Republic of the Philippines
Laguna State Polytechnic University
Province of Laguna

COLLEGE OF COMPUTER STUDIES

CMSC 311 – Software Engineering
Final Project

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

Technical Documentation

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

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Automated Parole Assignment + Officer Panel	*Automation*	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)	*Database Optimization*	We improved the database by adding normalized tables. We ***added tables*** and ***more queries*** for better data flow.
Email Recipient from API	*API Cloud Integration*	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	*UI/UX*	Just a ***basic animation***, to make the chatbot look more interactive.
Toggle Password Visibility	*UI/UX*	Small ***UI improvement***.
UI Redesign (Red-Yellow theme)	*UI/UX*	We changed the ***UI to match the formal tone*** needed for parole and probation work.
Client Status + Proper Message Popup	*Backend Management*	Improves the way users receive feedback on their actions.
CRUD Enhancement	*Backend Management*	The system doesn't have a complete set of ***CRUD*** so we added more CRUD functionality.
Denied and Revoked Sections	*Backend Management*	These features help organize user status better.
Archived User Section	*Backend Management*	We also added an archive ***accounts*** section so we can see inactive users easily.

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

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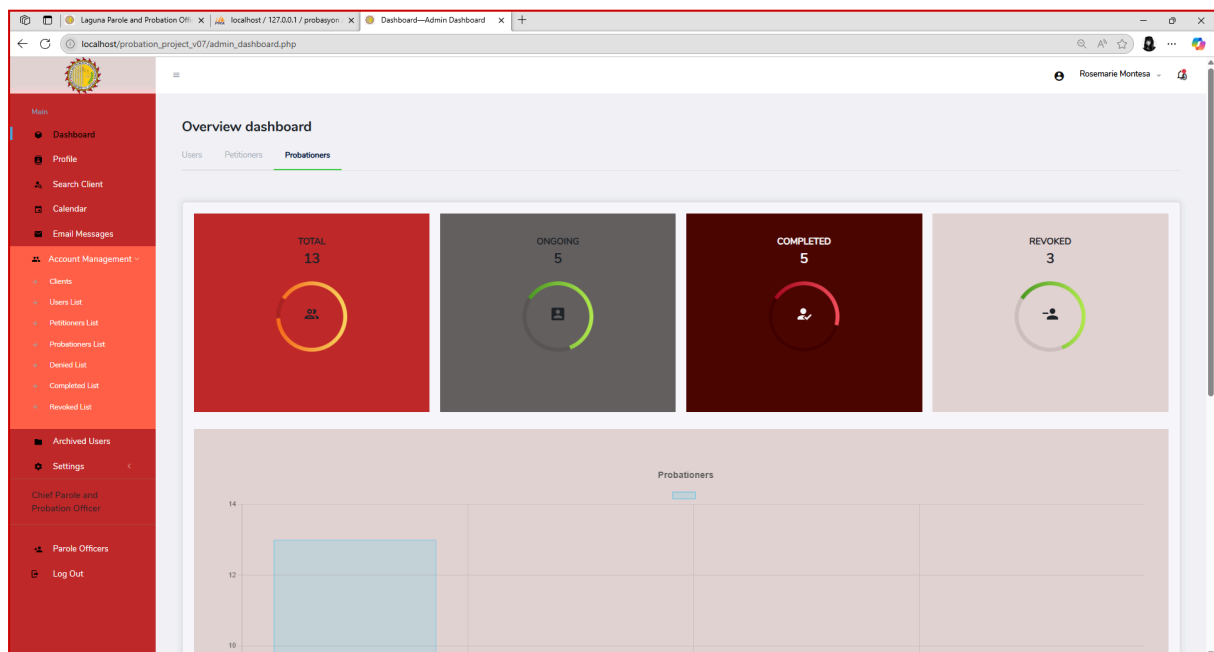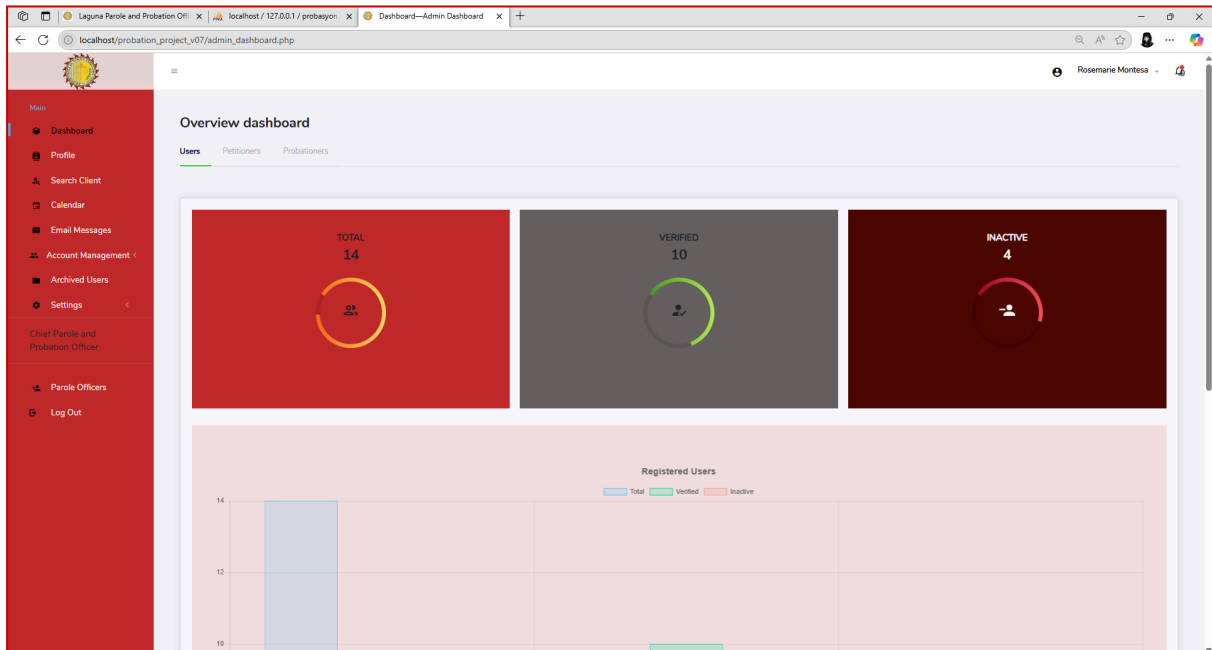
The old design used overly pastel colors, which didn't align well with the serious and formal nature of parole and probation work. So, we changed the theme to a red and yellow color scheme to reflect a more formal and straightforward look.

4

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

This interface shown is for both admin and client side.

5

IV. Testing Approach and Results

LPPO Assistant Bot

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

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Real-Time Search (For Admin)

Real-Time Search (For Client)

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.

Email Creation - Registration Form

User registration panel.

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:

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

Now, a new account has been activated.

Automated Parole Assignment

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.

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

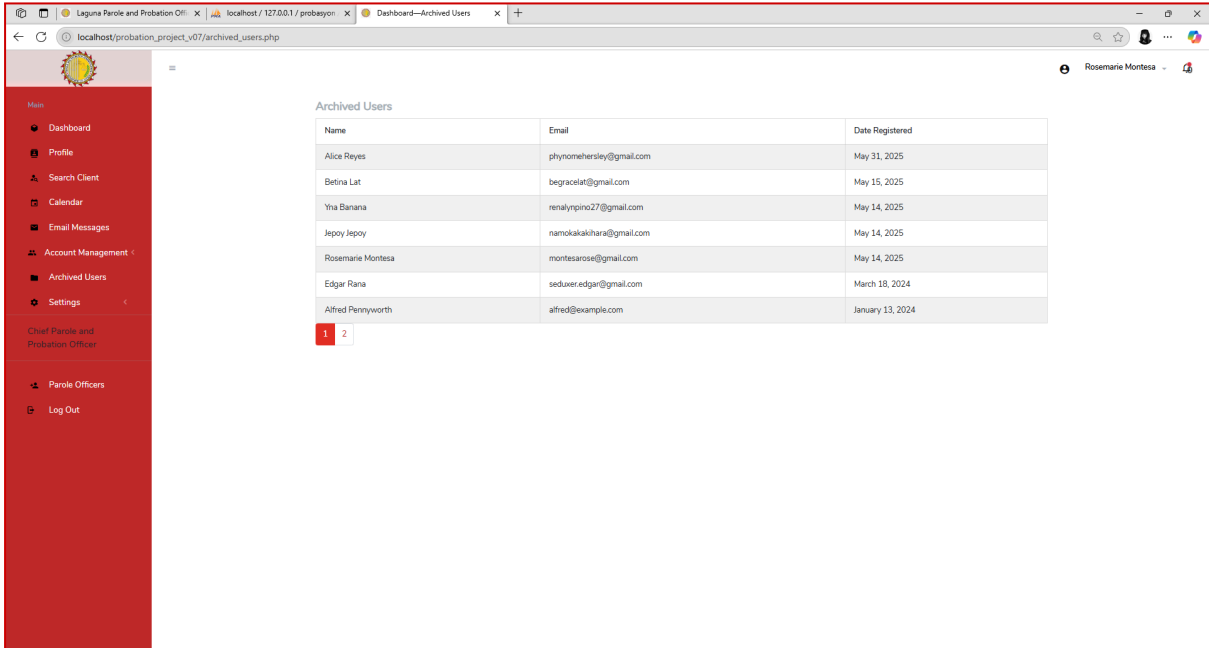*So when we click Pila, the assigned parole there is automatically listed.*

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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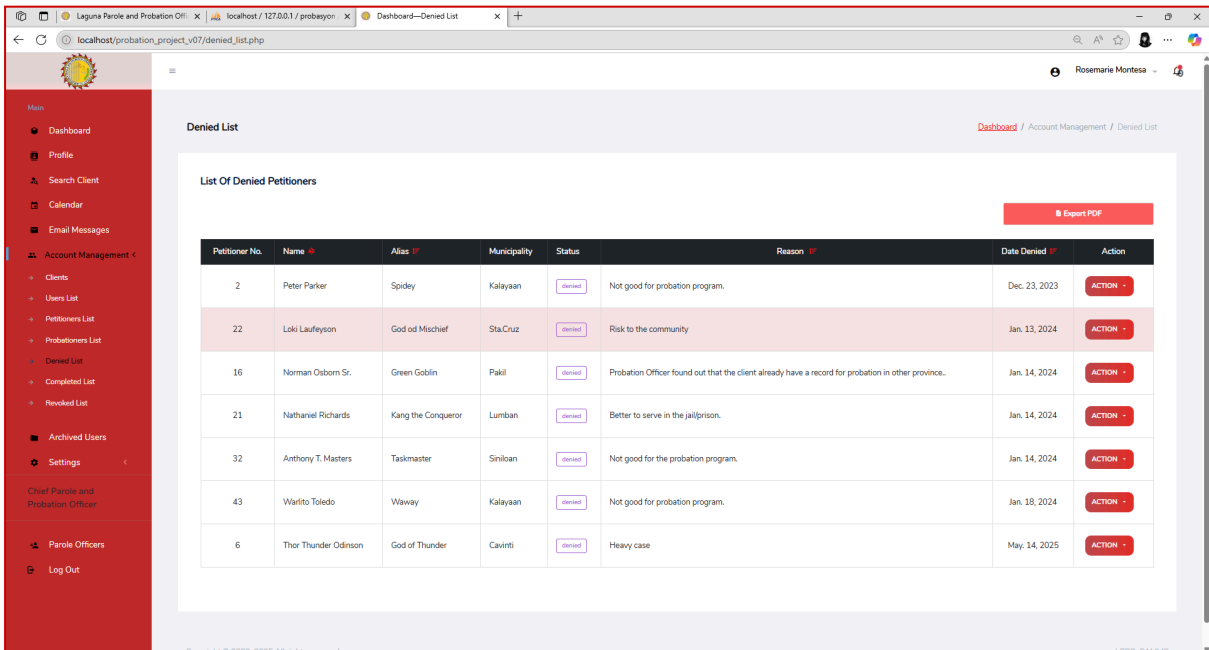**ADDITIONAL SECTIONS (BACKEND MANAGEMENT):**

Archive Accounts

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

Denied Reason Section

Here we added the Reason Section why users get denied.

12

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Revoked Reason Section

Here we added the Reason Section why users get revoked.

Toggle Password Visibility

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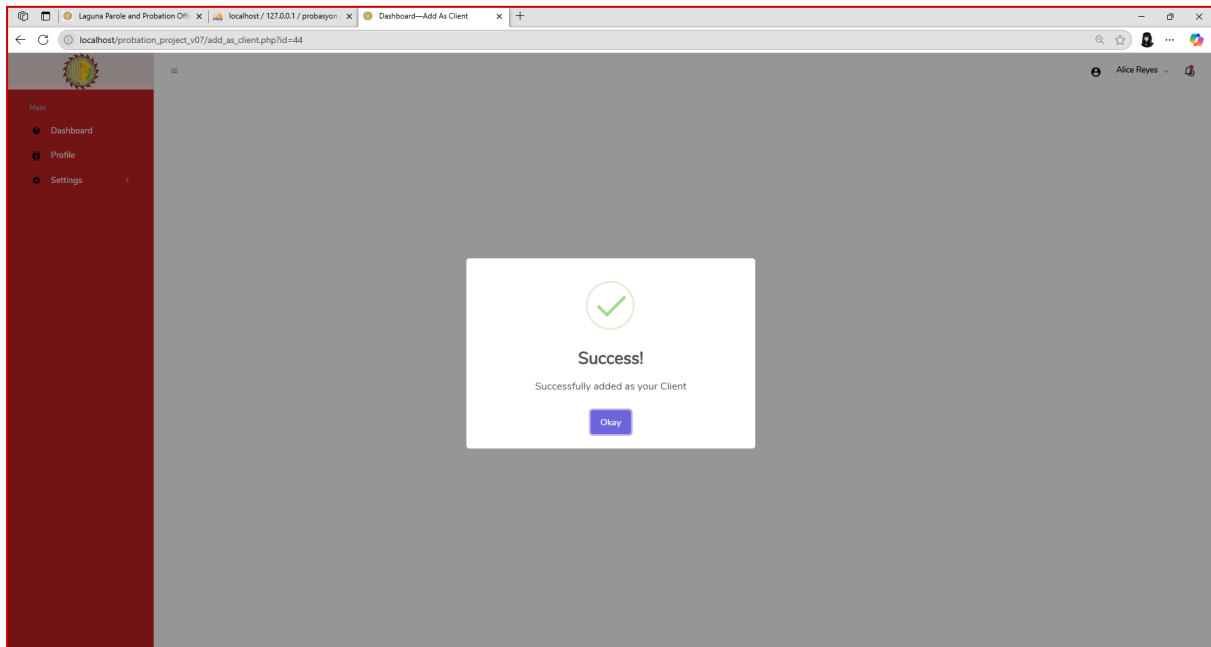
Status of the Client
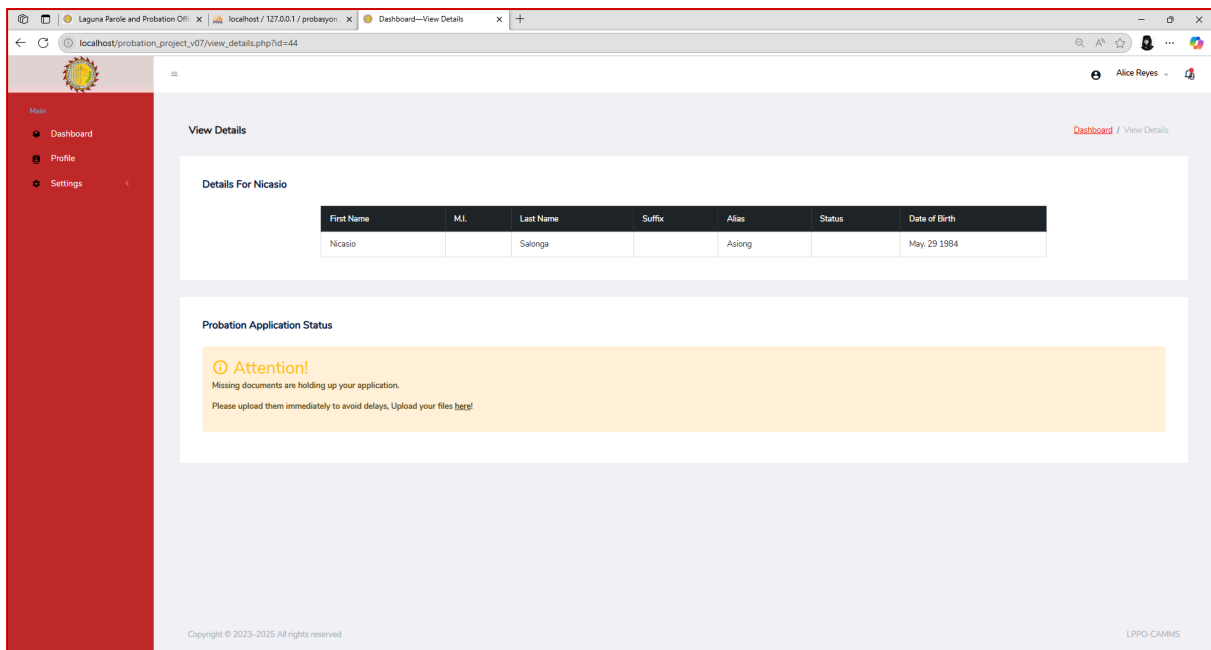
We also added a client status feature since the old system didn't have that section. This way, users can easily see each client's current status.

14

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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
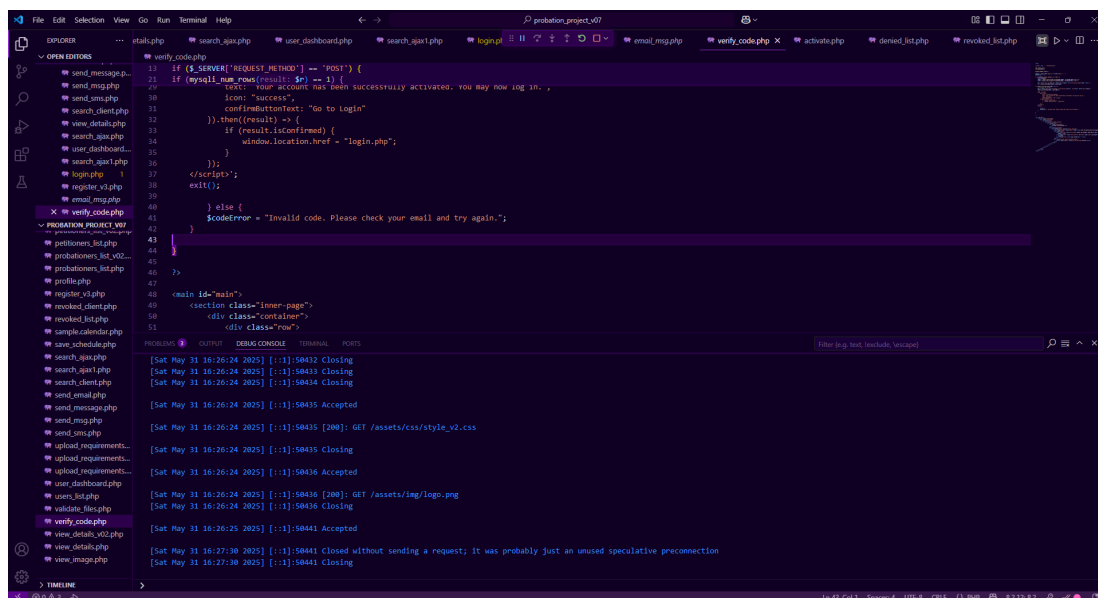
SQL DATABASE (with added tables)
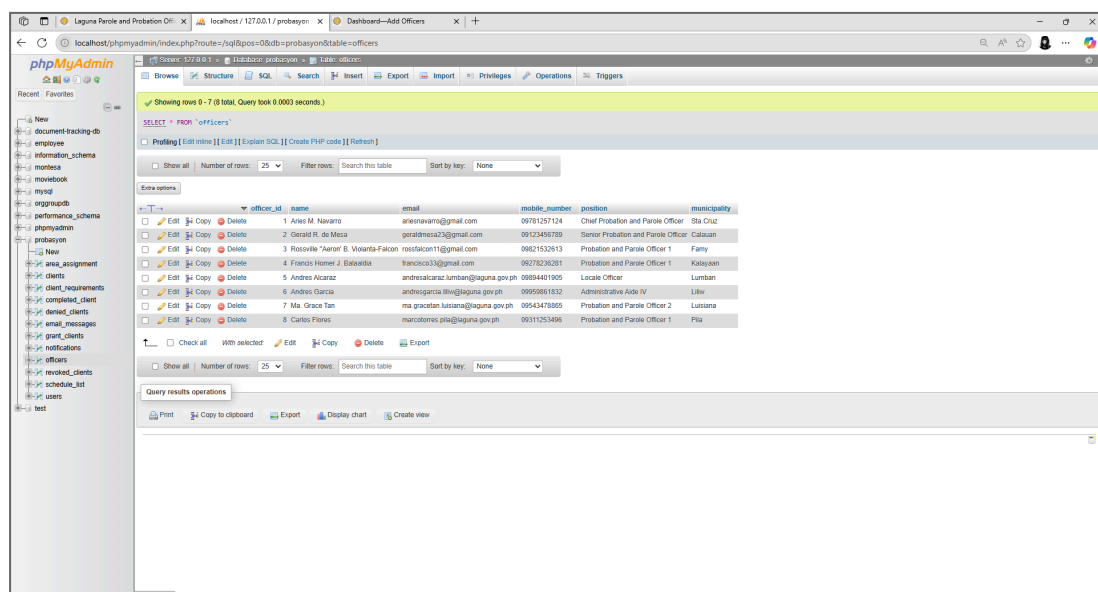
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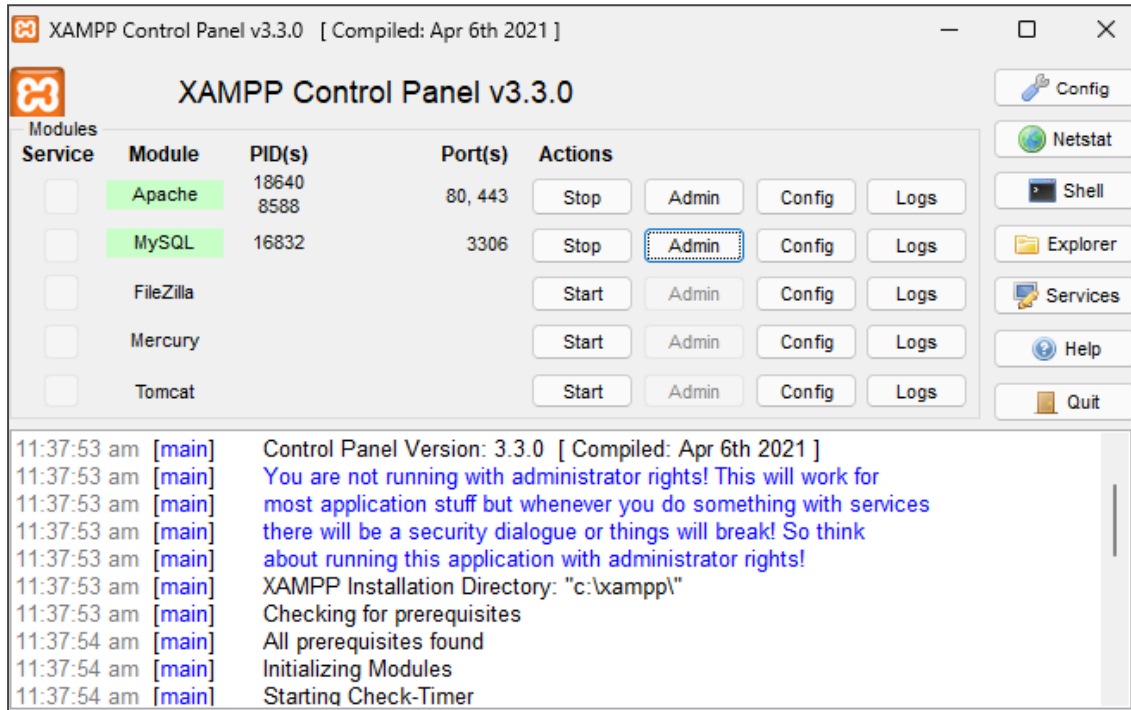
VI. Developer Notes / Installation Instructions

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**.

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.*