# Barangay Man-Ogob Easy Docs: Automated Barangay Certification Request System

**Course:** Bachelor of Science in Computer Science

**Subject:** Software  Engineering

**Instructor:** Aeron Dave Corral Enova

**Group Members:**

Darene Bamba

Francis Eric Obias

Kristina Mhae Salenga

Jennievic Dones

Jhon Loyd Canaria

Jhon Brayn Rafer

Jane De Vera

Rico Villamin

Rhen Emerson San juan

Kean Joshua Tan

**Submission Date:** March 2025

**II.PROJECT PROPONENTS**

Jhon Loyd Canaria - Project Manager

Jhon Brayn Rafer - Lead Developer/Syatem Analyst

Kean Joshua Tan - Developer

Rhen Emerson San Juan - Data Analyst

Rico Villamin - Developer

Francis Eric Obias - Developer

Darene Bamba - Technical Support

Jennievic Dones - Technical Support

Jane De Vera - Documentary Manager

Kristina Mhae Salenga - Quality Assurance

**III. PROJECT BACKGROUND**

The current manual system for issuing barangay certificates is inefficient, time-consuming, and inconvenient for residents. It also leads to inefficiencies for barangay staff, resulting in longer processing times and a higher potential for errors. According to an interview with the person responsible for processing certifications, each certification process typically takes less than 30 minutes.  
  
To address these challenges, we propose the implementation of a Barangay Certification Appointment System. This system will leverage technology to streamline the appointment process, reduce waiting times, and improve the overall efficiency of certificate issuance.

**IV. PROJECT OBJECTIVES**

General Objective:

To automate the traditional process of requesting barangay certifications in Barangay Man-Ogob, including Barangay Clearance, Certificate of Indigency, Certificate of Residency, and Certificate of Good Moral . The system aims to enhance efficiency, accessibility, and user-friendliness, particularly for residents who live far from the barangay office.

Specific Objectives:

1. **Develop an Online Request System** – Create a digital platform that allows residents to request certifications remotely.
2. **Implement Real-Time Status Updates** – Enable applicants to track the progress of their requests in real-time.
3. **Integrate Email Notifications** – Automate updates and confirmations regarding the status of requests.
4. **Enhance Data Security & Record Management** – Store request records securely using a cloud-based database system.
5. **Improve Service Efficiency** – Reduce processing time and minimize manual paperwork for barangay staff.
6. **Ensure Mobile Accessibility** – Design a responsive system compatible with both mobile and desktop devices.
7. **Generate Reports for Tallying Payments** – Include a feature to generate reports on the number of requests processed to assist in payment tallying.

**VI. PROJECT SCOPE AND LIMITATIONS**

***Scopes****:*

* The system will cater to residents of Barangay Man-Ogob and barangay staff.
* The platform will be web-based for the admin panel and mobile-accessible for residents.
* The system will provide real-time data synchronization to ensure accuracy.
* A landbase option will be created for individuals who prefer not to create an online account but needed to be enlisted by the admin.
* The system will have auto generated certification base on the user provided information.

***Limitations****:*

* The system will not track the estimated or exact processing time of certification requests.
* It will not integrate with external payment gateways for online transactions.

**VII. DEVELOPMENT METHODOLOGY**

This project will follow the **Agile Development Model**, which allows flexibility and iterative improvements based on feedback. The development will be divided into Sprints, each lasting 2 weeks, ensuring continuous progress and refinement.

Development Phases:

1. Planning & Requirements Gathering – Define system requirements.
2. System Design & Prototyping – Create wireframes and mockups.
3. Development & Implementation – Write and test the system's core functionalities.
4. User Testing & Feedback – Allow stakeholders to test the system.
5. Final Deployment – Deploy the system for actual use.

**VIII. SYSTEM ARCHITECTURE**

* Presentation Layer (Front-End): User Interface (UI) built with XML, HTML, CSS, JavaScript(React Framework ).
* Application Layer (Back-End): Logic developed using javascript (Express Framework ).
* Data Layer (Database): Postgres for database in storing data.
* Project Deployment (Cloud Deployment): Hosted on Render, Vercel (for frontend), and a cloud-based PostgreSQL database.

**IX. SYSTEM SECURITY MEASURES**

Data Security Features:

* Multi-Factor Authentication (MFA): Requires multiple verification steps for login.
* Secure Database: Uses AES-256 encryption to protect sensitive data.
* Regular Data Backup: Ensures prevention of data loss.

**X. EXPECTED OUTPUTS AND DELIVERABLES**

1. Functional Software System – A fully operational secure resident information, certification request system, generated reports and transaction history.
2. Technical Documentation – Detailed user and system manuals.
3. Final Presentation & Demo – Live demonstration of the system.

**XI. PROJECT TIMELINE**

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| --- | --- | --- | --- |
| **Task** | **Effort (person-days)** | **Duration (days)** | **Dependencies** |
| Phase 1: Planning & Requirement Gathering (Days 1-4) |  |  |  |
| Define project scope & objectives | 5 | 2 | None |
| Gather requirements from barangay officials | 5 | 3 | Project Scope |
| Analyze system feasibility & risks | 4 | 2 | Requirement Gathering |
| Phase 2: System Design (Days 5-7) |  |  |  |
| UI/UX wireframes & mockups | 6 | 3 | Requirement Gathering |
| System architecture & database design | 6 | 3 | Requirement Gathering |
| Define system workflows | 4 | 2 | Requirement Gathering |
| Phase 3: Development (Days 8-21) |  |  |  |
| Front-end development (React.js) | 6 | 8 | UI/UX Design, System Architecture |
| Back-end API development (Express, Java) | 10 | 8 | System Architecture |
| Database setup & integration (PostgreSQL) | 8 | 4 | System Architecture |
| User authentication & security features | 8 | 4 | API Development, Database Integration |
| Real-time updates & email notifications | 6 | 3 | API Development, Database Integration |
| Phase 4: Testing (Days 22-26) |  |  |  |
| Unit Testing (Each module) | 6 | 3 | Development Completed |
| Integration Testing | 4 | 2 | Unit Testing |
| User Acceptance Testing | 4 | 2 | Integration Testing |
| Phase 5: Deployment & Training (Days 27-30) |  |  |  |
| Deployment to production server | 4 | 2 | Successful Testing |
| System optimization & debugging | 4 | 2 | Deployment |
| User training & documentation | 4 | 2 | Deployment |
| Official system launch | 2 | 1 | Completion of all phases |

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| **Week 0** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
| P1 |  |  |  |  |  |  |  |  |  |  |
|  | P2 |  |  |  |  |  |  |  |  |  |
|  | P3 |  |  |  |  |  |  |  |  |  |
|  |  |  | P4 |  |  |  |  |  |  |  |
|  |  |  |  |  |  | P5 |  |  |  |  |
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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Week 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Rafer | P1 | P2, P3 | P2, P3 |  |  |  |  |  |  |  |
| Villamin |  | P2, P3 | P2, P3 |  |  |  |  |  |  |  |
| Obias |  | P2, P3 | P2, P3 |  |  |  |  |  |  |  |
| Tan |  | P2, P3 | P2, P3 |  |  |  |  |  |  |  |
| Canaria | P1 |  |  |  |  |  |  |  |  |  |
| San Juan | P1 | P1 |  |  |  |  |  |  |  |  |
| Dones | P1 |  |  |  |  |  |  |  |  |  |
| De Vera | P1 |  |  |  |  |  |  |  |  |  |
| Bamba | P1 |  |  |  |  |  |  |  |  |  |
| Salenga | P1 |  |  |  |  |  |  |  |  |  |

**XII. Conclusion**

The proposed Barangay Certification Request System holds significant promise for enhancing the efficiency and accessibility of certificate issuance within the barangay. By automating the appointment process, the system will eliminate manual scheduling, significantly reduce waiting times for residents, and minimize the potential for errors. This not only improves the overall experience for residents but also frees up barangay staff to focus on other essential tasks, leading to a more efficient and responsive service delivery. The implementation of this system represents a positive step towards modernizing barangay services and ensuring a more convenient and efficient experience for all stakeholders.