



Republic of the Philippines
Laguna State Polytechnic University
Province of Laguna



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CMSC 311 – Software Engineering Final Project

Client Appointment and Monitoring Management System for Laguna Parole and Probation Office with SMS Notification

Technical Documentation

Submitted to:

Ms. Micah Joy P. Formaran

Submitted by:

BSCS 3A-IS

Angeles, Khatrina B.

Lat, Betina Grace C

Montesa, Rosemarie D.

Pino, Renalyn N.

Teaño, Aedran Gabriel R.



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I. System Overview and Architecture

This study presents the development and evaluation of a web-based Client Appointment and Monitoring Management System with SMS Notification designed specifically for the Laguna Parole and Probation Office (LPPO) in Sta. Cruz, Laguna, a capstone project system originally developed by Gilbert C. Etalla, Jerwin R. Pontipendra, and Rana S. Edgar Jr.

Our goal on the other hand, is to enhance the system's overall performance, user interface and other features for the LPPO. With **Computer Science** implementation, this improved version aims to make client scheduling more efficient, reduce missed appointments and help staff manage records more effectively.

II. Summary of Enhancements and Rationale

We have implemented *more than (1) one* CS feature. Here is the summary:

Feature/Enhancement	CS Concept	What we did
LPPO Assistant Chatbot	<i>Machine Learning Algorithm</i>	This <i>simple chatbot</i> helps users interact with the system more efficiently compared to FAQ's with more limited information.
Email Code Verification OTP	<i>Security Enhancement</i>	Instead of using the usual XAMPP link for verification (as we've seen in the old system) <i>we implemented OTP for direct verification.</i> It's a more secure and convenient way for users to activate their account.
Real-time Search (Admin/Client)	<i>Automation</i>	As requested by the researchers, we created <i>real time search</i> , allowing users to see search results as they type. Helpful for fast data access.



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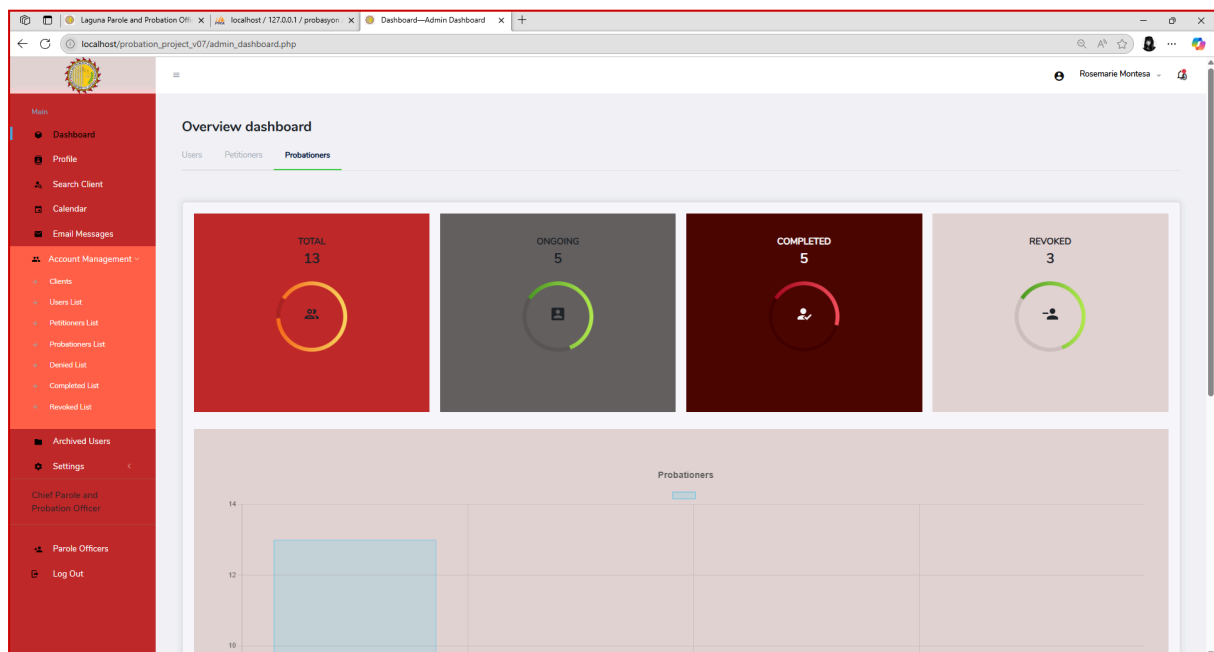
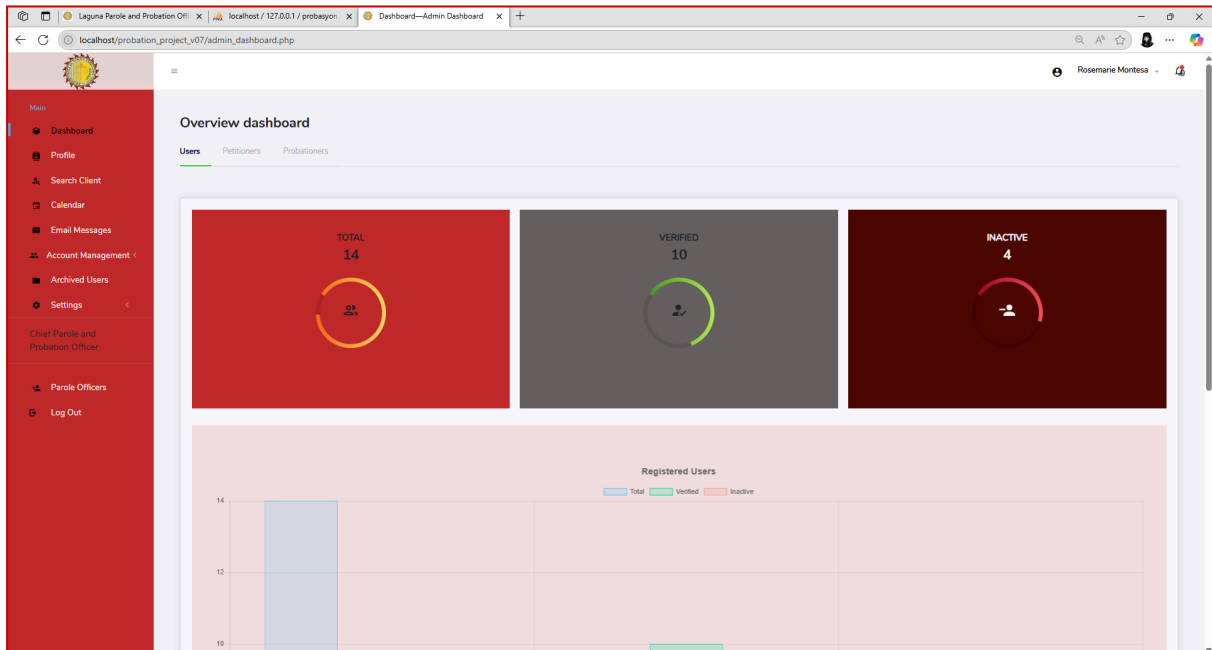
Automated Parole Assignment + Officer Panel	<i>Automation</i>	Also recommended by the researchers, the goal of this feature is to automatically assign clients to officers based on certain conditions like location.
Database Optimization (Officer, Area Assignment tables)	<i>Database Optimization</i>	We improved the database by adding normalized tables. We added tables and more queries for better data flow.
Email Recipient from API	<i>API Cloud Integration</i>	This connects to an external email API to handle email delivery. We use our own Gmail API , so we can have full access and control.
Assistant Bot Typing Animation	<i>UI/UX</i>	Just a basic animation , to make the chatbot look more interactive.
Toggle Password Visibility	<i>UI/UX</i>	Small UI improvement .
UI Redesign (Red-Yellow theme)	<i>UI/UX</i>	We changed the UI to match the formal tone needed for parole and probation work.
Client Status + Proper Message Popup	<i>Backend Management</i>	Improves the way users receive feedback on their actions.
CRUD Enhancement	<i>Backend Management</i>	The system doesn't have a complete set of CRUD so we added more CRUD functionality.
Denied and Revoked Sections	<i>Backend Management</i>	These features help organize user status better.
Archived User Section	<i>Backend Management</i>	We also added an archive accounts section so we can see inactive users easily.



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III. Updated UI/UX Screenshots (if applicable) - 100% Progress

UI/UX Red-Yellow Theme



The old design used overly pastel colors, which didn't align well with the serious and formal nature of parole and probation work. So, we changed the theme to a red and yellow color scheme to reflect a more formal and straightforward look.



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Requirements Name	Uploaded file	Date Uploaded	Status	Actions
Birth Certificate	Choose File No file chosen		no file	ACTION
Valid IDs	Choose File No file chosen		no file	ACTION
Talambuhay	Choose File No file chosen		no file	ACTION
Clearance	Choose File No file chosen		no file	ACTION
Case Information	Choose File No file chosen		no file	ACTION
Decision/Judgement	Choose File No file chosen		no file	ACTION

We improved the buttons, tables, hover effects, and the overall look of the system.

Search For Petitioner

Search By: First Name

Search: Search Here...

Note

If you cannot find the name of the Petitioner you are looking for, here are the possible reasons:

- Case not yet filed: The petition may not have been filed yet, or it might be in the process of being filed and hasn't been entered into the system. In such cases, the user would need to wait until the case is officially filed and processed before it becomes searchable.
- Incomplete or inaccurate search criteria: You may not be providing enough or accurate information to narrow down the search results.
- Case filed under a different name: The petitioner might have filed the case under a different name, such as their married name, nickname, or alias. If you are unaware of these alternative names, you may not be able to find the petitioner's record using their primary name alone.
- Technical issues: Technical glitches or downtime on the search platform could temporarily prevent the user from accessing or retrieving petitioner information.

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This interface shown is for both admin and client side.



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IV. Testing Approach and Results

LPPQ Assistant Bot



Ask our LPPQ Assistant

Type a question about probation and get an instant answer.

Assistant: maaari kang magbasa pa sa pamamagitan ng [pag-click dito](#). / You can read more by [clicking here](#).

Ikaw: Ano ang probation?
Assistant: Probation ay pribilehiyo na ibinibigay ng korte sa isang taong nahatulan para manatili sa komunidad sa halip na makulong. / Probation is a privilege granted by the court allowing a convicted person to remain in the community instead of going to jail.

Assistant is typing..

Ask

Ano ang probation?

What is probation?

Ano ang mga benepisyo ng probation?

What are the benefits of probation?

Sino ang pwedeng mag-apply ng probation?

Who can apply for probation?

Gaano katagal ang probation?


How long is probation?

Ano ang mangyayari kapag nilabag ang probation?

What happens if probation is violated?

Saan ako makakabasa ng PDF?

Where can I read more?



Ask our LPPQ Assistant

Type a question about probation and get an instant answer.

Ikaw: What happens if probation is violated?
Assistant: Probation ay pribilehiyo na ibinibigay ng korte sa isang taong nahatulan para manatili sa komunidad sa halip na makulong. / Probation is a privilege granted by the court allowing a convicted person to remain in the community instead of going to jail.

Ikaw: Saan ako makakabasa ng PDF?
Assistant: Maaari kang magbasa pa sa pamamagitan ng [pag-click dito](#). / You can read more by [clicking here](#).

Ask

Ano ang probation?

What is probation?

Ano ang mga benepisyo ng probation?

What are the benefits of probation?

Sino ang pwedeng mag-apply ng probation?

Who can apply for probation?

Gaano katagal ang probation?

How long is probation?

Ano ang mangyayari kapag nilabag ang probation?

What happens if probation is violated?

Saan ako makakabasa ng PDF?

Where can I read more?

Here, the user can type simple questions and concerns about probation.



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Real-Time Search (For Admin)

The screenshot shows the Admin Real-Time Search interface. The left sidebar contains a navigation menu with options: Dashboard, Profile, Search Client, Calendar, Email Messages, Account Management, Archived Users, Settings, Chief Parole and Probation Officer, Parole Officers, and Log Out. The main content area is titled "Dashboard" and "Search Account". It features a search form with a "Search:" input field containing "Wa", a "Search By:" dropdown menu set to "First Name", and a table of search results.

First Name	Middle Name	Last Name	Suffix	Alias	Case Number	Status	Actions
Wanda		Maximoff		Scarlet Witch	57132	pending	ACTION -
Warito		Toledo		Waway	4040	denied	ACTION -

Real-Time Search (For Client)

The screenshot shows the Client Real-Time Search interface. The left sidebar contains a navigation menu with options: Dashboard, Profile, and Settings. The main content area is titled "Dashboard" and "Search For Petitioner". It features a search form with a "Search By:" dropdown menu set to "First Name", a "Search:" input field containing "marc", and a table of search results.

First Name	Middle Name	Last Name	Suffix	Alias	Case Number	Action
Ma**		Sp*****		Moon Knight	62***	ADD AS CLIENT
Ma*****		Ann*		Baby Ama	19***	ADD AS CLIENT

Note

If you cannot find the name of the Petitioner you are looking for, here are the possible reasons:

- > Case not yet filed: The petition may not have been filed yet, or it might be in the process of being filed and hasn't been entered into the system. In such cases, the user would need to wait until the case is officially filed and processed before it becomes searchable.
- > Incomplete or inaccurate search criteria: You may not be providing enough or accurate information to narrow down the search results.
- > Case filed under a different name: The petitioner might have filed the case under a different name, such as their married name, nickname, or alias. If you are unaware of these alternative names, you may not be able to find the petitioner's record using their primary name alone.
- > Technical issues: Technical glitches or downtime on the search platform could temporarily prevent the user from accessing or retrieving petitioner information.

As recommended by the researcher, we replaced the previous method of clicking names and waiting for results with a real-time search feature. Now, users can simply type and instantly see the results, making the process faster and more convenient.



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Email Creation - Registration Form

Registration Form

First Name: Alice, Middle Name: Grey, Last Name: Reyes, Suffix: Select

Email: phynomehersley@gmail.com, Mobile No.: 09327214162

Password: [masked], Confirm Password: [masked]

[Register](#)

Already have an account? [Login now](#)

User registration panel.

Your Account Verification Code

Laguna Parole and Probation Office Administrator <montesarose@gmail.com>

Thank you Alice, for registering.
To activate your account, please enter this code on the website:

875926

[Reply](#) [Forward](#) [AI Reply](#)

This is Email API Integration. Now, after clicking the registration, a code will be sent to their email. This code will then be used to verify and activate their account. Instead of clicking the xampp link which is less secure, the user can just type the code directly on the website and the process will continue smoothly.

Old system email:

Thank you Peter, for registering.
To activate your account, please click on this link:

http://localhost/probation_project_v07/activate.php?c=phynomehersley%40gmail.com&y=cca4b9112129cbe1869358215a2f69d8

[Reply](#) [Forward](#) [AI Reply](#)



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Email Verification

Enter the 6-digit code sent to your email:

875926

Verify

Now the user will just type the code to directly activate their account.

Account Activated!

Your account has been successfully activated. You may now log in.

Go to Login

Now, a new account has been activated.



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Automated Parole Assignment

Add Officer

Full Name:

Email Address:

Mobile Number:

Position:

Municipality:

ADD OFFICER

Officer List

Name	Email	Mobile Number	Position	Municipality	Actions
Carlos Flores	marcotomres.pila@laguna.gov.ph	09311253496	Probation and Parole Officer 1	Pila	Edit Delete
Ma. Grace Tan	ma.gracetan.luisiana@laguna.gov.ph	09543478865	Probation and Parole Officer 2	Luisiana	Edit Delete
Andres Garcia	andresgarcia.liliw@laguna.gov.ph	09959861832	Administrative Aide IV	Liliw	Edit Delete
Andres Alcaraz	andresalcaraz.lumban@laguna.gov.ph	09894401905	Locale Officer	Lumban	Edit Delete

We added Parole Officer Panel, so we can easily add, update or assign parole instead of manually adding them on SQL database. This way, we can easily assign parole based on their municipality/location.

So for example we are assigning based on Pila.

Edit Officer

Full Name:

Email Address:

Mobile Number:

Position:

Municipality:

UPDATE OFFICER **Cancel**

Officer List

Name	Email	Mobile Number	Position	Municipality	Actions
Carlos Flores	marcotomres.pila@laguna.gov.ph	09311253496	Probation and Parole Officer 1	Pila	Edit Delete
Ma. Grace Tan	ma.gracetan.luisiana@laguna.gov.ph	09543478865	Probation and Parole Officer 2	Luisiana	Edit Delete
Andres Garcia	andresgarcia.liliw@laguna.gov.ph	09959861832	Administrative Aide IV	Liliw	Edit Delete
Andres Alcaraz	andresalcaraz.lumban@laguna.gov.ph	09894401905	Locale Officer	Lumban	Edit Delete



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Since user is from that location, there is a specific parole officer assigned there automatically.

The screenshot shows the 'Add Petitioner' form in a web application. The form is titled 'Add Petitioner' and contains sections for Personal Information, Address, Assigned Parole Officer, and Additional Information. A dropdown menu for 'Select Municipality' is open, showing a list of municipalities including Pila, which is highlighted. The form fields include First Name (Sophia), Middle Name (Enter middle name), Suffix (Jr.), Alias (Soping), Street (Purok 2), Barangay (San Antonio), Email Address, Mobile Number, Date of Birth, Case Number, Gender, and a Choose option (PDL, BAILED). A red 'ADD PETITIONER' button is at the bottom.

So when we click Pila, the assigned parole there is automatically listed.

The screenshot shows the 'Address' section of the 'Add Petitioner' form. It shows the Street (Purok 2), Barangay (San Antonio), and Municipality (Pila) fields. Below these, the 'Assigned Parole Officer' field shows 'Carlos Flores'.

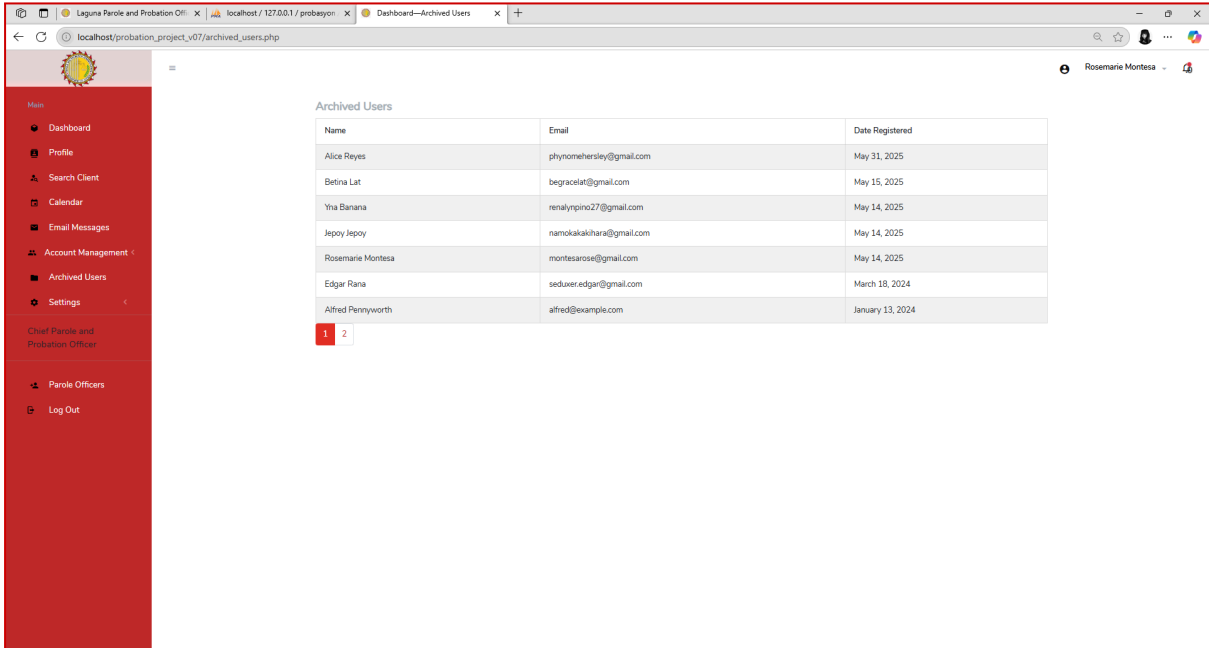
This is based on what we added on the Parole Officer panel. We connected those databases to make this feature work correctly since syncing them both in area assignment was kind of challenging. So, in order to assign more parole officers, it's up to the admin to add them to the panel, and this will automatically reflect on the system.



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ADDITIONAL SECTIONS (BACKEND MANAGEMENT):

Archive Accounts



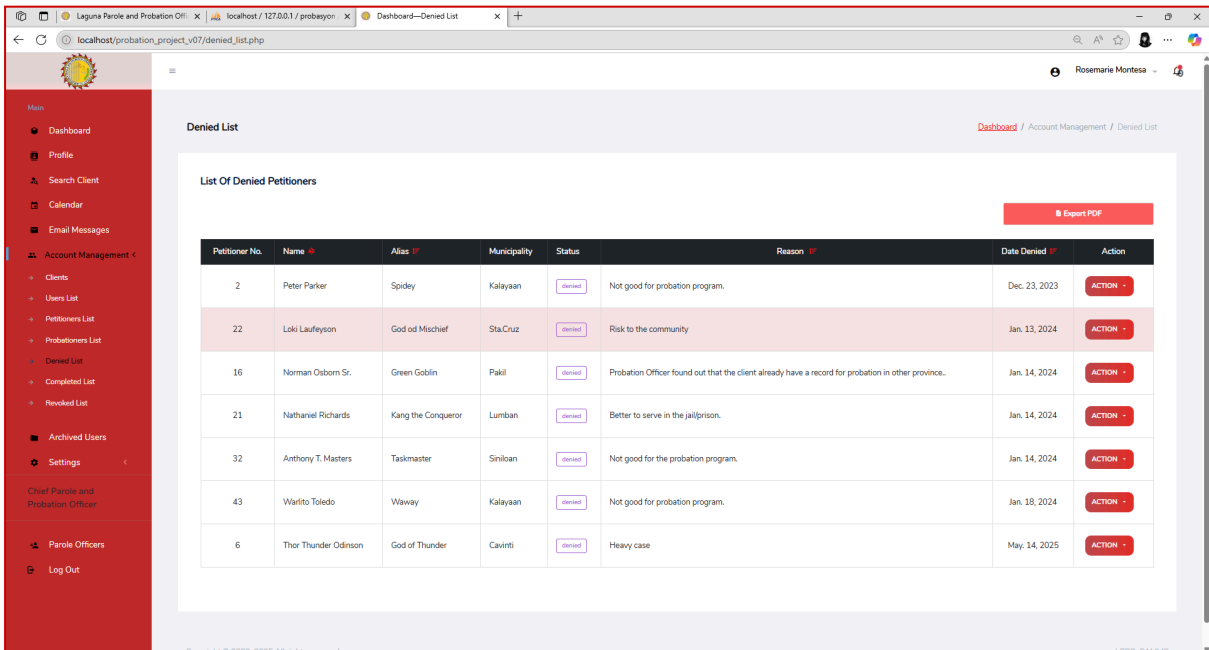
The screenshot shows a web application interface for 'Laguna Parole and Probation Office'. The left sidebar contains a menu with options: Dashboard, Profile, Search Client, Calendar, Email Messages, Account Management, Archived Users (selected), and Settings. The main content area is titled 'Archived Users' and displays a table with the following data:

Name	Email	Date Registered
Alice Reyes	phynomeherley@gmail.com	May 31, 2025
Betina Lat	begracelat@gmail.com	May 15, 2025
Yna Banana	renalypino27@gmail.com	May 14, 2025
Jepoy Jepoy	namokakakihara@gmail.com	May 14, 2025
Rosemarie Montesa	montesarose@gmail.com	May 14, 2025
Edgar Rana	seduer.edgar@gmail.com	March 18, 2024
Alfred Pennyworth	alfred@example.com	January 13, 2024

At the bottom of the table, there are two red buttons labeled '1' and '2'.

It was also recommended by the researchers to implement a feature that tracks user inactivity.

Denied Reason Section



The screenshot shows a web application interface for 'Laguna Parole and Probation Office'. The left sidebar contains a menu with options: Dashboard, Profile, Search Client, Calendar, Email Messages, Account Management, Denied List (selected), and Settings. The main content area is titled 'Denied List' and displays a table with the following data:

Petitioner No.	Name	Alias	Municipality	Status	Reason	Date Denied	Action
2	Peter Parker	Spidey	Kalayaan	denied	Not good for probation program.	Dec. 23, 2023	ACTION
22	Loki Laufeyson	God of Mischief	Sta.Cruz	denied	Risk to the community	Jan. 13, 2024	ACTION
16	Norman Osborn Sr.	Green Goblin	Pakil	denied	Probation Officer found out that the client already have a record for probation in other province..	Jan. 14, 2024	ACTION
21	Nathaniel Richards	Kang the Conqueror	Lumban	denied	Better to serve in the jail/prison.	Jan. 14, 2024	ACTION
32	Anthony T. Masters	Taskmaster	Sinloan	denied	Not good for the probation program.	Jan. 14, 2024	ACTION
43	Warito Toledo	Waway	Kalayaan	denied	Not good for probation program.	Jan. 18, 2024	ACTION
6	Ther Thunder Odinson	God of Thunder	Cavinti	denied	Heavy case	May. 14, 2025	ACTION

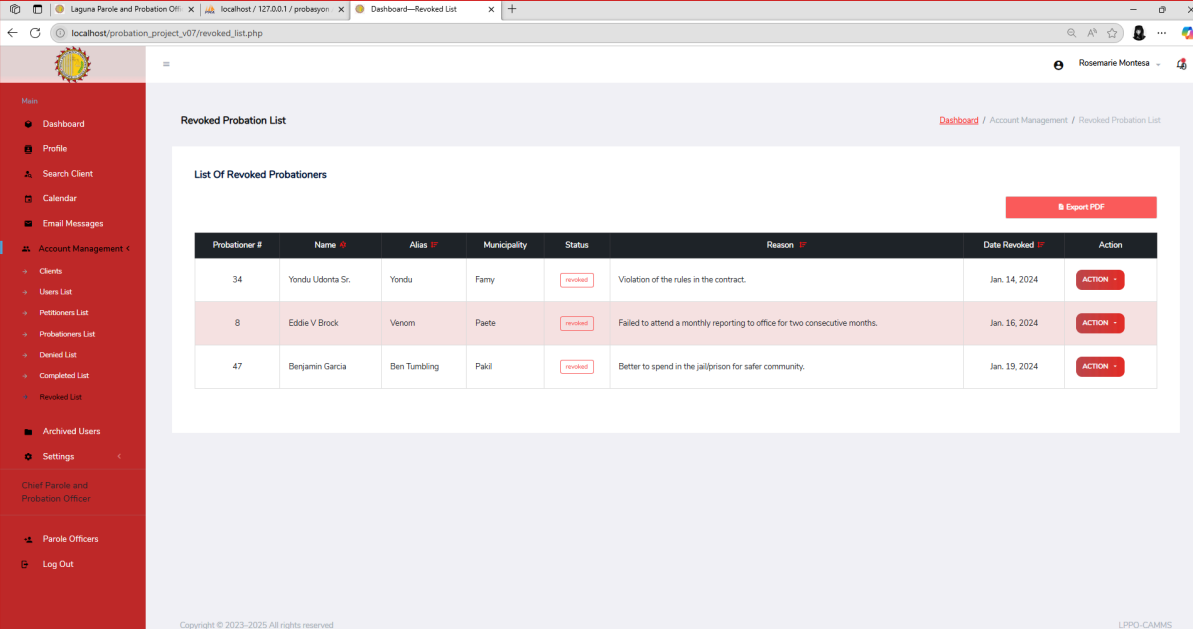
At the top right of the table, there is a red button labeled 'Export PDF'.

Here we added the Reason Section why users get denied.



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Revoked Reason Section

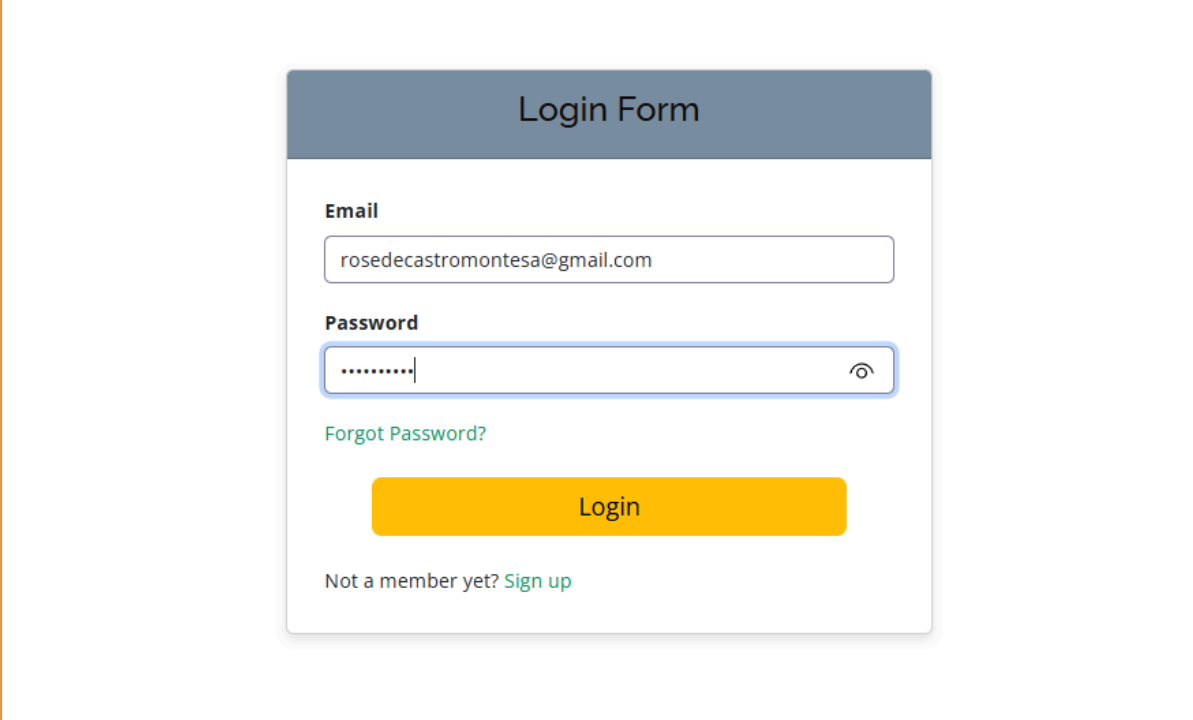


The screenshot shows a web application interface for the 'Revoked Probation List'. The left sidebar contains a menu with options like Dashboard, Profile, Search Client, Calendar, Email Messages, Account Management, Archived Users, Settings, Chief Parole and Probation Officer, Parole Officers, and Log Out. The main content area is titled 'Revoked Probation List' and includes a breadcrumb trail: Dashboard / Account Management / Revoked Probation List. Below the title is a section 'List Of Revoked Probationers' with an 'Export PDF' button. A table lists three probationers with columns for Probationer #, Name, Alias, Municipality, Status, Reason, Date Revoked, and Action.

Probationer #	Name	Alias	Municipality	Status	Reason	Date Revoked	Action
34	Yondu Udonta Sr.	Yondu	Famy	revoked	Violation of the rules in the contract.	Jan. 14, 2024	ACTION
8	Eddie V Brock	Venom	Paete	revoked	Failed to attend a monthly reporting to office for two consecutive months.	Jan. 16, 2024	ACTION
47	Benjamin Garcia	Ben Tumbling	Pakil	revoked	Better to spend in the jail/prison for safer community.	Jan. 19, 2024	ACTION

Here we added the Reason Section why users get revoked.

Toggle Password Visibility

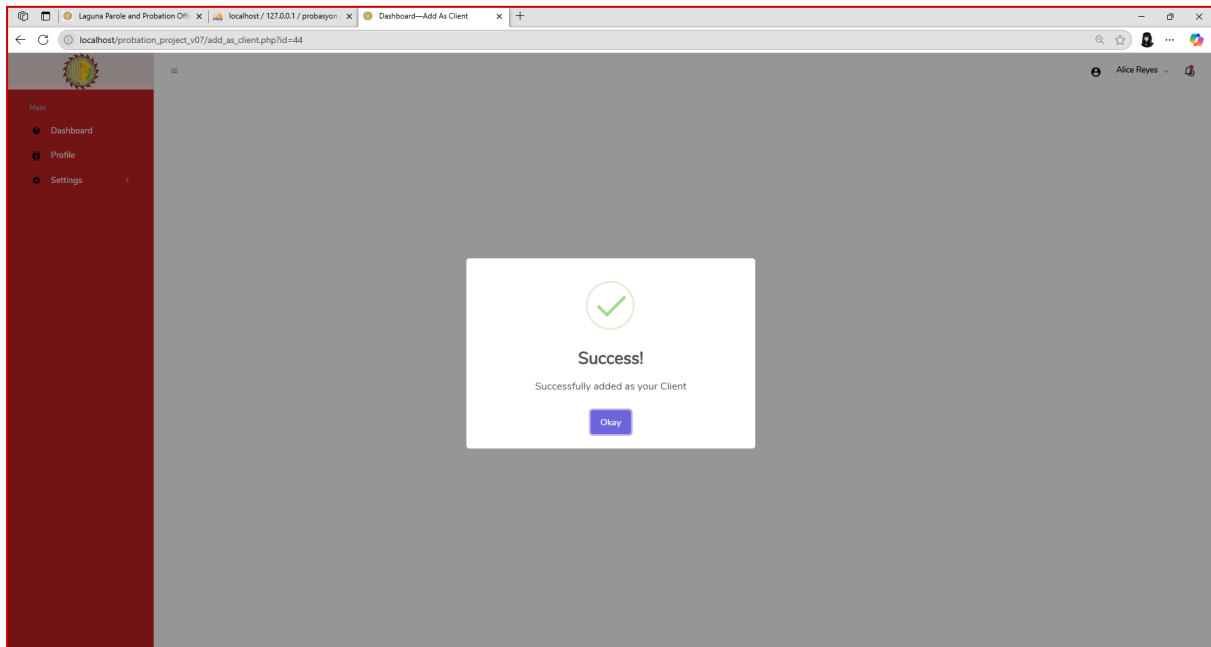


The image shows a 'Login Form' with a dark blue header. It contains an 'Email' field with the text 'rosedecastromontesa@gmail.com' and a 'Password' field with masked characters '.....'. A toggle icon (an eye) is visible next to the password field. Below the password field is a link 'Forgot Password?'. A yellow 'Login' button is positioned below the links. At the bottom, there is a link 'Not a member yet? Sign up'.

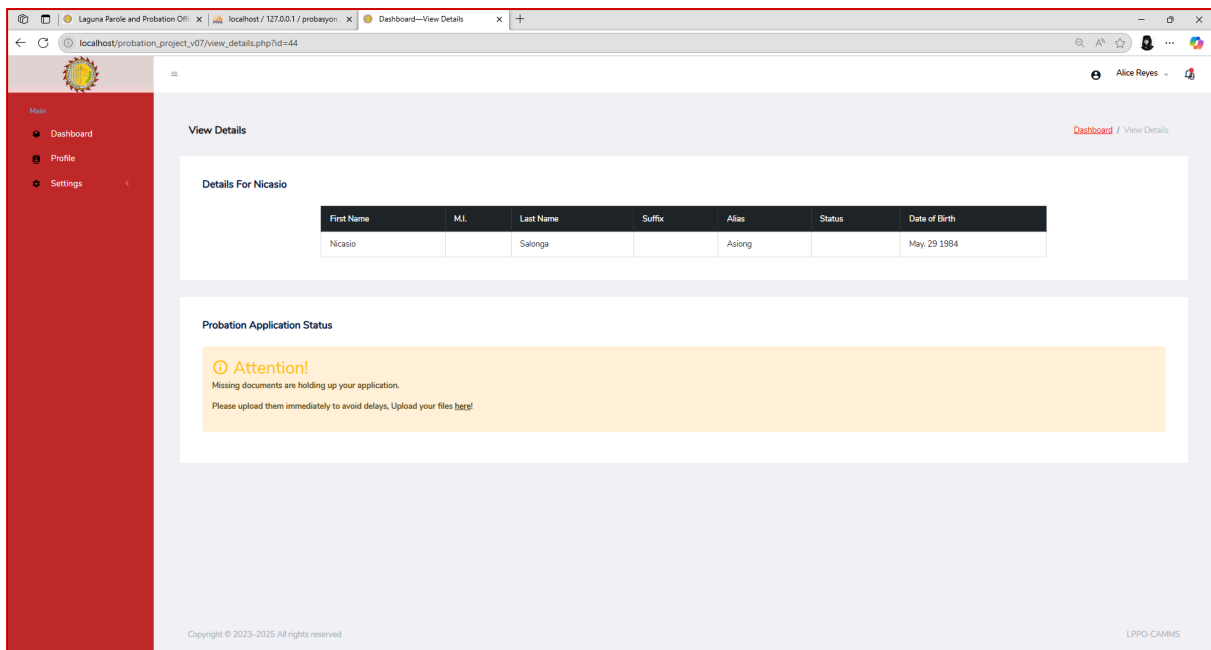


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Proper Message Popup



Status of the Client



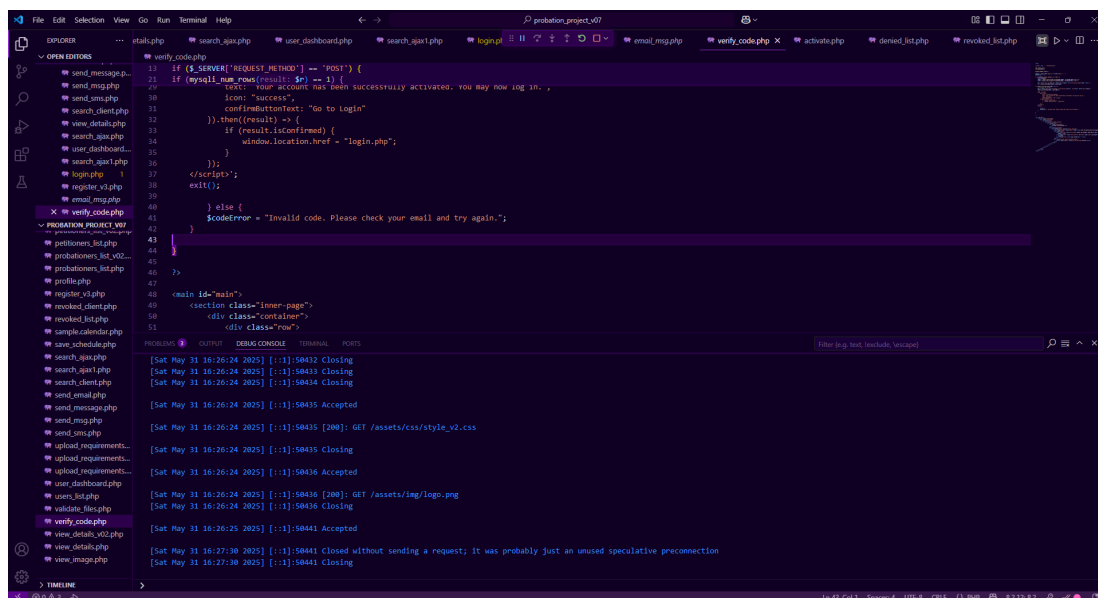
We also added a client status feature since the old system didn't have that section. This way, users can easily see each client's current status.



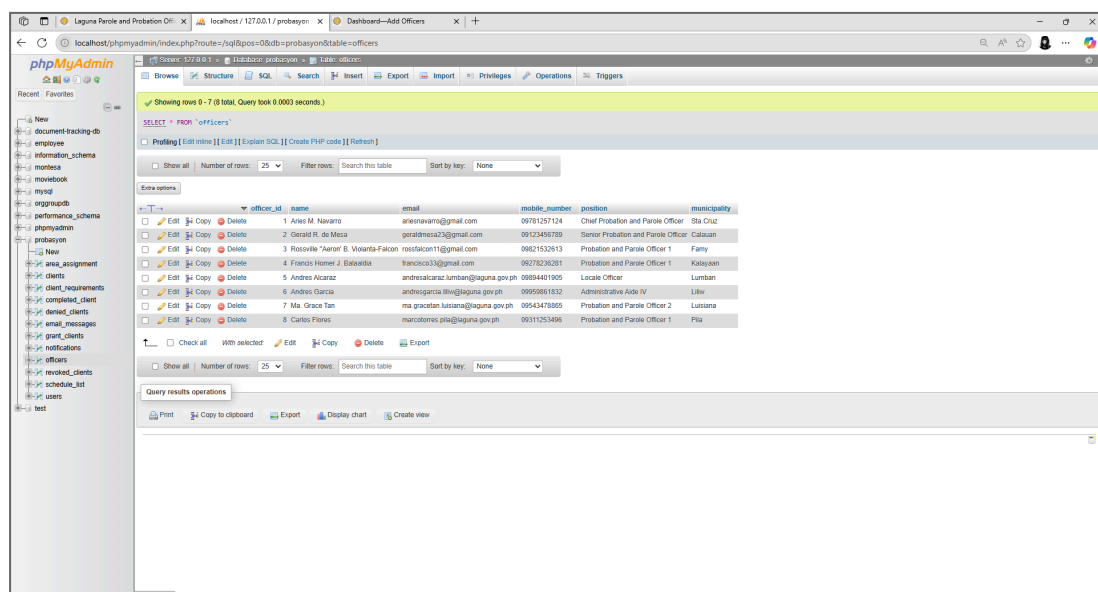
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V. Technologies and Frameworks Used

- Visual Studio – for system development
- XAMPP – to run the local server environment
- MySQL – for storing the system's database
- phpMyAdmin – for managing the database through a web interface

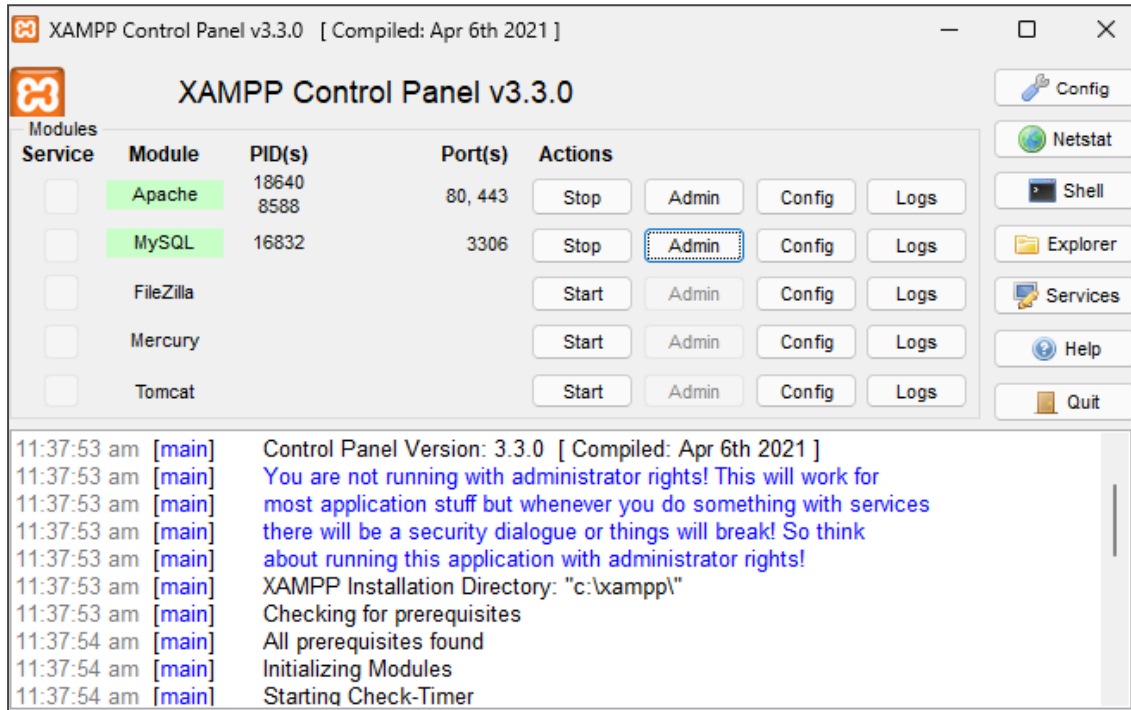


SQL DATABASE (with added tables)





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VI. Developer Notes / Installation Instructions

a. System Requirements:

- OS: Windows 10 or later
- RAM: At least 4GB
- XAMPP (PHP 7.4+ and MySQL)
- Visual Studio (2019 or later)
- Web browser (Chrome or Firefox recommended)

b. Installation Steps:

1. Download and install **XAMPP**.



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2. Open the **XAMPP Control Panel**, then start **Apache** and **MySQL**.
3. Copy the project folder to the following directory:
`C:\xampp\htdocs\probation_project_v07`
4. Open your browser and go to `localhost/phpmyadmin`.
5. Create a new database (e.g., `probation_db`).
6. Click **Import** and select the `.sql` file from the project folder to load the database.
7. Open the project in **Visual Studio**.
8. Check the database connection string in your config files (if needed, update it to match your MySQL settings).
9. Run the project via browser at `http://localhost/probation_project_v07`.

c. Default Login (for testing):

- **Create your own account:**
 - Username: `sample@gmail.com`
 - Password: `Sample@123`

A verification code will be sent to you in your email to activate your account.

d. Developer Notes:

- *Always make sure PHP and MySQL versions are compatible.*
- *You can edit the Main CSS design under template not the Assets one (under Assets are for selected designs only)*
- *Keep your database and source code in sync if changes are made.*
- *Follow consistent naming conventions in database fields.*