

**NBI Online Colleague Assistance and Case Progress System in
Regional office**

An
Application Development Project
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INTRODUCTION

Project Context

Introduction

Efficient communication is essential to remaining productive and organized in the demanding and fast-paced work world of today. Constant phone calls can seriously disturb the productivity of National Bureau of Investigation (NBI) secretaries, making it challenging for them to concentrate on job and efficiently manage their time. These calls, which frequently originate from coworkers looking for information or updates, present a constant problem, particularly after work or during breaks.

In order to tackle this problem, we suggest creating the NBI Online Colleague Assistance and Case Progress System in Regional office, an intuitive program that aims to simplify internal correspondence and minimize disturbances. Instead of making repeated phone calls, this system will act as a central location for coworkers to submit questions and requests pertaining to their assignments. The secretary can prioritize and manage requests in an orderly manner, responding to them at the right times without feeling overburdened, particularly during personal or non-working hours, by automating the process of delivering notifications.

In addition, the system enables the secretary to reply to inquiries and give status updates straight within the platform, guaranteeing that every query is answered promptly and openly. This method facilitates straightforward communication and retains a digital record of all exchanges, which makes task tracking and accountability easier. The NBI Online Colleague Assistance and Case Progress System in Regional office facilitates more seamless collaboration by centralizing and digitizing these conversations, giving the secretary greater control over her workload and fewer disruptions. In the end, this increases output and creates a more effective work atmosphere.

Objectives

The general objectives of the NBI Online Colleague Assistance and Case Progress System in Regional office are to improve internal

communication for the secretary of the National Bureau of Investigation. By providing a centralized platform for staff to submit their inquiries and manage tasks, the system aims to reduce interruptions to the secretary's workflow. It will help the secretary respond to requests more efficiently, encourage better teamwork, and ensure that all questions are addressed in a clear, organized, and timely manner.

While its specific objectives are:

- Develop a user-friendly and efficient platform for handling staff inquiries.
- Enable the NBI secretary to manage, prioritize, and respond to requests without constant interruptions from phone calls.
- Ensure all communication is documented and easily accessible within the system.
- Track tasks and provide updates in a timely and organized manner.
- Improve overall workflow and productivity through structured task management and efficient communication.

Scope and Limitation

The scope of the NBI Online Colleague Assistance and Case Progress System in Regional office is to enhance internal communication within the NBI office by facilitating consistent interactions between colleagues and the secretary. The system streamlines the management and prioritization of inquiries and requests, enabling the secretary to organize their workflow more effectively. By providing timely notifications about incoming queries, the platform reduces disruptive phone calls, allowing the secretary to maintain focus during work hours and personal time. It also enables prompt responses and updates within the application, ensuring transparency and creating a digital record of all communication for future reference. With a user-friendly interface, this system is specifically designed for internal use, fostering a more efficient and organized working environment.

However, the system does have limitations. It is designed solely for internal communication and is not intended for use by external clients or the general public. Furthermore, the scope is restricted to the NBI office in region 4B MIMAROPA, and its features may not be applicable in other regions without customization. The platform's functionality relies on stable internet connectivity,

meaning that any disruptions could hinder real-time notifications and responses. While it effectively addresses communication and tracking needs, it does not serve as a comprehensive case management tool for handling investigations or legal processes. Lastly, the system's success depends on user adoption among staff and the secretary, which may require initial training and a period of adaptation to ensure consistent usage.

Definition of Terms

Internal Communication Platform - The system's primary function as a centralized hub where NBI colleagues and the secretary can communicate, manage queries, and share updates without relying on phone calls.

Scalability - The system's capability to accommodate an increasing number of users, queries, and case updates as the NBI office's needs grow over time.

Auditability - A feature within the system that ensures all interactions, inquiries, and case updates are logged and can be reviewed for future reference or auditing purposes.

Data Storage - Refers to the system's ability to securely store all communication records and case progress information for up to five years, adhering to NBI policies.

Maintainability - The ease with which the system can be updated and modified to improve functionality or fix issues without causing significant disruptions to the workflow.

Data Privacy - The system's compliance with data protection laws, such as the Philippines Data Privacy Act, ensuring that all sensitive information handled within the platform is protected.

AES-256 Encryption - The security measure used within the system to protect sensitive case and client data by encrypting it with Advanced Encryption Standard (AES) at a 256-bit level, ensuring confidentiality.

Case Progress Updates - Information and reports entered into the system to track the status of cases handled by the NBI, providing transparency and accountability within the office.

Queries - Questions or requests submitted by NBI colleagues to the secretary via the platform, replacing the need for direct phone calls or in-person inquiries.

CHAPTER 2

REQUIREMENTS SPECIFICATION

Hardware and Software Requirements

Software Requirements

Operating System - Windows 10 or higher

Web Server - Apache 2.4 or higher

Database - MySQL 5.7 or higher / MariaDB 10.5 or higher

Backend Framework - Node.js 14 or higher

Frontend Technologies - Bootstrap 4 or higher

Programming Language - PHP 7.4 or higher

Functional Requirements

1. User Management
 - User Authentication - Users can sign up and log in using their email and password, verified from the User table with encrypted passwords.
 - User Profile Management - Users can view and update their personal information, like their contact details and address.
 - User availability - Help users to recognize if the admin or the secretary is in busy, active, idle and invisible.
2. Case Progress and Query Management
 - Case Query Submission - NBI colleague can submit queries or requests related to their ongoing cases through the system by uploading.
 - Query Tracking - Secretaries can track the status of each submitted query, including pending, resolved, or in-progress status.
 - Response Management - Secretaries can respond to case inquiries, providing real-time updates and maintaining communication logs.
3. Case Progress Reporting
 - Case Status Updates - Secretaries can update and track case statuses within the system, with cases marked as open, in-progress, or closed.
 - Progress Timeline - The system will display the case progress and communication history in a timeline format for easy reference.

4. Communication Management
 - Message Center - A platform for sending messages between secretaries and their colleagues.
 - File Attachments - Users can attach files, such as documents or images, to their messages or case updates for better communication.
5. Security
 - Data Encryption - Important information, like passwords and payment details, will be encrypted to keep it safe.
 - Activity Logs - The system will keep a record of all user activities to track who did what and when.
6. Accessibility and Usability
 - Mobile Compatibility - The platform will be mobile-friendly, so users can access it on their phones or tablets.
 - User-Friendly Interface - The system will have a user-friendly interface, making it easy for users to find what they need.

Non-Functional Requirements

Operational Requirements

Easy to Use - The system will be simple and built-in, so that NBI secretaries and colleagues can use it with minimal training.

Scalable - The system should be scalable to support the addition of new users, queries, and case progress updates.

Maintainability - The system will be designed to allow easy updates without causing major downtime.

Performance Requirements

Auditability - The system will keep records of all communication and case updates, so everything can be reviewed later if necessary.

Data Storage - All communication and case records will be kept for up to 5 years, following NBI rules.

Security Requirements

Security - Sensitive case and client information should be encrypted with AES-256.

Data Privacy - Ensure compliance with data protection laws such as the Philippines Data Privacy Act.

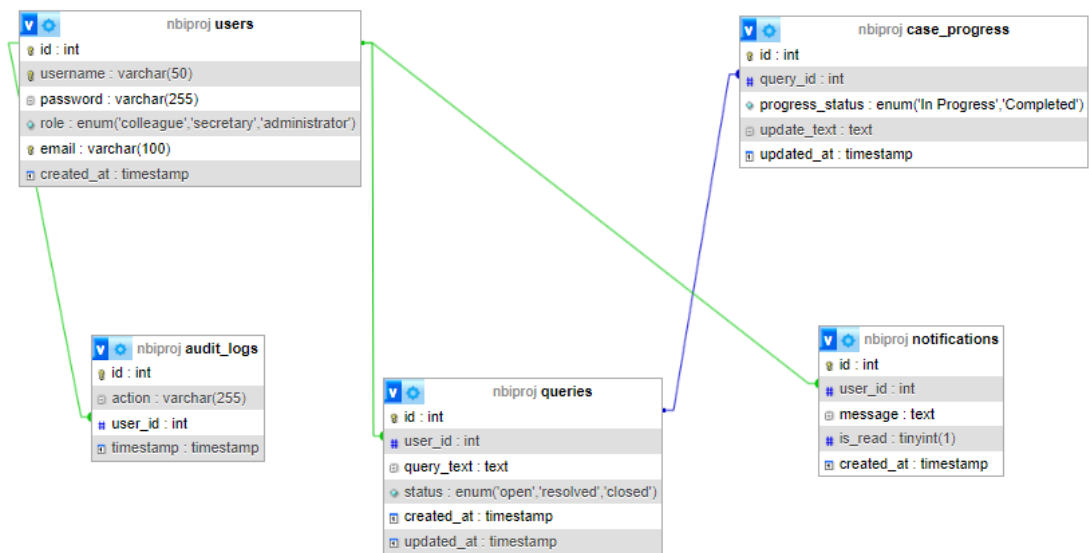
CHAPTER 3

DESIGN AND DEVELOPMENT METHODOLOGIES

System Design

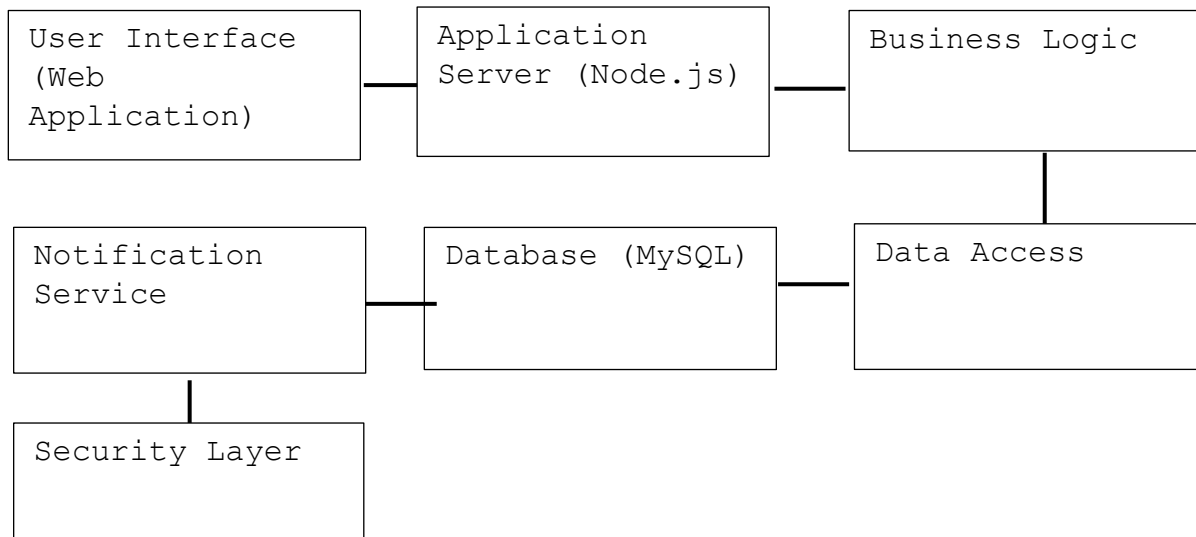
Database Design

The database design for the NBI Online Colleague Assistance and Case Progress System in the Regional Office is critical for efficiently managing data related to staff inquiries, case progress, and user interactions.



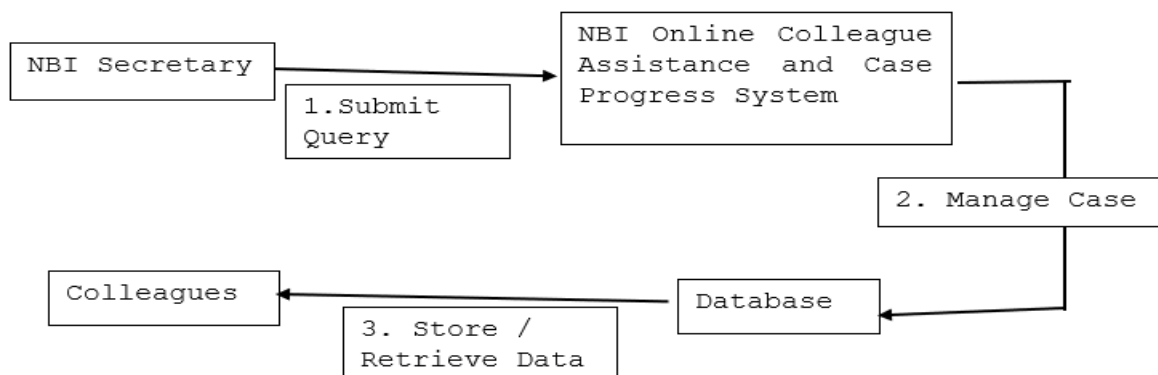
Architectural Diagram / Block

The architectural diagram for the NBI Online Colleague Assistance and Case Progress System in the Regional Office visually represents the structure and components of the system. It outlines how different modules interact with each other and the overall flow of data within the system.



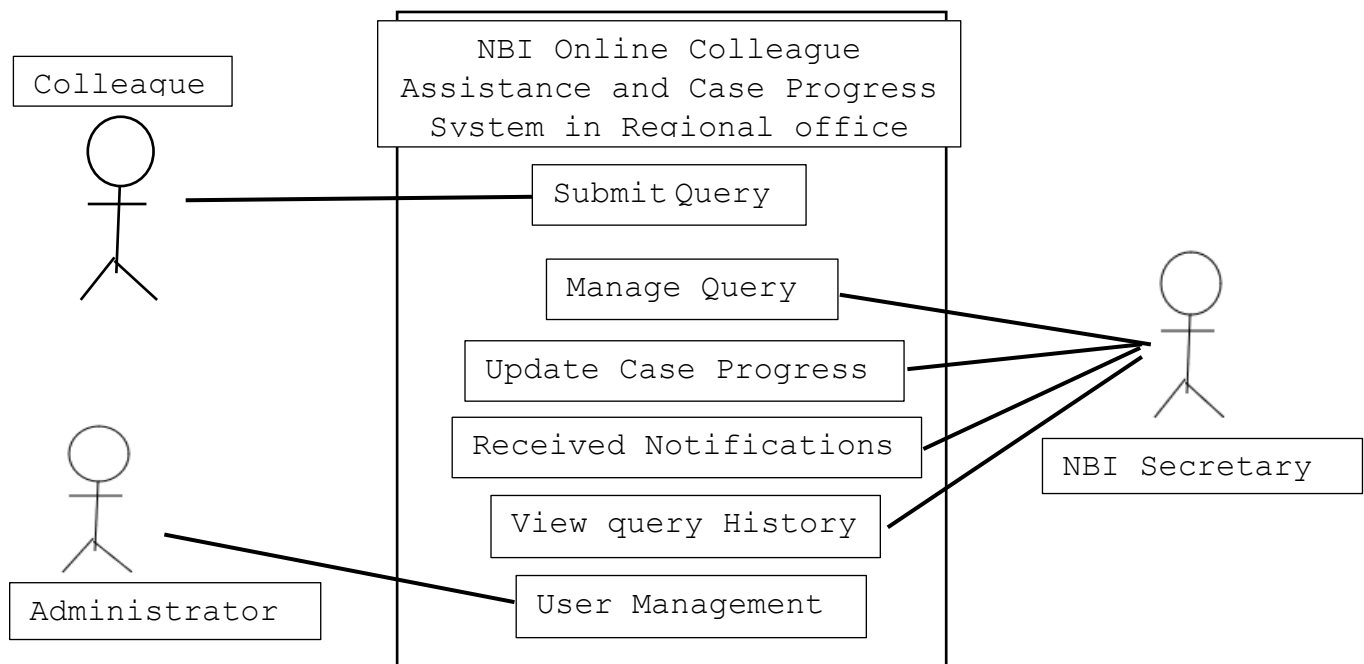
DFD Level 0

The Data Flow Diagram (DFD) Level 0, also known as a Context Diagram, provides a high-level overview of the NBI Online Colleague Assistance and Case Progress System in the Regional Office. It illustrates how the system interacts with external entities, the major data flows, and the system's boundary.



UML Use-Case Diagram

The UML Use Case Diagram for the NBI Online Colleague Assistance and Case Progress System in the Regional Office visually represents the system's functional requirements by illustrating the interactions between users (actors) and the system's functionalities (use cases). This diagram helps in understanding the system's operations from a user's perspective.



Project Methodology

Agile Development Methodology

The Agile Development Methodology is an iterative and incremental approach to software development that focuses on delivering functional parts of the system over short development cycles. We chose this method because it offers flexibility and allows us to adapt to changing needs throughout the project. This approach is ideal for the NBI Online Client Assistance and Case Progress System as it ensures the system evolves based on real-time feedback from the NBI secretaries and staff. Agile's iterative process helps deliver key features early, like query management and case tracking, while continuing to refine other areas. It also allows for seamless adjustments in line with evolving security standards, especially for sensitive data like case information.

Regular updates and transparent communication are central to Agile, ensuring that the system always aligns with user expectations, while providing the team with the ability to make improvements without causing major disruptions. This method not only keeps the project on track but also ensures the final product is user-friendly, efficient, and secure.

The Agile Manifesto (Fowler et al., 2019) emphasizes the importance of individuals and interactions, working software, customer collaboration, and responsiveness to change. These principles align directly with the needs of the NBI Online Client Assistance and Case Progress System, where the ability to adapt to the needs of secretaries and colleagues in real-time is crucial for improving internal communication and case management.

A recent study by Dikert, Paasivaara, and Lassenius (2019) highlights the success of Agile in environments that require frequent interaction between developers and end-users, ensuring that user feedback is incorporated into the development process. This is particularly relevant in government settings, where projects must evolve based on the practical needs of staff rather than assumptions made during initial planning.

Phases of Methodology

Agile development methodology phases in NBI Online Colleague Assistance and Case Progress are:

1. Project Planning - In this phase, the team defines the high-level goals, vision, and scope of the project. Gathering basic requirements, identify the main features, and understand the needs of the NBI secretaries and staff.
2. Requirements Gathering - Detailed requirements are collected. Regular interaction with the NBI secretaries will ensure that the system's features meet their needs, and any new requirements are integrated in future iterations.
3. Design - During this phase, the technical architecture and design of the system are created. This includes planning the user interface (UI) for a user-friendly experience, the database structure for managing case records, and the security mechanisms. The design is kept flexible to allow for future updates or changes.
4. Development - Build the system in short, iterative cycles (sprints), delivering small, functional parts after each sprint.
5. Testing - Both functional and non-functional testing are done here. Functional testing will focus on how the system manages

inquiries, while non-functional testing will address performance, security, and scalability.

6. Deployment - Gradually roll out system features, deploying usable parts while continuing development.
7. Review Feedback - Gather feedback at the end of each sprint, making adjustments based on user needs.
8. Maintenance - After deployment, provide ongoing updates, bug fixes, and improvements as needed.

Testing

Unit Testing - To ensure each feature behaves as expected and identifies bugs at the code level before integrating them with other system parts.

Integration Testing - To test the interaction between different system modules work together smoothly and that data flows properly between modules.

Functional Testing - To verify that the system performs its intended functions, such as handling staff queries, updating case progress, and sending notifications.

Security Testing - To ensure the system protects sensitive case and client information, preventing unauthorized access.

Performance Testing - To assess the system's speed, scalability, and stability under different load conditions.

ISO 25010 Evaluation

The ISO 25010 model is used to evaluate the quality of the NBI Online Client Assistance and Case Progress System, focusing on key attributes such as functionality, performance, usability, and security.

Respondents Profile

The selected respondents include NBI Regional Office secretaries and NBI colleagues who will be the primary users. This selection is strategic, ensuring that the feedback comes from individuals who frequently interact with the platform for internal communication and case management.

NBI Regional Office Secretary - are responsible for handling queries from colleagues, managing case progress, and ensuring smooth communication within the office.

NBI Colleagues - are the staff members who submit inquiries, track case progress, and rely on the system for updates.

Likert Scale

We used a 5-point Likert scale to gather user feedback on various aspects of the system. This is the scale and its corresponding interpretation.

TABLE 1. Likert Scale

Scale	Verbal Interpretation
5	Strongly Agree
4	Agree
3	Neutral
2	Disagree
1	Strongly Disagree

Evaluation Instrument

To gather feedback and evaluate the NBI Online Colleague Assistance and Case Progress System in the Regional Office, a survey questionnaire will be used.

Survey Questionnaire - The survey will use a Likert scale to measure user satisfaction and the system's efficiency in handling queries, managing case progress, and improving communication.