



**DESIGN, DEVELOPMENT AND EVALUATION OF  
BARANGAY MINABUYOC INFORMATION**



**SYSTEM**

**A Capstone Project**

**Presented to:**

**The Faculty Members of the**

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## **Chapter I**

### **PROJECT OVERVIEW**

#### **Project Description**

This capstone project aims to provide a Barangay Information System that will store information of residents in Barangay Minabuyoc including: The List of Senior Citizens, List of the members of Pantawid PamPamilyang Pilipino Program (4Ps), List of the Barangay Officials and the Sangguniang Kabataan members (SK), Barangay Health Workers (BHW), Barangay Police (Barangay Tanod) and the citizens of the Barangay. This information system involves everything that has to do with adding new records, updating and searching specific residents' information. This project is server- based and integrated with the other system such as Municipal Government of Talavera – Barangay Information System Main Server and all the Barangays of the Municipality of Talavera. It can browse the information of the residents so that the system end-user will not encode the residents' data one by one and print all the summary reports of the Barangay. All the records of the Barangay will be stored in the Database. Only authorized person can have the rights to access the system.

#### **Project Goals/Objectives**

This project aims to design, develop, and evaluate the Barangay Information System of Barangay Minabuyoc and specifies:

1. To develop a Computerized Barangay Information System that can automate the record-keeping process in order to produce efficient and accurate reports and proper automated files management.
2. To reduce the time consumed in the process of issuing certificates such as:

Barangay Clearance

Business Permits

Certificate of Indigence

3. To minimize the time in writing records and eliminate the use of paper.
4. To provide backup database of all records.
5. To secure residents' confidential records.

### **Project Rationale**

The developers built and created these BIS to help the Barangay Minabuyoc in keeping records in an efficient way. Instead of using manual process, it is undeniable that automation accomplishes a job a lot faster than the traditional way of recording. The automated Barangay Information System will make the keeping and retrieving of information faster and more convenient by storing files of the

residents' information in a computer system. The main function of the system is to keep, update and validate information. This will reduce the time and effort of the secretary in processing, storing and finding the files/ records of each resident living in the Barangay. The information in a computerized system can be viewed in easy way if the data are duplicated and if the data are lost.

This project will contribute in enhancing the managing of residents' information records.

Some benefits of this Information System:

1. **Residents:** can save time and efforts in acquiring and compilation of Barangay Clearances, Good moral Certificate, Bart Chairman Certification, Barangay Indigence and other Certifications.
2. **Administrator:** they can easily generate reports, view and search or track all residents' information, and other Barangay information. They can easily release the Barangay Clearance, Barangay Indigence and other business permit (operation/ non-operational). The residents' information would be organized and easy to manipulate by the user.
3. **Developers:** it gives further knowledge and improves their ability about the system development.
4. **Future researchers and students:** this capstone project will serve as a reference for future projects.

## **Chapter II**

### **REVIEW OF EXISTING WORKS AND RESEARCH**

#### **Barangay History**

Barangay Minabuyoc is just like a forest where tall trees and wild grasses grew. Nobody dwells in the place, since it is not yet ready to live at. However, it is one of Filipino value to seek for their fate everywhere, like a certain couple Lorenzo and Siana Velasquez. The couple went to the place, cleared it until such time that the place is ready for dwelling and some other part can be used for their agricultural and planting purposes and so be it. Until one day Lorenzo noticed so many bees around the place, but one thing is noticeable, these bees lived in the land. He thought that the place is a bee mine. (Mina ng Bubuyog), until people continue to dwell together with the couple. Children usually called the place "Minabuyoc" (Child term for "mina ng bubuyog"). That is why when the place was recognized as a barangay. Higher authorities called the place Minabuyoc.

#### **Barangay Officials**

Currently the Barangay officials of Minabuyoc are led by Barangay Captain Mr. Reynaldo C. Velazquez, with his councilors Mr. Baltazar A. Velasquez, Marcelino B. Pascual, Eduardo DG. Lumibro, Ramon J. Morales, Fernando M. Arenas, Reynaldo V. Norte and Ms. Liezel N. Ramos. Barangay Sk Chairman Paulo V. Soriano. Mr.

Andres D. Bernardo the Barangay Secretary. Mr. Juanito S. Manimbo as treasurer and Disy H. Beltran as Accounting Clerk.

### **Existing Works/Research**

#### **1. Barangay Resident Record Management and Certificate Issuance System of Barangay Ticol, Sorsogon City**

A thesis submitted by John Edmar L. Caubang in partial fulfillment of the requirements for the Degree of Bachelor of Science in Information Technology. This study for Barangay Residents Record Management and Certificate Issuance System is develop to enhance the way of managing, issuing certificate and keeping all the residents confidential records. This system facilities Barangay 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 client Barangay. ([http://www.academia.edu/31530757/Barangay\\_Resident\\_Record\\_Management\\_and\\_Certificate\\_Issuance\\_System\\_Of\\_Barangay\\_Ticol\\_Sorsogon\\_City](http://www.academia.edu/31530757/Barangay_Resident_Record_Management_and_Certificate_Issuance_System_Of_Barangay_Ticol_Sorsogon_City))

#### **2. Barangay Information Systems: A Tool for Local Planning and Project Implementation**

This participatory action-research conducted by Paderes, Aurora S. followed the reflection-input-action-reflection process in allowing Barangay to evolve their own information system. Benchmark study, secondary data use, key informants interview and observations were the key data gathering techniques. This project was implemented in nine Barangays of Munoz, Nueva Ecija. The project

also described and documented the Barangay Information System (BIS) implementation process of the nine barangay. It covered the activities that the barangays did in implementing their BIS. (<https://prezi.com/xs2wqvbnktxb/barangay-management-information-system/>)

### **3. Barangay Decision Support and Mapping System** Asia

Pacific Journal of Multidisciplinary Research conducted by Tracy N. Tacuban (MSCS) Iloilo Science and Technology University, Burgos St. Lapaz Iloilo City, Philippines. The system is designed to allow the storage and retrieval of the record of all the residents in the barangay; allow the user to create and edit the barangay map using the generally-accepted symbols or icons which represents the natural and man-made features within the barangay; automate the processing of barangay clearances, permits and similar documents issued by the barangay; allow the storage and retrieval of barangay-approved ordinances, resolutions and other necessary reports; record environmental problems in the barangay and the solutions provided; record and retrieve cases of domestic violence, child abuse and barangay hazards and the actions taken by the concerned officials; and provide the necessary reports. (<http://www.apjmr.com>)

### **4. Web-based Barangay Information system for Malita, Davao Occidental**

A thesis from Southern Philippines Agribusiness and Marine and Aquatic School of Technology, the study covered the thirty (30) barangays of Malita, Davao Occidental. It was developed to automate

the management of barangay household, commodities and population, populate barangay data that can be viewed in the municipal webpage in order to monitor the increase and decrease of household, commodities and population for an immediate action, and establish geotagging of commodities for barangays. ([https://www.researchgate.net/publication/325465116\\_WebBased\\_Barangay\\_Information\\_System\\_for\\_Malita\\_Davao\\_Occidental](https://www.researchgate.net/publication/325465116_WebBased_Barangay_Information_System_for_Malita_Davao_Occidental) )

## **5. Computerized Information System in Barangay Poblacion, Danao City Cebu**

A thesis submitted by Lado, Mark John P., Maloloy-on, Monica I. Perez, Gladys C., Rizaldo, Philip Keven M., Tacocong, Stephanie A. from Colegio De San Antonio De Padua taking up Bachelor of Science in Information Technology. The purpose of this study is to maintain complete and up to date system that easily accessible for verification, monitoring and references purposes. Moreover, one can automate the record keeping process, in order to produce efficient and accurate reports and proper automated file management. It converts data into a useful form that will allow the operation to work smoothly. (<https://www.slideshare.net/MarkJohnPerezLado/computerized-information-system-in-barangay-poblacion-danao-city-cebu>)



## **6. Barangay Office Management System**

A thesis project developed by Jaime P. Pulumbarit and Jane Kristine G. Suarez, the system focuses on creating a Barangay Office Management System facilitated by the Barangay Secretary, Barangay Treasurer, Barangay Record Keeper, and Barangay Clerk depending upon the transaction they are involved. Barangay Census is the procedure of systematically acquiring and recording information about the members of a given population. The Secretary, Barangay Record Keeper, and Clerk can perform command such as add, edit and save information. It should have control number in every form. Barangay Case Records is a written account of those people who have violated the barangay laws. (<http://advancejournals.org/International-Journal-of-Mathematics-and-Computing/article/barangay-office-management-system/>)

## **7. Barangay Resident Record Management and Certificate Issuance System**

This study focuses on the records management system of the Barangay. The Barangay treasurer/secretary is the one who performs permits, certificates transactions community tax, business taxes, and other fees. They are also in charge of keeping tracks of the records, capture and maintain up-to-date records of all issuance transactions and daily, monthly, yearly reports. Proposing software for the records management system is very useful to the staff, from hand written records and manual issuing of barangay clearance and certificates, as well as the income and expenses reports into an automated processing

system. (<https://www.inettutor.com/source-code/barangay-resident-record-management-and-certificate-issuance-system/>)

## **8. Barangay Management System**

A thesis submitted by Harra Grace Mirasol from Barangay Tacas Jaro, Iloilo City. This project started last July 2015 and ends on October 2015. This project entitled “Barangay Management System for Barangay Tacas” is intended to be automated in such way that all records and transaction that the barangay is needed will be totally organized, easy to process and fast. This project aims to implement a computerized profiling system for the Barangay Tacas to lessen the use of drawers and log books. The automations of such repetitive task are what the researchers wish to resolve through the development of profiling system. (<https://prezi.com/duwqmke-43vc/barangay-management-system/>)

## **9. Barangay Management Information System (BMIS) for**

**Cities and Municipalities in the Philippines** A thesis project developed by John Kevin P. Imus, Elmer D. Magleo, Mary Angelica A. Soriano and Romulo L. Olalia, Jr. from San Carlos College Agdao, San Carlos City Pangasinan. Barangay Management Information System for San Carlos City is an online and offline system to keep, process, retrieves and update. Barangay and City Hall information through a secure network interface. It is designed to handle a wide-range of information relating to barangay profile, constituents profile, barangay clearances, barangay disputes/cases, barangay activities, and barangay legislation and City Hall’s required reports from the

barangay. It covers all the functions, activities and transactions of the barangay which aims to provide complete and accurate information for the barangay and city hall management and stakeholders. (<https://ijcaonline.org/volume180/number19-imus2018-ijca91644.pdf>)

#### **10. iBRGY (iBarangay)**

iBRGY is a browser-based system that can be accessed to any computer within a local network. It can be used by multiple users secured thru defined permissions and access rights. Clearances and certificates use templates for flexibility. Makes use of webcam to embed pictures of applicants in clearances and ID. Make use of MS Word to download clearances and ID for printing. (<http://www.ibrgy.com/features.php>)

### **SOFTWARE USED IN DEVELOPING THE INFORMATION SYSTEM**

**NetBeans** is an integrated development environment (IDE) for Java. It allows applications to be developed from a set of modular software components called modules. NetBeans runs on Microsoft Windows, Mac OS, Linux and Solaris. In addition to Java development, it has extensions for other languages like PHP, C, C++, HTML5, and Java script. Applications based on Net Beans, including the Net Beans IDE, can be extended by third party developers.

**MySQL** is an open-source relational database management system (RDBMS). The MySQL development project has made its source code available under the terms of the GNU General Public License, as well as under a variety of proprietary agreements. MySQL was owned and sponsored by a single for-profit firm, the Swedish company MySQL AB, now owned by Oracle Corporation.

**XAMPP** is a free and open-source cross platform web server solution stack package developed by Apache Friends.

### **Chapter III**

## **METHODOLOGY AND PROCEDURES**

The chapter dealt with methods and procedures that we used in the system study and design of the proposed system. An investigation of the current manual system was carried out in order to determine the requirement specifications for the Barangay information system. The method used in this study is incremental development. It contains outline description, specification, development, and validation. Therefore the process of data collection involved identifying all the major activities that should be considered for the development of the system.

### **A. Requirement Specification**

A letter of request was given to Hon. Reynaldo Velasquez and based on the interview with Barangay Secretary Andres Bernardo, the system should be able to access efficiently and user friendly. The

system should focus on the particular terms regarding records, population, officials and reports generation.

Mr. Bernardo also said that the system should also be capable of providing the different certificates of the Barangay by using system functions that can enhance the time consuming process in printing certificates.

### **Information Gathering**

We've conducted an Interview at Department of the Interior and Local Government (DILG) and asked their permission if we can gather some information of residents that are living in Barangay Minabuyoc. Then, we also conducted an interview at Municipal Planning Development Coordinator with Ms. Evina G. Pablo about Barangay histories and other information needed in developing a proficient Information system that can be use by Barangay Minabuyoc.

### **Formal Interview**

We have conducted a formal interview at Barangay Minabuyoc and asked the Secretary Mr. Andres D. Bernardo about how they manage their records and if they have any existing automated system. We also asked them how they release documents to the residents. Mr. Bernardo explained that they only use manual based process in managing their records and releasing documents. He also mentioned that when considering a permanent resident they should stayed and live at least 6 months and further inside the Barangay.

### **User Requirements**

The system must be easy to understand how to use the system and how it works. The system needs a security to make sure the record is safe from lost. It must have a flexible database that makes it more organized and lessen the redundant data. This system also needs to have a design that should be pleasant to the eye with readable text. It must be simple but constructive.

## **Functional Requirements**

### **Creation of New Record**

1. This function creates a record for a new resident / transferred residents from other Barangay.
2. Use to create a new records of the residents who aquired the clearance, indigence and the Barangay Business Permit.

### **Updating In Record**

1. This function updates the information record of the residents.
2. This function updates the new elected officials of the Barangay.
3. This function updates the history of the elected officials.

### **Filtering / Searching Residents Information**

1. This function is used to search and filter the name of the particular resident accordingly to their: age, gender, first name, last name, and etc. It will help the admin to easily find the specific information of the residents.

### **Report / Document Printing**

1. This function allows the user to print specific documents or reports.

## **Non-Functional Requirements**

**Error handling:** System shall handle expected and non-expected errors in ways that prevent loss in information and long downtime period.

**Performance:** The system shall accommodate high number of records without any faults.

**Ease of use and Consistency:** Provide simple navigation tools and layout.

**Safety Requirements:** The system shall not cause any harm to human users.

**Security:** The system will use secured database. High protection to the resident's confidential records

**Reliability:** Check for the error instantly whenever user key in data.

**Legislative Requirements:** It does not consist of illegal or prohibited data.

**Ethical requirements:** Increases the reliability and efficiency for Information System.

## **REFERENCES**

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