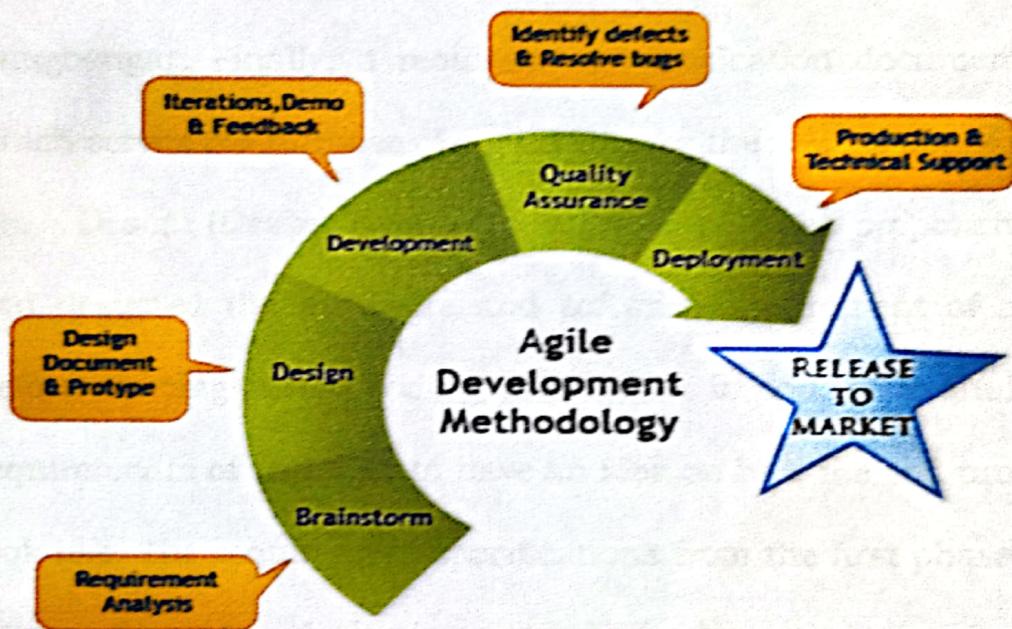


## Chapter II

### METHODOLOGY

#### Software Model/Paradigm

The proponents used the Agile Model to develop the BRRM & CIS for barangay Bangbangar, Burgos, Ilocos Sur. It describes the functions of each stage involved in the development of the project from the beginning process until the maintenance of the completed system.



**Figure 1. Agile Development Methodology**

Agile software development is based on an incremental, iterative approach. Instead of in-depth planning at the beginning of the project, agile methodologies are open to changing requirements over time and encourages constant feedback from the end users. Cross-functional teams work on iterations of a product over a period of time, and this work is



organized into a backlog that is prioritized based on business or customer value. The goal of each iteration is to produce a working product ([smartsheet.com](https://www.smartsheet.com)).

The Agile model of software development consists of five phases which are described below.

Brainstorm (Requirement Analysis). The proponents focused on possible requirements of the system to be developed. Requirements are set of functions and constraints that the end user expects from the system. The requirements are gathered from the secretary of barangay Bangbangar. Finally, a requirement specification document is created which serves the purpose of a guideline for the next phase of the model.

Design (Design Document & Prototype). The proponents identified and designed the hardware and software requirement of every model. Before starting actual coding phase, it is important to understand the requirements of end user to have an idea on how the end product should look like. The requirement specifications from the first phase are studied here, and a system design is prepared. The design helps in specifying the hardware and system requirements. It also helps in defining the overall system architecture. The system design specifications served as an input for the next phase of the model.

Development (Iterations, Demo & Feedback). On receiving system design documents, the work is divided in modules/units and actual coding starts. The system is first elaborated into small program called units,



which are integrated in the next phase.

**Quality Assurance (Identify defects & Resolve Bugs).** The units are now integrated to form a complete system during the integration phase and tested to check if all modules/units coordinate with each other. The proponents will do test and test cases to check the modules/units for bugs, faults and other errors.

**Deployment (Production & Technical Support).** After the system is tested and all the errors and bugs are corrected, it will be then offered to the designated recipient, the Bangbangar Residents Record Management & Certificate Issuance System for its consumption.

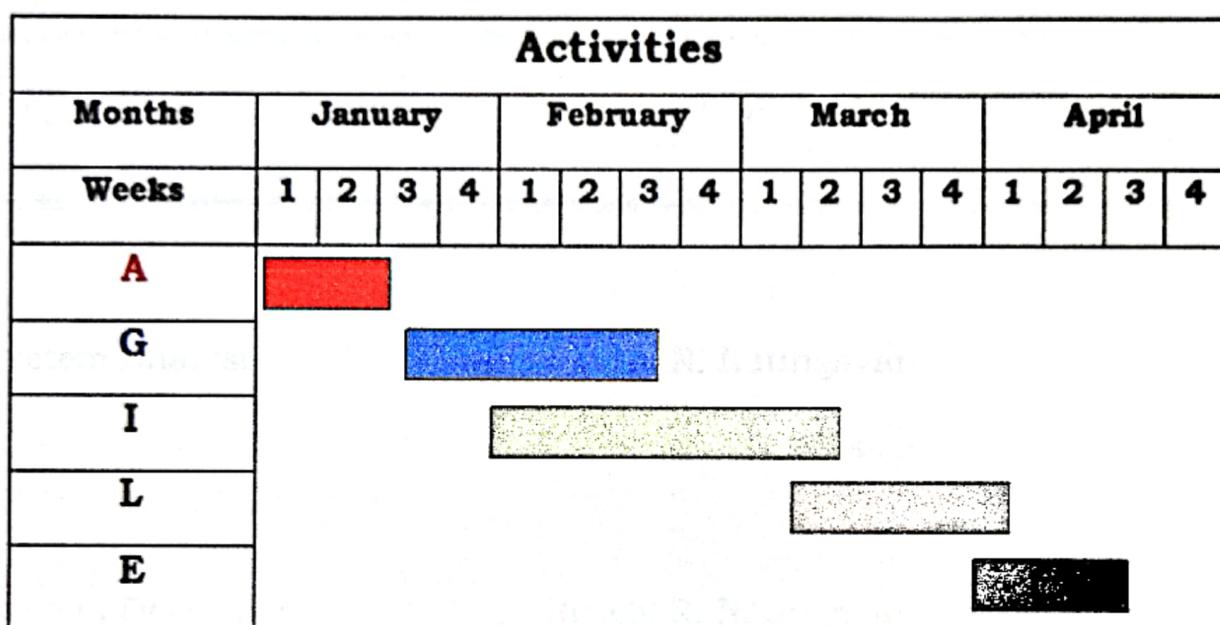
The project started during the first week of January 2018 until third week of April 2018. Figure 2 shows the activities that were undertaken during the project development.



## Project Plan

The following table presents the activities based on the Agile methodology and the project schedule. The project started in January 2018 and was completed in April 2018.

**Table 1. Gantt Chart**



### Legend:

- Brainstorm
- Design
- Development
- Quality Assurance
- Deployment



## Project Team Assignment

The assigned role for each of the team members as required in the Agile model are presented in Table 2.

**Table 2. Role requirements and responsibility**

<b>Project Role</b>	<b>Proponents</b>
System Analyst	Rocely R. Naungayan
System Developer	Rocely R. Naungayan
and Designer	Kimberly G. Reyes
Researcher and Documenter	Rocely R. Naungayan
Documenter	Kimberly G. Reyes
Researcher and Documenter	Rose Ann R. Ragudo
Researcher and Documenter	Ma.Cristina F. Vitales
Researcher and Documenter	Rocely R. Naungayan
Documenter	Kimberly G. Reyes
Researcher and Documenter	Rose Ann R. Ragudo
Researcher and Documenter	Ma. Cristina F. Vitales



## Data Gathering Procedure

Document Analysis. The proponents collected the needed documents from the barangay which were used as references. Data collected were analyzed to determine how they could develop the Bangbangar Residents Record Management & Certificate Issuance System.

Interview. The proponents gathered the needed information by conducting interview with the barangay secretary.

Internet Surfing. The proponents gathered important information from various website through the internet.

Library Research. The proponents gathered information from books and research manuscript related to capstone project.

Survey. The Website Analysis Measurement Inventory (WAMMI) was used by the proponents to test the usability of the system. WAMMI is a 20-item questionnaire that measures the efficiency, attract ability, helpfulness, controllability and learnability of a website. A 5-point Likert scale was used to measure the degree of agreement with 5 as strongly agree and 1 as strongly disagree. The respondents were 5 IT Experts and 4 Barangay Officials including the barangay secretary and barangay captain.

The following table presents the statistical ratings for interpreting positive and negative items in the responses.

**Table 3. Statistical Ratings for Positive and Negative Items****For Positive Items**

Scale Range	Descriptive Range	Statistical Rating
1	Strongly Disagree	1.0 – 1.80
2	Moderately Disagree	1.81 – 2.60
3	Undecided	2.61 – 3.41
4	Moderately Agree	3.42 – 4.23
5	Strongly Agree	4.24 – 5.0

**For Negative Items**

Scale	Descriptive Range	Statistical Rating
1	Strongly Agree	1.0 – 1.80
2	Moderately Agree	1.81 – 2.60
3	Undecided	2.61 – 3.41
4	Moderately Disagree	3.42 – 4.23
5	Strongly Disagree	4.24 – 5.0



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## Interview

1 Mrs. Loida D. Reyes. Personal Interview. February 2018 and March 2018

“Mrs. Francisco D. Guinto, the 10th president of the college, was the first president here serving for the year, and he had a vision of what he wanted to do for the college, that is, to improve the quality of education, improving the research, improving the extension activities, and providing support to the students.”

Dr. Francisco M. Divine, Executive Dean, Faculty of Information Technology, Improving the quality, research, extension activities, and providing support to the students.

Dr.水利工程 Julian D. Claveria, Director, Faculty of Engineering, Civil Engineering, facing distinctive challenges towards the development of the faculty, the quality of education, the quality of research, and the quality of extension activities.

Mr. Arnold Fernandez G. Pugayawan, Head, Office of the Vice President for Academic Affairs, Advisor, Institutional Research, Monitoring and Evaluation, validating the strengths and potentials of the college, the quality of education, the quality of research, and the quality of extension activities, and the quality of extension activities.

Mr. Francisco D. Guinto, the 10th president of the college, was the first president here serving for the year, and he had a vision of what he wanted to do for the college, that is, to improve the quality of education, improving the research, improving the extension activities, and providing support to the students.”