CRIME REPORTING AND MAPPING SYSTEM FOR SPATIO-TEMPORAL CRIME ANALYSIS IN ILIGAN CITY

A Capstone Project Presented to the Faculty of the
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Chapter 1

THE PROBLEM AND ITS SETTING

Introduction

Crime is an unlawful act that is punishable usually by way of fine or imprisonment by a state or other authority. Some matters, such as assault, can be both crimes and civil wrongs at the same time. The police can prosecute for assault and the victim can take civil action to recover money (or some other kind of compensation) for any injury suffered. (Law Hand Book, 2017).

The people need to report these crimes in order to increase the personal safety and the safety of our country. This will also justify the crime committed by the proprietor for the victim. With the lesser crime the country has, the safer the country is.

Crime reporters are specialist reporters are sometimes called police reporters. Crime reporters does is to report on what the police are doing and should in fact cover all aspects of law-breaking – the police, the criminals and the victims. Crime reporting has long been a central part of news coverage in free press societies, because crime stories are usually newsworthy (Avila, 2018).

The importance of crime reporting is that if someone is a victim of a crime, the person who committed the crime is more likely to be arrested and kept from doing the same thing to someone else. This will

also help the police to determine the Modus Operandi of the criminals. (Victims of crime, 2017)

The ways on how the people can report a crime is that you have to go to a near law enforcement agencies and you have to tell the officers on what exactly happened during the crime. You may be asked to provide a statement or help them to identify the offender. In some cases, a specialist police member, such as a detective and will investigate your case. (Queensland Government, 2018)

Crime mapping is used by analysts in law enforcement agencies to map, visualize, and analyze crime patterns. It is a key component of crime analysis. Mapping crime, using Geographic Information Systems (GIS), allows crime analysts to identify crime hot spots, along with other trends and patterns.

Just like the use of MRI results does not cure an illness, crime analysis is the process of using examining data and making conclusions; it is not a crime reduction strategy (cure) by itself. The connection between crime analysis and crime reduction is only through an effective police strategy that uses crime analysis.

The researchers are conducting this study in order to help the community and the police to have a safer place to live in. The researchers can also help the police in conducting faster analyzation of the data the police currently have.

Statement of the Problem

Based on the current data gained from the PNP Iligan, there are 30.53% of crimes that have been gone unsolved/under investigation.

- There are times in which the PNP assigns the resources inefficiently and can cause lack of manpower. For the Iligan City local police department, is dealing on a problem in which the lack of visualization of the data.
- Analyzing a large amount of data manually will take massive amount of time. Hence, it will make the action and response of the PNP slower from preventing those crimes from happening.

Objectives of the study

This study aims to:

- Design a crime mapping and analysis to help law enforcement management (e.g. the police chief) visualize the data to make better decisions, target resources, and formulate strategies, as well as for tactical analysis.
- Develop a system in which helps the local city police department on analyzing the gathered data and to be able to visualize crime crime patterns.

- Test a system in which the PNP can acknowledge and gain its approval. The developed system can also be used as reference for future research.

Scope and Limitation of the Study

This study focuses on creating a web based crime reporting and mapping system using Geographical information system (GIS) and other analytical tools that will help the Iligan City PNP officers keep track of violent and property crimes that are committed inside Iligan City, this system will let its users (PNP Iligan officers) to record reported crimes within Iligan City and map the said crime into the mapping system for Spatio-Temporal crime analysis. This system can only be used by the 5 police stations within Iligan City. The system also covers the 44 barangays of Iligan City. The data gathered is only limited from 2016 up to present. This system will provide a solution to the problems stated above.

Significance of the study

This study will give sufficient contribution to the public safety of the community and can help the PNP to visualize the crime pattern based on the given data.

Philippine National Police. The study will help the PNP (Philippine National Police) to improve their way of monitoring crimes.

Iligan City Police Office. The study will help Iligan City's PNP officers to monitor crime crimes in Iligan City through their mobile phones.

Community. The study will help community improve its public safety.

Future Researchers. This research would partly help them undertake similar studies and help them to understand more about the Crime Reporting and Mapping System.

Definition of Terms

In order to understand better the study being conducted the following terms are being defined conceptually and operationally.

Crime. An action or omission that constitutes an offense that may be prosecuted by the state and is punishable by law.

Crime-Reporting. An act of reporting a crime for legal purposes.

Mapping. The act or operation of making a map or maps.

Mapping System. Graphical representation of a procedure, process, structure or system that depicts arrangement and relationships among its different components, and traces flows of energy, goods, information, materials, money, personnel, etc.

Spatio-Temporal. Belonging to both space and time or to space-time.

GIS. A geographic information system (**GIS**) is a system designed to capture, store, manipulate, analyze, manage, and present all types of geographical data

Chapter 2

REVIEW OF LITERATURE AND STUDIES

This chapter presents the review of the existing literature and studies related to Crime–Reporting and Mapping System for Spatio-Temporal Crime Analysis for Iligan City.

Related Literature

Studies of crime at micro places have generally relied on cross-sectional data and reported the distributions of crime statistics over short periods of time. The researchers go beyond prior research in two ways. First, the researchers view crime trends at places over a much longer period than other studies that have examined micro places. Second, the researchers use group- based trajectory analysis to uncover distinctive developmental trends in our data. These findings are particularly important given the more general decline in crime rates observed in Seattle and many other American cities in the 1990s. Our study suggests that the crime drop can be understood not as a general process that occurred across the city landscape but one that was generated in a relatively small group of micro places with strong declining crime trajectories over time. (D.Weisburd et al, 2006).

Various scholars have suggested that neighborhood social cohesion and confidence in police effectiveness influence the probability that victims report crime to the police, but this has never been properly

tested. Neighborhood socio-economic disadvantage is also often assumed to influence reporting, but empirical support is limited. This study examines the effects of these three characteristics on Dutch victims' reporting decision. Data from a large-scale victimization survey are merged with data on characteristics of neighborhoods to test the hypotheses. Hierarchical logistic modelling is used to analyze the nested data. The results show that, in addition to crime and victim features, neighborhood social cohesion and socio-economic disadvantage affect reporting. Neighborhood confidence in police effectiveness does not have an effect (The British Journal of Criminology, 2006).

Existing methods of predicting and mapping the future location of crimes are intrinsically retrospective. New methods of map evaluation are proposed, such as the production of search efficiency rates and area-to-perimeter ratios; standardized metrics that can be derived for maps produced using different techniques, thereby allowing meaningful comparisons to be made and techniques contrasted. The results suggest that the predictive mapping technique proposed here has considerable advantages over more traditional methods and might prove particularly useful in the shift-by-shift deployment of police personnel. (The British Journal of Criminology, 2004).

The links between social and physical disorder, crime, and the fear of crime have long been areas of research interest, few studies have

looked at these links from a spatiotemporal viewpoint. This is somewhat surprising, as many of the factors associated with disorder, crime, and fear are known to vary over time and space. This paper uses GISystems to investigate potential spatiotemporal links between these areas in Wollongong, New South Wales, with specific focus on links between graffiti and the fear of crime. The results reveal that the distribution of fear of crime varies considerably over time and is often spatially cocrime with concentrations of disorder. Graffiti was found to be one of the most prevalent types of physical disorder. The results are discussed in the context of the "broken windows" thesis and strategic intervention at the community level. (Doran et al, 2005).

Crime mapping is the principle method behind examining environment factors and situations that influence crime; Geographic Information Systems (GIS) create automated maps with attribute data to examine spatial, temporal, and other aspect influences on crime. The market for GIS software for law enforcement is extensive in tools, analytical methods, and report outputs – not one software product is fit for all law enforcement agencies. This study examines the variety of GIS software used by law enforcement agencies, and compare the results to a previous study. Findings from the study reveal that crime mapping continues to be an integral attribute in law enforcement practices; as well as similarities and variations in practices. (Hansgen, 2015).

Related Studies

Regarding about the large body of literature detailing crime reporting practices, scant research examines the correlates of the crime reporting decision in developing nations with newer democracies, newer economies, or developing economies. Using a sample of 23 nations from the 2000 International Crime Victimization Survey (ICVS), the study tests, the generalizability of correlates of robbery and assault reports to the police in a non-US sample to determine whether there are national differences in reporting practices. Based on this analysis emphasizing the developing world and countries in transition, an expanded model, integrating incident, demographic, police-related, and national variables, is developed that will enhance our understanding of differences in reporting practices in developing and developed nations. (Morabito, 2015).

Police researchers have long argued that favorable evaluations of the police eventually lead to citizens' willingness to cooperate with the police. However, this assumption has barely been studied empirically. The current study examines the association between attitudes toward the police and crime reporting behavior of victims. Furthermore, the study explores the influence of victims' characteristics on their decisions to report crime to the police. Using field data originally collected in Ghana, the study found that victims' levels of confidence in the police and

satisfaction with police work positively predict their decisions to report sexual assault and robbery to the police. (Boateng, 2016).

According to A.Braga (2001), he stated that perhaps the most compelling evidence for the e5ectiveness of place-oriented preventive patrol as opposed to random preventive patrol analysis and systematic review of)hot spot* policing studies. Out of nine studies, seven showed noteworthy crime reductions as a result of place-oriented patrol activities, and it should be noted that intervention types ranged among three broad categories, enforcement problem-oriented-policing (POP) interventions, directed and aggressive patrol programs, and the use of crackdowns and raids.

The overall approach to developing digital crime reporting techniques has been experimented with considerable success. Mobile devices are already central in user's sense of security and can play an even more pivotal role, given a design solution that caters to the need of the target individuals. Traditional and modern techniques used by individuals and communities to report and prevent crime in a digital context and the inherent complications of using technology to do so, such as potential Privacy invasion and the increase in report volume made to authorities. (Ndlovu, 2013).

National surveys demonstrate that millions of crimes go unreported in the United States. Several reasons may contribute to this

lack of reporting and the researchers are investigating these potential reasons and how they may be addressed. The researchers are developing an online system that provides an anonymous and secure mechanism for both victims and witnesses to report crimes to police. The system is being implemented and tested on a university campus. Potential users (i.e., students, staff) were surveyed to determine their intent to use the system. Respondents claimed to report crimes already, which is in contrast with the findings from the national surveys. Our respondents found the online system useful, accessible, and safe to report crime, but the type of crime and the urgency of response is a determinant in the decision to use the system versus reporting it to a live person. (Garrett et al, 2006).

Surveys showed that the majority of crimes committed were unreported to the authorities. Given this fact, the paper presents the development of a crime crimes reporting system with the use of Google Maps at the same time exploiting the active participation of netizens. This will provide another venue for reporting crime crimes. The idea draws its motivation from the inconvenience of going to the police station, personal belief of the weak investigative capabilities of the authorities to resolve petty crimes and limited dissemination of crime information to the community from the authorities. (Lavilles et al, 2015).

Crime tends to be concentrated at a relatively small proportion of proprietary places—small parcels of land that often have a single address and are used for a specific purpose, like housing or entertainment. This fact points to the potential of regulation to reduce crime. Drawing on research and theory, this article discusses why the people should be concerned about crime places, how the management of places influences crimes, why and how place management regulation might be helpful for reducing crimes, criteria for selecting place-based regulatory instruments, why it might be necessary to adjust such regulation to neighborhood characteristics, and principles for applying a regulatory approach to crime places. (Eck, 2018)

In the United States, the use of crime mapping began a little later than it did in Europe. Because the United States was a relatively new country in the 1800s, reliable maps were not readily available and census data were not regularly collected, as they were in France and England at that time. The first substantive spatial analysis of crime in the United States was conducted in the 1920s and 1930s by urban sociologists in Chicago. Their crime research and related crime maps linked crime and delinquency to factors such as social disorganization and poverty. In fact, these scholars' spatial analysis of juvenile delinquency and social conditions in Chicago is considered to be one of the foremost examples of crime mapping in the first half of the 20th century. (Groff et al, 2002).

The authors review research on police effectiveness in reducing crime, disorder, and fear in the context of a typology of innovation in police practices. That typology emphasizes two dimensions: one concerning the diversity of approaches, and the other, the level of focus. The authors find that little evidence supports the standard model of policing—low on both of these dimensions. In contrast, research evidence does support continued investment in police innovations that call for greater focus and tailoring of police efforts, combined with an expansion of the tool box of policing beyond simple law enforcement. (Weisburd et al, 2004)

The governance of crime and security has undergone major transformations in recent decades. Several important shifts in the rationale and logic of crime control have led to a growth in regulatory practices and an expansion of regulatory provisions. As a result, the scope of actors who regulate behaviors have widened as have the types of tools to facilitate the governance of crime and security also expanded. (Gurinskaya et al, 2018)

As essential apparatus in crime analysis, crime mapping and Geographical Information Systems (GIS) are being progressively more accepted by police agencies. Development in technology and the accessibility of geographic data sources make it feasible for police departments to use GIS and crime mapping. GIS and crime mapping can

be utilized as devices to discover reasons contributing to crime, and hence let law enforcement agencies proactively take action against the crime problems before they become challenging. To achieve this purpose, first a historical evaluation of GIS and crime mapping will be rendered and then the importance of place will be explained in terms of assessing crime problems accurately. (Argun et al, 2016).

Chapter 3

RESEARCH METHOD

This chapter describes and explains the methodology deployed in this study, specifically the diagrams that will be utilized to develop the system.

Analysis Modeling

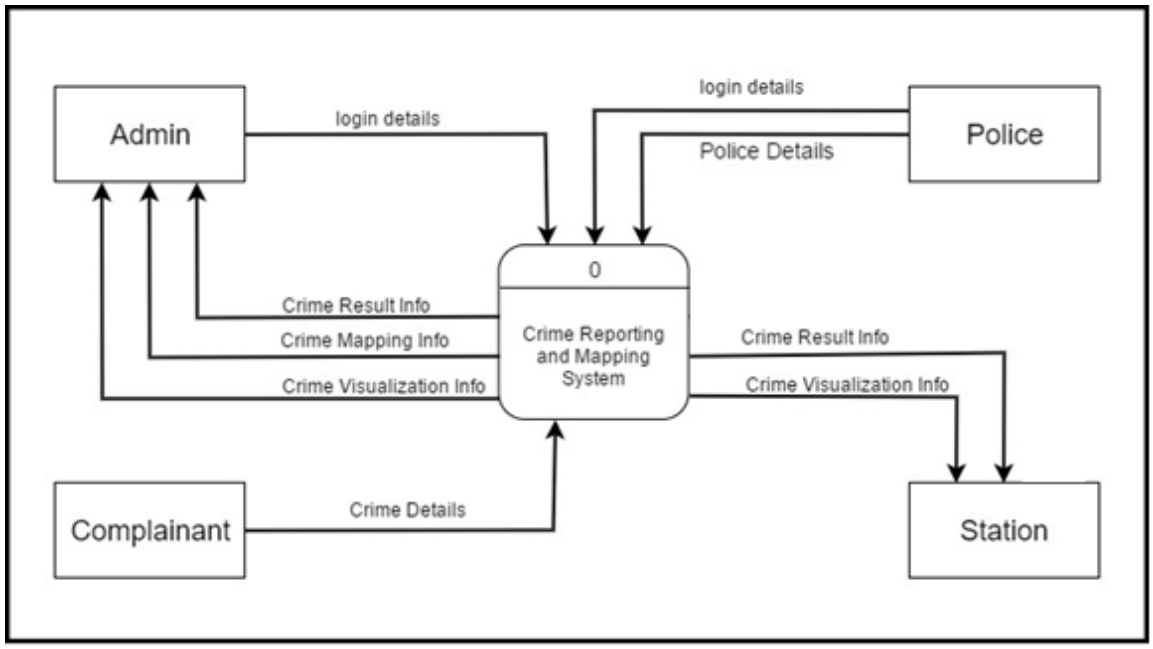

Figure 3.1 Context Diagram

This context diagram shows the inputs and outputs of the Management System, and its environments by showing the entities that interact with.

The Admin entity represents the authorized personnel of PNP Iligan who can manage the system and is able to register users The Police

entity represents all of the authorized PNP officers of Iligan City. This entity will be the one who will record any crime reported within any police stations in the city.

The Complainant entity represents the citizens who are going to report any crime or crime category that they want to settle.

The Station entity represents all of the authorized PNP ICPO Stations within Iligan City. This entity handles specific number of barangays within the city.

System Design

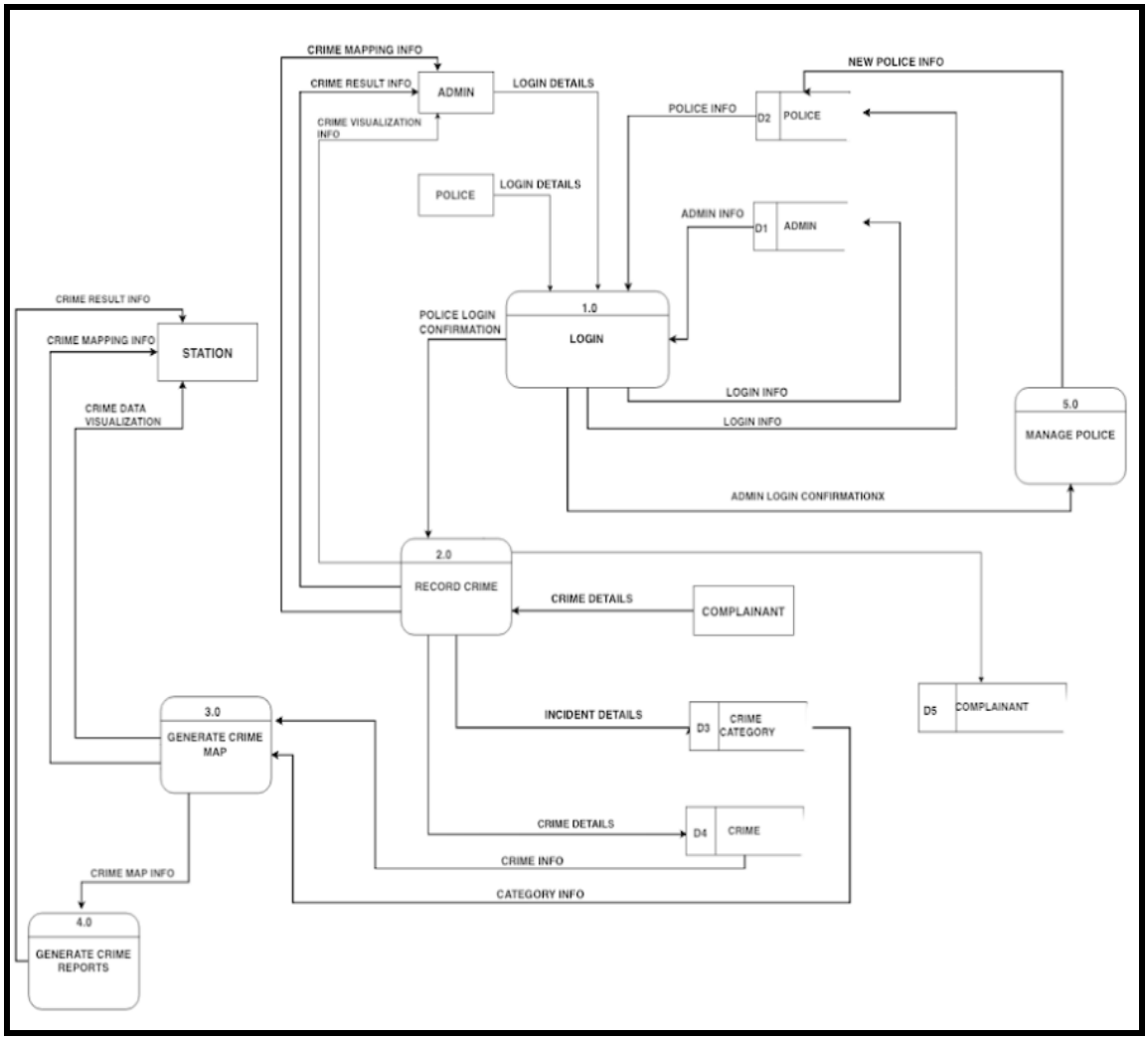

Figure 3.2 Data Flow Diagram

Process 1.0 verifies the login information as provided by the admin and police officer which are only their distinctive username and account passwords.

Process 2.0 allows the police officer record any crimes committed within iligan city.

Process 3.0 will plot the crime committed on the mapping system.

Process 4.0 will generate reports and graphs using spatio-temporal crime analysis.

Process 5.0 allows the admin to manage new authorized PNP personnel to use the system.

Decomposition

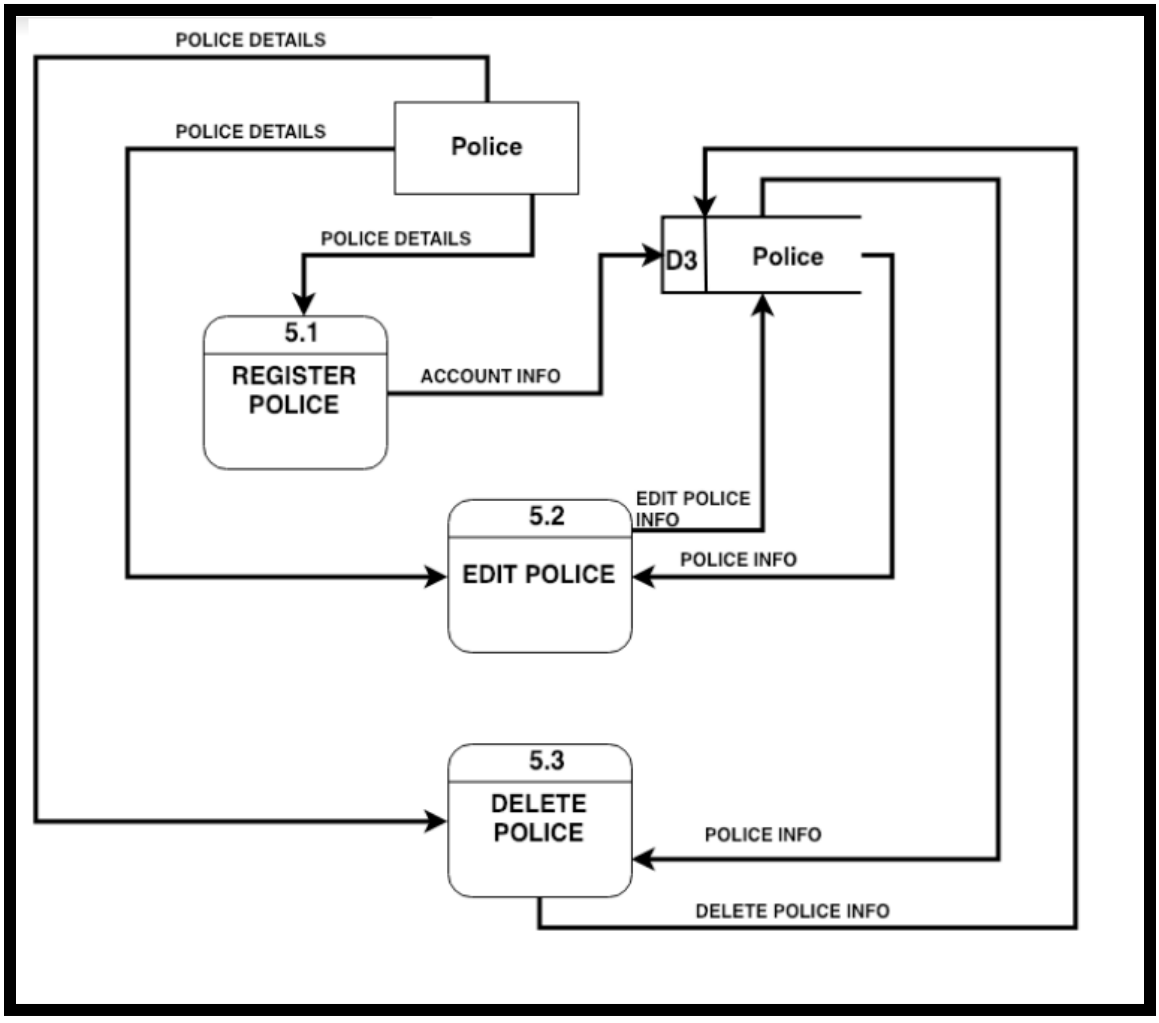

Figure 3.2.1 Decomposition of Process 5.0

Process 5.1 admin is able to add/register a police officer as a user.

Process 5.2 allows the admin to edit the police officer's info

Process 5.3 admin deletes the police info to the database.

Entity-Relationship Diagram

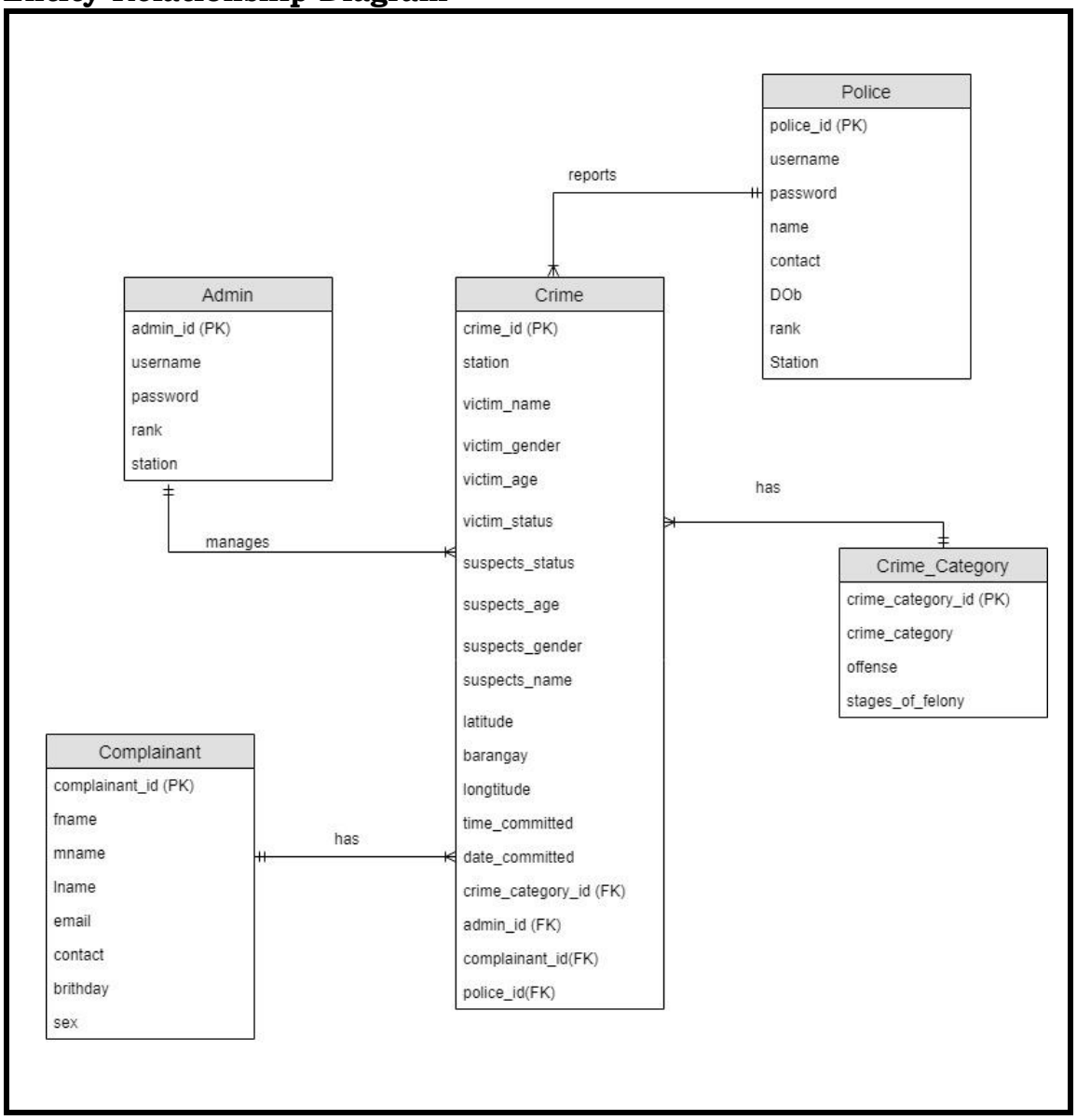

Figure 3.3 Entity-Relationship Diagram

The entity-relationship diagram (ERD) is a data modeling technique that graphically explicates an information system's entities and relationship between those entities.

The Crime Reporting and Mapping System involves four data stores: Admin, Police, Crime, Brgy and Address.

Data Dictionary

In this phase, researchers had constructed a data dictionary in order to have a collection of descriptions of the data objects or items in a data model for the benefit of programmers and others who need to refer to them. It consists of the different table, field, descriptions and type of the data used in the development of the system.

Table 3.4.1 Admin

Attribute	Type	Length	Description
Admin_id	Int	11	Primary key
Username	Varchar	25	Username of the user
Password	Varchar	25	Password of the user
rank	Varchar	25	Rank of the admin
Station	Varchar	25	ICPO station where the crime was reported

This is the admin entity table. With its attributes, username which is the username of the user, password which is the password of the user, rank which is the rank of the user and station which is the station assigned of the user.

Table 3.4.2 Crime Category

Attribute	Type	Length	Description
Crime_category_id	Int	11	Primary key
Crime_category	Varchar	25	Category of crime committed
Offense	Varchar	25	Offense of the crime
Stage_of_felony	Varchar	25	Stage of felony of the crime

This table shows the crime catgeory entity. Crime category means which type of crime it belongs, stage of felony in which the what stage of felony the crime belongs.

Table 3.4.3 Crime

Attribute	Type	Length	Description
Crime_id	Int	11	Primary key
Station	Int	11	Station where the is user assigned
Victim_name	Varchar	25	Name of the victim
Victim_gender	Varchar	25	Gender of the victim
Victim_age	Int	11	Age of the victim
Victim_status	Varchar	25	Status of the victim
Suspects_status	Varchar	25	Status of the suspect
Suspects_age	Int	11	Age of the suspect
Suspects_gender	Varchar	25	Gender of the suspect

Suspects_name	Varchar	25	Name of the suspect
Latitude	Int	11	Latitude where the crime happened
Barangay	Varchar	25	Barangay where the crime happened
Longitude	Int	11	Longitude where the crime happened
Time_committed	Int	11	Time the crime happened
Date_committed	Date	11	Date the crime happened
Crime_category_id(FK)	Int	11	Foreign key from crime_category
Admin_id(FK)	Int	11	Foreign key admin
Complainant_id(FK)	Int	11	Foreign key from complainant
Police_id(FK)	Int	11	Foreign key from police

This table 3.4.3 shows the crime entity. The table has a crime_id indicating the primary key of the table. This table will contain the data relating to specifics of the said crime committed such as the specifics of the victim and the specifics of the suspect and police officer that recorded the said crime, making it easy for the admin to locate the people involved in a crime and those police officers who handled it, It is connected to other tables such as the crime_category, admin, complainant and police tables.

Table 3.4.4 Police

Attribute	Type	Length	Description
Police_id	Int	11	Primary key
username	Varchar	25	Username of the user
Password	Varchar	25	password of the user
Name	Varchar	25	Name of the user
Contact	Int	11	Contact details of the user
DoB	Date		Date of birth if the user
Rank	Varchar	25	Rank of the user
Station	Varchar	25	ICPO station where the crime was reported

The police entity table shows that the table has attributes of police_id indicating the primary key of the police, username indicating the username of a specific user and password indicating the specific password of a user. Login details of the user police, such as the username, password, name, contact, dob, rank and assigned station of the police, this table is responsible for handling the police officers accounts securing the details of the users (police officers) also their login credentials and eligibility to record crimes and incidents that have been committed here inside Iligan City .

Table 3.4.5 Complainant

Attribute	Type	Length	Description
Complainant_id(PK)	Int	11	Primary key
Fname	Varchar	25	Username of the user
Mname	Varchar	25	password of the user
Lname	Varchar	25	Name of the user
Email	Int	11	Contact details of the user
Contact	Int	11	Date of birth if the user
Birthday	Date	25	Rank of the user
Sex	Varchar	25	ICPO station where the crime was reported

This is the complainant entity table, the table has attributes of complainant_id indicating the primary key of the police. Login details such as the username, password, name, contact, birthday and sex of the complainant.

Hardware Specifications

- Desktop Computer
- Laptop

Software Specifications

- Operating System: Windows 7 Ultimate 64-bit (6.1, Build 7601)
- Xampp v3.2.2

- Sublime Text 3, Build 3114, 64 bit
- Notepad++ v7.5.1
- Browser: Google Chrome
- PHP

3.6 Testing Procedure

Admin

1. First, make sure the computer being used is connected to the internet.
2. Then, the user must open the webpage.
3. After, the user must login his username and password to the system for confirmation. Note: Only those who registered on the application can login.
4. After the user has logged in, the user can see the hit maps of the crimes. The user can also manage reported crimes in the system on the different page.
5. Lastly, the user can see the updated hit map and the summarized graphs of the data in the system.

Police Officer

1. First, make sure the computer being used is connected to the internet.
2. Then, the user must open the webpage.

3. After, the user must login his username and password to the system for confirmation. Note: Only those who registered on the application can login.
4. After the user has logged in, the user can see the hit maps of the crimes and the can view the summarized graphs of the data in the system.
5. Lastly, the user can also manage the police information.

Research Environment

Figure 3.7.1 Locations of ICPO in Iligan City

In this stage, the research environments of the study is applied in Iligan City (Figure 3.7.1). The PNP Iligan has 5 substations namely, Police Station 1 located at Isabel Ramiro St, Police Station 2 located at

Fuentes Highway, Police Station 3 located at Tag-Ibo Highway, Police Station 4 located at Tubod Highway, Police Station 5 located at Candelaria Building, Mercado Street, and the headquarters of the PNP Iligan located at Tipanoy.

Research Instrument

In this study, the researchers will utilize the use of a questionnaire. The questionnaire is based from ISO 9126 software quality model standard which helps to facilitate in measuring the characteristics of software such as the functionality, reliability, usability, efficiency, maintainability, and portability to be made in the future. Each quality sub-characteristic (e.g. adaptability) is further divided into attributes. An attribute is an entity which can be verified or measured in the software product. Attributes are not defined in the standard, as they vary between different software products. This questionnaire will be helpful for the researchers for further understanding and enhancing the said system.

CHAPTER 4

RESULTS AND DISCUSSIONS

This chapter covers the testing results including the graphical user interface of the developed system. Each part of the system will be discussed thoroughly in this chapter to have a clearer understanding on the system and the functions that it offers.

4.1 Description of User Interface

The description prototype contains the explanations on how things work on the system page.

Figure 4.1.1 User Login Interface

This page shows the login page for the user (admin and the police) which requires registered username and password. The user will input his username and password at the bottom input text and press the sign in button; The Login button is utilized to connect to the server-side IP address as indicated by the input box.

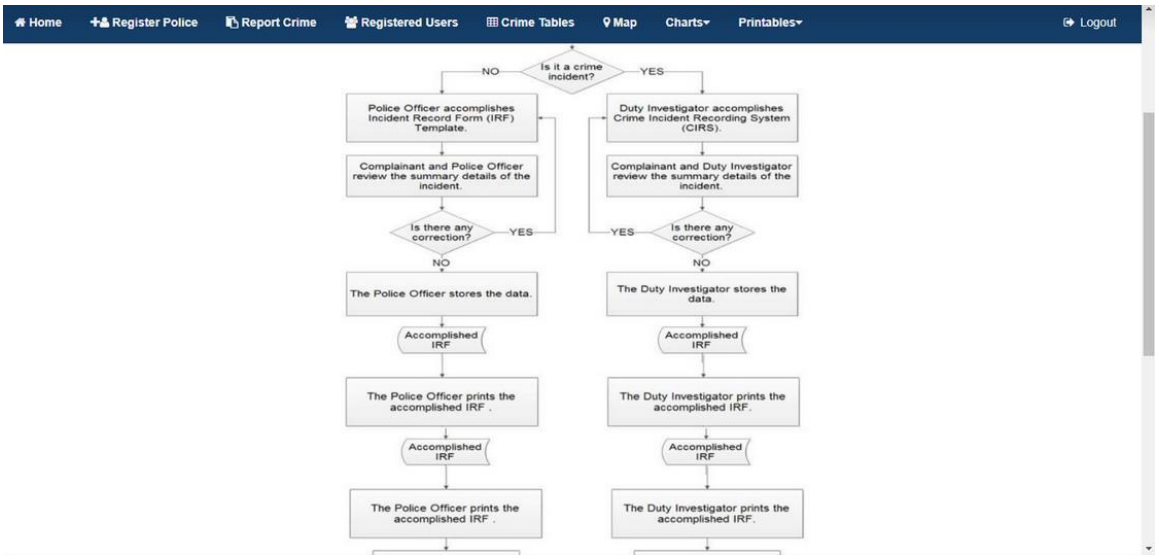

Figure 4.1.2 User's Home Page

This is the User's Home Page. In which, this page contains the contact information and social media of the PNP. This page also displays a RSS plugin in which shows the news related to the PNP.

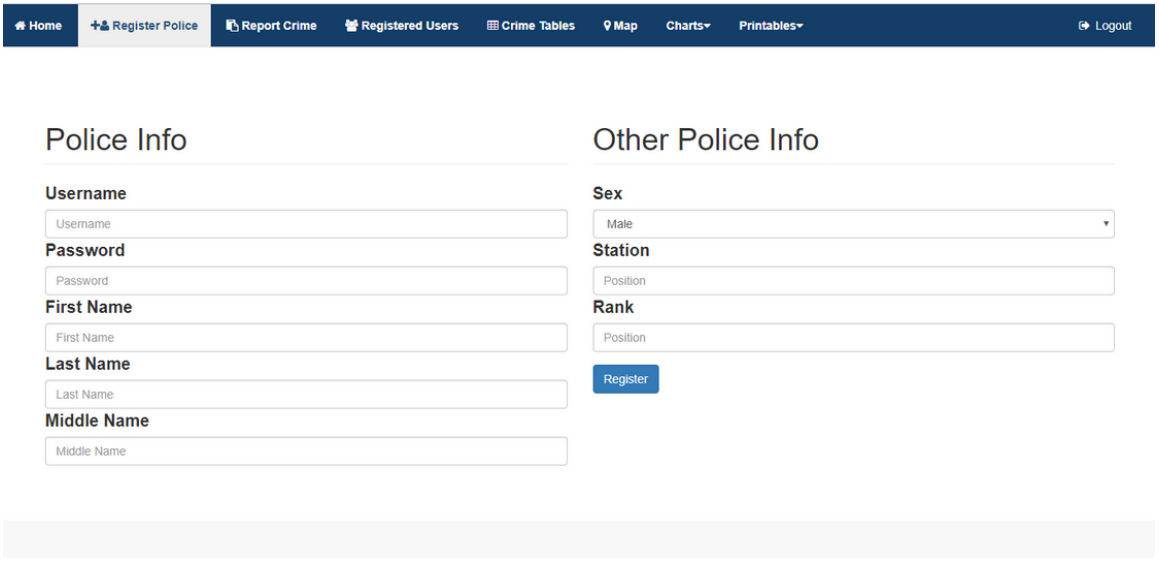

Figure 4.1.3 User (Police) Registration Page

This page contains the form registration in which the user (police) registers. The admin can register the police as a user. This contains the

basic information of the police such as Username, Password, Name and the assigned station in where they're posted.

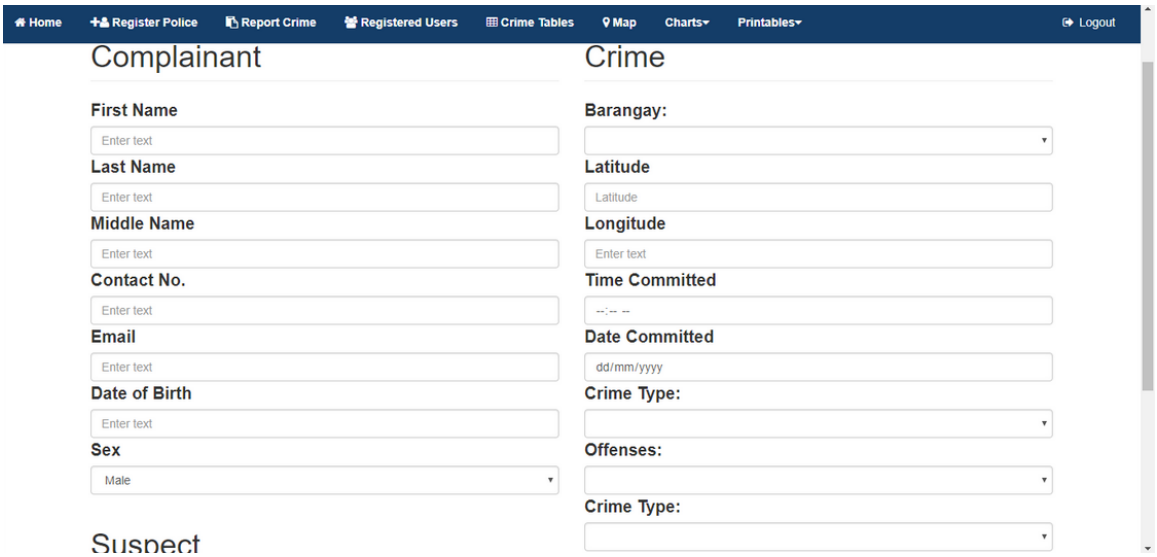

Figure 4.1.4 Report Crime Page

This page contains the where the admin or the police can input the details of the report by the complainant. This contains such as the details of the complainant, the details of the crime and the details of the suspect. The data will then be recorded in the database.

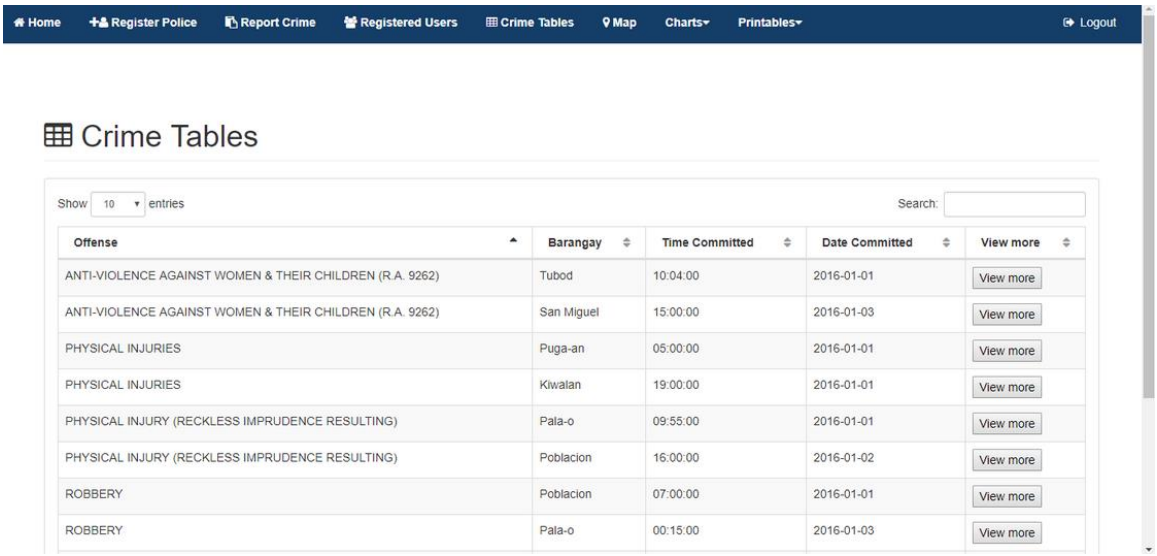

Figure 4.1.5 Crime Tables Page

In this Figure 4.1.5, shows the list of crimes recorded in the database. In this page you can see more details about the crimes in the database.

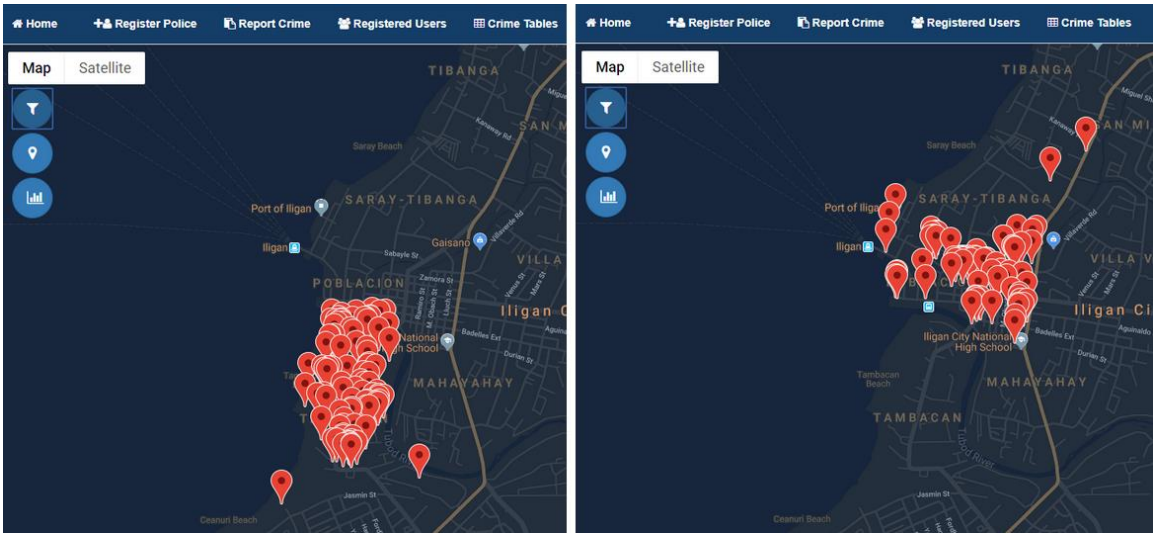

Figure 4.1.6.A Map of Iligan City Marked with Crimes

This map shows the places of Iligan City in which has marks that indicates where the crime happened in that area. In this image, the one on the left shows the barangay Tambacan. The one on the right shows the barangay of Poblacion. Both showing the markers with an offense of Comprehensive Dangerous Drugs Act Of 2002 but, In the system the user can actually choose a specific barangay and a specific offense and a specific year they need, creating a visualize data representation of crime rates in a particular area, in which they can create an assessment out of the visualize data shown in the system.

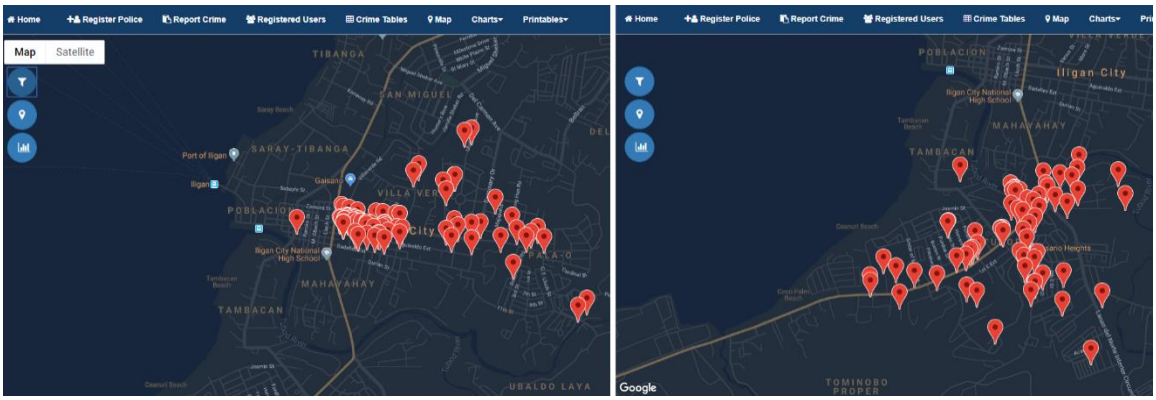

Figure 4.1.6.B Map of Iligan City Marked with Crimes

In this image, the one on the left shows the barangay Palao. The one on the right shows the barangay of Tubod. Both showing the markers with an offense of Theft but, In the system the user can actually choose a specific barangay and a specific offense and a specific year they need, creating a visualize data representation of crime rates in a particular area in which they can create an assessment out of the visualize data shown in the system.

Figure 4.1.7 Printable Crime Details

This is the information in which shows the all other information about the crime in which contains details such as offense, barangay, crime category, stages of felony, date, time, victim's gender, victim's age, suspect's gender, and suspect's age. In this page, you can have it become printable by clicking the print button.

Figure 4.1.8.A Data Charts

In addition, this page shows the all of the data represented in both line chart and donut chart. In the line chart it shows the comparison of

a selected crime by year. Meanwhile, in the donut chart, it shows the gender comparison between the number of victims and suspects based on a selected crime. You can also print these charts.

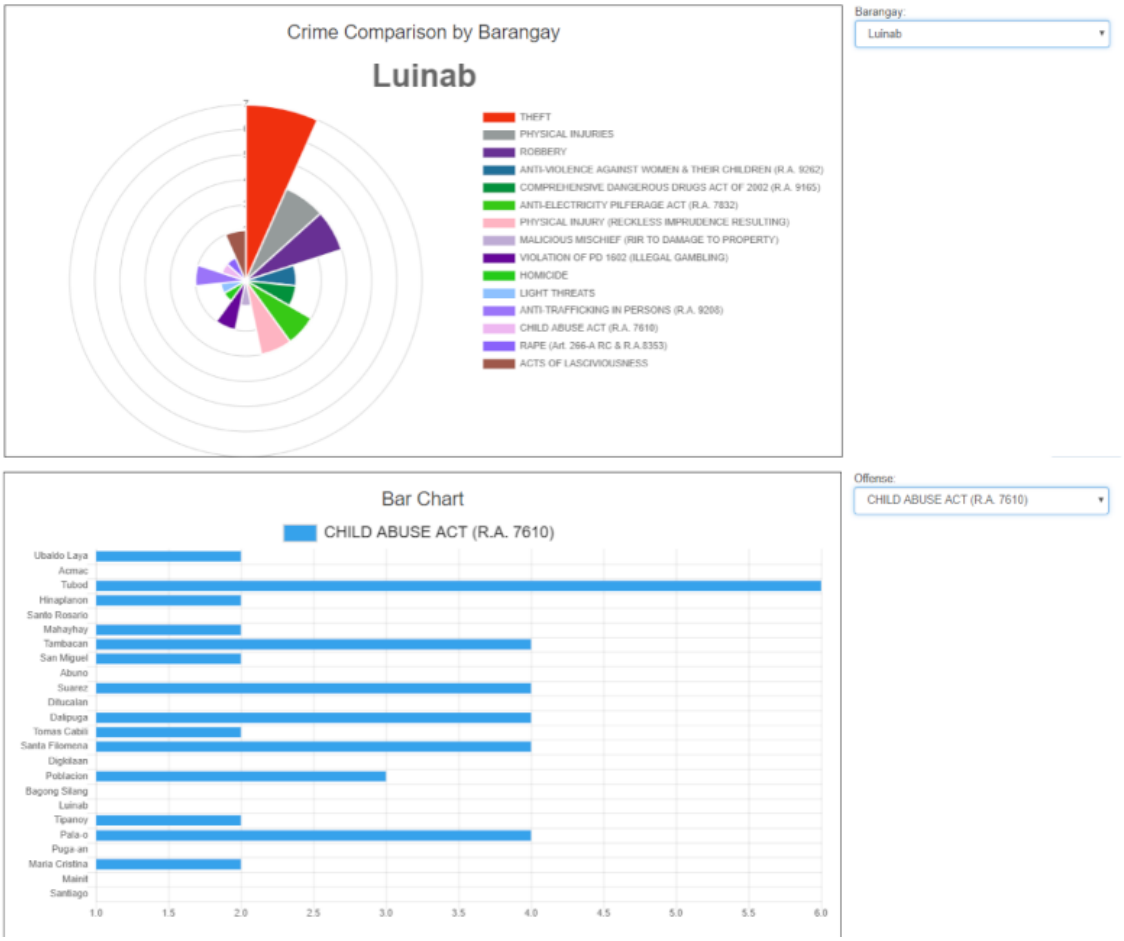

Figure 4.1.8.B Data Charts

Lastly, this shows the polar area chart and the bar chart, In the polar area it shows the number of crime on a selected barangay. In the bar chart you can see the number of crime committed between the barangays through a selected offense, the user can also select specific

crimes from the dropdown menu at the upper right corner of the screen. You can also print these charts.

4.2 System Testing

Figure 4.2.1 PNP Headquarters

The PNP Headquarters tested the developed system and evaluates the functions and features of the system. The officers examines the contents of the developed system like reporting crimes and adding users. However, the Police officers suggested on adding more feature and contents to the system.

Figure 4.2.2 PNP Police Stations Testing

The proponents present the developed system to the other police stations of Iligan City, to have them examine it and evaluate the system's functionality and over-all use, this is needed in order to make sure that the system was able to meet the PNP Iligan's approval. The proponents explained the procedures and functions of the system in order to have the police officers gain knowledge about the developed system.

Figure 4.2.3 Complainant Testing

The proponents present the developed system to the complainants/civilians, in order to measure how reliable the system can be, especially when civilians would want to file a complaint to the police stations. The proponents explained the procedures and function of the system in order for the respondents to test the system.

Table 4.2.4 Distribution of System Respondents.

Respondents	**Frequency**	**Percentage**
ICPO Station 1	3	6.25 %
ICPO Station 2	3	6.25 %
ICPO Station 3	3	6.25 %
ICPO Station 4	3	6.25 %
ICPO Station 5	3	6.25 %
PNP Iligan Headquarters	3	6.25 %
Complainants	30	62.50 %
Total	***48***	***100%***

Table 4.2.4 Distribution of System Respondents

This study has a forty-eight (48) respondents in a total. These composed of three (3) respondents for each police station and there are 5

police station which is thirty-one point five percent (31.5%) in a percentage. For the headquarters there are also three (3) respondents which is six point twenty-five percent (6.25%) in a percentage and a thirty (30) complainants which is sixty-two point fifty percent (62.50%) in total of one-hundred percent (100%). The chosen respondents from different stations and complainants will be the one who evaluated the system based on what they observe after using it. They will be given a questionnaire as for their guide in evaluating the software.

4.3 Testing and Results

Table 4.3.1 Distribution of user's assessment of the Crime Reporting and Mapping System for Spatio-Temporal Crime Analysis in Iligan City.

SUB-CHARACTERISCTICS	**MEAN**	**INTERPRETATION**
Suitability	8.13	High
Accurateness	6.83	Medium
Inter-operability	6.94	Medium
Security	6.98	Medium
Total	7.22	High

Table 4.3.1 presents the user's assessment of the Crime Reporting and Mapping System for Spatio-Temporal Crime Analysis in Iligan City in terms of Functionality as reflected from the table. The first line of the table shows the Suitability of the system which was interpreted medium

with a mean of 8.13, it implies that the system can perform the task required. In terms of Accurateness the user rated the system medium with a mean of 6.83, it means that the system is not so accurate to perform the given functions of the system and needs to be improved. The Inter-operability of the system was also rated medium with a mean of 6.94, it indicates that the system can interact with another system. The Security of the system was rated medium with a mean of 6.98, it signifies that the system can prevent unauthorized access of the system but there are loopholes in other security areas such as sql injection. The overall functionality of the system software was rated high with a mean of 7.22, it implies that the system software is functioning as specified and delivered the functionality characteristics.

Table 4.3.2 Distribution of user's assessment of the Crime Reporting and Mapping System for Spatio-Temporal Crime Analysis in Iligan City.

SUB-CHARACTERISCTICS	**MEAN**	**INTERPRETATION**
Maturity	6.70	Medium
Fault Tolerance	6.59	Medium
Recoverability	6.75	Medium
Total	6.68	Medium

Table 4.3.2 shows the user's assessment of the Crime Reporting and Mapping System for Spatio-Temporal Crime Analysis in Iligan City,

as reflected from the table. The first line of the table shows the Maturity of the system which was interpreted medium with a mean of 6.70, it indicates that the system has achieved maturity in terms of the development of the system. The Fault Tolerance of the system was rated medium with a mean of 6.59, it implies that the system is capable of handling errors. The Recoverability of the system was also rated medium with a mean of 6, it signifies that the system can restore lost data after failure occur. As gleaned, the users rated the Reliability of the system medium with a mean of 6.68, it implies that the system software is functioning as specified and delivered the reliability characteristics.

Table 4.3.3 Distribution of user's assessment of the Crime Reporting and Mapping System for Spatio-Temporal Crime Analysis in Iligan City.

SUB-CHARACTERISTICS	**MEAN**	**INTERPRETATION**
Understandability	7.77	High
Learnability	7.89	High
Attractiveness	6.39	Medium
Total	7.35	High

Table 4.3.3 presents the users' assessment of the Crime Reporting and Mapping System for Spatio-Temporal Crime Analysis in Iligan City in terms of Usability, as reflected from the table. The first line of the table shows the Understandability of the system which was interpreted high

with a mean of 7.77, it indicates that the system software is easy to perceive. The Learnability of the system was rated high with the mean of 7.89, it means that the system is easy to navigate without much effort. The Attractiveness of the system was also rated medium with a mean of 6.39, it implies that the interface of the system software is user friendly. As gleaned, the Usability of the system was rated 7.35 which is interpreted as high. It implies that the users of the designed system have the ease of use for a given function addresses the usability of the functions is easy for them to use the system.

Table 4.3.4 Distribution of user's assessment of the Crime Reporting and Mapping System for Spatio-Temporal Crime Analysis in Iligan City.

SUB-CHARACTERISTICS	**MEAN**	**INTERPRETATION**
Time Behavior	8.30	High
Resource Utilization	8.86	High
Total	8.58	High

Table 4.3.4 shows the user's assessment in terms of Efficiency. The first line of the table shows the Time Behavior of the system which was rated high with a mean of 8.30, it signifies that the system can quickly respond on time. The Resource Utilization of the system was rated high with a mean 8.86, it means that the system utilizes resources efficiently. As gleaned, the users rated the Efficiency of the system software high

with a mean of 8.58. It implies that the performance of the system confirms the functionality of the system.

Table 4.3.5 Distribution of user's assessment of the Crime Reporting and Mapping System for Spatio-Temporal Crime Analysis in Iligan City.

SUB-CHARACTERISTICS	**MEAN**	**INTERPRETATION**
Analyzability	6.69	Medium
Changeability	7.67	High
Stability	6.74	Medium
Testability	7.91	High
Total	7.25	High

Table 4.3.5 shows the users assessment of the Crime Reporting and Mapping System for Spatio-Temporal Crime Analysis in Iligan City in terms of Maintainability, as reflected from the table. The first line of the table shows the Analyzability of the system which was rated medium with a mean of 6.69, it indicates that the system can easily diagnose errors. The Changeability of the system software was rated high with a mean of 7.67, it means that the system can be easily modified. The Stability of the system was also rated medium with a mean of 6.74, it signifies that the system is well stable and can adopt to changes. The Testability of system was rated high with a mean of 7.91, it means that the system can be tested easily. The overall Maintainability of the system

software was interpreted as medium with a mean of 7.25, it infers that the designed system of the researchers has a reference of supportability. It has the ability to verify or test the system and is impacted by code readability or complexity as well as modularization.

Table 4.3.6 Distribution of user's assessment of the Crime Reporting and Mapping System for Spatio-Temporal Crime Analysis in Iligan City.

SUB-CHARACTERISITICS	**MEAN**	**INTERPRETATION**
Adaptability	7.81	High
Installability	7.79	High
Conformance	7.66	High
Replaceability	7.90	High
Total	7.79	High

Table 4.3.6 shows that the users' assessment of the Crime Reporting and Mapping System for Spatio-Temporal Crime Analysis in Iligan City in terms of Portability, as reflected from the table. The first line of the table shows the Adaptability of the system which was interpreted high with a mean of 7.81, it means that the system software is adaptable to any kinds of environment as long as it's connected to internet. The Installability of the system was interpreted high with a mean of 7.79, it implies that the system can be easily installed. The Conformance of the system was interpreted high with a mean of 7.66, it indicates that the system complies the portability standards. In terms of

Replaceability the system software was interpreted high with a mean of 7.90, it means the system software can easily replace other software. The overall Portability of the system was interpreted high with a mean of 7.79. It discloses that the designed system of the researchers can adopt to changes in its environment or with its requirements.

Table 4.3.7 Distribution of user's assessment of the Crime Reporting and Mapping System for Spatio-Temporal Crime Analysis in Iligan City.

CHARACTERISTICS	**MEAN**	**INTERPRETATION**
Functionality	7.22	High
Reliability	6.68	Medium
Usability	7.35	High
Efficiency	8.58	High
Maintainability	7.25	Medium
Portability	7.79	High
Total	7.48	High

Table 4.3.7 presents the summary of the users' assessment of the PNP Web Based Crime Reporting and Mapping System. The overall functionality of the system software was rated high with a mean of 7.22, it implies that the system software is functioning as specified and delivered the functionality characteristics. The Reliability of the system was also interpreted medium with a mean of 6.68, it implies that the

system software is functioning as specified and delivered the reliability characteristics. In terms of Usability of the system it was also interpreted high with a mean of 7.35, it indicates that the users of the designed system have the ease of use for a given function addresses the usability of the functions is easy for them to use the system. The Efficiency of the system software was interpreted high with a mean of 8.58. It implies that the performance of the system confirms the functionality of the system. The overall Maintainability of the system software was interpreted as medium with a mean of 7.25, it infers that the designed system of the researchers has a reference of supportability. The overall Portability of the system was interpreted high with a mean of 7.79. As gleaned, the designed system has a mean of 7.48 interpreted as high. The table describes quality of the software based on the ISO/IEC 9126 standard. On the other hand, the researchers have seen that the system can still be improve in terms of its functionality, reliability and efficiency with intention to better serve the PNP Iligan and the City of Iligan.

Chapter 5

CONCLUSION AND RECOMMENDATION

This chapter presents the conclusion made and the recommendations being offered to further develop the efficiency of the system on Crime Mapping and Mapping System for Spatio-Temporal Crime Analysis in Iligan City.

Summary of Findings

Based on the results found on the previous chapter, the proponents have the following findings:

1. With the help of the visualized data of the system the Iligan City Police Office can now allocate their assets and resources to appropriate places much more efficiently
2. Time is one of the most valuable resources available. With the help of the developed system, the Iligan City Police Office can now analyze the data faster and efficiently with the help of the visualized data. Resulting in an efficient planning and prevention of crime handling.

Conclusion

The Crime Reporting and Mapping System for Spatio-Temporal Crime Analysis in Iligan City is a web-based system that will focus in

reporting crimes and giving visualization of the data given namely the heat maps and the charts. The proponent developed the system to ensure that the PNP will have an online crime reporting and visualization on the data.

It has been a problem for the PNP Iligan City there is no visualization of the data the PNP have. In addition, there is no existing system for the the PNP Iligan City for spatio-temporal visualization of data. The system was evaluated by 18 police officers from different stations and 30 complainants throughout the Iligan City. As per evaluation result of the overall system, it has a mean of 6.81 interpreted as medium. The overall mean was broken down into 6 smaller categories such as functionality, reliability, usability, efficiency, maintainability, and portability.

The system's overall functionality has the mean of 6.76 interpreted as medium; reliability has the mean of 6.57 interpreted as medium; usability has the mean of 7.15 interpreted as high; efficiency has the mean of 6.53 interpreted as medium; maintainability has the mean of 6.94 interpreted as medium; portability has the mean of 6.93 interpreted as medium. Overall, the proponents of the study have concluded that Crime Reporting and Mapping System for Spatio-Temporal Crime Analysis in Iligan City can be used and confirms the ability of the system

to better serve the community of Iligan in cases of Crime reporting and visualization of the crime reported data but it needs some improvement.

Recommendations

The proponent recommends the following to the future researchers for further development of the system:

- The system can be accessed through a mobile device.
- There will be more interpretation and analysis of the data
- The system will give a recommendation on what the police officer needs to do in order to assign the resources efficiently.
- The system can show the detailed profiles of both the victim and suspects for a more comprehensive information.

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Appendix A (Gantt Chart)

Activities	**April 10-11**	**April 11-15**	**April 16-30**	**May 1-7**	**May 8-20**	**May 21-24**	**June 1-30**	**July 1 Oct. 15**	**Oct. 16-22**	**Oct. 23-25**
Come up with a research proposal	■									
Chapter 1 Documentation		■								
Chapter 2 Documentation			■							
Chapter 3 Documentation				■	■					
Proposal Hearing						■				
Graphic User Interface (GUI) Designing							■			
Coding Function								■		
Chapter 4 and 5 Documentation									■	
Final Defense										■

Appendix B (Testing Documents)

ISO 9126 QUALITY SYSTEM ASSESSMENT TOOL
(Source: ISO 1991; Alain Abran 2003)

Name:_____ Sex: _____

Age: _____ Address: _____

Instructions: Please check your level of agreement to the system on the following statement where 1 is the lowest and 9 is the highest.

CHARACTERISTICS	SUB-CHARACTERISTICS	DESCRIPTION	Weight								
			1	2	3	4	5	6	7	8	9
Functionality	Suitability	Can software perform the tasks required?									
	Accurateness	Is the result as expected?									
	Interoperability	Can the system interact with another with another system?									
	Security	Does the software prevent unauthorized access?									
Reliability	Maturity	Have the most of the faults in the software been eliminated over time?									
	Fault tolerance	Is the software capable of handlingerrors?									
	Recoverability	Can the software resume working and restore lost data after failure?									
Usability	Understandability	Does the user comprehend how to use the system easily?									
	Learnability	Can the user learn to use the system without much effort?									
	Attractiveness	Does the interface look good?									
Efficiency	Time Behavior	How quickly does the system respond?									
	Resource Utilization	Does the system utilize resources efficiently?									
Maintainability	Analyzability	Can faults be easily diagnosed?									
	Changeability	Can the software be easily modified?									
	Stability	Can the software continue functioning if the changes are made?									
	Testability	Can other software be tested easily?									
Portability	Adaptability	Can the software be moved to other environments?									
	Installability	Can the software be installed easily?									
	Conformance	Does the software comply with portability standards?									
	Replaceability	Can the software easily replace other software?									

Appendix C (Letter for PNP Requesting Data)

St. Michael's College
Iligan City

May 11, 2018

PSSUPT Leony Roy Geroche Ga
PNP Headquarters Iligan City
Tipanoy, Iligan City, 9200
Lanao Del Norte

Dear PSSUPT Leony Roy Geroche Ga,

Praise be Jesus and Mary!

We are Allan Arnt Bicoy and Jecy Jericho Ong, BS Information Technology students from the College of Engineering and Computer Studies in St. Michael's College. As part of our requirements for the final yr. is to come up with a Capstone Project, In this regard our plan is to have a study entitled "Crime Reporting and Mapping System for Spatio – Temporal Analysis in Iligan City". The study is about developing a crime reporting and mapping system that will represent any violent and property crimes through a mapping system and by using spatio – temporal crime analysis the can give recommendations accordingly.

For us to complete our study, we humbly ask for your permission to request data about the crimes that are committed here in Iligan city. And in line with this we would also like to conduct a short interview that will not take up much of your precious time. And if ever our request is granted, we will assure you that PNP Iligan will be highly acknowledge in our paper and that the requested data and its content will remain strictly confidential and if ever we fail to do so, we will take full responsibility for it.

We are hoping for your kind understanding and consideration, Thank you.

Very respectfully yours,

Allan Arnt Bicoy
Researcher

Jecy Jericho Ong
Researcher

Noted by:

Jerome Abilay
Thesis Adviser

Engr. Maria Fe Bahinting
College Dean

ILIGAN CITY POLICE OFFICE
RECEIVED BY: PO1 Tamayo
DATE / TIME: 5/11/18 2:10 pm

Appendix D (Letter for Testing)

St. Michael's College

Iligan City

November 5, 2018

PSSUPT Rene P. Solidarios

PNP Headquarters Iligan City

Tipanoy, Iligan City, 9200

Lanao Del Norte

Dear PSSUPT Rene P. Solidarios,

Praised be Jesus and Mary!

We are Allan ArntBicoy and Jecy Jericho Ong, BS Information Technology students from the College of Engineering and Computer Studies in St. Michael's College. As part of our requirements for the final year. We have come up a Capstone Project entitled "Crime Reporting and Mapping System for Spatio – Temporal Analysis in Iligan City". The study is about developing a crime reporting and mapping system that will represent any violent and property crimes through a mapping system and by using spatio – temporal crime analysis that can visualize the given data.

Last summer May, 2018 we requested to be given crime data for our given study, our outmost gratitude and thanks to PNP Iligan, for granting our request that time and we highly appreciate your consideration for us.

And now, for us to finally complete our study, we humbly ask for your permission again Sir, for us, the researchers to conduct a short testing for our system. We are required to have at least 3 respondents each stations in Iligan City namely; Station 1, Station 2, Station 3, Station 4, Station 5, along with the headquarters with the total of 18 respondents. We alsowould like tohumbly ask for your recommendations and opinions throughout the testing. We promise this will only take a littlebit of precious time. And if this request is granted, we will make surely that you Sir, PSSUPT Rene P. Solidarios and the PNP Iligan will be highly acknowledge in our paper.

We are hoping for your kind understanding and consideration, Thank you.

Very respectfully yours,

Allan Arnt Bicoy
Researcher

Jecy Jericho Ong
Researcher

ILIGAN CITY POLICE OFFICE
RECEIVED BY: POI AVOS
DATE / TIME: 11/05/18 - 12:05 PM

Noted by:

Jerome Abilay
Thesis Adviser

Appendix E (Source Code)

PNPmapping/php/index.php

```
<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="utf-8">

    <meta http-equiv="X-UA-Compatible" content="IE=edge">

    <meta name="viewport" content="width=device-width, initial-scale=1">

    <meta name="description" content="">

    <meta name="author" content="">

    <title>Crime Reporting and Mapping System for Spation-Temporal in Iligan City</title>

    <link href="vendor/bootstrap/css/bootstrap1.min.css" rel="stylesheet">

    <link href="vendor/font-awesome/css/font-awesome1.min.css" rel="stylesheet" type="text/css">

    <link href="https://fonts.googleapis.com/css?family=Montserrat:400,700" rel="stylesheet" type="text/css">

    <link href='https://fonts.googleapis.com/css?family=Kaushan+Script' rel='stylesheet' type='text/css'>

    <link href='https://fonts.googleapis.com/css?family=Droid+Serif:400,700,400italic,700italic' rel='stylesheet' type='text/css'>

    <link href='https://fonts.googleapis.com/css?family=Roboto+Slab:400,100,300,700' rel='stylesheet' type='text/css'>

    <link href="css/agency.min.css" rel="stylesheet">


</head>

<body id="page-top" class="index">

    <nav id="mainNav" class="navbar navbar-default navbar-custom navbar-fixed-top">
```

```
        <div class="container">
            <div class="navbar-header page-scroll">
                <button type="button" class="navbar-toggle" data-
toggle="collapse" data-target="#bs-example-navbar-collapse-1">
                    <span class="sr-only">Toggle navigation</span> Menu <i
class="fa fa-bars"></i>
                </button>
                <a class="navbar-brand page-scroll" href="#page-
top">Welcome!</a>
            </div>
            <div class="collapse navbar-collapse" id="bs-example-navbar-
collapse-1">
                <ul class="nav navbar-nav navbar-right">
                    <li class="hidden">
                        <a href="#page-top"></a>
                    </li>
                    <li>
                        <a class="page-scroll" href="#about">About Us</a>
                    </li>
                    <li>
                        <a class="page-scroll" href="#info">More Info</a>
                    </li>
                    <li>
                        <a class="page-scroll" href="#mandate">PNP
Mandate</a>
                    </li>
                    <li>
                        <a class="page-scroll" href="php/login.php">Login</a>
                    </li>
                </ul>
            </div>
```

```
        </div>
    </nav>
    <header>
        <div class="container">
            <div class="intro-text">
                <div class="intro-lead-in" style="text-shadow: 4px 4px 5px black;">To Serve and To Protect</div>
                <div class="intro-heading" style="text-shadow: 4px 4px 5px black;">Philippine National Police</div>
            </div>
        </div>
    </header>
    <section id="about">
        <div class="container">
            <div class="row">
                <div class="col-lg-12 text-center">
                    <h2 class="section-heading">About Us</h2>
                </div>
            </div>
            <div class="row text-center">
                <div class="col-md-4">
                    <div class="timeline-image">
                            <center><img class="img-circle img-responsive" src="img/about/mission.png" alt=""></center>
                    </div>
                    <h4 class="service-heading">Mission</h4>
                    <p class="text-muted">The PNP shall enforce the law, prevent and control crimes, maintain peace and order, and ensure public safety and internal security with the active support of the community.</p>
                </div>
```

```
            <div class="col-md-4">
                <div class="timeline-image">
                        <center><img class="img-circle img-responsive"
src="img/about/vision.png" alt=""></center>
                </div>
                <h4 class="service-heading">Vision</h4>
                <p class="text-muted">Imploring the aid of the Almighty, by
2030, We shall be a highly capable, effective and credible police service
working in partnership with a responsive community towards the
attainment of a safer place to live, work and do business.</p>
            </div>
            <div class="col-md-4">
                <div class="timeline-image">
                        <center><img class="img-circle img-responsive"
src="img/about/values.png" alt=""></center>
                <h4 class="service-heading">Core Values</h4>
                <p class="text-muted">Makadiyos (God-fearing)<br>
                                Makabayan (Nationalilstic)<br>
                                Makatao (Humane)<br>
                                Makakalikasan (Environment-Friendly)</p>
            </div>
        </div>
    </div>
</section>
<section id="info">
    <div class="container">
        <div class="row">
            <div class="col-lg-12 text-center">
                <h2 class="section-heading">PNP P.A.T.R.O.L.</h2>
                <h3 class="section-subheading text-muted">Plan 2030
Roadmap</h3>
```

```
            </div>
        </div>
        <div class="row">
            <div class="col-lg-12">
                <ul class="timeline">
                    <li>
                        <div class="timeline-image">
                            <img class="img-circle img-responsive"
src="img/about/1.jpg" alt="">
                        </div>
                        <div class="timeline-panel">
                            <div class="timeline-heading">
                                <h4>Community</h4>
                            </div>
                            <div class="timeline-body">
                                <p class="text-muted">
                                    A safer place to live, work and do business.
                                </p>
                            </div>
                        </div>
                    </li>
                    <li class="timeline-inverted">
                        <div class="timeline-image">
                            <img class="img-circle img-responsive"
src="img/about/2.jpg" alt="">
                        </div>
                        <div class="timeline-panel">
                            <div class="timeline-heading">
                                <h4>Process Excellence</h4>
                            </div>
```

```
                        <div class="timeline-body">
                            <p class="text-muted">Improve crime prevention.
                            <br>
                            Improve crime solution.
                            </p>
                        </div>
                    </div>
                </li>
                <li>
                    <div class="timeline-image">
                        <img class="img-circle img-responsive"
src="img/about/3.jpg" alt="">
                    </div>
                    <div class="timeline-panel">
                        <div class="timeline-heading">
                            <h4>Learning and Growth</h4>
                        </div>
                        <div class="timeline-body">
                            <p class="text-muted">Develop Competent,
Motivated, Values-oriented and Disciplined Police Personel.</p>
                        </div>
                    </div>
                </li>
                <li class="timeline-inverted">
                    <div class="timeline-image">
                        <img class="img-circle img-responsive"
src="img/about/4.jpg" alt="">
                    </div>
                    <div class="timeline-panel">
                        <div class="timeline-heading">
```

```
                        <h4>Resource Management</h4>
                    </div>
                    <div class="timeline-body">
                        <p class="text-muted">Optimize use of financial and logical resources.</p>
                    </div>
                </div>
            </li>
            <li class="timeline-inverted">
                <div class="timeline-image">
                    <h4>Help
                        <br>Us
                        <br>Improve</h4>
                </div>
            </li>
        </ul>
    </div>
</div>
</section>
<section id="mandate" class="bg-light-gray">
    <div class="container">
        <div class="row">
            <div class="col-lg-12 text-center">
                <h2 class="section-heading">PNP Mandate</h2>
                <h3 class="section-subheading text-muted">Republic Act 6975 entitled An Act Establishing the Philippine National Police under a reorganized Department of the Interior  and Local Government and Other Purposes as amended by RA  8551 Philippine National Police Reform and Reorganization Act of 1998 and further amended by RA 9708.</h3>
            </div>
```

```
            </div>
    </section>
    <footer>
        <div class="container">
            <div class="row">
                <div class="col-md-4">
                    <span class="copyright">Copyright &copy; Your Website
2018</span>
                </div>
    </footer>
    <script src="vendor/jquery/jquery.min.js"></script>
    <script src="vendor/bootstrap/js/bootstrap.min.js"></script>
    <script src="https://cdnjs.cloudflare.com/ajax/libs/jquery-
easing/1.3/jquery.easing.min.js"></script>
    <script src="js/jqBootstrapValidation.js"></script>
    <script src="js/contact_me.js"></script>
    <script src="js/agency.min.js"></script>
</body>
</html>
```

PNPmapping/db/DB_info.php

```
<?php
$username="root";
$password="";
$database="pulis";
$connection=mysqli_connect ('localhost', $username, $password);
if (!$connection) {
  die('Not connected : ' . mysql_error());
}else{
}
```

```
$db_selected = mysqli_select_db($connection,$database);
if (!$db_selected) {
  die ('Can\'t use db : ' . mysqli_error());
}else{
}
?>
```

PNPmapping/php/navbar.php

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="utf-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <meta name="description" content="">
    <meta name="author" content="">
    <title>SB Admin 2 - Bootstrap Admin Theme</title>
    <link href="../vendor/bootstrap/css/bootstrap.min.css"
rel="stylesheet">
    <link href="../vendor/metisMenu/metisMenu.min.css"
rel="stylesheet">
    <link href="../dist/css/sb-admin-2.css" rel="stylesheet">
    <link href="../vendor/morrisjs/morris.css" rel="stylesheet">
    <link href="../vendor/font-awesome/css/font-awesome.min.css"
rel="stylesheet" type="text/css">
</head>
<body>
    <div id="wrapper">
        <nav class="navbar navbar-default navbar-static-top"
role="navigation" style="margin-bottom: 0;background-color: #143d68;">
            <div class="navbar-header">
```

```
<button type="button" class="navbar-toggle" data-toggle="collapse" data-target=".navbar-collapse">
<span class="sr-only">Toggle navigation</span>
<span class="icon-bar"></span>
<span class="icon-bar"></span>
<span class="icon-bar"></span>
</button>
<ul class="nav navbar-top-links navbar-right" style="font-weight: bold;">
<li><a class="a_nav" href="admin.php"><i class="fa fa-home"></i> Home </a></li>
<li><a class="a_nav" href="register_police.php"><i class="fa fa-plus"></i><i class="fa fa-user"></i> Register Police </a></li>
<li><a class="a_nav" href="report_crime.php"><i class="fa fa-clipboard"></i> Report Crime </a></li>
<li><a class="a_nav" href="registered_users.php"><i class="fa fa-users"></i> Registered Users </a></li>
<li><a class="a_nav" href="crime_tables.php"><i class="fa fa-table"></i> Crime Tables </a></li>
<li><a class="a_nav" href="map.php"><i class="fa fa-map-marker"></i> Map </a></li>
<li>
<a class="dropdown-toggle" data-toggle="dropdown" href="#">
<i class="fa fa-envelope fa-fw"></i> <i class="fa fa-caret-down"></i>
</a>
<ul class="dropdown-menu dropdown-messages">
<li>
<a href="#">
test
</a>
</li>
```

```
                </ul>
            </li>
            </ul>
        </div>
        <ul class="nav navbar-top-links navbar-right">
                <li><a class="a_nav" href="login.php"><i class="fa fa-sign-
out fa-fw"></i> Logout</a></li>
        </ul>
    </nav>
  </div>
  <script src="../vendor/jquery/jquery.min.js"></script>
  <script src="../vendor/bootstrap/js/bootstrap.min.js"></script>
  <script src="../vendor/metisMenu/metisMenu.min.js"></script>
  <script src="../vendor/raphael/raphael.min.js"></script>
  <script src="../vendor/morrisjs/morris.min.js"></script>
  <script src="../data/morris-data.js"></script>
  <script src="../dist/js/sb-admin-2.js"></script>
</body>
</html>
```

PNPmapping/php/login.php

```
<?php
$con=mysqli_connect('localhost','root','','pulis');
if(!$con){
        echo'fail';
}
else{
        echo'sulods';
}
if(isset($_POST['btn'])){
```

```
$user=$_POST['username'];
$pass=$_POST['password'];
$POLICEuser='';
$POLICEpass='';
$type1='';
$type2='';
$ADMINuser='';
$ADMINpass='';
$admin='admin';
$police='police';
$query=mysqli_query($con,"select * from police where username =
'$user' and password = '$pass'");
while($row=mysqli_fetch_assoc($query)){
        $POLICEuser=$row['username'];
        $POLICEpass=$row['password'];
        $type1=$row['userType'];
}
$query2=mysqli_query($con,"select * from admin where username
= '$user' and password = '$pass'");
while($row=mysqli_fetch_assoc($query2)){
        $ADMINuser=$row['username'];
        $ADMINpass=$row['password'];
        $type2=$row['userType'];
}

if($user==$POLICEuser && $pass==$POLICEpass &&
$type1==$police){
        echo "<script>
        alert(' halo police');
         window.location.href='admin.php';
```

```
            </script>";
        }
        elseif($user==$ADMINuser && $pass==$ADMINpass &&
$type2==$admin){
            echo "<script>
            alert('helo  admin');
            window.location.href='admin.php';
            </script>";
        }elseif($user=='' && $pass==''){
            echo "<script>
            alert('way sulods');
            </script>";
        }
        else{
            echo "<script>
            alert('wrong password or username');
            </script>";
        }
}
?>
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="utf-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <meta name="description" content="">
    <meta name="author" content="">
    <title>Login Page</title>
```

```
    <link href="../vendor/bootstrap/css/bootstrap.min.css"
rel="stylesheet">

    <link href="../vendor/metisMenu/metisMenu.min.css"
rel="stylesheet">

    <link href="../dist/css/sb-admin-2.css" rel="stylesheet">

    <link href="../vendor/font-awesome/css/font-awesome.min.css"
rel="stylesheet" type="text/css">

</head>

<body class="bg">

    <div class="container">

        <div class="row">

            <div class="col-md-4 col-md-offset-4">

                <div class="login-panel panel panel-default" style="border-
style: none;">

                    <div class="panel-heading" style="background-color:
#337ab7;color: white;border-style: none;">

                        <h3 class="panel-title">Please Sign In</h3>

                    </div>

                    <div class="panel-body">

                        <form action = "#" method = "post" role="form">

                            <fieldset>

                                <div class="form-group">

                                    <input class="form-control"
placeholder="Username" name="username" type="username" autofocus>

                                </div>

                                <div class="form-group">

                                    <input class="form-control"
placeholder="Password" name="password" type="password" value="">

                                </div>

                                <div class="checkbox">

                                    <label>
```

```
                                <input name="remember" type="checkbox"
value="Remember Me">Remember Me
                                </label>
                            </div>
                            <input type="submit" class="btn btn-lg btn-success
btn-block" name="btn" id="loginbtn" value="Login" style="border-style:
none;">
                        </fieldset>
                    </form>
                </div>
            </div>
        </div>
    </div>
    <script src="../vendor/jquery/jquery.min.js"></script>
    <script src="../vendor/bootstrap/js/bootstrap.min.js"></script>
    <script src="../vendor/metisMenu/metisMenu.min.js"></script>
    <script src="../dist/js/sb-admin-2.js"></script>
</body>
</html>
```

PNPmapping/php/admin.php

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="utf-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <meta name="description" content="">
    <meta name="author" content="">
```

```
    <title>SB Admin 2 - Bootstrap Admin Theme</title>

    <link href="../vendor/bootstrap/css/bootstrap.min.css"
rel="stylesheet">

    <link href="../vendor/metisMenu/metisMenu.min.css"
rel="stylesheet">

    <link href="../dist/css/sb-admin-2.css" rel="stylesheet">

    <link href="../vendor/morrisjs/morris.css" rel="stylesheet">

    <link href="../vendor/font-awesome/css/font-awesome.min.css"
rel="stylesheet" type="text/css">

</head>

<body>

<?php

    include("navbar.php");

?>

<div id="page-wrapper">

    <div class="wrapper">

    <section id="info">

    <div class="container">

        <div class="row">

            <center><h1 class="page-header">Revised Blotter Procedure
Flowchart</h1></center>

            <img src="../img/chart.jpg" style="display: block;margin-left:
auto;margin-right: auto;width: 50%;">

            <script type="text/javascript" src="https://feed.mikle.com/js/fw-
loader.js" data-fw-param="90710/"></script>

        </div>

    </div>

    </section>

    </div>

</div>

    <script src="../vendor/jquery/jquery.min.js"></script>
```

```
    <script src="../vendor/bootstrap/js/bootstrap.min.js"></script>
    <script src="../vendor/metisMenu/metisMenu.min.js"></script>
    <script src="../vendor/raphael/raphael.min.js"></script>
    <script src="../vendor/morrisjs/morris.min.js"></script>
    <script src="../data/morris-data.js"></script>
    <script src="../dist/js/sb-admin-2.js"></script>
</body>
</html>
```

PNPmapping/php/map.php

```
<?php
include("../db/DB_info.php");
?>
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="utf-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <meta name="description" content="">
    <meta name="author" content="">
    <title>Home Page</title>
    <link href="../vendor/bootstrap/css/bootstrap.min.css"
rel="stylesheet">
    <link href="../vendor/metisMenu/metisMenu.min.css"
rel="stylesheet">
    <link href="../dist/css/sb-admin-2.css" rel="stylesheet">
    <link href="../vendor/morrisjs/morris.css" rel="stylesheet">
    <link href="../vendor/font-awesome/css/font-awesome.min.css"
rel="stylesheet" type="text/css">
```

```
    <link href="../css/map.css" rel="stylesheet" type="text/css">
</head>
<body>
<?php
    include("navbar.php");
?>
<div id="main">
    <div id="settings" style="position: fixed;">
        <button  id="myBtn" type="button" id="btn" style="margin-bottom: 5px;" class="btn btn-primary btn-circle btn-lg" data-toggle="modal" data-target="#myModal"  data-placement="right" title="Filter"><i class="fa fa-filter" data-toggle="tooltip"></i>
        </button>
        <button  id="myBtn" type="button" id="btn" style="margin-bottom: 5px;" class="btn btn-primary btn-circle btn-lg" onclick="myFunction();"
        data-placement="right" title="Markers and Heatmap"><i class="fa fa-map-marker" data-toggle="tooltip"></i>
        </button>
        <div id="myDIV" style="display: none;">
            <div style="display: inline-flex;">
                <p style="color: white;">Marker:  </p>
                <label class="switch" data-placement="right" title="ON/OFF Markers">
                    <input type="checkbox" id="powerMarker" onclick="powerMarker();" value="on" >
                    <span class="slider round">On Off</span>
                </label>
            </div>
            <br>
            <div style="display: inline-flex;">
                <p style="color: white;">Heatmap:  </p>
```

```
            <label class="switch" data-placement="right" title="ON/OFF
Heatmap">
                <input type="checkbox" id="powerheatmap"
onclick="powerHeatmap();" value="off" >
                <span class="slider round">On Off</span>
            </label>
          </div>
        </div>
    </div>
     <?php
       include('mapSample.php');
     ?>
    </div>
<div class="modal fade" id="myModal" tabindex="-1" role="dialog" aria-
labelledby="myModalLabel" aria-hidden="true">
    <div class="modal-dialog">
        <div class="modal-content">
            <div class="modal-body">
                <form action="filter.php" class="form-group"
method="POST">
                    Offense:
                    <select id="offense" name="offense" class="form-control"
class="type">
                    <?php
                    $res=mysqli_query($connection,"SELECT offense from
crime_category GROUP BY offense");
                    echo '<option>Select Offense</option>';
                    while($row=mysqli_fetch_array($res))
                    {
                      ?>
                      <option value="<?php echo $row["offense"]; ?>"><?php
echo $row["offense"]; ?></option>
```

```
                <?php
                }
                ?>
                </select> <br>
                Barangay:
                <select id="brgy" name="brgy" class="form-control"
class="barangay">
                <?php
                $res=mysqli_query($connection,"SELECT barangay from
crime GROUP BY barangay");
                echo '<option value="all">Select Barangay</option>';
                while($row=mysqli_fetch_array($res))
                {
                ?>
                <option value="<?php echo $row["barangay"]; ?>"><?php
echo $row["barangay"]; ?></option>
                <?php
                }
                ?>
                </select>
                Year:
                <select id="year" name="year" class="form-control">
                    <option value="all">all</option>
                    <option>2016</option>
                    <option>2017</option>
                    <option>2018</option>
                </select>

            </div>
        <div class="modal-footer">
```

```
            <button type="button" class="btn btn-default" data-
dismiss="modal" onclick="">Close</button>
            <button type="submit" id="done" class="btn btn-primary"
data-dismiss="modal" value="submit" onclick="getValue(); enable();
disable();">Done</button>
          </div>
        </div>
         </form>
    </div>
</div>
<div class="modal fade" id="myModal2" tabindex="-1" role="dialog" aria-
labelledby="myModalLabel" aria-hidden="true">
    <div class="modal-dialog">
        <div class="modal-content">
            <div class="modal-body">

                <div class="tab-content">
                    <div class="tab-pane fade in active" id="bargraph">
                        <?php
                            include('bargraph2.php');
                        ?>
                    </div>
                    <div class="tab-pane fade" id="doughnut">
                        <center>
                            <?php
                                include('dougnut.html');
                            ?>
                        </center>
                    </div>
                    <div class="tab-pane fade" id="messages-pills">
                        <center>
```

```
                        <?php
                            include('line_graph_crimeYear.html');
                        ?>
                    </center>
                </div>
                <div class="tab-pane fade" id="settings-pills">
                    <center>
                        <?php
                            include('line_graph_crimeMonth.html');
                        ?>
                    </center>
                </div>
            </div>
        </div>
    <div class="modal-footer">
            <ul class="nav nav-pills">
                <li class="active"><a href="#bargraph" data-
toggle="tab">Bar Graph</a>
                </li>
                <li><a href="#doughnut" data-toggle="tab">Pie
Graph</a>
                </li>
                <li><a href="#messages-pills" data-toggle="tab">line
Graph(yearly)</a>
                </li>
                <li><a href="#settings-pills" data-toggle="tab">line
Graph(Monthly)</a>
                </li>
            </ul>
        <button type="button" class="btn btn-default" data-
dismiss="modal" onclick="">Close</button>
```

```
            <button type="button" class="btn btn-primary"  data-
dismiss="modal" onclick="">Done</button>
          </div>
       </div>
    </div>
</div>
</div>
<script type="text/javascript" src="../js/map.js"></script>
<script async defer>

src="https://maps.googleapis.com/maps/api/js?key=AIzaSyDPuDuIbhW
C5C7Bq-
HcZ5GTkDBw05I7Ss4&libraries=visualization&callback=initMap"
</script>
    <script src="../vendor/jquery/jquery.min.js"></script>
    <script src="../vendor/bootstrap/js/bootstrap.min.js"></script>
    <script src="../vendor/metisMenu/metisMenu.min.js"></script>
    <script src="../vendor/raphael/raphael.min.js"></script>
    <script src="../vendor/morrisjs/morris.min.js"></script>
    <script src="../data/morris-data.js"></script>
    <script src="../dist/js/sb-admin-2.js"></script>
</body>
</html>
```

PNPmapping/php/report_crime.php

```
<?php
    include('DB_info.php');
?>
<!DOCTYPE html>
<html lang="en">
<head>
```

```
    <meta charset="utf-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <meta name="description" content="">
    <meta name="author" content="">
    <title>Home Page</title>
    <link href="../vendor/bootstrap/css/bootstrap.min.css"
rel="stylesheet">
    <link href="../vendor/metisMenu/metisMenu.min.css"
rel="stylesheet">
    <link href="../dist/css/sb-admin-2.css" rel="stylesheet">
    <link href="../vendor/morrisjs/morris.css" rel="stylesheet">
    <link href="../vendor/font-awesome/css/font-awesome.min.css"
rel="stylesheet" type="text/css">
    <link href="../css/map_crime_select.css" rel="stylesheet"
type="text/css">
</head>
<body>
<div class="row">
    <div class="col-lg-12">
<?php
    include("navbar.php");
?>
    </div>
</div>
<div class="row">
    <div class="col-lg-12" style="padding-top: 50px; ">
        <div id="map" style="width: 100%; height: 500px;"></div>

    </div>
    <br>
```

```
    <br>
</div>
    <div class="row p-t-20">
        <div class="col-lg-12 p-l-60 m-r-10 m-t-30"  style="padding-top:
20px;">
            <div class="col-lg-2 p-r-0">
                <center><h4>Search for Location:</h4></center>
            </div>

            <div class="col-lg-10 form-group">
                <input id="pac-input" type="text" name="search" class="full-
width form-control" placeholder="Search Box" style="height: 50px; font-
size: 20px;">
            </div>
        </div>
    </div>
<div id="page-wrapper p-t-5">
    <div class="container">
    <div class="row">
        <div class="col-lg-6">
        <h1 class="page-header">Complainant</h1>
            <div class="form-group">
                <label>First Name</label>
                <input class="form-control" id="fname" placeholder="Enter
text">
                <label>Last Name</label>
                <input class="form-control" id="lname" placeholder="Enter
text">
                <label>Middle Name</label>
                <input class="form-control" id="mname" placeholder="Enter
text">
```

```
            <label>Contact No.</label>
            <input type="text" class="form-control" id="contact"
placeholder="Enter text">
            <label>Email</label>
            <input class="form-control" id="email" placeholder="Enter
text">
            <label>Date of Birth</label>
            <input type="text" class="form-control" id="birth"
placeholder="Enter text">
            <label>Sex</label>
            <select class="form-control" id="sex">
              <option>Male</option>
              <option>Female</option>
            </select>
            <label> Station:</label>
                  <select class="form-control" id="station">
                     <?php
                     $res=mysqli_query($connection,"SELECT DISTINCT
station from crime");
                     while($row=mysqli_fetch_array($res))
                     {
                     ?>
                     <option><?php echo $row["station"]; ?></option>
                <?php
                }
                ?>
                   </select>
          </div>
       </div>
            <div class="col-lg-6">
          <h1 class="page-header">Crime</h1>
```

```
            <div class="form-group">
                <label>Barangay:</label>
                <select class="form-control" id="barangay" >
                <?php
                    $res=mysqli_query($connection,"SELECT DISTINCT
barangay from crime");
                    while($row=mysqli_fetch_array($res))
                    {
                    ?>
                    <option><?php echo $row["barangay"]; ?></option>
                <?php
                }
                ?>
                </select>

                <label> Latitude </label>
                <input class="form-control" name="Snum"
placeholder="Latitude" id="lat" disabled>
                <label> Longitude </label>
                <input class="form-control" name="Snum"
placeholder="Longitude" id="long" disabled>

                <label> Time Committed </label>
                <input type="time" class="form-control time" id="time"
placeholder="Enter text">

                <label> Date Committed </label>
                <input type="date" class="form-control" id="date"
placeholder="Enter text">

                <label> Offense :</label>
```

```
                    <select class="form-control" id="offense">
                    <?php
                        $res1=mysqli_query($connection,"SELECT DISTINCT
offense from crime_category");
                        while($row=mysqli_fetch_array($res1))
                        {
                        ?>
                        <option><?php echo $row["offense"]; ?></option>
                    <?php
                    }
                ?>
                    </select>
                <label> Crime Category:</label>
                    <select class="form-control" id="crime_category">
                        <?php
                        $res=mysqli_query($connection,"SELECT DISTINCT
crime_category from crime_category");
                        while($row=mysqli_fetch_array($res))
                        {
                        ?>
                        <option><?php echo
$row["crime_category"]; ?></option>
                <?php
                }
                ?>
                    </select>
                <label>Stages of Felony</label>
                    <select class="form-control" id="stages_of_felony">
                        <?php
                        $res=mysqli_query($connection,"SELECT DISTINCT
stages_of_felony from crime_category");
```

```
                    while($row=mysqli_fetch_array($res))
                    {
                    ?>
                    <option><?php echo
$row["stages_of_felony"]; ?></option>
                <?php
                }
                ?>
                    </select>
            </div>
                <button id="submit" class="btn btn-
primary">Report!</button>
        </div>
    </div>
    </div>
</div>
    <script src="../vendor/jquery/jquery.min.js"></script>
    <script src="../vendor/bootstrap/js/bootstrap.min.js"></script>
    <script src="../vendor/metisMenu/metisMenu.min.js"></script>
    <script src="../vendor/raphael/raphael.min.js"></script>
    <script src="../vendor/morrisjs/morris.min.js"></script>
    <script src="../data/morris-data.js"></script>
    <script src="../dist/js/sb-admin-2.js"></script>
    <script type="text/javascript"
src="../js/select_crime_sa_map.js"></script>
    <script async defer

src="https://maps.googleapis.com/maps/api/js?key=AIzaSyDPuDuIbhW
C5C7Bq-
HcZ5GTkDBw05I7Ss4&libraries=places&callback=initAutocomplete">
    </script>
```

```
<script src="../js/crime_insert.js"></script>
<script type="text/javascript">
   $(document).ready(function(){
      $("#submit").click(function(){
         $.ajax({
         url: "http://localhost/bootstrap2/php/report_crimeDb.php",
         method: "POST",
         data:{
            fname: $("#fname").val(),
            lname: $("#lname").val(),
            mname: $("#mname").val(),
            contact: $("#contact").val(),
            email: $("#email").val(),
            sex: $("#sex").val(),
            birth: $("#birth").val(),
            barangay: $("#barangay").val(),
            offense: $("#offense").val(),
            crime_category: $("#crime_category").val(),
            stages_of_felony:$("#stages_of_felony").val(),
            date :$("#date").val(),
            time :$("#time").val(),
            latitude :$("#lat").val(),
            longtitude :$("#long").val(),
            station :$("#station").val()
         },
         success: function(data) {
            alert(data);
         },
         error: function(data) {
```

```
                console.log(data);
            }
        });
        });
    });
  </script>
</body>
</html>
```

PNPmapping/php/chart.php

```
<?php
  include('DB_info.php');
?>
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="utf-8">
  <meta http-equiv="X-UA-Compatible" content="IE=edge">
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <meta name="description" content="">
  <meta name="author" content="">
  <title>Home Page</title>
  <link href="../vendor/bootstrap/css/bootstrap.min.css"
rel="stylesheet">
  <link href="../vendor/metisMenu/metisMenu.min.css"
rel="stylesheet">
  <link href="../dist/css/sb-admin-2.css" rel="stylesheet">
  <link href="../vendor/morrisjs/morris.css" rel="stylesheet">
```

```
    <link href="../vendor/font-awesome/css/font-awesome.min.css"
rel="stylesheet" type="text/css">
    <script src="../vendor/jquery/jquery.min.js"></script>
    <script src="../js/Chart.bundle.js"></script>
    <script src="../js/utils.js"></script>
    <script src="../js/app2.js"></script>
    <script src="../js/pie_gender.js"></script>
    <script src="../js/pie_genderS.js"></script>
    <script src="../js/polar_area.js"></script>
    <script src="../js/line_graph_crimeYear.js"></script>
    <script src="../js/line_graph_crimeMonth.js"></script>
    <script src="../js/select_year.js"></script>


</head>
<body>
<?php
    include("navbar.php");
?>
<div id="page-wrapper">
    <div class="row">
        <div class="wrapper col-lg-12">
            <div class="col-lg-9" style="border: solid; border-width: 1px;">
                    <section id="chart1">
                        <div class="chart1">
                            <div class="chart">
                                <center>
                                    <h3>Bar Chart</h3>
                                    <canvas id="mycanvas"></canvas>
```

```
                    </center>
                </div>
            </div>
        </section>

        <section id="chart2">
            <div class="chart2">
                <center>
                    <h3>Gender Comparison</h3>
                    <div style="display: inline-flex; width: 100%; height:
100%;" id="chart2">

                        <div id="canvas-holder" style="width:100%;
height: 100%;">
                            <h1>Victims</h1>
                            <canvas id="pie_gender"></canvas>
                        </div>

                        <div id="canvas-holder1" style="width:100%;
height: 100%;">
                            <h1>Suspects</h1>
                            <canvas id="pie_gender_suspek"></canvas>
                        </div>

                    </div>
                </center>
            </div>
        </section>
    </div>
```

```
            <div class="col-lg-3">
                <form class="form-group" method="POST">
                    Offense:
                    <select id="offense" class="form-control" class="type">
                        <?php
                        $res=mysqli_query($connection,"SELECT offense from
crime_category GROUP BY offense");
                        echo '<option>Select Offense</option>';
                        while($row=mysqli_fetch_array($res))
                        {
                          ?>
                          <option value="<?php echo
$row["offense"]; ?>"><?php echo $row["offense"]; ?></option>
                          <?php
                        }
                        ?>
                    </select>
                </form>
            </div>
        </div>
    </div>
    <br>
    <br>
    <div class="row">
        <div class="col-lg-12">
            <div class="col-lg-9" style="border: solid; border-width: 1px;">
                <section id="chart4">
                    <center>
                        <div id="canvas-holder">
```

```
                    <h1>Comparison By Year</h1>
                    <canvas id="line_graph_crimeYear"></canvas>
                </div>
            </center>
        </section>
            <section id="chart5">
                <div class="chart5">
                    <center>
                        Select a Year:
                        <select id="year-selector" class="form-control"
style="width: 25%;">
                            <option value="2016">2016</option>
                            <option value="2017">2017</option>
                            <option value="2018">2018</option>
                            <option value="2019">2019</option>
                        </select>
                        <input type="hidden" id="offenseval"
value="THEFT">
                    </center>
                    <center>
                        <div id="canvas-holder">
                            <h1>Comparison By Month</h1>
                            <canvas id="line_graph_crimeMonth"></canvas>
                        </div>
                    </center>
                </div>
            </section>
        </div>
        <div class="col-lg-3">
```

```
        </div>
      </div>
    </div>
    <br>
    <br>
    <div class="row">
        <div class="col-lg-12">
            <div class="col-lg-9"  style="border: solid; border-width: 1px;">
                <section id="chart3">
                    <div class="chart3">
                        <center>
                            <h3>Crime Comparison by Barangay</h3>
                            <div id="canvas-holder" style="width:100%; height:
auto;">
                              <canvas id="chart-areaPolar"></canvas>
                            </div>
                        </center>
                    </div>
                </section>
            </div>
            <div class="col-lg-3">
                    <form class="form-group" method="POST">
                        Barangay:
                        <select id="brgy" name="brgy" class="form-control"
style="width: 100%;">
                          <?php
                            $res1=mysqli_query($connection,"SELECT
barangay from crime GROUP BY barangay");
```

```
                                echo '<option value="all">Select
Barangay</option>';


                                while($row=mysqli_fetch_array($res1)):
                            ?>
                                    <option value="<?php echo
$row["barangay"]; ?>"><?php echo $row["barangay"]; ?></option>
                            <?php
                                endwhile;
                            ?>
                        </select>
                    </form>
                </div>
            </div>
        </div>
        <button class="btn btn-primary" style="float: right"
onclick="printDiv('printme')">Print Now!</button>
</div>
    </div>
</div>
    <script src="../vendor/bootstrap/js/bootstrap.min.js"></script>
    <script src="../vendor/metisMenu/metisMenu.min.js"></script>
    <script src="../vendor/raphael/raphael.min.js"></script>
    <script src="../vendor/morrisjs/morris.min.js"></script>
    <script src="../data/morris-data.js"></script>
    <script src="../dist/js/sb-admin-2.js"></script>
    <script>
        function printDiv(divName){
```

```
        var printContents =
document.getElementById(divName).innerHTML;
        var originalContents = document.body.innerHTML;
        document.body.innerHTML = printContents;
        window.print();
        document.body.innerHTML = originalContents;
        }
    </script>
</body>
</html>
```

PNPmapping/php/Police.php

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="utf-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <meta name="description" content="">
    <meta name="author" content="">
    <title>SB Admin 2 - Bootstrap Admin Theme</title>
    <link href="../vendor/bootstrap/css/bootstrap.min.css"
rel="stylesheet">
    <link href="../vendor/metisMenu/metisMenu.min.css"
rel="stylesheet">
    <link href="../dist/css/sb-admin-2.css" rel="stylesheet">
    <link href="../vendor/morrisjs/morris.css" rel="stylesheet">
    <link href="../vendor/font-awesome/css/font-awesome.min.css"
rel="stylesheet" type="text/css">
```

```
</head>
<body>
<?php
   include("navbar.php");
?>
<div id="page-wrapper">
   <div class="wrapper">
   <section id="info">
   <div class="container">
      <div class="row">
         <center><h1 class="page-header">Revised Blotter Procedure Flowchart</h1></center>
         <img src="../img/chart.jpg" style="display: block;margin-left: auto;margin-right: auto;width: 50%;">
         <script type="text/javascript" src="https://feed.mikle.com/js/fw-loader.js" data-fw-param="90710/"></script>
   </div>
   </section>
   </div>
</div>
   <script src="../vendor/jquery/jquery.min.js"></script>
   <script src="../vendor/bootstrap/js/bootstrap.min.js"></script>
   <script src="../vendor/metisMenu/metisMenu.min.js"></script>
   <script src="../vendor/raphael/raphael.min.js"></script>
   <script src="../vendor/morrisjs/morris.min.js"></script>
   <script src="../data/morris-data.js"></script>
   <script src="../dist/js/sb-admin-2.js"></script>

</body>
```

```
</html>
```

PNPmapping/php/crime_tables.php

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="utf-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <meta name="description" content="">
    <meta name="author" content="">
    <title>SB Admin 2 - Bootstrap Admin Theme</title>
    <link href="../vendor/bootstrap/css/bootstrap.min.css"
rel="stylesheet">
    <link href="../vendor/metisMenu/metisMenu.min.css"
rel="stylesheet">
    <link href="../vendor/datatables-plugins/dataTables.bootstrap.css"
rel="stylesheet">
    <link href="../vendor/datatables-
responsive/dataTables.responsive.css" rel="stylesheet">
    <link href="../dist/css/sb-admin-2.css" rel="stylesheet">
    <link href="../vendor/font-awesome/css/font-awesome.min.css"
rel="stylesheet" type="text/css">
</head>
<body>
<?php
    include("navbar.php");
?>
<div id="page-wrapper">
```

```
<div class="wrapper">
<div class="row">
   <div class="col-lg-12">
        <h1 class="page-header"><i class="fa fa-table"></i> Crime Tables </h1>
   </div>
</div>
<div class="row">
   <div class="col-lg-12">
        <div class="panel panel-default">
          <div class="panel-body" id="printme">
            <table width="100%" class="table table-striped table-bordered table-hover" id="dataTables-example">
                <thead>
                    <tr>
                      <th>Offense</th>
                       <th>Barangay</th>
                       <th>Time Committed</th>
                       <th>Date Committed</th>
                       <th>View more</th>
                     </tr>
                </thead>
                <tbody>
                  <?php
                       include("DB_info.php");
                       $pquery = "SELECT b.crime_id,a.crime_category_id,b.barangay,b.victim_name,b.victim_status,b.victim_age,b.victim_gender,b.suspects_name,b.suspects_status,b.suspects_age,b.suspects_gender,b.time_committed,b.date_committed,b.latitude,b.longtitude,a.crime_category,a.stages_of_felony,a.offense FROM
```

```
crime_category as a, crime as b WHERE a.crime_category_id =
b.crime_category_id order by b.date_committed  limit 10";
                                $userQuery=
mysqli_query($connection,$pquery);
                                while($row=mysqli_fetch_assoc($userQuery)):
                            ?>
                                <tr>
                                    <td><?php echo $row['offense'] ?></td>
                                    <td><?php echo $row['barangay'] ?></td>
                                    <td><?php echo
$row['time_committed'] ?></td>
                                    <td><?php echo
$row['date_committed'] ?></td>
                                    <td><button style="color: black;"
                                     value="<?php echo
$row['crime_category_id'] ?>"
                                      class="view-modal" data-toggle="modal"
data-target="#viewModal<?php echo $row['crime_category_id'] ?>"
onclick="view(this.value);">View more</button></td>
                                </tr>
                            <?php endwhile; ?>
                        </tbody>
                    </table>
                </div>
            </div>
                <button class="btn btn-primary" style="float: right"
onclick="printDiv('printme')">Print Now!</button>
        </div>
    </div>
        <?php
            include("DB_info.php");
```

```
            $pquerys= "SELECT
b.crime_id,a.crime_category_id,b.barangay,b.victim_name,b.victim_statu
s,b.victim_age,b.victim_gender,b.suspects_name,b.suspects_status,b.sus
pects_age,b.suspects_gender,b.time_committed,b.date_committed,b.latitu
de,b.longtitude,a.crime_category,a.stages_of_felony,a.offense FROM
crime_category as a, crime as b WHERE a.crime_category_id =
b.crime_category_id order by b.date_committed limit 10";

            $userQuerys= mysqli_query($connection,$pquerys);

            while($row=mysqli_fetch_assoc($userQuerys)):

        ?>

        <div class="modal fade" id="viewModal<?php echo
$row['crime_category_id'] ?>" tabindex="-1" role="dialog" aria-
labelledby="myModalLabel" aria-hidden="true">


            <div class="modal-dialog">

                <div class="modal-content">

                    <div id="printmeples<?php echo
$row['crime_category_id'] ?>">

                        <div class="modal-header">

                            <h1 style="color: black;">Incident Info</h1>

                        </div>

                        <div class="modal-body" id="eut">

                            <div id="incident_info<?php echo
$row['crime_category_id'] ?>" style="color: black;">


                            </div>

                        </div>

                    </div>


                    <div class="modal-footer">
```

```
                        <button class="btn btn-primary" style="float: right"
onclick="printDiv('printmeples<?php echo $row['crime_id'] ?>')">Print
Now!</button>


                        <button type="button" id="" class="btn btn-primary"
data-dismiss="modal" value="submit">Done</button>
                    </div>
                </div>
            </div>
        </div>
        <?php endwhile; ?>
    </div>
</div>
    <script src="../vendor/jquery/jquery.min.js"></script>
    <script src="../vendor/bootstrap/js/bootstrap.min.js"></script>
    <script src="../vendor/metisMenu/metisMenu.min.js"></script>
    <script
src="../vendor/datatables/js/jquery.dataTables.min.js"></script>
    <script src="../vendor/datatables-
plugins/dataTables.bootstrap.min.js"></script>
    <script src="../vendor/datatables-
responsive/dataTables.responsive.js"></script>
    <script src="../dist/js/sb-admin-2.js"></script>
    <script src="../js/incident_table.js"></script>
    <script>
    $(document).ready(function() {
        $('#dataTables-example').DataTable({
            responsive: true
        });
    });
```

```
    </script>
    <script src="../dist/js/sb-admin-2.js"></script>
    <script>
        function printDiv(divName){
        var printContents =
document.getElementById(divName).innerHTML;
        var originalContents = document.body.innerHTML;
        document.body.innerHTML = printContents;
        window.print();
        document.body.innerHTML = originalContents;
        }
    </script>
</body>
</html>
```

PNPmapping/php/registered_users.php

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="utf-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <meta name="description" content="">
    <meta name="author" content="">
    <title>SB Admin 2 - Bootstrap Admin Theme</title>
    <link href="../vendor/bootstrap/css/bootstrap.min.css"
rel="stylesheet">
    <link href="../vendor/metisMenu/metisMenu.min.css"
rel="stylesheet">
```

```
    <link href="../vendor/datatables-plugins/dataTables.bootstrap.css" rel="stylesheet">
    <link href="../vendor/datatables-responsive/dataTables.responsive.css" rel="stylesheet">
    <link href="../dist/css/sb-admin-2.css" rel="stylesheet">
    <link href="../vendor/font-awesome/css/font-awesome.min.css" rel="stylesheet" type="text/css">
</head>
<body>
<?php
    include("navbar.php");
?>
<div id="page-wrapper">
    <div class="row">
        <div class="col-lg-12">
            <h1 class="page-header"><i class="fa fa-users"></i> Registered Users </h1>
        </div>
    </div>
    <div class="row">
        <div class="col-lg-12">
            <div class="panel panel-default">
                <div class="panel-body" id="printme">
                    <table width="100%" class="table table-striped table-bordered table-hover" id="dataTables-example">
                        <?php
                            include("DB_info.php");
                            $userQuery=mysqli_query($connection,"SELECT * FROM police");
                            while($row=mysqli_fetch_assoc($userQuery)):
```

```
                    ?>
                        <thead>
                            <tr>
                                <th>Name</th>
                                <th>Police ID</th>
                                <th>Station No.</th>
                                <th>Rank</th>
                                <th>Option</th>
                            </tr>
                        </thead>
                        <tbody>
                            <td><?php echo $row['firstname'] .
$row['lastname'] ?></td>
                            <td><?php echo $row['police_id'] ?></td>
                            <td><?php echo $row['station'] ?></td>
                            <td><?php echo $row['rank'] ?></td>
                            <td><a href="">Edit</a>  ||  <a
href="">Delete</a></td>
                        </tbody>

                    <?php
                        endwhile;
                    ?>
                </table>
            </div>
        </div>
            <button class="btn btn-primary" style="float: right"
onclick="printDiv('printme')">Print Now!</button>
    </div>
```

```
        </div>
    </div>
</div>
</div>
    <script src="../vendor/jquery/jquery.min.js"></script>
    <script src="../vendor/bootstrap/js/bootstrap.min.js"></script>
    <script src="../vendor/metisMenu/metisMenu.min.js"></script>
    <script
src="../vendor/datatables/js/jquery.dataTables.min.js"></script>
    <script src="../vendor/datatables-
plugins/dataTables.bootstrap.min.js"></script>
    <script src="../vendor/datatables-
responsive/dataTables.responsive.js"></script>
    <script src="../dist/js/sb-admin-2.js"></script>
    <script>
    $(document).ready(function() {
        $('#dataTables-example').DataTable({
            responsive: true
        });
    });
    </script>
    <script src="../dist/js/sb-admin-2.js"></script>
    <script>
        function printDiv(divName){
        var printContents =
document.getElementById(divName).innerHTML;
        var originalContents = document.body.innerHTML;
        document.body.innerHTML = printContents;
        window.print();
```

```
        document.body.innerHTML = originalContents;
        }
    </script>
</body>
</html>
```

PNPmapping/php/registerpolice.php

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="utf-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <meta name="description" content="">
    <meta name="author" content="">
    <title>Home Page</title>
    <link href="../vendor/bootstrap/css/bootstrap.min.css"
rel="stylesheet">
    <link href="../vendor/metisMenu/metisMenu.min.css"
rel="stylesheet">
    <link href="../dist/css/sb-admin-2.css" rel="stylesheet">
    <link href="../vendor/morrisjs/morris.css" rel="stylesheet">
    <link href="../vendor/font-awesome/css/font-awesome.min.css"
rel="stylesheet" type="text/css">
</head>
<body>
<?php
    include("navbar.php");
?>
```

```
<div id="page-wrapper">


   <div class="row">
      <div class="col-lg-6">
         <form role="form">
         <h1 class="page-header">Police Info</h1>
            <div class="form-group">
               <label>Username</label>
               <input class="form-control" name="uname"
placeholder="Username">
               <label>Password</label>
               <input type="password" class="form-control" name="pword"
placeholder="Password">
               <label>First Name</label>
               <input class="form-control" name="pfname"
placeholder="First Name">
               <label>Last Name</label>
               <input class="form-control" name="plname"
placeholder="Last Name">
               <label>Middle Name</label>
               <input class="form-control" name="pmname"
placeholder="Middle Name">
            </div>
</div>
      <div class="col-lg-6">
         <h1 class="page-header">Other Police Info</h1>
            <div class="form-group">
               <label>Sex</label>
                  <select class="form-control" name="snum">
                  <option>Male</option>
```

```
                    <option>Female</option>
                </select>
                <label> Station </label>
                <input class="form-control" name="snum"
placeholder="Position">
                <label> Rank </label>
                <input class="form-control" name="pos"
placeholder="Position">
            </div>
          <button type="submit" name="signup" id="submit"  class="btn
btn-primary">Register</button>
      </div>
      </form>
   </div>


</div>
   <script src="../vendor/jquery/jquery.min.js"></script>
   <script src="../vendor/bootstrap/js/bootstrap.min.js"></script>
   <script src="../vendor/metisMenu/metisMenu.min.js"></script>
   <script src="../vendor/raphael/raphael.min.js"></script>
   <script src="../vendor/morrisjs/morris.min.js"></script>
   <script src="../data/morris-data.js"></script>
   <script src="../dist/js/sb-admin-2.js"></script>
</body>
</html>
```

PNPmapping/php/print_crimes.php

```
<?php
   include("DB_info.php");
```

```
?>
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="utf-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <meta name="description" content="">
    <meta name="author" content="">
    <title>Home Page</title>
    <link href="../vendor/bootstrap/css/bootstrap.min.css"
rel="stylesheet">
    <link href="../vendor/metisMenu/metisMenu.min.css"
rel="stylesheet">
    <link href="../dist/css/sb-admin-2.css" rel="stylesheet">
    <link href="../vendor/morrisjs/morris.css" rel="stylesheet">
    <link href="../vendor/font-awesome/css/font-awesome.min.css"
rel="stylesheet" type="text/css">
</head>
<body>
<?php
    include("navbar.php");
?>
<div id="page-wrapper">
    <div class="container">
        <h1 class="page-headings">Print Crimes</h1>
        <h4>Select Crime to Print</h4>
            <form class="form-group" method="POST">
                    Offense:
```

```
                    <select id="offense" class="form-control" class="type">
                        <?php
                        $res=mysqli_query($connection,"SELECT offense from
crime_category GROUP BY offense");
                        echo '<option>Select Offense</option>';
                        while($row=mysqli_fetch_array($res))
                        {
                          ?>
                          <option value="<?php echo
$row["offense"]; ?>"><?php echo $row["offense"]; ?></option>
                          <?php
                        }
                        ?>
                    </select>
                </form>
<div class="row">
    <div class="col-lg-12">
        <div class="panel panel-default" id="printme">
        <div class="panel-heading">
            <h3 id="title_es" class="page-headings"></h3>
        </div>
            <div class="panel-body">
                <div class="table-responsive">
                    <table class="table table-hover">
                        <thead>
                            <tr>
                                <th>Barangay</th>
                                <th>Station No.</th>
                                <th>Crime</th>
```

```
                    </tr>
                </thead>
                <tbody id="table_es">
                </tbody>
            </table>
        </div>
    </div>
</div>
</div>
<button class="btn btn-primary" style="float: right"
onclick="printDiv('printme')">Print Now!</button>
</div>
</div>
</div>
<script src="../vendor/jquery/jquery.min.js"></script>
<script src="../vendor/bootstrap/js/bootstrap.min.js"></script>
<script src="../vendor/metisMenu/metisMenu.min.js"></script>
<script src="../vendor/raphael/raphael.min.js"></script>
<script src="../vendor/morrisjs/morris.min.js"></script>
<script src="../data/morris-data.js"></script>
<script src="../dist/js/sb-admin-2.js"></script>
<script>
    function printDiv(divName){
    var printContents =
document.getElementById(divName).innerHTML;
    var originalContents = document.body.innerHTML;
    document.body.innerHTML = printContents;
    window.print();
    document.body.innerHTML = originalContents;
```

```
        }
    </script>
    <script type="text/javascript" src="../js/crime_select.js"></script>
</body>
</html>
```