

**IMPLEMENTING DATA INTERGRITY ON AN ONLINE
CRIME REPORTING MANAGEMENT SYSTEM**

CASE STUDY OF: KENYA POLICE

Presented by

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**‘A PROPOSAL / RESEARCH PROJECT SUBMITTED TO THE
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DECLARATION

This is to confirm that I, Kennedy John Wanda, Registration number BIT-001-1846/2011, undertook this project as my final year project. I also confirm that this is my original work and has not been presented in this or any other university for examination or for any other purposes.

Kennedy John Wanda,

Registration number: BIT-001-1846/2011

Signature.....

Date.....

Approval

Name of Supervisor: Mrs. Grace Mugambi

Signature: -----

Date: -----.

ABSTRACT

This is a summary of what this document contains. Most of the work of the Kenya police still remains manual and assuring the accuracy and consistency of [data](#) has been a major concern and problem to them. The aim of this project is to develop an online crime report and managing system which is easily accessible to the public, the police department and the administrative department and also ensure data and information that the Kenya police have is accurate and also consistence. This system registers the complaints from people through online and it will also helpful to police department in catching criminals, in system and person can give any complaint at any time. The first chapter there is an introduction of the project. The objectives of the project are included in this first chapter. It also explains the methodology that has was used during the project development.

DEDICATION

I dedicate this project to my parents; Mr. & Mrs. Wando who encouraged me during my undertaking of this project.

ACKNOWLEDGEMENTS

My sincere regards goes to Mrs. Grace Mugambi my supervisor who guided me throughout the process of documentation, second of all, I wish to thank the I.T staff members who helped me in one way or another throughout the project planning and preparations and my collogues for giving me a humble time throughout my course . Lastly, I thank my parents for their contributed support in ensuring that the project becomes a success

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Chapter 1

1.1 BACKGROUND

The police's main task is to prevent and investigate crimes and ensure that the perpetrators are brought to justice. Over time the types of crimes have advanced and increased in number from past cases as simple as cattle rustling to modern new forms of crime such as terrorism. Police now more than ever find themselves in need to keep up with the crimes and to do their jobs properly.

The first emergence of the police was in 1898 at the port of Mombasa as a unit called Camp Askaris that were tasked with looking after the railway. In 1902 its name was changed to East African Police and its scope broadened. Again in 1920 it underwent another name change into its current name, The Kenya Police. In 1948 proper legislation regarding the police in the name of the Police Act was brought into being.

Since then the force has undergone several changes including when the new constitution was effected thereby uniting the two main sub-branches of administration and regular police under a single command of an overall inspector general. While the force has structurally undergone changes it has made little or no progress in the information technology aspect of its operations. There is still widespread presence of manual systems in use where a more automated approach would be better suited.

Their work is governed by existing laws and mainly The Kenyan Penal Code which gives a definitive list of crimes that are recognized within Kenya and its laws. Recently, reforms have begun being made to the police force to make it a more effective, efficient, transparent and accountable unit.

1.2 INTRODUCTION

The research area will be on data in DATA INTERGRITY. It is an important feature of a database or RDMS whereby data contained in the database should be accurate and reliable. Data that has integrity is maintained during any operation such as transfer, storage or retrieval .in GENERAL this is the process of maintaining and assuring the accuracy and consistency of data. Developing an online comprehensive **crime reporting management system** will improve the communication between police and public which helps to improve the time utilization for solving crimes and not much time is wasted to communicate with police. So, to reduce the time and increase problem solving efficiency in time period, this application will be more helpful but also data integrity will much needed in assuring the accuracy and the consistency of the data Modern society is characterized by increasing levels of global social mobility and uncertainty relating to levels of risk posed by internal and external security threats. Within this climate security driven by technology is increasingly being used by governments, corporate bodies and individuals to monitor and reduce risk There has been an acceptance that the criminal justice system is limited in its capacity to control crime which has led to the exploration of other avenues for tackling crime and this has provided a market for private companies to push forward the growth of technological security innovations. Crime is a human experience and is as old as the human race. Crime is geographical. It occurs at a specific place, specific time and for a specific reason. It can affect everyone and anyone at any time. Both Information Technology (IT) and crime are complex and constantly changing. Social and technological changes introduce new targets, tools and motives for crime. E-crime targets include confidential information, technical infrastructure and denial of service. Improved and faster technology and worldwide communications make it easier to both organize and conceal crime. Software to help criminals is available, even as commercial products: criminals have used attack-testing software to probe the security of target systems. Motivations now include terrorism and revenge as well as traditional desires for gain. In Kenya police's main task is to prevent and investigate crimes and ensure that the perpetrators are brought to justice. Over time the types of crimes have advanced and increased in number from past cases as simple as cattle rustling to modern new forms of crime such as terrorism. Police now more than ever find themselves in need to keep up with the crimes and to do their jobs properly. Their work is governed by existing laws and mainly The Kenyan Penal Code which gives a definitive list of crimes that are recognized within Kenya and its laws.

1.3 PROBLEM STATEMENT

Police work in Kenya has largely remained manual-oriented i.e. the work is largely done manually by the police officers themselves. There has traditionally been little or no place for technology in their work. This has hindered the police from being more effective. They are more reactive than active in crime fighting. This has been due to how people in the society report the crime to them. Most people fear going to the police station to report the case to the authority. The distance could also be a limiting factor to report a crime on time due to the distance between the incidence of the crime and the police station. There have been also issues of data being corrupted or even data being lost In most police station the data recorded by the police is not recorded exactly as its intended and also tensional change of data and information can happen. This means that they are mostly responding to offences instead of actively anticipating them and recognizing the pattern and relationships in the crime data. The vast archive of crime data thus remains unused. Crime is part of human activities and needs to be managed. No human society has ever been totally free of deviants and it is unlikely that society will ever be. The more populated and complex a society becomes the wider the range of anti-social conduct that must be controlled by government using police power. The incident-based system reports on a much broader range of crimes and includes data on the circumstances of the crime, the victim, and the defendant. The current crime reporting management system is faced with several difficulties as there is no instant means of reporting crime rather than telephone calls, messaging or perhaps face-to-face which is always cumbersome in a case the reporter might want to keep anonymity. To strengthen crime reporting management system, an online crime management system is enhanced to fully take the responsibility of reporting crime in a manner that will be useful to the Kenya Police Force. For instance, in cases involving property crime the incident-based system will report on the:

- Type and description of the article.
- Its value.
- Type of loss (e.g., stolen, vandalized)

1.4 PROPOSED SOLUTION

The main aim of proposed system is to develop a system of improved facilities and ensure accuracy and consistence of data. The proposed system can overcome all the limitations of the existing system. The system provides proper security control and reduces the manual work and also ensure that the data is accurate and consistence. The existing system has several disadvantages and many more difficulties to work well. The proposed system tries to eliminate or reduce these difficulties up to some extent. The proposed system will help the user to reduce the workload and mental conflict. The proposed system helps the user to work user friendly and he can easily do his jobs without time lagging. The system is very simple in design and to implement. The system requires very low system resources and the system will work in almost all configurations. It has got following features

- Ensure data accuracy's
- Minimize manual data entry.
- Minimum time needed for the various processing.
- Greater efficiency.
- Better service.
- User friendliness and interactive.
- Minimum time required.
- Ensure consistence of data

1.5 OBJECTIVES

1.5.1 General objectives

To develop an online crime reporting management system for Kenya Police that will improve security problems and also ensure data integrity

1.5.2 Specific objectives

1. To conduct research on data integrity in online crime management system.
2. To use the appropriate ways to implement data integrity in online crime management system.
3. To research on the tools used in data integrity
4. To conduct research on methods used in data integrity implementation
5. To design and develop an online crime management system
6. To carry out literature review about a system that is of high data integrity.
7. To develop a secure online crime reporting management system.
8. To test the system for and debug errors.
9. To carry out a feasibility study to check if the system is viable or not.

1.6 RESEARCH QUESTIONS

1. What is data integrity?
2. What are the appropriate ways for implementing data integrity?
3. What are the tools used in implementing data integrity?
4. What are the methods used in implementing data integrity?
5. Which are the best ways to design and develop a good system?
6. What is ideas can we borrow that will help the system to be of high data integrity?
7. What are the standards implemented in a secure system?
8. What method are we going to use to test the system and debug errors?
9. How will the feasibility study be carried out to check if the system is viable or not?

1.7 PROJECT JUSTIFICATION

Doing this will help Kenya Police executives plan better, make strategic decisions about future , It will also assist the Kenya Police Force in their bid to solve crimes with timely and useful information about criminals and/or their mode of operations so as to nip in the bud criminal activities in a given locality. The system will be able:

- To provide a deterministic online crime reporting model
- To create a distributed data warehouse for crime reporting based on the model.
- To analyses the existing Crime reporting system and identify constrains and also the problems
- also design a new improved online Crime reporting management system
- test the new improved system

- identify conditions for successful implementation of the new improved system

The enhanced data quality of the incident-based reporting system will be of significant benefit to Kenya and local governing bodies, criminal justice agencies, and the public. Data from the incident-based system will enhance both strategic and tactical decision making in criminal justice. Because incident-based data will provide a more accurate picture of a community's crime patterns, decisions regarding law enforcement, judicial, and correctional resources can be made based on empirical data. Similarly, the level of detail provided by incident-based data can assist law enforcement agencies and the community to identify crime problems in their community such as:

- crime hotspots
- populations who are at risk and
- Drug and alcohol problems.

Crime prevention strategies may then be developed and evaluated based on empirical evidence. This study will also assist policy analyst to understand both factors that impedes the efficiency and effectiveness of the police and the ways by which the situation could be improved upon so as to bring crime and disorders in the society to its barest minimum. Finally, this study will go a long way in contributing to the knowledge of police work. Besides, other researchers and students in higher institutions especially those in sociology department can derive various secondary data from this study.

1.8 PROPOSED RESEARCH AND SYSTEM METHODOLOGIES

A Methodology is a systematic description of the sequence of activities required to solve a problem. It provides a collection of procedures, techniques, tools and documentations aids which helps systems developers in their efforts to develop and implement the proposed system. (Wilkinson, 1997).

The methodology that will be used to develop the system is Object-Oriented Modeling and Design (OOMD) this is because OOMD naturally combines data and processes. It is iterative in nature and therefore receptive to changes in user requirements, there is a smooth transition from analysis to design i.e. analysis models seamlessly develop to design models. OOMD encapsulates the use of System Development Life Cycle which has the following processes: system management and planning, system Analysis, system Design, Implementation and operation which involve the following: coding, Testing and maintenance.

1.8.1 System Analysis

It will involve doing Questionnaires and observations in order to refine project goals into defined functions and operation of the proposed system.

In this phase, there will be interaction with both the users and the management of the system to find out the user requirements and it will also doing analysis for the proposed system to capture the user requirements properly in the proposed new system.

Basing on this study, there will be developing a model of the desired system. This model will be based on the user requirements as well as the functionalities, basing on the idea that the system will be made up of a set of interacting objects.

1.8.2 System Design

This phase will illustrate the overall design of the desired system. It will describe desired features and operations in detail which, include screen layouts, business rules, process diagrams, pseudo code and other documentation.

The system will be an organization of modules interacting with each other. While designing the system as a set of interacting modules, there will be taking a care of specifications as observed in system analysis as well as what will be required out of the new system by the end user.

1.8.3 Object Design

In this phase, there will be implementation of the details of the system analysis and system design. The Objects identified in the system design phase will be designed. Here the implementation of these objects will be decided as the data structures got defined and also the interrelationships between the objects will be defined.

1.8.4 Implementation

This phase will be initiated after the system has been tested and accepted by the user. This phase will continue until the system is operating in production in accordance with the defined user requirements.

In this phase, there will be translation of the class objects and the interrelationships of those classes into actual code, using PHP programming language. There will be a complete databases and the complete system will be in a functional shape.

The complete Object Oriented methodology revolves around the objects identified in the system. When observed closely, every object exhibits some characteristics and behavior. The objects recognize and respond to events.

The system or system modifications will be installed and made operational in a production environment.

1.9 Scope

The focus of this research is to develop an online crime reporting management system of improved facilities and ensure accuracy and consistence of data .the system should help the Kenya police to be able to fight crime and manage it in a quick and efficient manner. Such systems require implementing data integrity in order to be reliable. I will focus on how these systems implement user accessibility, referential integrity constraints that maintain the accuracy of data and also how they maintain consistency of the criminal and crimedata.