

Web-Based Citizen-Police Report System

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Abstract: Many crimes and accidents were not reported to the authorities today due to the costs and time required to go to police stations, and the laborious process. Thus, this project was developed to analyze, design, develop, and test a web-based system and mobile application for citizen to lodge police report online. Citizens can file police reports using smartphone or laptop and police can handle them easily through the system. Upon finishing, the system became an alternative way for citizen to file police report and gain trustable information. Waterfall Model was used in the development of this project. The system implemented using PHP programming language in Visual Studio Code and phpMyAdmin tool. With a test strategy and User Acceptance Test (UAT), the system lets citizens file many reports and police officers and admin quickly process and update them. When the system can track citizens, fake report limits must be considered.

Keywords: Police report, police, citizen, web-based

1. Introduction

Nowadays, much of the crimes committed and accidents happened were unreported to the authorities, this may be due to the reason of the fear of getting involved, and the costs and time required to go to police stations located far from their homes and businesses. However, Supt. Tan Boon Sing [1] states that if a car accident happened, the driver must file a police report at the nearest police station. Without the report, the police force of Malaysia will not know whether an accident occurred, or whether the road is safe or not, and they will not receive any statistics. As mentioned by Kamaluddin et al., in many nations, underreporting of traffic accidents impedes the development of suitable road safety remedies [2]. Given this fact, the idea of developing a Web-Based Citizen-Police Report (CPR) System should be able to motivate the citizens of Malaysia to report incidents or accidents, in order to minimize the cost and time for citizens to lodge a police report.

Previously, if you are unfamiliar with the process or there is a distance to your local police station, filing a police report can be extremely laborious. Still, even if there is an online platform for the citizen to lodge a complaint nowadays, they still lacking of knowledge and understanding to use the online platform. Moreover, system such as RMP e-Reporting System currently only able to handle reports that do not involve criminal cases or do not required further investigation by the police force, it do not even can be used for making police report on traffic complaints [3]. Other than that, many current platform

provide inaccurate or incomplete informations or articles that confuse the public about lodging a police report. Those false or deceptive information might be reported as news, and finally misleading the public.

Based on the problem statement, several objectives have been set as follows to achieve the aim:

- I. To analyze and design a specific online platform that enables citizens of Malaysia to file a police report,
- II. To develop a web-based system for citizens to get the correct information from Royal Malaysia Police (RMP),
- III. To evaluate and test the developed web-based system by target users.

On the other hand, Web-Based Citizen Police Report System included three user types: admin, police and, citizen. The system extends to provide a good online reporting system for the citizens of Malaysia that wants to save time for filing a police report, while the police force can also view the report through the system, as well as providing accurate current information to the public. Besides, the developed system included five functional modules as shown in Table 1.

Table 1: Functional Module

Module	Explanation
User management	Registration perform by citizen, and all users are able to login to and manage their account.
Report management	Citizen are able to lodge police report, while admin and police are able to update the report status.
Report summarization	All users are able to view the list of reports.
Administration panel	Admin are able to perform CRUD process.
Mobile-based	Citizen are able to lodge police report through smartphones or tablets.

2. Related Work

Police reports aid in the identification, apprehending, and prosecution of criminals by serving as a source document for filing criminal complaints, providing a record of all investigations, and serving as a foundation for additional follow-up investigations. According to Güss et al., the police officers are expected to create reports, such as criminal case reports, traffic collision reports, driving under the influence reports, or death case reports, as part of their job [4]. In fact, police reports are considered sacred and the preferred solution to the majority of problems in Malaysia. Police reports are most likely the last truly free and fair mechanism in our democracy. Whatever problems you have, whether criminal, social, political or personal, lodge a report, and then watch as others file their own reports against you [5].

2.1 Existing Process Applied

In Malaysia, citizens can file a police report at the local police station. If the citizens headed to the police station, they may speed things up by drafting a report beforehand. However, only reports in Malay or English are allowed. If a car accident occurs, both drivers engaged in the accident must report to the nearest local police station within 24 hours. The drivers should photograph the damage to both cars, or if it is a self-accident, take photos of the damaged property as well. Then, immediately proceed to the nearest local police station and seek a police report from the officer on duty. Then, they will be asked to fill in a form and the police officers will document the informations. After the report has been filed, the police officer will have to undergo few investigation at the scene of accident in order to decide on who is on the fault and who is responsible for the accident happened.

2.2 Study of Existing Related System

Three online police report system will be discussed and studied on their features and functionality. They are RMP e-Reporting System [6], e-Report Centre HK Police Force [7] and NSW Police Force Community Portal [8]. The comparison will be made and summarized in a table.

RMP e-Reporting System was launched in March 2017, it is a Royal Malaysian Police (RMP) endeavor to make it easier for the public to lodge a police complaint online. It allows the public to file a police report regarding to loss of identity card, loss of driving license, loss to debit or credit card, loss of mobile phone, loss of road tax and so on. However, currently, in order for the aforementioned issues to qualify for online reporting through the RMP e-Reporting platform, they must not be connected to or caused by crime.

e-Report Centre is an online platform provided by Hong Kong Police Force, it is designed for non-emergency report or enquiry [7], thus, there will not be an immediate response to the report or inquiry. Users of the e-Report Centre can submit reports in a variety of categories, namely Crime, Miscellaneous Report, Road Traffic Incident Report etc., and with up to 10 attachments, including documents and images. Moreover, e-Report Centre also offers new features include posing screening questions to distinguish between urgent and non-urgent instances, providing the informant with an acknowledgment sheet to confirm receipt of the report and so on.

In Australia, Community Portal is a web-based system provided by the New South Wales (NSW) Police Force for citizens to file a police report online, it also allows users to track the report and receive status updates. One of the most amazing features provided in NSW Police Force Community Portal is the Crime Stoppers feature. With the help of this feature, members of the public can report missing persons, unsolved crimes, planned crimes in the future, people they know who have committed crimes but have not been apprehended, suspicious or unusual activity, and other information.

The developed Web-Based Citizen Police Report System is an online platform that allow citizen of Malaysia to lodge police report. A mobile application will be utilized to provide flexibility and conveniences to the users. Simultaneously, the police officers will be able to manage police reports through this system. Table 2 shows the comparison of the existing system with the developed system.

Table 2: Comparison between existing system and developed system

Features	A	B	C	X
Web-based platform	√	√	√	√
Mobile-based platform	X	X	X	√
Clear navigation	√	X	√	√
Simple interface	√	√	X	√
Invisible design	√	√	√	√
Report managements	√	√	√	√
Report access	√	√	√	√
Report for crimes	X	√	√	√
Report for missing person	X	X	X	√
Report for minor car accident	X	√	√	√

A: RMP e-Reporting System

B: e-Report Centre

C: NSW Police Force Community Portal

X: Developed Web-Based Citizen-Police Report System

3. Methodology/Framework

3.1 Waterfall Model

While developing a system, development methodology is needed, usually software development life cycle (SDLC) [9]. Waterfall Model is the basic SDLC model. The software development process is depicted using the Waterfall Model, which follows a linear sequential flow. This implies that a phase of development can only start if the one before it is finished.

Waterfall Model usually used for small project because there is only one cycle exist [10], and is very simple to understand or use. Therefore, this model help in completing project phases more efficient and helps to ensure the accuracy of the contents of the developed system. It will be easy to make sure that the progress of the project stick on the schedule if using Waterfall Model. It consists of six phases, each phase concludes with an intermediate result or milestone.

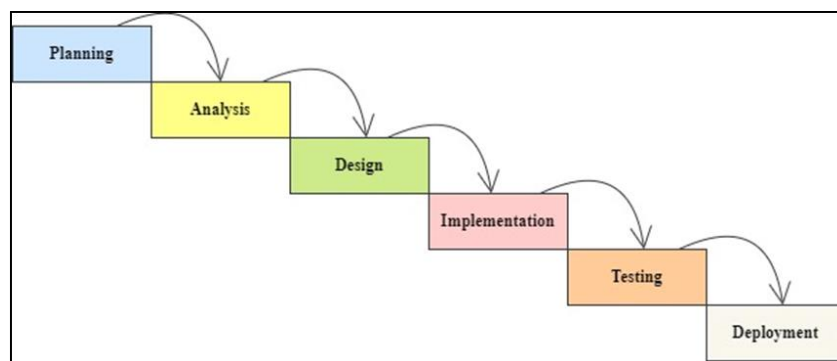


Figure 1: Waterfall Model's Phases

In planning phase, major activities such as the project plan design and project schedule, are planned in advance. A Gantt chart is prepared as shown in Appendix A. A meeting has been conducted with the project's supervisor, Dr. Nayef Abdulwahab Mohammed Alduais. Since interviews are versatile, allowing in-depth analysis from a very small sample size, and focusing research on participants' perspectives [11], an informational interview has been conducted with Supt. Tan Boon Sing to understand as much as possible about the real-world process of lodging a police report in analysis phase. Design phase is the stage where all the captured data will be studied. In this project, context diagram, Data Flow Diagram (DFD), Entity Relationship Diagram (ERD), data dictionary and wireframes will be illustrated to provide clear ideas on system design.

Implementation phase is where all the source code is written as per requirements [122]. The developed system is created using Visual Studio code, with PHP Hypertext Preprocessor (PHP) as main programming language. Besides, the mobile-based system will be developed by using Android Studio IDE, while phpMyAdmin is utilized to set up and locate the system's database. One of the important phase of the SDLC is testing phase [13]. In testing phase, functional test and user acceptance test will be carried out to give users the opportunity to review and engage with the planned application. Table 3 depicts a summarised process for the development of the developed system.

Table 3: Software development activities and their task

Phase	Task	Output
Planning	I. Developed the project	I. Project proposal
	II. Identify problem statements, objectives, scope, expected result and project significance.	II. Gantt chart
	III. Set up work plan.	III. Literature review
	IV. Research on previous project, works and so on.	IV. Comparison between existing system and developed system.
	V. Study the features and functionality of existing system.	
Analysis	I. Interview with Supt. Tan Boon Sing.	I. Gather user requirements.
	II. Analyze hardware and software requirements.	II. Hardware and software specifications.
Design	I. Illustrate wireframe.	I. Wireframes.
	II. Design database.	II. Database specification.
Implementation	I. Develop system module.	I. Developed system.
	II. Integrate developed system.	
	III. Connect database.	
Testing	I. Conduct system testing.	I. Fix and improve bugs.
	II. Identify the bugs and improvements.	II. Enhanced and get ready to release the system.
		III. User acceptance test

3.2 System Analysis and Design

System design and modelling mainly discussed on the architecture of the developed system, some important diagrams such as Context Diagram, Data Flow Diagram (DFD) and so on will be illustrated by using diagrams.net, formerly known as draw.io.

A context diagram emphasizes the data transfer between the system and external entities [14]. This diagram illustrates what the system's internal workings are like at a high level and does not go into great detail about their complex nature. Figure 2 shows the diagram towards the system to be built.

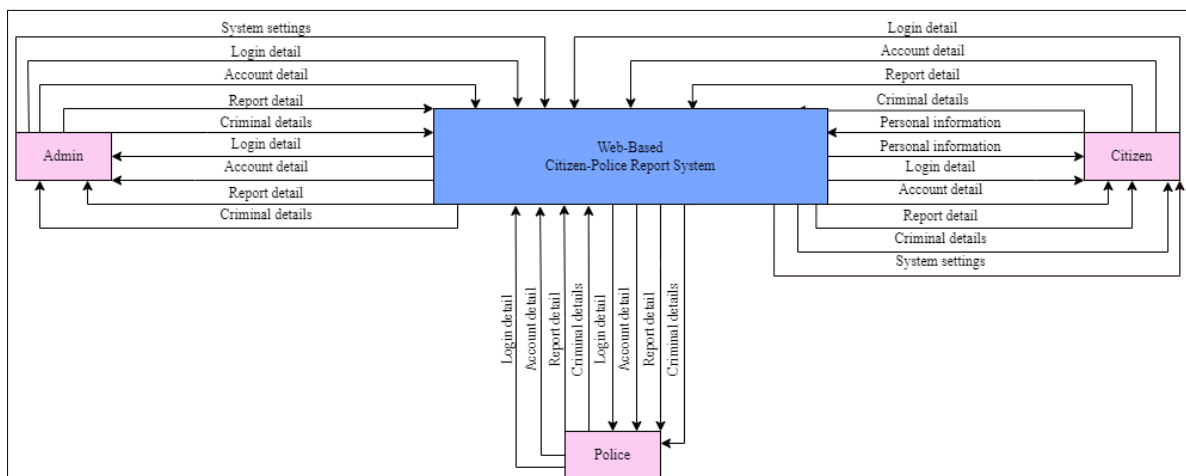


Figure 2: Context Diagram

A Data Flow Diagram (DFD) is a graphical depiction of data "flow" across an information system that models its process features. Figure 3 shows the DFD Level 0 of the system.

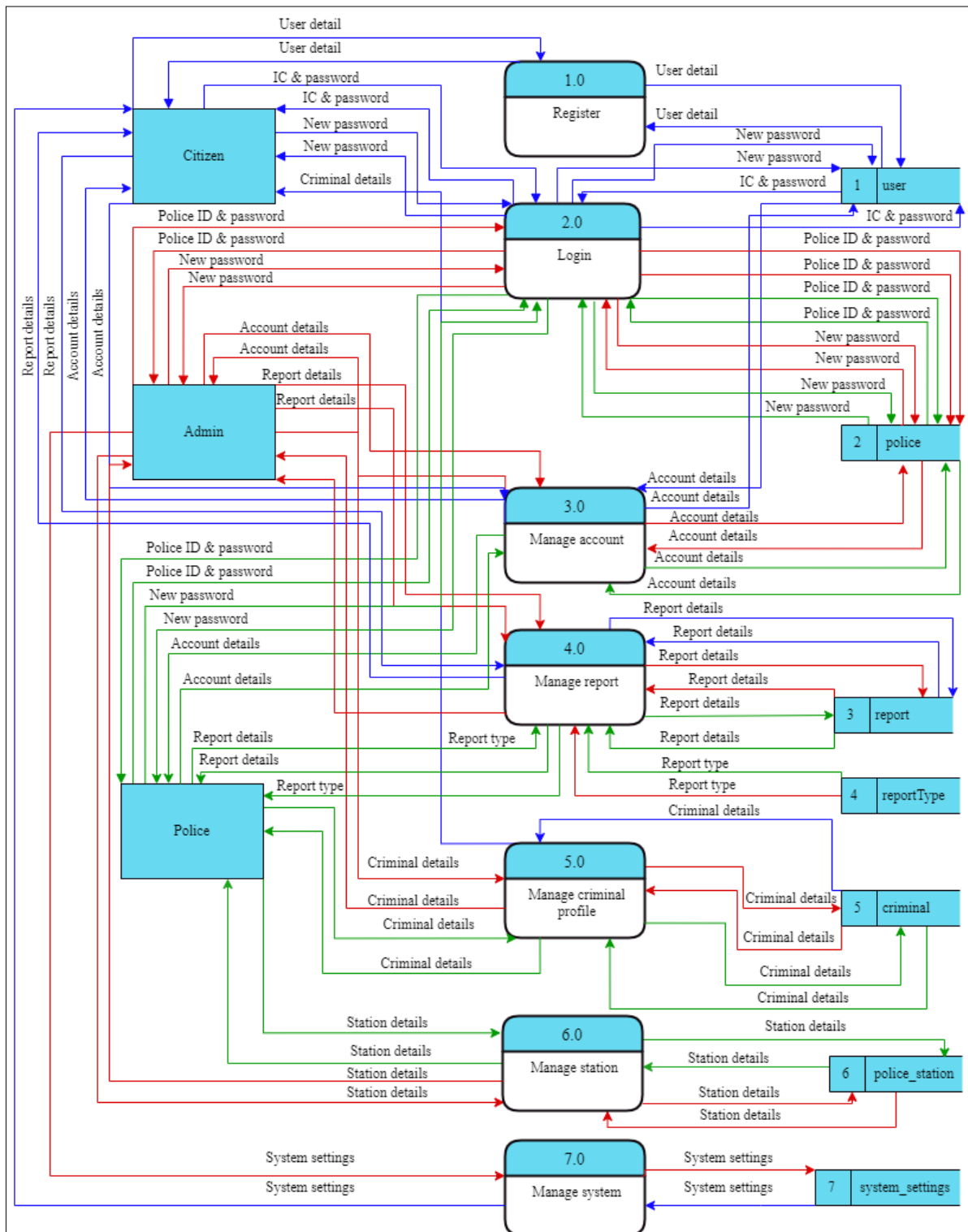


Figure 3: Data Flow Diagram Level 0 (DFD 0)

A sort of diagram in the Unified Modeling Language (UML) called an activity diagram displays the progression of activities inside a system. Figure 4 shows the activity diagram of the system.

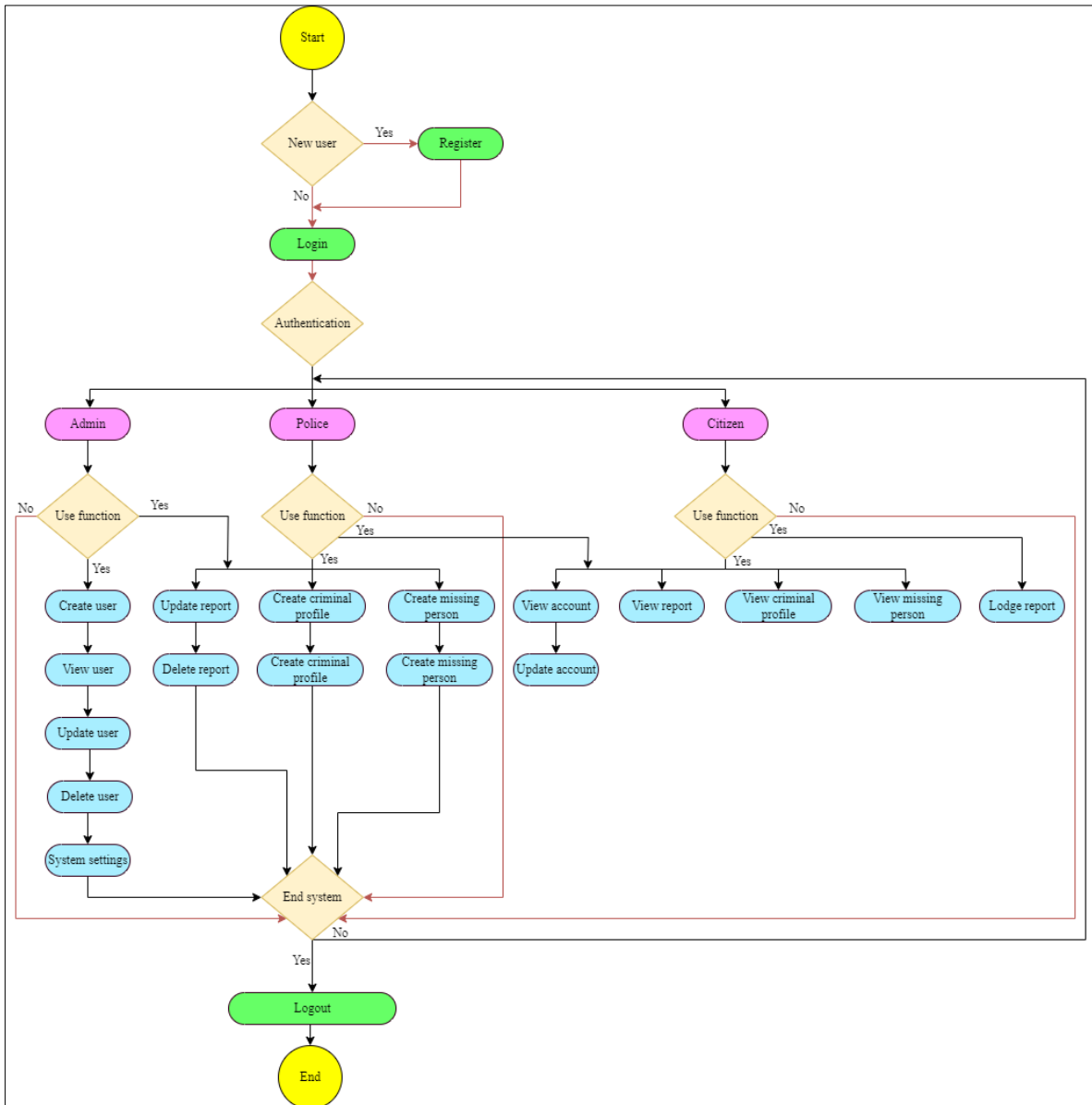


Figure 4: Activity diagram

Database design is the process of developing a well-organized database. An Entity Relationship Diagram (ERD) was illustrated as shown in Appendix B to prevent errors and faults.

4. Result and Discussion

Web-Based Citizen Police Report System is implemented using Hypertext Preprocessor (PHP), Hypertext Markup Language (HTML), Cascading Style Sheet (CSS), and, Asynchronous JavaScript and XML (AJAX), while the mobile-based version implemented with Dart programming language. The database management system used is MySQL, which is extensively utilized for data management and storage in a variety of applications.

4.1 System Implementation

Citizens can create system accounts or profiles here as shown in Figure 5. Registration validates input fields to verify data accuracy. The system checks name, ID number, contact, email, and more against the MySQL database. If the data is unique and unregistered, registration begins.

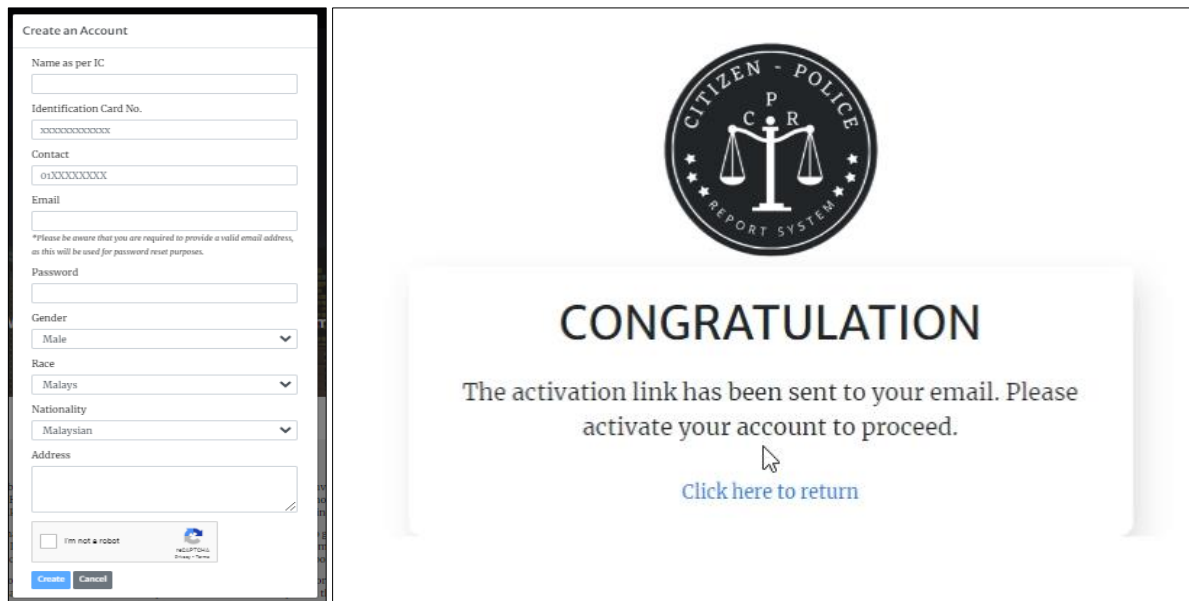


Figure 5: Register process for citizen

Figures 6 demonstrate citizen and administrator login interfaces. Input validation will occur. The system checks the user's account status: active, inactive, or deactivated. To avoid cyberattacks and other risks, the system will allow three erroneous submissions before deleting the account for one hour. The logon session expires after 30 minutes.

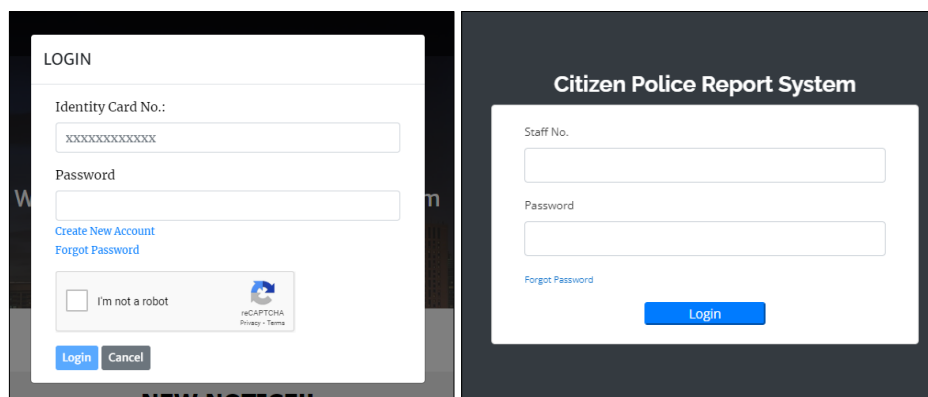


Figure 6: Login process for citizen, admin and police

The citizen, police, and admin password reset process is shown in Figure 7. To reset password, they must give a valid email address.

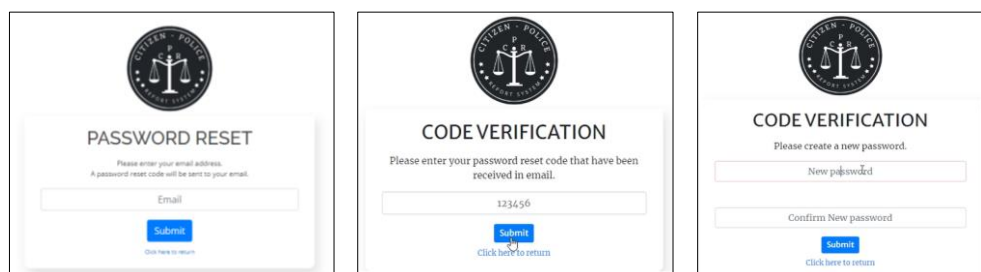


Figure 7: Login process for admin and police

Citizen, enforcement, and administrator account management is shown in Figure 8. Validating each input field and requiring a password will improve data accuracy.

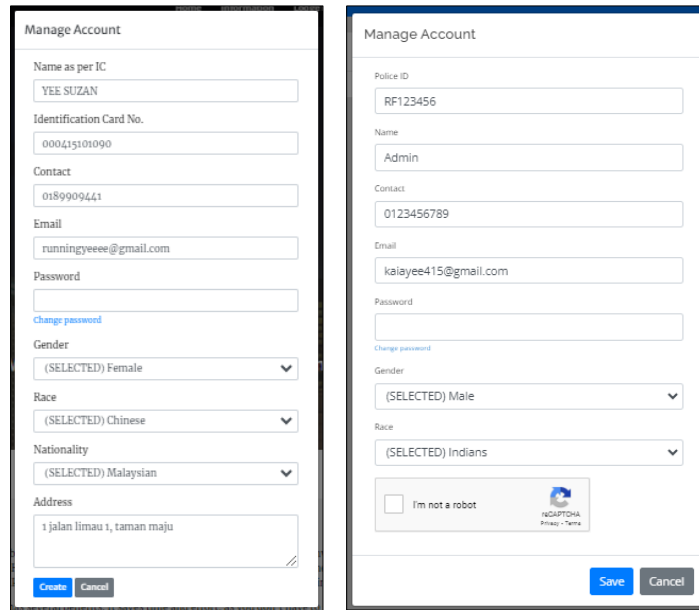


Figure 8: Account management interface for citizen, police and admin

Figure 9 shows the process of managing citizen account by the police staff and admin through the administrator panel. They are allowed to add, edit, view and delete citizen account.

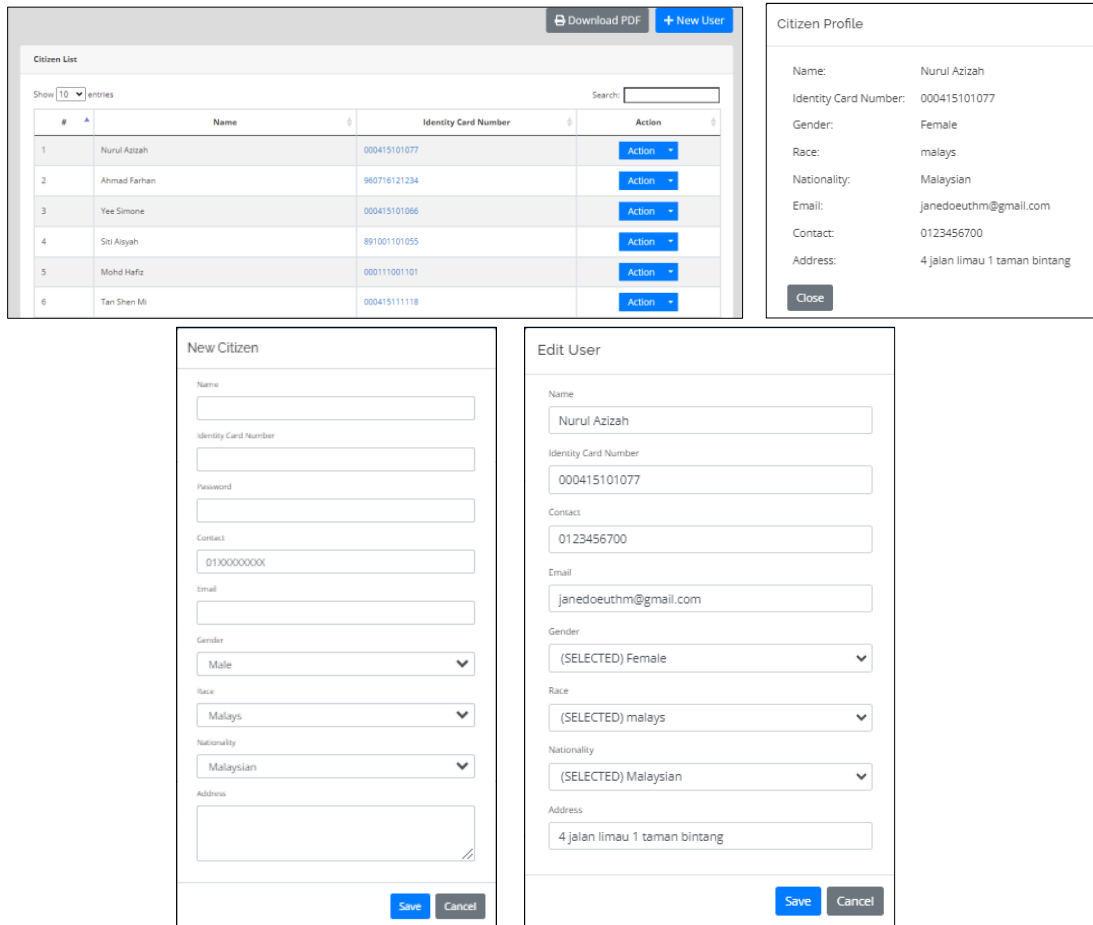


Figure 9: Citizen management process

Figure 10 shows the process of managing police account by the admin through the administrator panel. Admin allowed to add, edit, view and delete or deactivate police account through the system.

The figure shows three panels related to police management:

- Police Profile:** Displays information for Police ID: RF011211, Name: Azman Abdul, Gender: Female, Race: Malays, Email: azman@gmail.com, Contact: 0123456549, Type: Admin, Status: Active, and Station: Balai Polis Larkin. A 'Close' button is at the bottom.
- New Police:** A form to create a new police profile with fields for Police ID, Name, Contact, Email, Password, Gender (Male), Race (Malays), Station (Balai Polis Larkin), Type (Admin), and Status (Active). 'Save' and 'Cancel' buttons are at the bottom.
- Edit User:** A form to edit an existing user profile with fields for Police ID, Name (Azman Abdul), Contact (0123456549), Email (azman@gmail.com), Gender ((SELECTED) Female), Race ((SELECTED) Malays), Station ((SELECTED) Balai Polis Larkin), Type ((SELECTED) Admin), and Status ((SELECTED) Active). 'Save' and 'Cancel' buttons are at the bottom.

Figure 10: Citizen management process

Figure 11 illustrates citizen police report filing. Each input field will be validated. To verify the incident report and avoid bogus reports, citizens must agree to certain statements at the end.

The figure shows three stages of the report filing process:

- Report Details (Top Left):** A dropdown menu with options: Lost, Lost Identity Card, Lost Driving License, Lost Passport, Lost Bank Card, Lost Digital Product, Lost Road Tax, Lost Marriage Certificate, Lost Land Grant, Lost Wallet, Missing Person, Missing Person, Accident, and Others.
- Report Details (Top Right):** A form with fields for Incident/Accident/Missing Location* (Pelangi Indah), Date* (07/06/2023), Address (if applicable), and Time* (06:58 AM). It also shows 'Report will be sent to: Station: Balai Polis Pelangi Indah' and 'Location: Pelangi Indah'. 'Back' and 'Next' buttons are at the bottom.
- Report Details (Bottom Left):** A detailed form with fields for Name (as per I/C)*, I/C No.*, Gender* (Select a gender), Race* (Select a race), Height (cm)*, Weight (kg)*, Scars/Marka, Occupation*, and Detail/Remark. There is an 'Image' section with a 'Choose File' button and 'No file chosen' text. 'Back' and 'Next' buttons are at the bottom.
- Draft of Police Report (Bottom Right):** A summary page titled 'Draft of Police Report' showing 'Complainant's Personal Details' (Name: ADMIN, I/C No.: 00041504949, Gender: MALE, Race: INDIGENS, Nationality: MALAYSIAN, Residential Address: 1 JALAN LIMAU 1, TAMAN MAJU, Contact: 0123456789, Email: KAUVERA15@gmail.com) and 'Complainant Stated' (Date: 2023-06-07, Time: 06:58 AM, Location: PELANGI INDAH, Incident/Accident Address: [Image]). It includes a disclaimer: 'I AM MAKING THIS REPORT TO REFER TO THE RELATED AGENCIES FOR FURTHER ACTION.' and a warning: 'I declare that this report is a real incident, it isn't report to not on the real incident. I am guilty of the following: 1. Sections 482, Penal Code (Act 574), Giving false Information. Carry a maximum sentence of 6 months in prison, or a fine of up to two thousand ringgit (RM2,000.00), or both. 2. Section 233, Communications and Multimedia Act 1998, Using network facilities to send any false comments, requests, suggestions or communications. Carry a maximum sentence of 3 year in prison, or a fine of up to fifty thousand ringgit (RM50,000.00), or both and may be fined a further one thousand ringgit for each day the offence continues after conviction.' 'Back' and 'Submit' buttons are at the bottom.

Figure 11: Citizen's police report lodging process

The developed system allow the police staff and admin to view citizen-submitted police reports based on specific data, location, or both as shown in Figure 12.

#	Date/Time	Information	Team Responded	Dispatched By
1	Jun 15, 2023 12:39 AM	Report: Minor Accident Location: LARON	Batal Polis Larkin	
2	Jun 15, 2023 12:37 AM	Report: Lost Identity Card Location: LARON	Batal Polis Larkin	
3	Jun 12, 2023 07:25 PM	Report: Minor Accident Location: LARON	Batal Polis Larkin	
4	Jun 12, 2023 07:18 PM	Report: Lost Land Grant Location: LARON	Batal Polis Larkin	

Figure 12: Admin report summarization by date and location

The developed system allow the police officer and admin to view a list of police reports by their current police station’s location as shown in Figure 13. The police station in charge of that region will be able to handle and update the status of these reports.

Date	Report Type	Status	Action
2023-06-02 14:33:30	Minor Accident	PENDING	Action
2023-06-02 13:50:52	Lost Identity Card	RECEIVED	Action
2023-06-02 13:50:30	Lost Identity Card	ACTION MADE/COMPLETED	Action
2023-05-31 11:24:54	Minor Accident	ACTION MADE/COMPLETED	Action
2023-05-30 16:38:37	Minor Accident	ACTION MADE/COMPLETED	Action
2023-05-28 16:32:03	Missing Person	ACTION MADE/COMPLETED	Action
2023-05-25 18:28:19	Missing Person	ACTION MADE/COMPLETED	Action
2023-05-25 07:48:43	Missing Person	ACTION MADE/COMPLETED	Action
2023-05-25 07:42:22	Missing Person	ACTION MADE/COMPLETED	Action
2023-05-25 06:58:51	Missing Person	ACTION MADE/COMPLETED	Action

Figure 13: Admin report summarization by police station’s location

The system also provided with data visualization capabilities, which allows police staff and admin to view the statistics by Year, Month and Day, as shown in Figure 14.

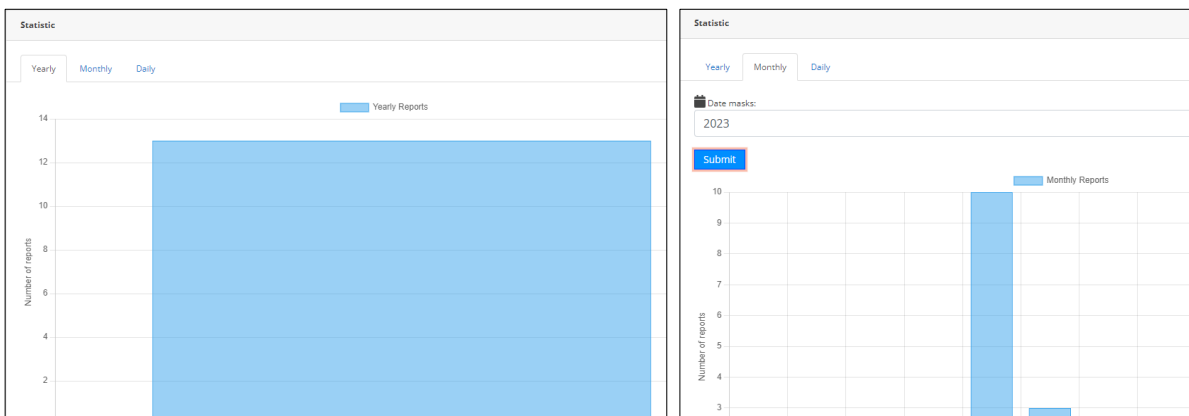


Figure 14: Admin report summarization by police station’s location data visualization

Police staff and admin can add, edit, view or delete report type through the developed system, as shown in Figure 15. There will be four major category, including Lost, Missing, Accident, and Others.

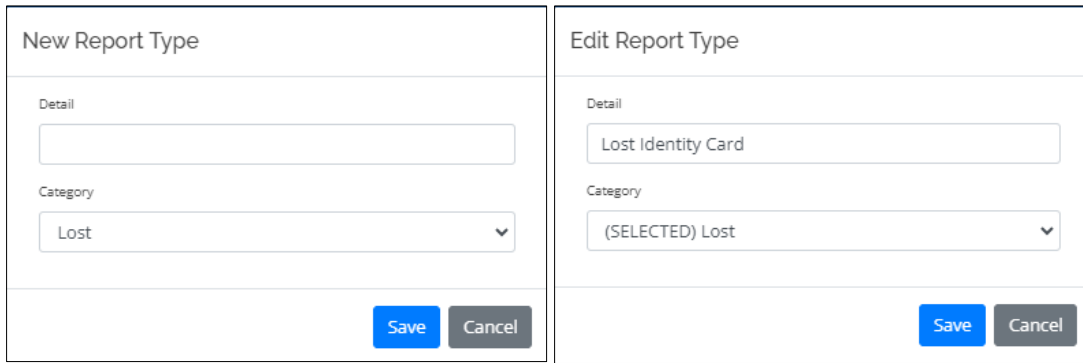


Figure 15: Admin report type management

Figure 16 shows how police officers and administrators can use the built system to add, update, view, and delete criminal profiles. They can also upload criminal images as references. Same interface applied to admin missing person management function.

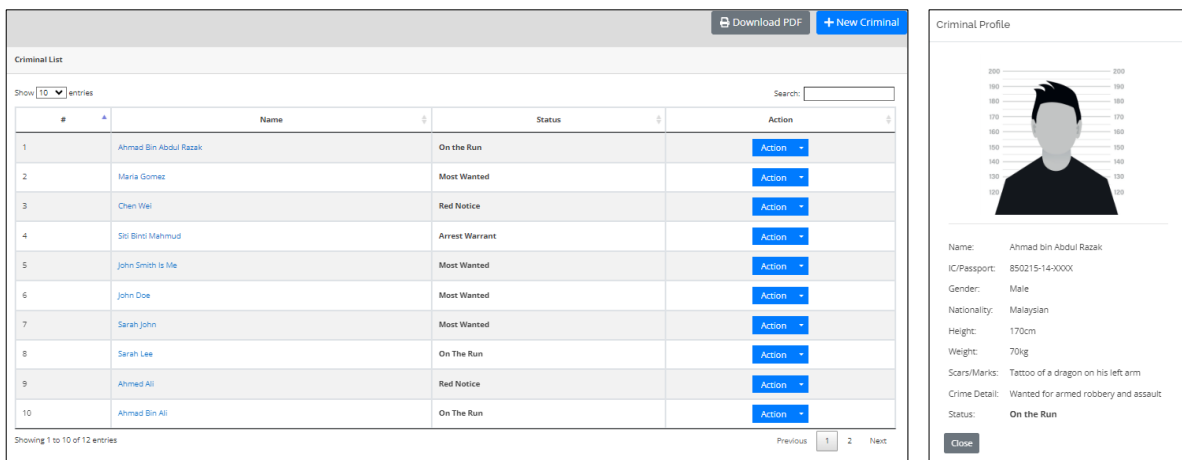


Figure 16: Admin criminal profile management

The viewing option that allows citizens to browse through a list of criminals is depicted in Figure 17. The PDF files can be viewed by the citizen, as well as the list of convicted criminals. Same interface applied to citizen view missing person function.

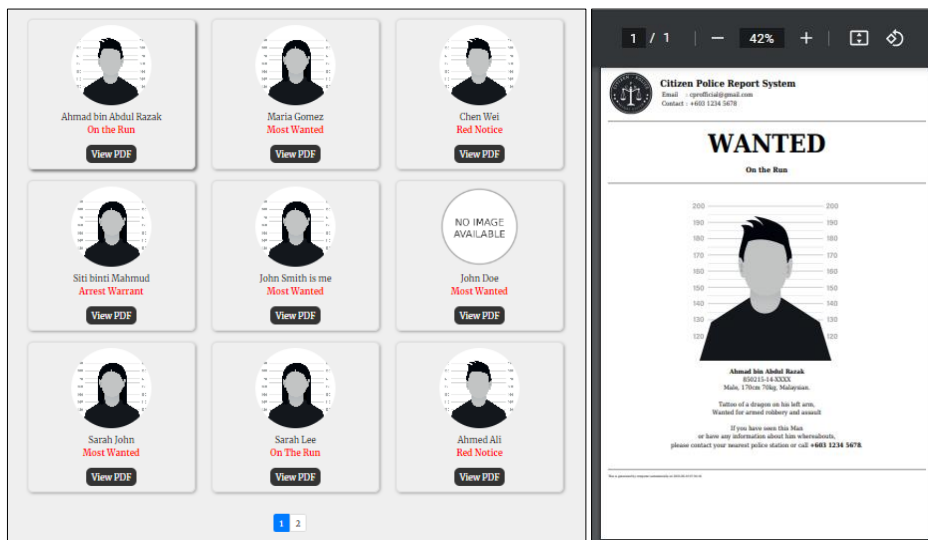


Figure 17: Citizen view criminal profile

Using the system, the admin can view, add, update, and delete police stations. Figure 18 depicts the developed system's police station management module.

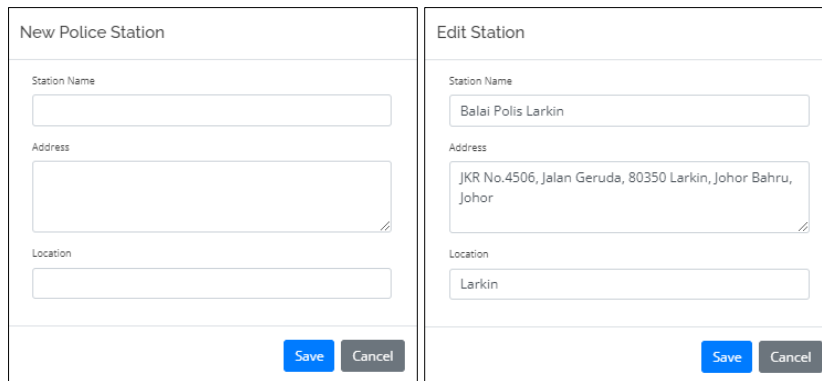


Figure 18: Admin police station management process

This module specially designed for the admin to update the system from day to day. By using Froala Editor, the admin will be able to update the system's name, contact, email, about content and cover image. Figure 19 illustrates the administrator panel's system settings interface.

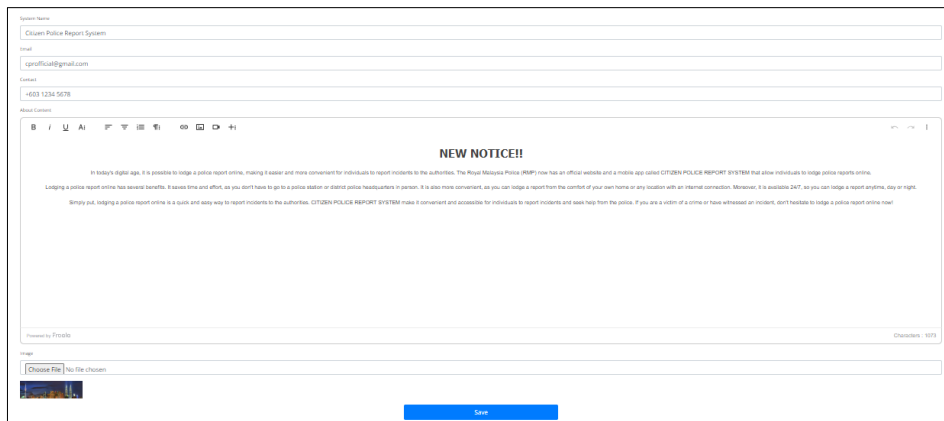


Figure 19: Admin system settings interface

With the help of this feature, citizens are able to visit the website using their mobile device in any location and at any time, provided that there is an internet connection. Figure 20 shows the mobile-based interface for citizen, where citizen can download and install the mobile applications and access to the system through their smartphone or tablets.

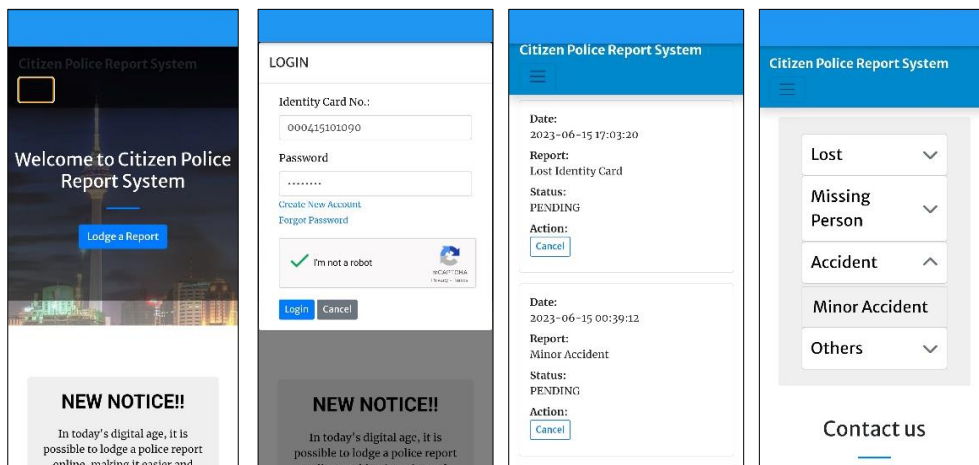


Figure 20: Mobile-based interface for citizen

4.2 System Testing

Before releasing, the suggested system must be tested. The system must be bug-free and meet criteria. This procedure ensures system performance. The system was tested using a test plan and user acceptability test.

4.2.1 Test Plan

A test plan outlines the system's testing strategy, goals, timeline, estimation, deliverables, and resources. It describes the testing process and guides testing actions. Tables 4-9 show module-specific test plans.

Table 4: Test plan for user management module

Function	Roles	Test Case	Expected Result	Actual Result
Register	Citizen	Incomplete data input	An alert message displayed indicates that the field is empty.	Pass
		Unique I/C number, email address and contact number	An alert message displayed indicates that the field should be unique.	Pass
		Valid password	An alert message displayed indicates that the field should be valid.	Pass
		ReCAPTCHA validation	Submit button released once ReCAPTCHA ticked.	Pass
		Complete registration	Activation link successfully sent to user email.	Pass
		Activation link	Account successfully activated once the link is clicked.	Pass
Login	Citizen Police Admin	Incomplete data input	An alert message displayed indicates that the field is empty.	Pass
		Matching I/C number and password	An alert message displayed indicates that the field should be matched with database.	Pass
		Security strategy	Login session blocked after user enter wrong data for 3 times; user logged out automatically after 30 minutes.	Pass
		Complete login	Login successfully and redirected to the homepage.	Pass
Forgot password	Citizen Police Admin	Incomplete data input	An alert message displayed indicates that the field is empty.	Pass
		Matching email address	An alert message displayed indicates that the field should be matched with database.	Pass
		Complete email input	Successfully sent OTP to the email address.	Pass
		Complete OTP input	Successfully entered OTP and direct to password changing page.	Pass
		Valid password	An alert message displayed indicates that the field should be valid.	Pass
		Complete password changing	Successfully changed new password.	Pass

Table 4: (cont)

Function	Roles	Test Case	Expected Result	Actual Result
Account management	Citizen Police Admin	Incomplete data input	An alert message displayed indicates that the field is empty.	Pass
		Matching password	An alert message displayed indicates that the field should be matched with database.	
		Complete update	Successfully updated account information.	Pass
Citizen management	Police Admin	Add new citizen	Successfully added new citizen.	Pass
		Edit citizen	Successfully updated citizen data.	Pass
		View citizen	Successfully viewed citizen data.	Pass
		Delete citizen	Successfully deleted citizen.	Pass
		Download PDF	Successfully generated and downloaded PDF.	Pass
Police management	Admin	Add new police	Successfully added new police.	Pass
		Edit police	Successfully updated police data.	Pass
		View police	Successfully viewed police data.	Pass
		Delete police	Successfully deleted police.	Pass
		Download PDF	Successfully generated and downloaded PDF.	Pass

Table 5: Test plan for report management module

Function	Roles	Test Case	Expected Result	Actual Result
Citizen lodge police report	Citizen	Incomplete data input	An alert message displayed indicates that the field is empty.	Pass
		Valid I/C number	An alert message displayed indicates that the field should be valid.	Pass
		False report statement confirmation	Successfully released submit button after statement has been ticked.	Pass
		Complete report lodging	Successfully lodged report and sent a copy to citizen email.	Pass
Citizen report summarization	Citizen	Report lodging history	Successfully view list of history.	Pass
		Cancel report	Successfully canceled report.	Pass
Admin report summarization	Police Admin	Filter by date and location	Successfully filtered and displayed data.	Pass
		Filter by current police station's location	Successfully filtered and displayed data.	Pass
		Report status update	Successfully update status.	Pass
		Data visualization	Successfully display bar graph.	Pass
		Download PDF	Successfully generated and downloaded PDF.	Pass
Admin report type management	Police Admin	Add new report type	Successfully added new report type.	Pass
		Edit report type	Successfully updated report type data.	Pass

Table 5: (cont)

Function	Roles	Test Case	Expected Result	Actual Result
Admin report type management	Police Admin	View report type	Successfully viewed report type data.	Pass
		Delete report type	Successfully deleted report type.	Pass
		Download PDF	Successfully generated and downloaded PDF.	Pass

Table 6: Test plan for criminal profile management module

Function	Roles	Test Case	Expected Result	Actual Result
Admin criminal profile management	Police Admin	Add new criminal	Successfully added new police.	Pass
		Edit criminal	Successfully updated criminal data.	Pass
		View criminal	Successfully viewed criminal data.	Pass
		Delete criminal	Successfully deleted criminal.	Pass
		Download PDF	Successfully generated and downloaded PDF.	Pass
Citizen view criminal profile	Citizen	View criminal	Successfully viewed list of criminal.	Pass
		Download PDF	Successfully generated and downloaded PDF.	Pass

Table 7: Test plan for missing person profile management module

Function	Roles	Test Case	Expected Result	Actual Result
Admin missing person profile management	Police Admin	Status update	Successfully updated missing person status.	Pass
		View criminal	Successfully viewed criminal data.	Pass
		Download PDF	Successfully generated and downloaded PDF.	Pass
Citizen view missing person profile	Citizen	View missing person	Successfully viewed list of missing person.	Pass
		Download PDF	Successfully generated and downloaded PDF.	Pass

Table 8: Test plan for police station management module

Function	Roles	Test Case	Expected Result	Actual Result
Police station management	Police Admin	Add new police station	Successfully added new police station.	Pass
		Edit police station	Successfully updated police station data.	Pass
		View police station	Successfully viewed police station data.	Pass
		Delete police station	Successfully deleted police station.	Pass
		Download PDF	Successfully generated and downloaded PDF.	Pass

Table 9: Test plan for system settings module

Function	Roles	Test Case	Expected Result	Actual Result
Police station management	Police Admin	Edit system settings	Successfully updated system settings data.	Pass

UAT near the end of system development. It assesses if the designed technology meets user expectations in real-world scenarios. It prioritises usability, user requirements, and citizen and police needs. Supt. Tan Boon Sing will test solely the administrative panel in this project, which comprised 15 citizen users. After collecting citizen user data, the evaluation results are graphed. User satisfaction ranges from 1 (not satisfied) to 5 (highly satisfied).

Table 10: Result of user acceptance testing for admin user

No.	Acceptance Requirement	Ranking				
		1	2	3	4	5
User Interface						
I.	Easy to use and understand				√	
II.	Navigation				√	
III.	Interface design (e.g: color, background, font)					√
System Function						
IV.	Login function				√	
V.	Account management function				√	
VI.	Citizen management function					√
VII.	Police management function					√
VIII.	Report management function			√		
IX.	Data visualization function			√		
X.	Criminal and missing person profile viewing function				√	

Table 11: Result of user acceptance testing for admin user

No.	Acceptance Requirement	Ranking					Total
		1	2	3	4	5	
User Interface							
I.	Easy to use and understand	-	-	-	8	7	15
II.	Navigation	-	-	3	5	7	15
III.	Interface design (e.g: color, background, font)	-	-	2	9	4	15
System Function							
IV.	Register function	-	-	5	9	1	15
V.	Login function	-	-	5	8	2	15
VI.	Account management function	-	-	-	9	6	15
VII.	Report history function	-	-	7	8	-	15
VIII.	Criminal and missing person profile viewing function	-	-	2	10	3	15

5. Conclusion

Web-Based Citizen Police Report System has been successfully developed to provide a specific platform for citizens to lodge police reports and receive accurate information, while police officers can

use the system to monitor citizen reports daily and manage those reports and other data more efficiently. The website was completed successfully due to meeting project objectives and goals.

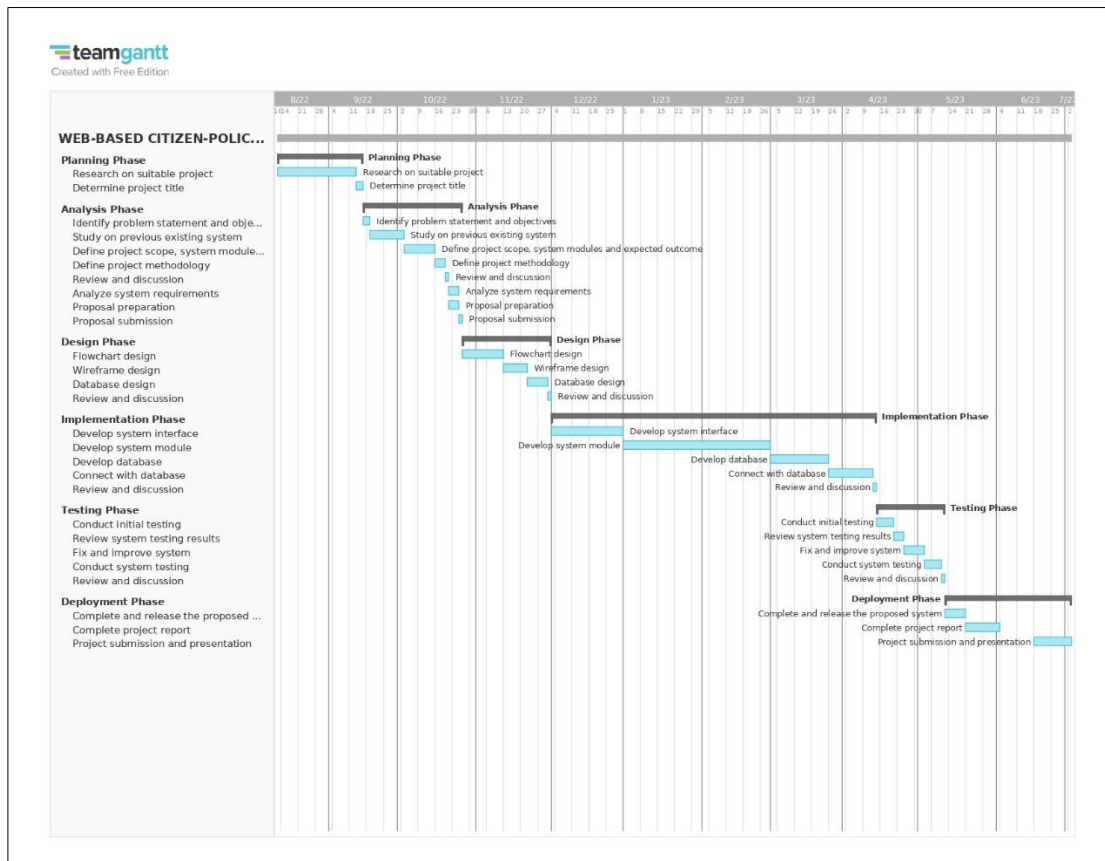
First, the system allows citizens to report lost items, accidents, missing people, and more. The user-friendly interface lets citizens report incidents right away. The method allows citizens to file reports without visiting a police station or going through complicated bureaucratic procedures. The web portal streamlines user reporting. They just log in and fill out the website's form to file a complaint or report. This boosts police incident reporting efficiency and efficacy. The citizen must verify the incident. The technology also displays missing person and criminal profiles.

However, the police officer and admin may quickly handle and update citizen reports using the established system. They no longer need to manually manage the report. Technology is crucial to work efficiency in the digital age. The solution allows Malaysian police officers to readily create data visualisations for analysis and decision-making. The administration interface lets police officers update system information daily. Finally, the security plan prevents cyberattacks and internet dangers. An hour after three wrong passwords, a user will be prompted to login again. The system also logs users out after 30 minutes.

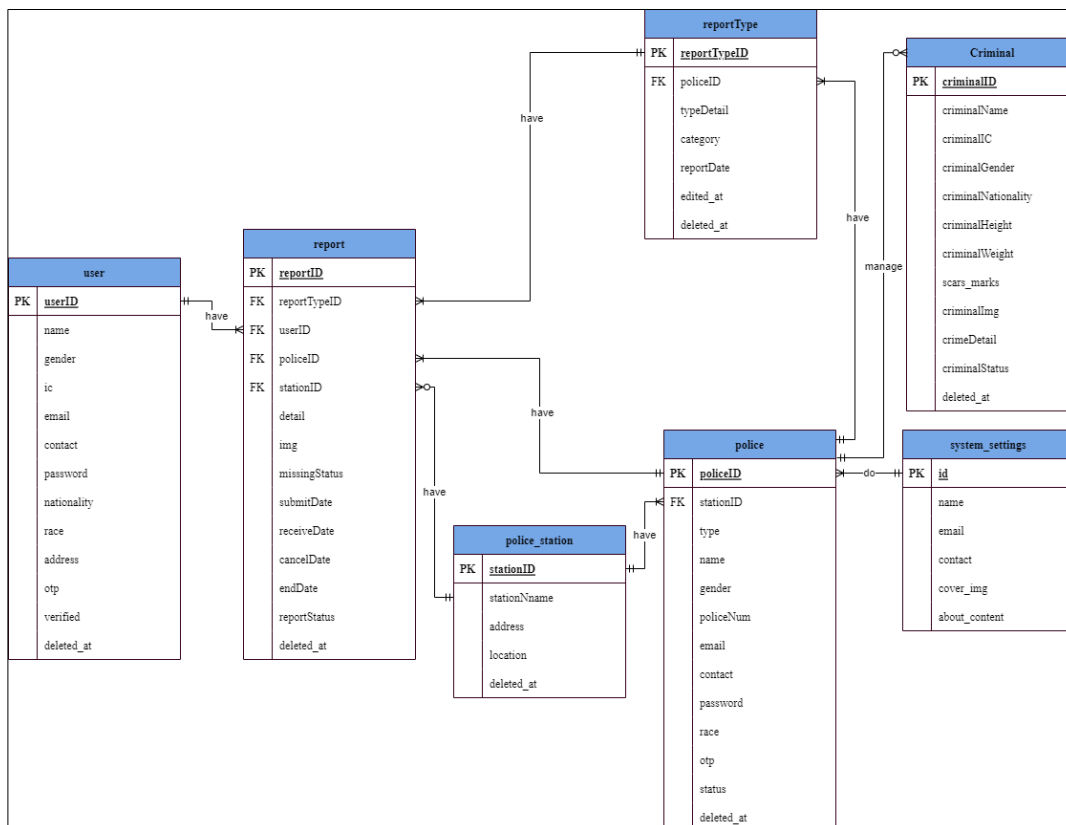
The developed system has achieved most of its goals, however it has some drawbacks. Online systems need fake report limitations to maintain reporting integrity and believability. Online systems can be misused, including the submission of fraudulent or misleading reports. Limits prevent people from filing fraudulent reports to cause harm, waste resources, or slander others. False reports can distort trends, crime statistics, and resource allocation. Limitations help the system create more accurate and reliable data for data-driven analysis, informed decisions, and preventive measures.

As the limitation states, increasing functionality can increase the system's usability. First, providing a link to a mobile device or emailing it to activate an account both have pros and cons, but mobile is easier. People may quickly get the activation link because they always have their phones. Mobile devices can deliver real-time notifications, allowing users to instantly activate the link. Mobile users can click the link without switching devices or apps. To determine where the individual submitted the report, read their current location. Location-based tracking in the online reporting system can verify reported occurrences and reduce false reports.

Appendix A Gantt chart



Appendix B Entity Relationship Diagram (ERD)



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