



**UNIVERSITY OF THE PHILIPPINES  
OPEN UNIVERSITY**

**Master of Information Systems**

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**PHILIPPINE ARMY RESERVE COMMAND ATTENDANCE SYSTEM**

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Date of Submission  
09 January 2022

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## ABSTRACT

There are issues and problems being experienced on the manual accounting of troops using pen and paper attendance sheets being used in the Philippine Army Reserve Command. This problem was recently faced during the Taal Volcano eruption and currently with the Covid19 crisis wherein the troops has to be deployed to different parts of Batangas and Laguna to help assist in the emergencies. The goal of this system is to address this problem which is the real time accounting of troops who are deployed at different locations on different schedules by using technology. Each personnel can update their commanders for their exact location and the time of their duties by logging in to the system through their mobile devices. The commanders will then have the capability to view real time data on the whereabouts of all personnel under their command.

The system is currently being reviewed by the Group Commander of the Philippine Army Reserve Command.

## **ACKNOWLEDGMENTS**

I would like to acknowledge the support of my family, friends, colleagues at my workplace and my fellow officers and members of the 1701<sup>st</sup> Infantry Brigade Combat Team Reserve, Philippine Army.

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**Dedicated to:**

The Officers and Enlisted Members of  
1701<sup>st</sup> INFANTRY BRIGADE COMBAT TEAM RESERVE

## **Chapter I**

### **INTRODUCTION**

The Philippine Army Reserve Command doesn't have an automated attendance system. The attendance of troops is currently being done manually by pen and paper.

The objective of the project is for the Philippine Army Reserve Command to have an attendance system for the real time accounting of troops who are deployed at different locations on different schedules.

The significance of the project is to enable the commanders to have sufficient information about the whereabouts of their troops. This will also give the commanders the advantage how to properly position their troops. The project will cover all active members of the Philippine Army Reserve Command.

## Chapter II

### REVIEW OF EXISTING ALTERNATIVES

There are similar alternatives to the attendance system but none of them have server side features like a real time map to show the visual locations of the users. These are the following: Jibble, Attendzone, Factotime and UbiAttendance. They all have attendance tracking systems for users but they don't have the capability to provide server side features which enable the commanders overall control and overview. This project is very useful especially in times of disasters and emergencies. The Philippine Army Reserve Command could have used a system like this during the Taal Volcano Eruption and the Covid-19 crisis we are currently experiencing right now wherein a lot of our troops are deployed to different locations around the region.

## **Chapter III**

### **PROJECT DETAILS**

#### **A. Overview**

The Philippine Army Reserve Command Attendance System will be used by the military reserve units for the accounting of troops when they are deployed to different locations in times of mobilization, emergencies, rescue operations and other military events.

#### **B. Theoretical Framework**

There is no current automated attendance system being used by the Philippine Army Reserve Command. The attendance is being done manually by pen and paper. To satisfy the need of the commanders to have an efficient way of accounting of their troops, an automated attendance system is needed to collect and save attendance information of all members.

#### **C. Technologies Used**

The technologies used for this project is server and client systems. The server system will be used by the commanders for full control of the system while the client system will be used by all troops of the Philippine Army Reserve Command who are deployed at different locations. There are alternative systems similar to the client system but there is no alternative system similar to the server system.

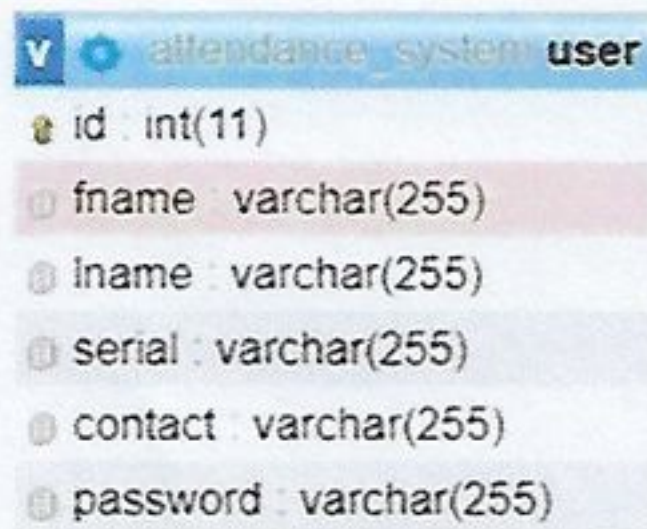
## D. System Design

### a. System Features

The server system's main feature is an interactive map wherein the admin user can view the exact locations of personnel who are currently deployed to different locations. The admin user can also print out reports based on the daily attendance of the troops. The client system will feature a password protected login screen and will capture the preferred schedule and location of the users.

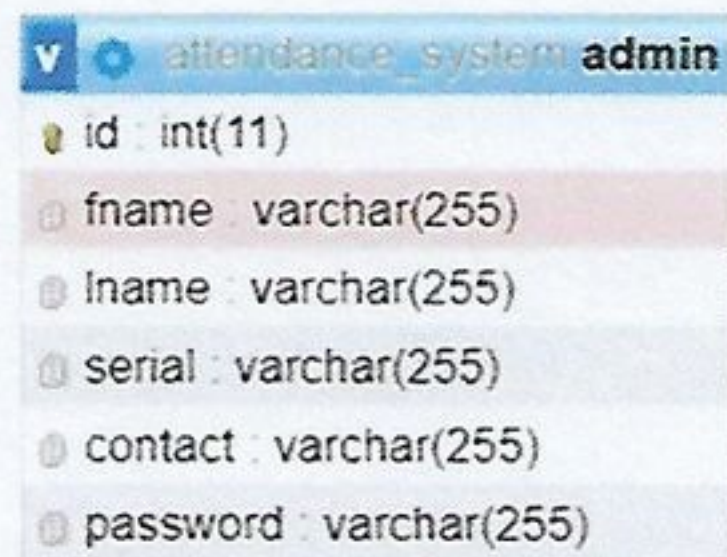
### b. Database Design

User table:



attendance_system	user
id	int(11)
fname	varchar(255)
lname	varchar(255)
serial	varchar(255)
contact	varchar(255)
password	varchar(255)

Admin table:



attendance_system	admin
id	int(11)
fname	varchar(255)
lname	varchar(255)
serial	varchar(255)
contact	varchar(255)
password	varchar(255)

Attendance table:



attendance_system	user_attendance
id	int(11)
serial	varchar(255)
fname	varchar(255)
lname	varchar(255)
sched	varchar(255)
time_in	varchar(255)
stat	varchar(255)
longitude	varchar(255)
latitude	varchar(255)
info	varchar(255)

## E. Implementation

The server system has been installed on a webserver and can be accessed through a URL using any internet browser. The client system can be accessed also on any internet browser using any mobile device like phone, tablet or laptop.

## Chapter IV

### PROJECT ASSESSMENT

#### A. User Testing

The system was initially tested using two computers on a local network. Once the server was already accessible to the local client, the next step was to configure the router for external access. Once the external access was configured successfully, the client system was accessed and tested by multiple users from different locations.

Total number of testers: 4

Test Specifications:

1. Admin user account login.
  - admin user to test if account and password are accepted by the system.
2. Client user account login.
  - client user to test if account and password are accepted by the system.
3. Map
  - admin user to test if google maps load properly
4. Reports
  - admin user to test if daily attendance report can be generated from this module
5. User management
  - admin user to test if new users can be added to the database
  - admin user to test if existing users can be deleted from the database
6. Client app

– client user to test if the appropriate schedule and location can be selected after logging in.

## **B. Testing Results**

1. Admin user account can log in successfully.
2. Client user account can log in successfully.
3. Google maps load properly.
4. Daily attendance reports can be printed from the attendance module.
5. New users can be added and existing users can be deleted from the database.
6. Client user can select the schedule and location from the client menu.

## Chapter V

### DISCUSSIONS

The Philippine Army Reserve Command Attendance System can definitely provide a more reliable and efficient attendance system for the accounting and real time tracking of troops who are deployed to different locations around their areas of responsibilities. It gives the commanders instant personnel location information and enables them to properly plan and balance troop movements across multiple locations and schedules.

One of the challenges encountered was the availability of a public IP to be used for external access. Since the server is using a PLDT Home fiber connection, a static public IP is unavailable. PLDT can only provide a dynamic IP so the router had to be configured by their technicians as they are not allowed to give the admin password to the subscribers.

Another challenge was when the server already had external access, hackers were able to infect the system with ransomware. The OS had to be reinstalled and the protection had to be updated.

Once the system was already up and running, there were no other untoward incidents recorded up to the present time.

#### Maintenance Plan

The database will be backed up daily using the Data Export of the MySQL Workbench. This will be done by the admin user.

## **Chapter VI**

### **CONCLUSION**

The Philippine Army Reserve Command Attendance System is the perfect tool to use for the accounting of troops who are currently deployed on the field. This system lessens the chance of incorrect or inaccurate data from using manual attendance procedures. Together with its ease of use, it also accelerates the acquiring of information as it provides real time data to the admin or the commanders.

## **Chapter VII**

### **FUTURE WORK**

Several enhancements for future versions are still in the planning phase. This includes biometrics and facial recognition, messaging, announcements and developing an official app which can be downloaded from the app store or play store.

Another feature which is currently being planned is the bulk adding of users from txt files or excel files like .xls and .csv files.

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Figure 1: Default user login screen



Figure 2: User time in screen

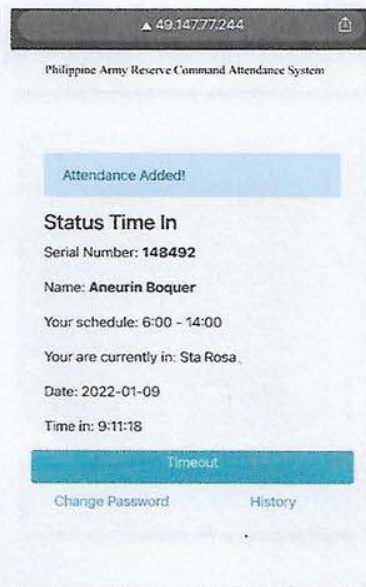


Figure 3: User time out screen



Figure 4: Change password screen

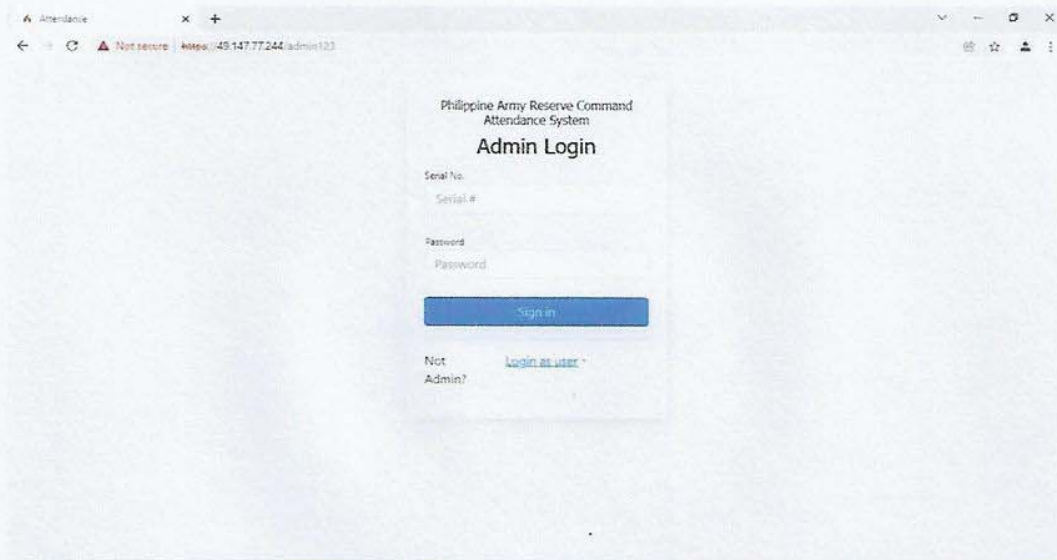


Figure 5: Admin login screen



Figure 6: Map screen

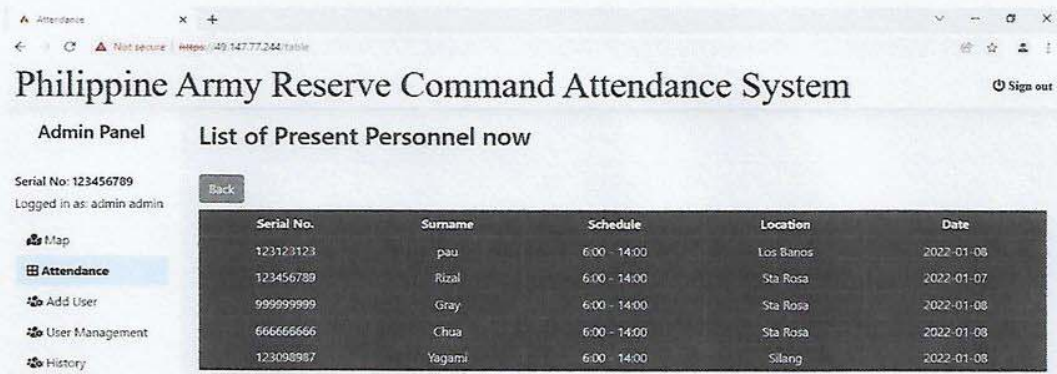


Figure 7: Attendance screen



Figure 8: Add new user screen

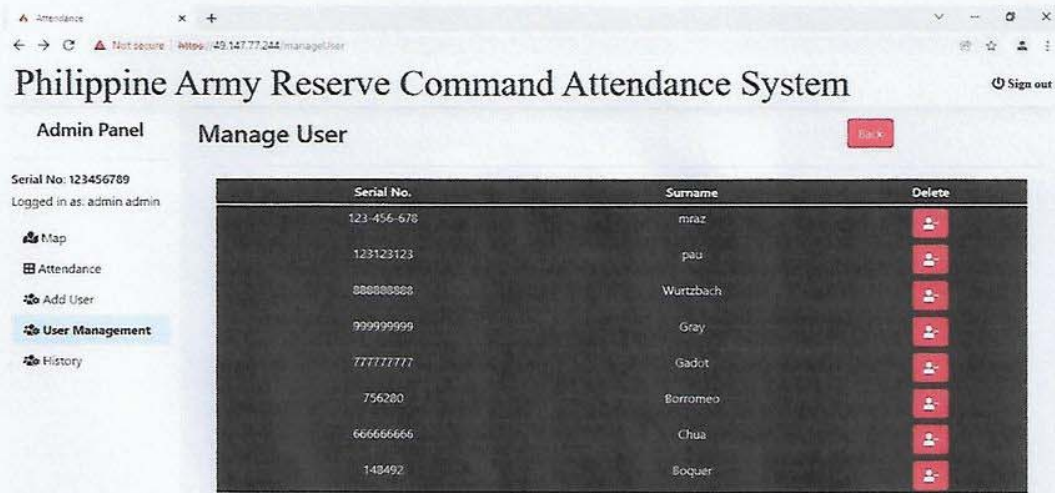


Figure 9: User management screen

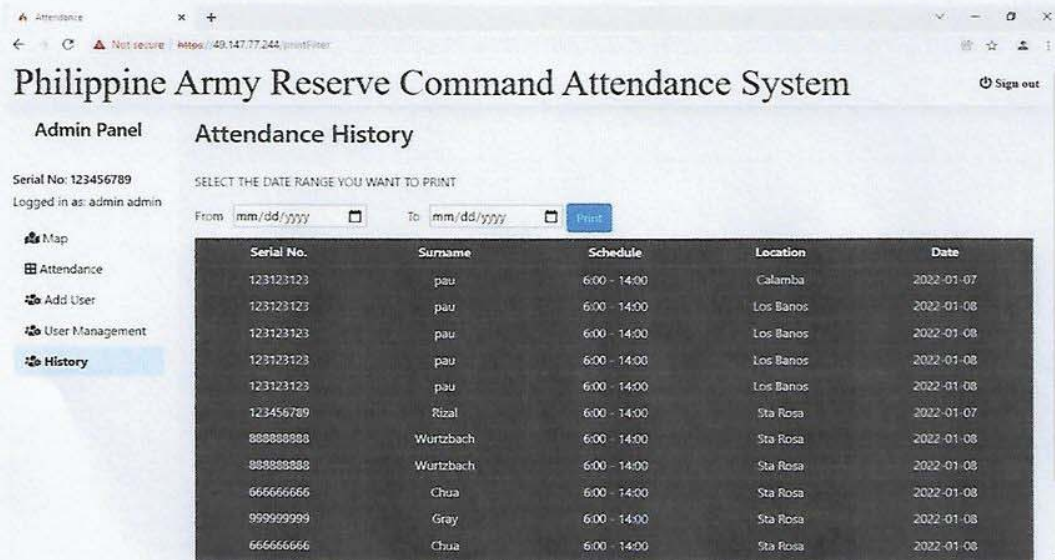


Figure 10: Attendance history screen