DESIGN AND IMPLEMENTATION OF A WEB BASED CRIME RECORD INFORMATION SYSTEM

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DECLARATION

I, ONAFETE SHADRACH UFUOMA, solemnly declare that this project is entirely my work and composition. The work contained here, is original and assembled by me and has not been submitted in institution for any degree. All references made to works of other persons have been acknowledged accordingly.

_____ _____

SIGNATURE DATE

CERTIFICATION

We certify that the work contained here was researched and compiled by ONAFETE SHADRACH UFUOMA in the Department of Computer Science, College of Pure and Applied Sciences, Caleb University, Lagos. The research work is considered adequate, in partial fulfillment of the requisite for the award of B.Sc. in Computer Science.

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DEDICATION

I would like to dedicate this project to God almighty the giver of wisdom. I also dedicate this to my parents who have been of great help to me right from the beginning and always encourage me and to my siblings for being there for me whenever I needed help.

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My great gratitude to God for grace and strength during my course of working on this project.

To my parents Mr. and Mrs. Onafete, to my uncle Mr. Sylvester Oyibocha, my grandmother Mrs. Victoria Oyibocha and my siblings for their love and support in every way; throughout the period of the project and my programme at Caleb University. I really love you all so much.

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Lastly, i am saying thanks ever supportive friends and colleagues who helped in several ways.

Thank you all.

ABSTRACT

Globally, the need for good record keeping and information sharing practices cannot be over emphasized. Different agencies interact together sharing divers information for swift decision making. The aim of this project is to design and implement a web-based crime record information system. The development of the project was completed using the agile methodology which allows for quick prototyping and development with capacity for easy expansion latter on. The project was developed using PHP as the programming language. Cascading Style sheet was used to ensure user experience is engaging and interesting while MY SQL was used as the database for storage of information. This system was developed after a thorough study of the current manual system in the Nigeria Police system. Lastly, when properly implemented, this system will eradicate all the flows and short comings of the existing manual system to ensure smooth flow of information sharing and generally improve the security architecture within the country.

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CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND TO THE STUDY

In every society, rules and regulations are paramount to all aspects of life and it accommodates both how one wishes to live, and how others should accommodate one's lifestyle. (Mubaraka, Jirgi, & Nanyanci, 2013) Certain proponents have asserted that crime which is a violation against laws of the society is integral to the human nature and hence the society can never be completely free from it. Modern society is characterized by increasing levels of risk posed by internal and external security threats. Within this context, security driven by technology is increasingly being used by government, corporate bodies, and individuals to monitor and reduce risk. (Ajocict, n.d.) The present world is technology driven as it is employed by many fields in the performance of their operation. In the case of law enforcement agencies, this is evident in the use of automated crime record management systems (CRMS) worldwide to keep record of crime and criminals involved. Crime being an act against the law of a society is a threat to the well-being of the populace and so, requires efficient and effective monitoring.

In Nigeria today, insecurity is generally on the increase across the country. Banditry, farmer-herders clashes, kidnapping, suicide bombing among others are very notable crimes committed frequently in the country. Even with the recent change in the security service chiefs in the country, not much improvement has been recorded. Notably, that who engages in crimes of any kind in a larger form has one time been involved in "little crimes".

It has been acknowledged that the nearest we can get to the criminal happenings or events is the record kept by the Police, of crimes reported to them (James, 2010). That is why each of Nigeria's 36 states, as well as the Federal Capital Territory, is served by an administrative unit known as a state command. The state commands are grouped into 12 zonal commands with two to four states in each zone each under the supervision of an assistant inspector general of police (AIG). Each state command is headed by a commissioner of police (CP) who is directly accountable to the AIG in the respective zone. Each State commands are divided into smaller area commands, police divisions headed by a divisional police officer, (DPO), police stations, police posts, and village police posts.

1.2 STATEMENT OF THE PROBLEM

Essentially, the police force is charged with the responsibility of protecting lives and property and assuring safety and well-being of all citizens through the detection and apprehension of criminals, prevention, and control of crime. Nevertheless, there are still some shortcomings which includes, poor criminal record keeping in short- and long-term bases which makes the processing and retrieval difficult. Another is lack of good storage media which makes retrieval of data and information quite stressful and cumbersome. Additionally, high cost of saving data as it is mostly associated with paperwork is another major problem. Others includes frequent case of missing files /documents because records are not properly secure, inability of the public to access record of criminal(s) to know who a criminal is.

1.3 AIM AND OBJECTIVES OF THE STUDY

The aim and objective of this study is to is to design a web-based crime record information system for the NIGERIA POLICE FORCE to address the various problems accompanied by manual by manual operation of crime record management system. The specific objectives includes:

1. .To create the web pages using hypertext markup language (HTML) for the frontend and then using cascading style sheets (CSS) to style the html code in order to create a good user interface.
2. .To develop the backend using hypertext processor (PHP) and structured query language (MySQL);the PHP is the scripting language that is used to communicate with the MySQL database.
3. To create the system to aid crime investigator(s) with timely and accurate information about a particular crime.
4. To ensure high reduction in the cost of paperwork associated with record keeping.
5. To provide faster time retrieval of needed information to avoid travelling other location.
6. To provide a more secure system for keeping
7. .To implement the developed system

1.4 SIGNIFICANCE OF THE STUDY

This study seeks to improving the keeping criminal records that would be easy to retrieve information from, by crime investigator(s) and approved persons. It will also assist securities agencies in their bid to solve crimes with timely and useful information about criminals and/or their mode of operations to nib in the bud criminal activities in each locality.

1.5 RESEARCH SCOPE

This research will cover crime information using the Nigeria Police Force as a case study. For the sake of time and other resources, the Nigeria Police Force Ikeja will be used for information gathering.

1.6 STRUCTURE OF THE PROJECT

The project will be a web-based system built using PhP as the programming language and MySQl as the database. The project will be executed on a personal computer with the capability to be uploaded on live server for real time access on the internet.

1.7 DEFINITIONS OF TERMS

Crime: an illegal act for which someone can be punished by the government; especially a gross violation of law.

Investigation: the action of investigating something or someone; formal or systematic examination or research.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

In this chapter, I discuss the relevant literature in line with the topic of this study. The model used will also be described. This also includes the concept of crime, perspectives to crime. Record information system will also be discussed as well as system development methodologies.

2.2 THE CONCEPT OF CRIME

Legally, crimes usually are defined as acts or omissions forbidden by law that can be punished by imprisonment and/or fine. Murder, robbery, burglary, rape, drunken driving, child neglect, and failure to pay your taxes all are common examples. However, as several eminent criminologists recently have noted (Sampson & Laub 1993; Gottfredson & Hirschi 1990), the key to understanding crime is to focus on fundamental attributes of all criminal behaviors rather than on specific criminal acts. Instead of trying to separately understand crimes such as homicide, robbery, rape, burglary, embezzlement, and heroin use, we need to identify what it is they all have in common. Much past research on crime has been confounded by its focus on these politico-legal rather than behavioral definitions.

Furthermore, the behavioral definition of crime focuses on, criminality, a certain personality profile that causes the most alarming sorts of crimes. All criminal behaviors involve the use of force, fraud, or stealth to obtain material or symbolic resources. As Gottfredson and Hirschi (1990) noted, criminality is a style of strategic behavior characterized by self-centeredness, indifference to the suffering and needs of others, and low self-control. More impulsive

individuals are more likely to find criminality an attractive style of behavior because it can provide immediate gratification through relatively easy or simple strategies. These strategies frequently are risky and thrilling, usually requiring little skill or planning. They often result in pain or discomfort for victims and offer few or meager long-term benefits because they interfere with careers, family, and friendships. Gottfredson and Hirschi assert that this means the "within-person causes of truancy are the same as the within-person causes of drug use, aggravated assault, and auto accidents (1990, p. 256)."

Criminality in this sense brears a problematic relationship with legal crimes. Some drug dealers, tax cheats, prostitutes and other legal criminals may simply be businesspeople whose business activity happens to be illegal. Psychologically, they might not differ from ordinary citizens. Almost all ordinary citizens commit at least small legal crimes during their lives. Nevertheless, Gottfredson's and Hirschi's hypothesis is that most of the legal crime is committed by individuals a general strategy of criminal activity. This conception of crime explains the wide variety of criminal activity and the fact that individuals tend not to specialize in one type of crime. It also is consistent with the well-established tendency of people to be consistent over long periods of time in the frequency and severity of crimes they commit. Even executives who commit white collar crimes probably are more impulsive, self-centered, and indifferent to the suffering of others than those who do not take advantage of similar opportunities. Focusing on criminality rather than political-legal definitions also allows us to finesse the perplexing problem of why some acts (e.g., marijuana consumption) are defined as crimes while similar arguably more damaging acts (e.g., alcohol consumption) are not. These issues, central to conflict theories and critical theories of crime, are important.

However, because they focus on systematically deeper power relations between competing interest groups, they seldom provide feasible policy alternatives and tend to reinforce perceptions of crime as an insolvable problem. What we want to do here is see if the human ecological approach can lead us to some practical strategies for controlling crime. Human resources can have material, symbolic, or hedonistic value. In crimes such as thefts, individuals take material resources such as property from another person without his or her knowing cooperation. Those who commit crimes such as narcotics trafficking and gambling attempt to obtain money that can be exchanged for material resources. In crimes such as assaults not associated with theft, sexual assaults, and illicit drug use, people obtain hedonistic resources that increase pleasurable feelings or decrease unpleasant feelings. Political crimes such as terrorism or election fraud attempt to obtain symbolic resources such as power or prestige.

2.2.1 SYSTEMS PERSPECTIVE ON CRIME

Criminal behavior is the product of a systematic process that involves complex interactions between individual, societal, and ecological factors over the course of our lives. In other words, from conception onward the intellectual, emotional, and physical attributes we develop are strongly influenced by our personal behaviors and physical processes, interactions with the physical environment, and interactions with other people, groups, and institutions. These systematic processes affect the transmission from generation to generation of traits associated with increased involvement in crime.

2.2.1.1 ECOLOGICAL FACTORS

Ecological factors involve interactions between people and their activities in a physical environment. This category includes things associated with the physical environment such as geography and topography, crowding, pollution, and recreational opportunities. These ecological factors can affect how people develop physically and emotionally over their lives as well as the level of hostility, fear, or well-being they feel from moment to moment as they experience, for example, a crowded subway, dark lonely parking lot, or serene park.

2.2.1.2 SOCIETAL OR MACROLEVEL FACTORS

Societal or macrolevel factors deal with systematic interactions between social groups. Societal factors describe the ways society is structured. They include such things as the relative distribution of the population among groups and the flows of information, resources, and people between groups. Societal factors encompass the variety and heterogeneity of racial/ethnic/cultural/productive groups, their behaviors, and beliefs, and economic relations.

2.2.1.3 MOTIVATION AND OPPORTUNITY

Individuals commit the crimes. Although ecological and societal factors must be included in any full explanation of crime, individual factors always intervene between them and a criminal act. For this reason, individual factors need to be the center of any description of the causes of crime. Motivation alone cannot cause a crime to occur; opportunity also is required. And—although few researchers today address this issue—opportunity itself may influence motivation (Katz 1988). Lay people call this “temptation” and probably would consider any discussion of motivation that excluded temptation silly. Thus a person’s propensity to commit a criminal act at a particular

point in time is a function of both motivation and opportunity. Some may be motivated to seek out and exploit criminal opportunities that offer extremely small rewards; others will commit crimes only when presented with relatively enormous opportunities; and a very few will not commit crimes regardless of rewards.

Criminologists hypothesize that several individual factors determine a person's motivation to commit an act. Motivation at a particular point in time is the result of interactions over a person's life course between biological, socio-cultural, and developmental factors—as well as contemporaneous opportunity. Psychological factors are the result of interactions between biological and socio-cultural factors. Criminologists do not imagine that some simple constitutional factor ('criminal nature") is a very satisfactory explanation for motivational factors.

2.3 RECORD INFORMATION SYSTEM

Information is "data, ideas, thoughts, or memories irrespective of medium." Information sources are considered "non-records": they are useful but do not provide evidence. Documents are any "recorded information or objects that can be treated as individual units." Examples include works in progress such as draft communications or "to do" lists, and transitory records such as emails confirming a meeting or acknowledging receipt of a document. Records are "information created, received, and maintained as evidence and information by an organization or person, in pursuance of legal obligations or in the transaction of business." Examples include final reports, emails confirming an action or decision, spreadsheets showing budget decisions, photographs or maps of field missions, which need to be kept as evidence.

The key difference between information, documents, and records is their level of accountability. We generate or receive information all the time, in articles, newspapers, radio reports, or books. If that information is useful but does not provide evidence of our actual official work, or our actions or decisions, we treat that information as a "non-record": it is informative but cannot be used to prove that we did or did not take a certain action. Within our daily work, we all create, receive, and use documents. We send and receive emails, draft memos, or write reports. We need those documents for a few minutes, hours, or months, to help us to work consistently and productively and to keep track of progress in projects and activities. Documents become records when we use them to inform our colleagues and ourselves of what has been done or decided or when they provide examples of or background to previous work or evidence of our actions or decisions. When a document provides evidence, we "declare" it to be a record. That is, we store the record in an official records system so that we can find and use it again easily. If the document is superseded or obsolete – an email confirming a lunch appointment is no longer needed when lunch is over – we do not need to declare that document as a record. We destroy that document so it does not take up valuable space in our records systems.

2.4 REVIEW OF RELATED LITERATURE

2.4.1 WEB BASED APPLICATION

Several researchers studied the issue of Web based application. Rokouet (2004), distinguished three basic levels in every web-based application: the Web character of the program, the pedagogical background, and the personalized management of the learning material. They defined a web-based program as an information system that contains a Web server, a network, a communication protocol like HTTP, and a browser in which data supplied by users act on the

system's status and cause changes. The pedagogical background means the educational model that is used in combination with pedagogical goals set by the instructor. The personalized management of the learning materials means the set of rules and mechanisms that are used to select learning materials based on the student's characteristics, the educational objectives, the teaching model, and the available media. Many works have combined and integrated these three factors in e-learning systems, leading to several standardization projects. Some projects have focused on determining the standard architecture and format for learning environments, such as IEEE Learning Technology Systems Architecture (LTSC), Instructional Management Systems (IMS), and Sharable Content Object Reference Model (SCORM). IMS and SCORM define and deliver XML-based interoperable specifications for exchanging and sequencing learning contents, i.e., learning objects, among many heterogeneous e-learning systems. They mainly focus on the standardization of learning and teaching methods as well as on the modeling of how the systems manage interoperating educational data relevant to the educational process].Juan Quesada and Bernd Simon have also presented model for educational activities and educational materials. Their model for educational activities denotes educational events that identify the instructor(s) involved and take place in a virtual meeting according to a specific schedule. Rokou (2004). described the introduction of stereotypes to the pedagogical design of educational systems and appropriate modifications of the existing package diagrams of UML (Unified Modeling Language). The IMS and SCORM models describe well the educational activities and system implementation, but not the educational contents knowledge in educational activities.

JuanQuemada's and F. P.Rokou's models add more pedagogical background by emphasizing educational contents and sequences using the taxonomy of learning resources and stereotypes of teaching models. But the educational contents and their sequencing in these models are

dependent on the system and lack standardization and reusability. Thus, we believe that if an educational contents frame of learning resources can be introduced into an e-learning system, including ontology-based properties and hierarchical semantic associations, then this e-learning system will have the capabilities of providing adaptable and intelligent learning to learners. The hierarchical content's structure is able to show the entire educational contents, the available sequence of learning, and the structure of the educational concepts, such as the related super- or subconcepts in the learning contents. Furthermore, some of semantic relationships among the educational contents, such as 'equivalent', 'inverse', 'similar', 'aggregate' and 'classified', can provide important and useful information for the intelligent e-learning system. For this purpose, ontology is introduced in our model. It can play a crucial role in enabling the representation, processing, sharing and reuse of knowledge among applications in modern web-based-learning systems because it specifies the conceptualization of a specific domain in terms of concepts, attributes, and relationships

2.4.2 CRIME AND CRIMINALITY

2.4.2.1 BIOLOGICAL THEORIES

Lombroso and Biological Positivism In the 19th Century, Italian prison psychiatrist Cesare Lombroso drew on the ideas of Charles Darwin and suggested that criminals were atavistic: essentially 'evolutionary throwbacks. He suggested that their brains were mal-developed or not fully developed. In his review of prisoners, he found that they shared several common physical attributes, such as sloping foreheads and receding chins. In so doing, Lombroso suggested that involvement in crime was a product of biology and biological characteristics: criminals were born that way. Lombroso's theory is essentially a theory of biological positivism.

2.4.2.2 SOCIOLOGICAL THEORIES

The Chicago School/Social Disorganization Theory Social disorganisation theory grew out of research conducted by sociologists at the University of Chicago in the 1920s and 1930s. It key proponents were Clifford R. Shaw and Henry D. McKay (1942), who used spatial mapping to examine the residential locations of juveniles referred to court. Shaw and McKay found that patterns of delinquency were higher in areas characterised by poor housing, poor health, socio-economic disadvantage, and transient populations. This led them to suggest that crime was a function of neighbourhood dynamics and not due to individual actors and their actions. Shaw and McKay explained these patterns by reference to the problems that accompanied immigration to Chicago at this time. They claimed that areas settled by newly arrived immigrants experienced a breakdown of social norms due to ethnic diversity and competing cultural traditions. Conventional institutions of social control were therefore weakened and unable to regulate the behaviour of local youths.

Contemporary theories of crime, place and space include:

- defensible space theory, which examines how the design of physical space is related to crime;
- broken windows theory, which looks the relationship between low level disorder and crime; and
- routine activities theory, which considers how opportunities to commit crime are shaped by between people's everyday movements through space and time.

2.4.2.3 ANOMIE/STRAIN THEORY

Anomie is a concept developed by one of the founding fathers of sociology, Emile Durkheim, to explain the breakdown of social norms that often accompanies rapid social change. American sociologist Robert Merton (1957) drew on this idea to explain criminality and deviance in the USA. His theory argues that crime occurs when there is a gap between the cultural goals of a society (e.g. material wealth, status) and the structural means to achieve these (e.g. education, employment). This strain between means and goals results in frustration and resentment, and encourages some people to use illegitimate or illegal means to secure success. In short, strain theory posits that the cultural values and social structures of society put pressure on individual citizens to commit crime.

2.4.2.4 SUBCULTURAL THEORY

Linked to anomie and strain are concepts of status frustration and differential opportunity, which North American subcultural theorists used to explain the delinquent activities of disadvantaged groups in the 1950s and 60s. Status frustration is associated with the work of Albert Cohen (1955), who conducted research into group offending by young, lower-class men. Cohen argued that lower-class youths could not aspire to middle-class cultural goals and so, frustrated, they rejected them to create their own subcultural system of values. In school, for example, they gain status and respect by meeting the expectations of peers not teachers, engaging in delinquent activities such as smoking, truanting, and acting up in class. Richard Cloward and Lloyd Ohlin (1960) built on these ideas, pointing to the differential opportunity structures available to lower-class young people in different neighborhoods: criminal (making a living from crime), conflict (territorial violence and gang fighting) and retreatism (drugs and alcohol).

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2.5 TYPES OF MODELS IN SOFTWARE DEVELOPMENT

In Software development SDLC stands for Software Development Life Cycle. It is also called as Software development process. This is further shown in the image below:

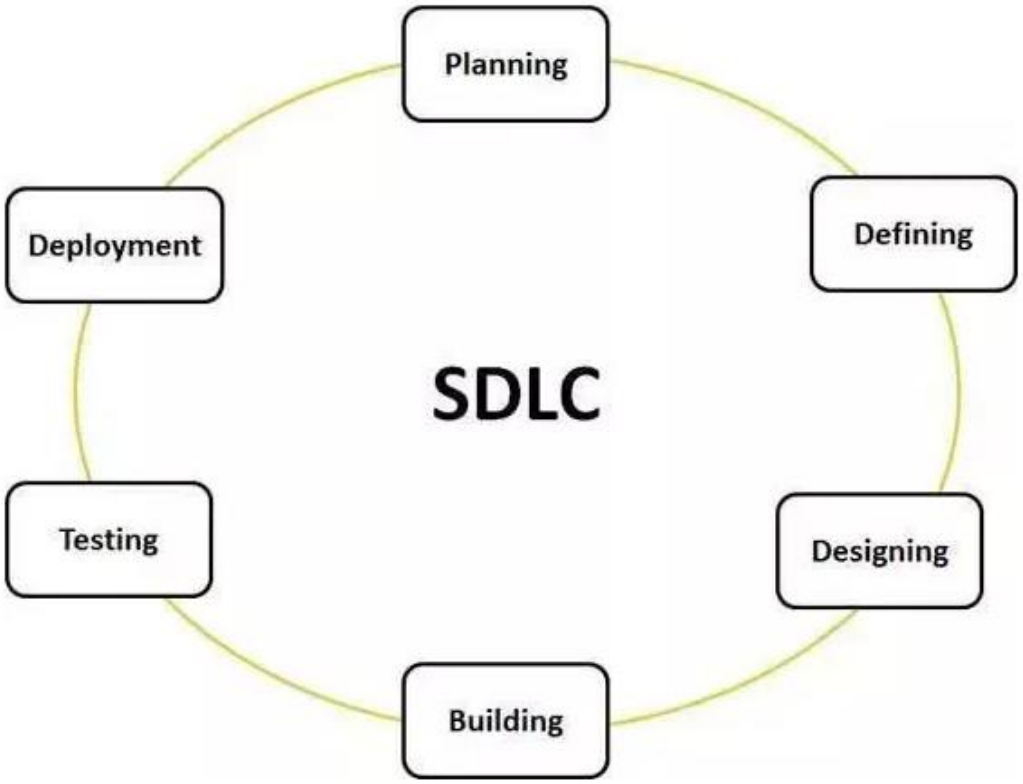

Figure 2:1: Stages Involved in a Software Development Lifecycle.

The software development should be complete in the pre-defined time frame and cost. It consists of a detailed plan describing how to develop, maintain, replace and alter or enhance specific software. Every phase of the SDLC lifecycle has its own process and deliverables that feed into the next phase. The Systems Development Life Cycle (SDLC) gives structure to the challenges of transitioning from the beginning to the end of your project without forgetting a step.

A number of different SDLC methodologies are used today to guide professionals through their project-based work. Here are the key pros and cons of six of the most common SDLC methodologies.

2.5.1. WATERFALL MODEL

Waterfall is the oldest and most straightforward of the structured SDLC methodologies finish one phase, then move on to the next. No going back. Each stage relies on information from the previous stage and has its own project plan. Waterfall is easy to understand and simple to manage. But early delays can throw off the entire project timeline. And since there is little room for revisions once a stage is completed, problems can't be fixed until you get to the maintenance stage. This model doesn't work well if flexibility is needed or if the project is long term and ongoing.

2.5.2 V-SHAPED MODEL

Also known as the Verification and Validation model, the V-shaped model grew out of Waterfall and is characterized by a corresponding testing phase for each development stage. Like Waterfall, each stage begins only after the previous one has ended. This model is useful when there are no unknown requirements, as it's still difficult to go back and make changes.

2.5.3. ITERATIVE MODEL

The Iterative model is repetition incarnate. Instead of starting with fully known requirements, you implement a set of software requirements, then test, evaluate and pinpoint further requirements. A new version of the software is produced with each phase, or iteration. Rinse and repeat until the complete system is ready. One advantage over other SDLC methodologies: This model gives you a working version early in the process and makes it less expensive to implement changes. One disadvantage: Resources can quickly be eaten up by repeating the process again and again.

2.5.4. SPIRAL MODEL

One of the most flexible SDLC methodologies, the Spiral model takes a cue from the Iterative model and its repetition; the project passes through four phases over and over in a “spiral” until completed, allowing for multiple rounds of refinement. This model allows for the building of a highly customized product, and user feedback can be incorporated from early on in the project. But the risk you run is creating a never-ending spiral for a project that goes on and on.

2.5.5 BIG BANG MODEL

A bit of an anomaly among SDLC methodologies, the Big Bang model follows no specific process, and very little time is spent on planning. The majority of resources are thrown toward development, and even the client may not have a solid grasp of the requirements. This is one of the SDLC methodologies typically used for small projects with only one or two software engineers. Big Bang is not recommended for large or complex projects, as it’s a high-risk model; if the requirements are misunderstood in the beginning, you could get to the end and realize the project may have to be started all over again.

2.5.6. AGILE MODEL

By breaking the product into cycles, the Agile model quickly delivers a working product and is considered a very realistic development approach. The model produces ongoing releases, each with small, incremental changes from the previous release. At each iteration, the product is tested. This model emphasizes interaction, as the customers, developers and testers work together throughout the project. But since this model depends heavily on customer interaction,

the project can head the wrong way if the customer is not clear on the direction he or she wants to go.

Each of these SDLC methodologies offers unique process for the variety of project challenges that will be encountered during development. Finding the right one depends heavily on not just the expected outcome, but the parameters by which the project is executed.

2.6 HISTORY OF THE NPF-CID

The Nigeria Police Force Criminal Investigation Department (FCID) is the highest investigating arm of the Nigeria Police. Its functions include investigation and prosecution of serious and complex criminal cases within and outside the country. The department also coordinates crime investigations/prosecution throughout the force. For effective and efficient administration, the NPF CID is divided into sections with most of them headed by Commissioner of Police. The Department is currently headed by a DIG JOSEPH EGBUNIKE

The Sections under the Force Criminal Investigation Department (FCID) include the following:

- Administration
- Ant-Fraud Section
- The Central Criminal Registry (CCR)
- Special Anti-Robbery Squad (SARS)
- Special Enquiry Bureau
- X-Squad
- General Investigation
- Special Fraud Unit (SFU)
- Legal Section

- Forensic Science
- Interpol
- Homicide
- Anti-Human Trafficking Unit

CHAPTER THREE

SYSTEM ANALYSIS AND DESIGN

3.1 METHODOLOGY OF THE STUDY

Software development methodology refers to the process of planning, creating, testing and then deploying a project. There are a few different variations on what people and companies think are good development practices. However, for the sake of brevity I am going to touch on the ones that I have seen the most frequently ones which are Agile and Scrum.

3.1.1 SCRUM

Scrum methodology was created as a sort of additional layer on the agile methodology. The goal of the scrum methodology is to improve productivity where progress has halted. Key features of the scrum include, the creation of a living backlog of work sorted by priority to be completed in sprints/iterations, a daily meeting where progress on and direction of the project is discussed, a planning session where backlogged tasks are chosen for the next sprint, and a reflection on the previous sprint.

3.1.2 AGILE

The Agile methodology encompasses a variety of other “agile methodologies”. For example, Crystal Methods, Dynamic Systems Development Model (DSDM), and Scrum are all considered agile methodologies. The hallmarks of the agile development process include working in sprints or iterations which last from one to four weeks with the goal of releasing new functionality at the end of each iteration. Within each of these iterations there is planning, requirements analysis, design, coding, testing, and the creation of documentation.

3.2 METHOD OF DATA COLLECTION

Data is one of the most valuable resources today's researches have. The more information available for research, the better one can understand their interests, wants and needs. Basically, there are two methods of data collection which are primary and secondary. The term primary data refers to data a researcher collects personally, rather than data gathered after another party initially recorded it. Primary data is information obtained directly from the source. The researcher will be the first party to use this exact set of data. Secondary data is the data that has already been collected through primary sources and made readily available for researchers to use for their own research. It is a type of data that has already been collected in the past. A researcher may have collected the data for a particular project, then made it available to be used by another researcher. The data may also have been collected for general use with no specific research purpose like in the case of the national census. These two methods were used to collect data for this work. The following fact finding method were used to carry out the research work and analyze the existing system of crime report records:

i. Interview
ii. Procedural manual
iii. Observations
iv. Studying forms/cards

3.3 SYSTEM ANALYSIS

3.3.1 ANALYSIS AND PROBLEMS OF THE EXISTING SYSTEM

The existing system has the following drawbacks:

i. The inability to trace criminal's crime history to know those who deserve pardon.
ii. More strength and strain of manual labor needed.
iii. inaccuracy
iv. Lack of integrity and Efficiency
v. Data redundancy due to multiple registration of crime.
vi. Difficult to handle due to the use of paper
vii. Difficult to update data
viii. Record keeping is difficult
ix. Backup data cannot be easily generated.

3.3.2 JUSTIFICATION FOR THE NEW SYSTEM

The system is designed using Object Oriented Analysis and Design and Unified Modelling Language was used to bring the view to real life situation. The proposed system will be built dynamically to process request in real time, online and responsively. With this new system, records will be retrieved swiftly within the shortest possible time. The proposed system will be developed using PHP, JavaScript as well My SQL as its database. Upon completion, the system will be a robust, fast, easy to use and graphical user interface friendly program.

3.3.3 DESCRIPTION OF THE NEW SYSTEM

The aim of the proposed system is to develop a computerized crime reporting system over the limitation of the existed system. With the proposed system there will be no loss of information whenever crime information is submitted to the database, the information can be backed up and referred to anytime of the day.

3.3.4 REQUIREMENTS ANALYSIS

Requirement Analysis, also known as Requirement Engineering, is the process of defining user expectations for a new software being built or modified. In software engineering, it is sometimes referred to loosely by names such as requirements gathering or requirements capturing. Requirement's analysis encompasses those tasks that go into determining the needs or conditions to meet for a new or altered product or project, taking account of the possibly conflicting requirements of the various stakeholders, analysing, documenting, validating and managing software or system requirements. There are different methods for gathering requirements of both soft and hard methodologies including; interviews, questionnaires, document analysis, observation, throw-away prototypes, use cases and static and dynamic views with users.

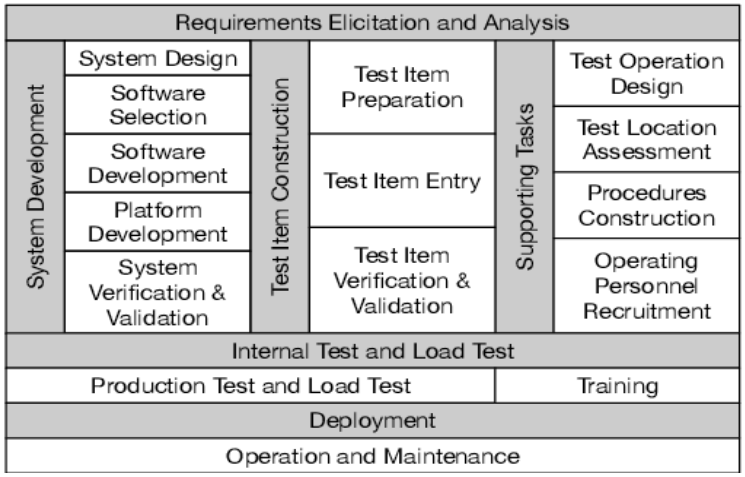

Figure 3.1: Requirement Analysis

3.3.5 ANALYSIS OF THE NEW MODEL

There are different models when developing this type of system with differs primarily with respect to their use of adaptive algorithms, the size of the records units, and the nature and extent to which automated record system is used. The model is reviewed with respect to several criteria including measurement efficiency, ability to ensure content balance and other test

form quality aspects, risk considerations related to data management, item-pool usage, ease of implementation, and performance within large-scale, secure testing networks.

3.4 SYSTEM DESIGN

Systems design is the process of defining elements of a system like modules, architecture, components and their interfaces and data for a system based on the specified requirements. Further information about the design of the new system will be discussed under the following headings of design goal, system architecture, hardware/software requirement and the data base design.

3.4.1 DESIGN GOALS

Systems design is the phase where system engineers analyses and understand the business of the proposed system by studying the user requirements document. They figure out possibilities and techniques by which the user requirements can be implemented. If any of the requirements are not feasible, the user is informed of the issue. A resolution is found and the user requirement document is edited accordingly. The software specification document which serves as a blueprint for the development phase is generated. Some design goal includes:

i. To allow us to write software that is as helpful as possible.

ii. To allow our software to continue to be as helpful as possible.

iii. To design systems that can be created and maintained as easily as possible by their programmers, so that they can be–and continue to be–as helpful as possible.

3.4.2 SYSTEM ARCHITECTURE

The architecture of the system design is 3-tier. The tiers are presentation tier, middle tier and data tier. The presentation tier is the user interface and it is designed using HTML. The middle tier connects the presentation tier and data tier together. The middle tier is also called application tier or business logic. The middle tier was designed using PHP and it runs on the server. The data tier is the part of the system that is responsible for storing data (database). The database management system used for developing this system is MySQL database server. Architecture of the system is shown below.

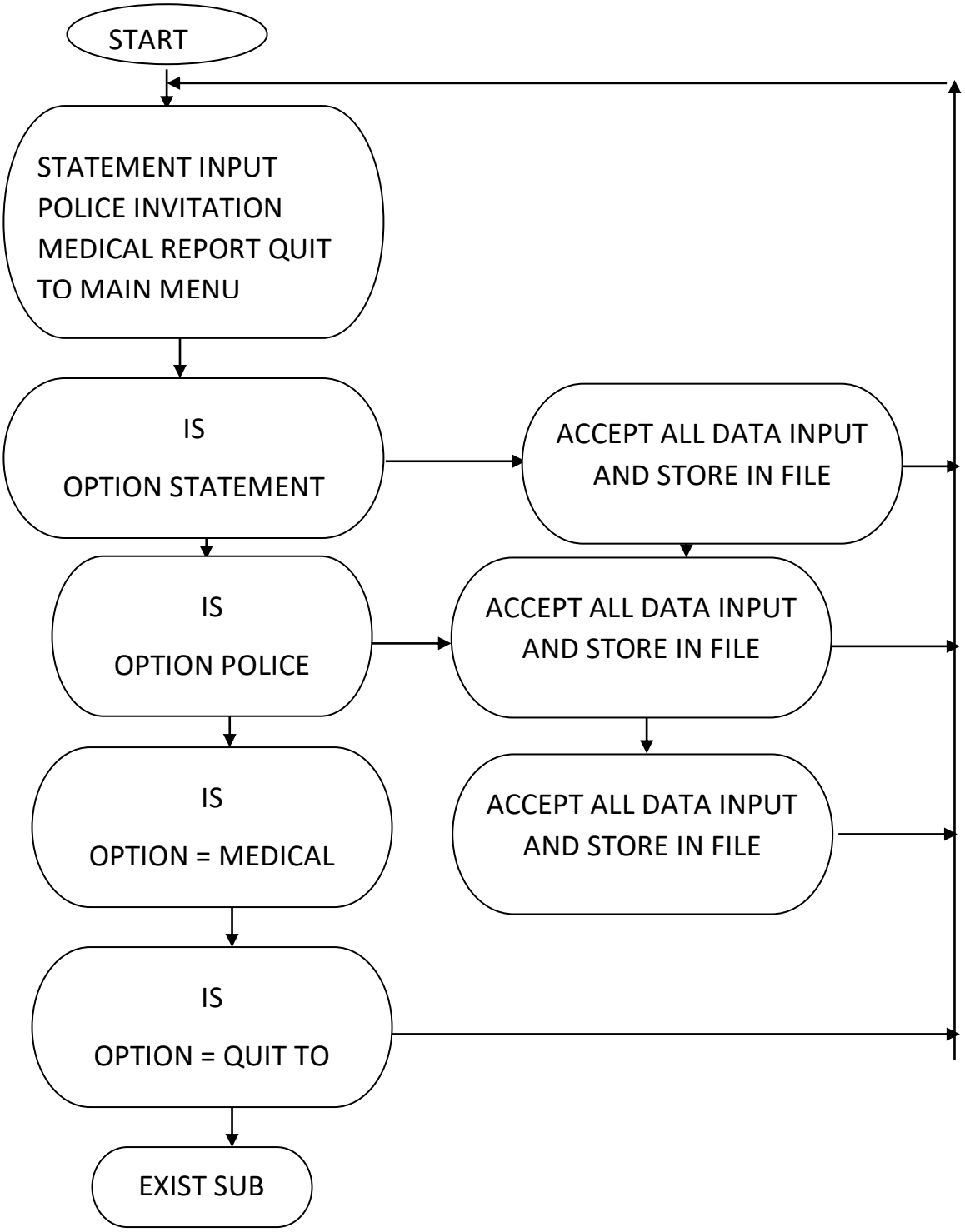

Figure 3.2: System Information Flow Diagram

3.4.3 HARDWARE/SOFTWARE PLATFORM

The program source code is deployed on Windows 10 Operating System. The web service code and the database is deployed on XAMMP which contains both Apache server and MySQL relational database server. The system will run efficiently on windows 8 and above operating system. Any Intel processor from core i3 and above enabled computer with 4GB RAM and 500GB Hard disk can be used.

3.4.4 DATABASE DESIGN

In computing, databases are sometime classified according to their organizational approach. A database is a collection of information that is organizes so that it can easily be accessed, managed and updated. In one view, database can be classified according to types of content: bibliography, full-text, numeric, and image.

3.5 CODING

Rapid PHP is the IDE used in implementing the client code and the web service code of this application. Rapid PHP editor is a faster and more powerful PHP editor for Windows, combining features of a fully-packed PHP IDE with the speed of the Notepad. Rapid PHP is the most complete all-in-one software for coding PHP, HTML, CSS, JavaScript and other web development languages with tools for debugging, validating, reusing, navigating and formatting your code. With Rapid PHP editor one can code smarter, save time and increase productivity. It supports tabbed browsing, offering flexibility when working with multiple documents at once. The application has a handy code explorer that will facilitate code search, especially functions, classes, variables and other commands of each supported language. The program includes small

wizards for creating CSS documents and the structure of HTML documents. The programme has some other powerful features like auto-completion, code highlighting in bright colours, syntax correction, and the ability to visualize your own projects within the editor. The scripting language selected to accomplish actualize the project is PERSONAL HOMEPAGE PREPROCESSOR popularly known as PHP.

CHAPTER FOUR

SYSTEM IMPLEMENTATION RESULTS

4.1 INTRODUCTION

After the successful development of any system, the next state is to implementation stage. Therefore, in this chapter, a detailed description of how the system will be implemented will be described.

4.2 INSTALLATION REQUIREMENTS

The effective running of every system requires specification requirements that must be met. Therefore, in every automated system, these requirements usually are in two categories which are hardware and software. These requirements must be always meet before the system can be used.

4.2.1 HARDWARE REQUIREMENTS

For this system to run effectively, the hardware requirement needed is as follows:

1. Computer System
2. 100GB Hard disk space or higher
3. Intel Core 2 Processor or Higher
4. 4GB RAM or higher

4.2.2 SOFTWARE REQUIREMENTS

For this system to run effectively, the software requirements needed are as follows:

1. WAMP or XAMP Server

2. Windows Operating System 8 or higher

4.3 PROTOTYPE DESIGN

The diagram below represents the prototype of a typical information system operation.

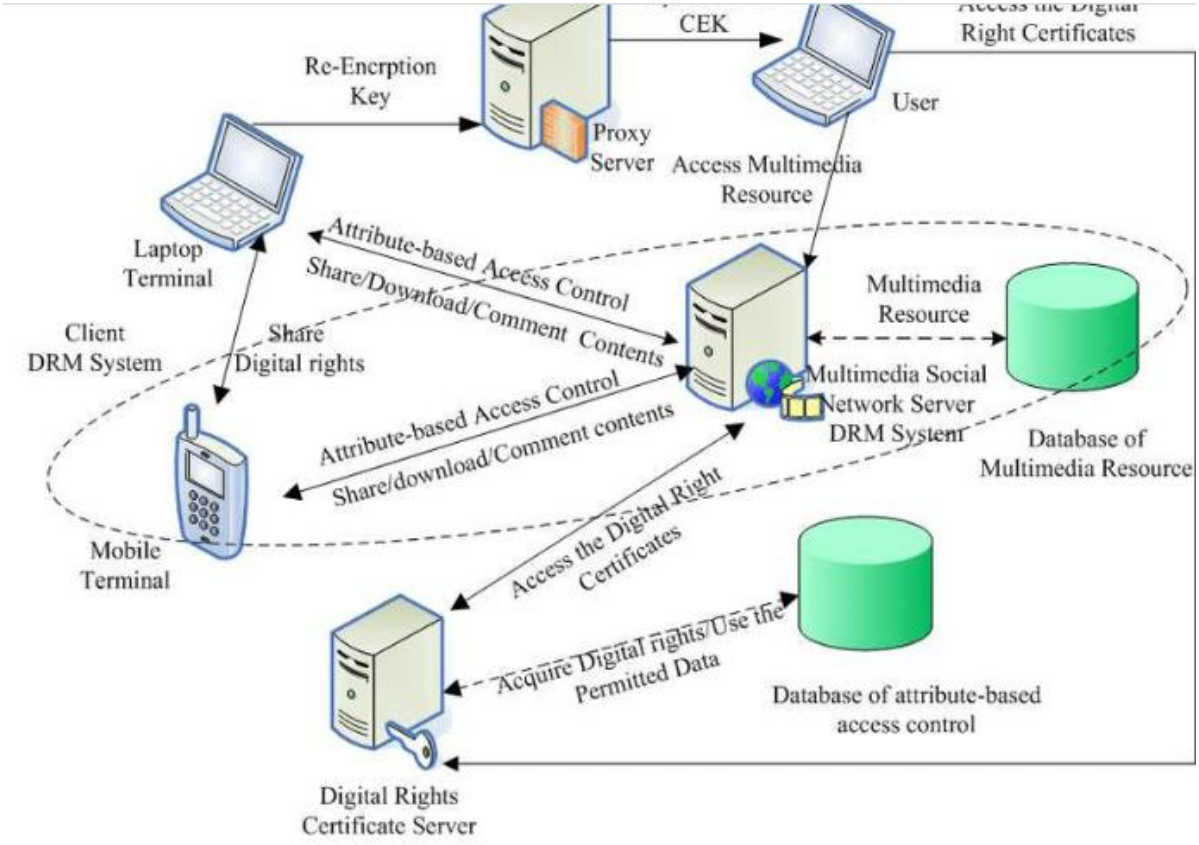

Fig 4.1: Prototype Design of Proposed System

4.3.1 SYSTEM SETUP

Step 1: Install Wamp or Xamp Server on the system to be used

Step 2: Copy the folder named **"social"** and paste inside the "**www"** folder if using wamp or **"htdocs"** folder if using xamp

Step 3: Start wamp or xamp server to ensure all services are running

Step 4: Next is to copy the database into the server: Open the browser and type “localhost” into the URL.

Step 5: Click on **phpmyadmin**

Step 6: Click on databases and create a new database with the name “station”

Step 7: Import the file social from the project folder into the newly created database

Step 8: Now, open the browser and type http://localhost/station/ in the URL.

Step 9: User can now sign up, login and use the system

4.4 RESULTS

Every information system ends with outputs as results. Below are the various screen shots of all the menu in the new system

4.4.1 MAIN MENU PAGE

Fig 4.2: Main Menu Page

4.4.2 REGISTER PAGE

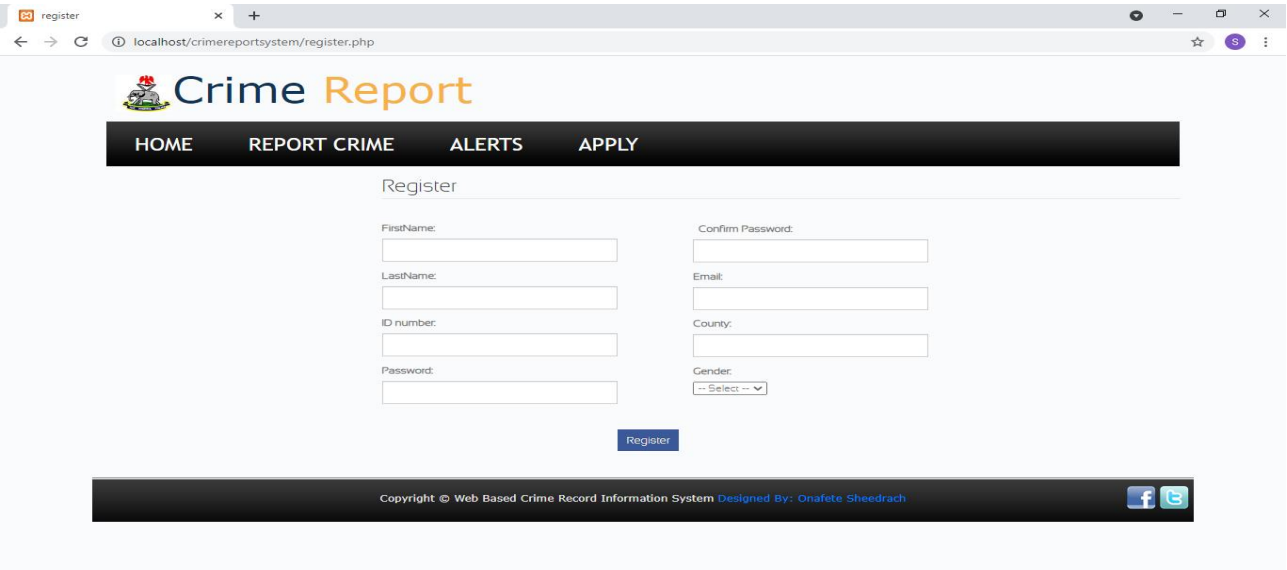

Fig 4.2: Register Page

4.4.3 LOGIN PAGE

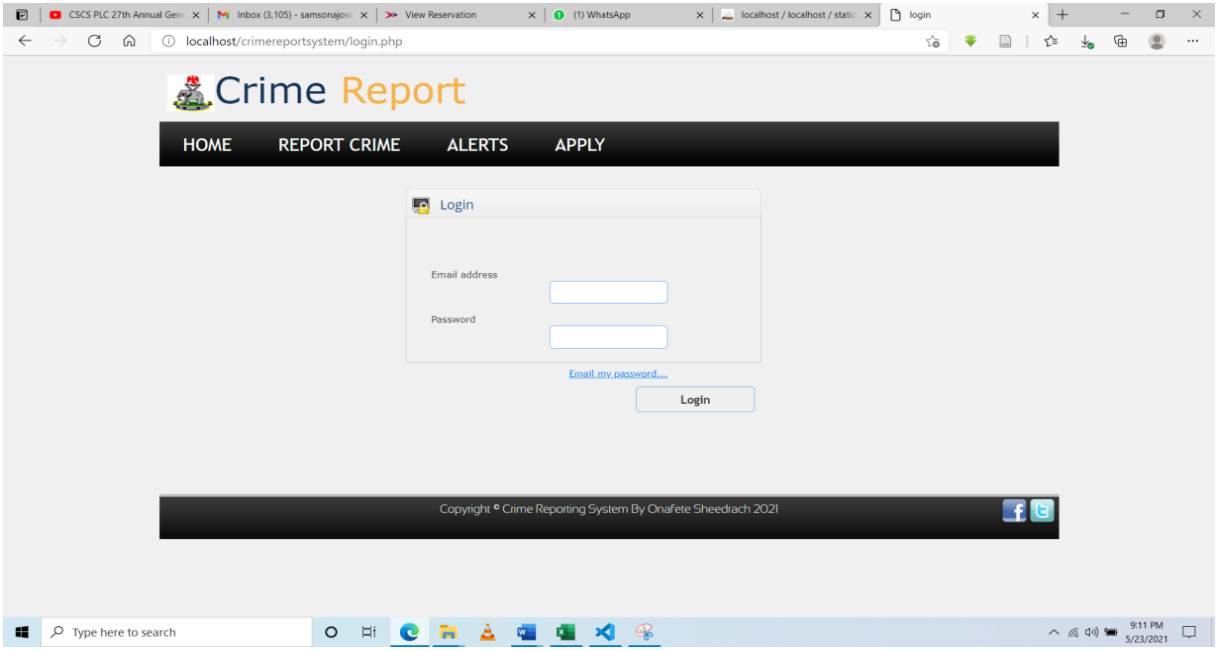

Fig 4.2: Login Page

4.4.4 ADMIN DASHBOARD

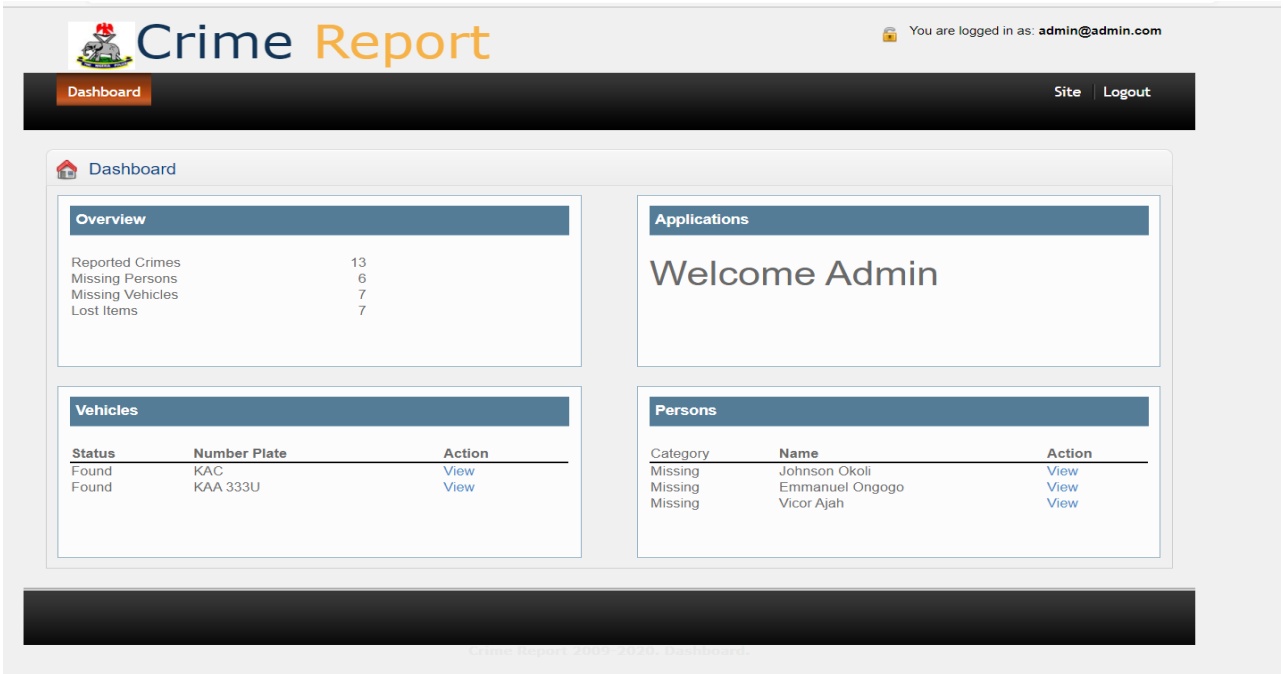

Fig 4.2: Admin Dashboard

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 SUMMARY

Today, the case of increased insecurity in Nigeria is alarming. There have been different calls for state policing, community policing and other kinds of local security outfit. This continuous cry is an indication that crime is on the increase daily in our nation. This is worrisome has lives, properties and businesses have been destroyed which is taking its toll on our economy.

The need for a computerized platform for crime record management cannot be overemphasized. This kind of system enhances proper and efficient management of criminal records by law enforcement agencies thereby helping in making informed decisions and improving reliability thus improving law enforcement operations. This results in lower crime rate in the country thereby increasing national security.

5.2 CONCLUSION

An integrated crime information system, at its core, is any computer network system or architecture that allows law enforcement and justice practitioners and agencies to electronically access and share information between systems and/or across jurisdictional lines. Integrated crime Information sharing generally refers to the ability to access and share critical information at key decision points throughout the law enforcement and justice enterprise. Integration also includes sharing information with traditionally non-law enforcement and justice agencies. These can include other governmental agencies, health and human services organizations, treatment service providers, schools and educational institutions, licensing authorities, etc. It is very important to

note that building integrated crime and justice information systems does not mean that all information between agencies is shared, without regard to the event, the agencies involved or the sensitivity of the information available. Rather, agencies need to share critical information at key decision points throughout the law enforcement and justice process. This is the rationale for proposing independent systems that share necessary data but are maintained autonomously by their respective agencies.

Over the course of this research work, the major limitation encountered was; inadequate information as officers were not forthcoming with information thereby making it complex to specify requirements of the system.

5.3 RECOMMENDATIONS

After carrying out extensive research on crime record management, some points to consider in improving the efficiency and effectiveness of the crime record management system of the law enforcement agencies generally in Nigeria include;

i. A generic platform for keeping human records from birth till death. Deploying this sort of platform will serve as a source of information on persons from various states within the country and even those outside. The crime record information system can then be linked to this system and thus provide comprehensive data on persons.
ii. The crime record information system should be merged with the criminal justice system to form a mega system that spans over all facets of the justice system. This will enhance synchronization and transfer of information between the court of law and law enforcement agencies.

iii. Verification using Biometric: it is highly recommended that a biometric system be inculcated into the system to enhance security of data stored in the system. This increases the restriction on access to the system thus unauthorized users have no access to the system.

REFERENCE

Agnew, Robert (1992) Foundation for a General Strain Theory of Crime and Delinquency. Criminology 30:47-88.

Falaye, A., Adama, N., & Agemerien, F. (2013, November). Design and Implementation of Crime Investigation System Using Biometric Approach (Nigeria Police Force). The pacific journal of science and technology

Govardhan, N. M. (September 2010). A Comparison Between Five Models of Software Engineering. IJCSI International Journal of Computer Science Issues, Vol. 7, Issue 5.

International council on archives. (2008). Principles and Functional Requirements for Records in Electronic Office Environments – Module 2: Guidelines and Functional Requirements for Electronic Records Management Systems,

James, N. (2010). Recording of Crime in Nigeria: Problems and Prospects. Retrieved from http://dspace.unijos.edu.ng/bitstream/10485/187/1/22%20%20RECORDING%20OF%20CRIME%20IN%20NIGERIA.pdf

Kawai, D., & Samson, D. (2011). Development of A Criminals Record Management System. Information Technology for People Centered Development, 1-8.

Korth, H. (2010). Database system concepts. Macgraw-Hill. Retrieved 2015

Kyobe, M.E; Molai, P; Salie, T. (2009). Investigating electronic record management and compliance with regulatory requirements in south African universities. peer reviewed article, 1-2.

Land, Kenneth C., Patricia L. McCall, and Lawrence E. Cohen (1990) Structural Covariates of Homicide Rates: Are There Any Invariances Across time and Social Space American Journal of Sociology 95:922-963.

Mubaraka, C., Jirgi, I. M., & Nanyanci, P. L. (2013). Integrating ICT in Traffic Police Department in Uganda; Design and development of traffic case management system. Innovative systems design and engineering, 1-11.

Muhammad, D., Muhammad, R., Muhammad, J., Faheemullah, & Ali, K. (n.d.). CRIMINAL

Olusoga, A. (2014). Understanding requirements. Fundamentals of Software Engineering.

Osayande, P. B. (2008). Factors Inhibiting Police. Understanding the mandate and operations of the police service commission in context of the rule of law.

Radack, S. (n.d.). The System Development Life Cycle. Computer Security Division (Information Technology Laboratory), 1-7.

Rouse, M. (2006, July). what is encryption. Retrieved October 30, 2014, from searchsecurity.techtarget.com:http://searchsecurity.techtarget.com/definition/encryption

Rouse, M. (2007, June). What is authentication. Retrieved October 30, 2014, from searchsecurity.techtarget.com.

Sommerville, I. (2004). CS2 sofware engineering note2.

Tonry, Michael L., Lloyd E. Ohlin, and David P. Farrington (1991) Human Development and Criminal Behavior. New York: Springer-Verlag.

Tutorials point. (2014). sdlc_waterfall_model.htm. Retrieved from tutorialspoint.com: http://www.tutorialspoint.com/sdlc/sdlc_waterfall_model.htm

Ullman, L. (2008). Visual QuickPro Guide PHP 6 and MySQL 5 for Dynamic Web Sites. Berkeley, United States of America.

Vijay. (2013, August). All about database testing. Retrieved January 22, 2015, from softwaretestinghelp.com: http://softwaretestinghelp.com/database-testing--process/

William Adesoji Johnson; Jide Johnson; Tolu Elizabeth Ifedayo. (2013). Evaluation and structures and operations of the Nigeria police public relations department. Kuwait Chapter of Arabian Journal of Business and Management Review Vol. 2, No.11; July 2013, 1-2

APPENDIX

```
<?php
        include 'php/includes/header.php';



?>
        <div class="container" id="wrapper">
                <div id="header">
                        <div class="mainLogo">
                         <div class="logo"><img src="images/lg.jpg" width="60px"
height="50px"/>Crime <span>Report</span></div>
                </div>
                        <div id="login">
                                <?php if(isset($_SESSION['email'])){?>
                                        You are logged in as: <b><?php echo $_SESSION['email'];
?></b>
                                <?php } else { ?>
                                <a href="login.php">Login</a> | <a
href="register.php">Register</a>
                                <?php } ?>
                        </div>
```

```
        </div>
        <div style="clear:both;"></div>
        <div id="nav">
            <?php include 'php/includes/navigation.php'?>
        </div>
        <div id="main">
            <div class="row" id="slider-background">
                <div class="col-sm-3">
        <div class="leftSidebar">
  <div class="titleBlock">
    <p>What we investigate</p>
     </div>
  <div class="blockList">
        <ul>
        <li><a href="alerts.php">Terrorism</a></li>
        <li><a href="alerts.php">Cyber Crime</a></li>
        <li><a href="alerts.php">Public Curruption</a></li>
                        <li><a href="alerts.php">Civil Rights</a></li>
                        <li><a href="alerts.php">Drug Dealers</a></li>
    </ul>
</div>

          <div class="titleBlock">
```

```
   <p>Most Wanted</p>
     </div>
  <div class="blockList">
            <ul>
            <li><a href="alerts.php">Ten most wanted</a></li>
            <li><a href="alerts.php">Most wanted</a></li>
            <li><a href="alerts.php">Other Criminals</a></li>
   </ul>
</div>
              <div class="titleBlock">
   <p>Alerts</p>
     </div>
  <div class="blockList">
            <ul>
            <li><a href="alerts.php">Road accidents</a></li>
            <li><a href="alerts.php">Traffic alerts</a></li>
                     .
```