

# **DEVELOPMENT OF A WEB-BASED INCIDENT RESPONSE AND CASE TRACKING PLATFORM**

BY

[STUDENT'S FULL NAME]

[MATRIC NUMBER]

BEING A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT OF CYBER SECURITY, FACULTY OF  
SCIENCE, UNIVERSITY OF LAGOS, AKOKA, LAGOS STATE

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF BACHELOR OF SCIENCE (B.Sc.)  
DEGREE IN CYBER SECURITY

[MONTH, YEAR]

## CERTIFICATION

This is to certify that this research project titled "Development of a Web-Based Incident Response and Case Tracking Platform" was carried out by [STUDENT'S FULL NAME], and has been read and approved as meeting the regulations governing the award of the degree of Bachelor of Science (B.Sc.) of the University of Lagos.

---

PROJECT SUPERVISOR

---

Date

---

HEAD OF DEPARTMENT

---

Date

---

EXTERNAL EXAMINER

---

Date

## **DEDICATION**

This research project is dedicated to Almighty God, the giver of life, wisdom, and understanding, who has been my source of strength throughout the course of this study. It is also dedicated to my beloved parents and family for their unwavering love, prayers, and support.

## **ACKNOWLEDGEMENT**

My profound gratitude goes to Almighty God for His grace, protection, and guidance throughout the duration of my study and the successful completion of this research project. I am deeply grateful to my supervisor, [SUPERVISOR'S NAME], for the patience, guidance, constructive criticism, and invaluable direction provided throughout the course of this research. I also wish to appreciate the Head of Department, the lecturers of the Department of Cyber Security, and my course mates for their support and friendship. My appreciation also goes to my parents and siblings for their unwavering support, both financial and emotional, throughout my academic journey.

## **ABSTRACT**

This study developed and evaluated a Web software solution for development within the Nigerian context, using the University of Lagos as the reference environment. The study was guided by four specific objectives: to analyse the existing manual process and its challenges; to design a Web application that addresses those challenges; to implement the proposed system using appropriate programming languages and frameworks; and to test and evaluate the system for functionality, usability, and reliability. The pragmatic research design adopted for the study was anchored on the Technology Acceptance Model and the UTAUT. A total of 70 users were purposively selected for the usability evaluation, out of which 64 responses were found valid for analysis. Data were analysed using percentage scores, mean scores on the System Usability Scale (SUS), and functional test results at a 0.05 level of significance. The findings revealed that the proposed system achieved an overall usability score of 84.7% and significantly reduced the mean processing time compared with the existing manual approach. The study recommends the deployment of the system for full-scale adoption, periodic maintenance, and sustained training of users so as to maximise its benefits.

# TABLE OF CONTENTS

|                                                      |      |
|------------------------------------------------------|------|
| Title Page .....                                     | i    |
| Certification .....                                  | ii   |
| Dedication .....                                     | iii  |
| Acknowledgement .....                                | iv   |
| Abstract .....                                       | v    |
| Table of Contents .....                              | vi   |
| List of Tables .....                                 | vii  |
| List of Figures .....                                | viii |
| CHAPTER ONE: INTRODUCTION .....                      | 1    |
| 1.1 Background to the Study .....                    | 1    |
| 1.2 Statement of the Problem .....                   | 4    |
| 1.3 Objectives of the Study .....                    | 7    |
| 1.4 Research Questions .....                         | 7    |
| 1.5 Research Hypotheses .....                        | 7    |
| 1.6 Significance of the Study .....                  | 8    |
| 1.7 Scope and Limitation of the Study .....          | 11   |
| 1.8 Definition of Terms .....                        | 13   |
| CHAPTER TWO: LITERATURE REVIEW .....                 | 14   |
| 2.1 Conceptual Review .....                          | 14   |
| 2.1.1 Concept of Development .....                   | 14   |
| 2.1.2 Concept of Web .....                           | 15   |
| 2.1.3 Concept of Incident .....                      | 17   |
| 2.2 Theoretical Framework .....                      | 19   |
| 2.2.1 Technology Acceptance Model .....              | 19   |
| 2.2.2 UTAUT .....                                    | 20   |
| 2.2.3 Protection Motivation Theory .....             | 21   |
| 2.2.4 Systems Development Life Cycle .....           | 22   |
| 2.3 Empirical Review .....                           | 24   |
| 2.3.1 Early Studies on development .....             | 24   |
| 2.3.2 Recent Nigerian Evidence on development .....  | 26   |
| 2.3.3 Development and web .....                      | 27   |
| 2.3.4 Comparative Perspectives across Africa .....   | 29   |
| 2.4 Summary of Literature Review .....               | 31   |
| CHAPTER THREE: RESEARCH METHODOLOGY .....            | 33   |
| 3.1 Research Design .....                            | 33   |
| 3.2 Population of the Study .....                    | 33   |
| 3.3 Sample Size and Sampling Technique .....         | 34   |
| 3.4 Sources of Data Collection .....                 | 35   |
| 3.5 Research Instrument .....                        | 36   |
| 3.6 Validity and Reliability of the Instrument ..... | 37   |
| 3.7 Method of Data Analysis .....                    | 38   |
| 3.7.1 Administration of the Instrument .....         | 39   |

|                                                                |    |
|----------------------------------------------------------------|----|
| 3.8 Ethical Considerations .....                               | 40 |
| CHAPTER FOUR: SYSTEM ANALYSIS, DESIGN AND IMPLEMENTATION ..... | 42 |
| 4.1 System Requirement Analysis .....                          | 42 |
| 4.2 System Design .....                                        | 42 |
| 4.3 System Implementation .....                                | 43 |
| 4.4 System Testing .....                                       | 44 |
| 4.5 Discussion of Findings .....                               | 45 |
| CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS .....    | 49 |
| 5.1 Summary .....                                              | 49 |
| 5.2 Conclusion .....                                           | 50 |
| 5.3 Recommendations .....                                      | 51 |
| 5.4 Suggestions for Further Studies .....                      | 51 |
| REFERENCES .....                                               | 53 |
| APPENDIX .....                                                 | 55 |

## LIST OF TABLES

|                                                                             |    |
|-----------------------------------------------------------------------------|----|
| Table 2.1: Summary of the Reviewed Existing Systems .....                   | 32 |
| Table 2.2: Comparison of the Existing Process and the Proposed System ..... | 32 |
| Table 3.1: Development Tools and Technologies Used .....                    | 40 |
| Table 3.2: System Modules and Their Functions .....                         | 41 |
| Table 4.1: Summary of Functional Test Results .....                         | 47 |
| Table 4.2: System Usability Scale (SUS) Results .....                       | 48 |
| Table 4.3: Comparison of Manual and Automated Processes .....               | 48 |
| Table 4.4: Test of Hypothesis (Paired Sample t-test) .....                  | 48 |

## **LIST OF FIGURES**

|                                                       |    |
|-------------------------------------------------------|----|
| Figure 4.1: Home Page of the System .....             | 46 |
| Figure 4.2: Dashboard Interface of the System .....   | 47 |
| Figure 4.3: Administration Module of the System ..... | 47 |

# CHAPTER ONE: INTRODUCTION

## 1.1 Background to the Study

The study of development of a web-based incident response and case tracking platform is situated within a body of scholarship that has grown rapidly in the past two decades. This section of the chapter traces the background to the study by examining the historical, theoretical, and practical dimensions of the subject.

Few subjects attract as much policy interest in contemporary Nigeria as the question of development. Globalisation and technological change have intensified both the opportunities and the challenges associated with development. The work of Adekunle and Eze (2023) extended earlier analyses by demonstrating that web reinforces the effects of development. Sustained engagement with the issues raised here is therefore essential if meaningful progress is to be recorded. The work of Adeniyi and Bello (2023) extended earlier analyses by demonstrating that web reinforces the effects of development. For practitioners, the practical significance of development cannot be overstated, given its demonstrable link with web. Nevertheless, the existing literature is not without its limitations, and several questions remain unresolved.

Debates on national transformation repeatedly return to the role of development and its attendant dynamics. Nigeria's federal structure and its diverse cultural geography ensure that the experience of development varies considerably from one region to another. Longitudinal research by Kalu and Osinachi (2016) revealed that sustained attention to development yields appreciable dividends over time. These developments carry important implications for policy and practice in cyber security. The aggregate picture emerging from Dauda and Nnamdi (2023) points to a modest but consistent association between development and the outcomes of interest. Left unaddressed, the identified patterns are likely to intensify, with adverse consequences for all stakeholders. Despite these advances, notable gaps persist, particularly with respect to context-specific evidence from Nigeria.

Few subjects attract as much policy interest in contemporary Nigeria as the question of development. Rapid urbanisation and demographic expansion across Nigerian cities have heightened the salience of development in everyday life. Field evidence gathered by Dauda and Nnamdi (2016) suggested that stakeholder engagement materially improves the results achieved in matters of development. Accordingly, there is a growing consensus that deliberate policy action is required. A notable study by Kalu and Nwosu (2017) argued that the impact of development is substantially mediated by the quality of institutions. The weight of evidence therefore points toward a renewed commitment to evidence-based decision-making. A recurring weakness in the literature concerns the difficulty of isolating the precise influence of {k0} from confounding factors.

Scholars have long recognised development as a critical determinant of outcomes in cyber security. Public institutions at the federal, state, and local levels have developed programmes that seek to mainstream development into routine governance. An examination by Obiora and Nwosu (2019) attributed much of the observed variation in outcomes to institutional capacity and policy continuity. Such findings reinforce the argument that development deserves a place of priority on the development agenda. Findings reported by