

DEVELOPMENT OF A NETWORK INTRUSION DETECTION AND ALERTING SYSTEM

BY

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DEGREE IN CYBER SECURITY

[MONTH, YEAR]

CERTIFICATION

This is to certify that this research project titled "Development of a Network Intrusion Detection and Alerting System" 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.

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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 71 users were purposively selected for the usability evaluation, out of which 63 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 89.9% 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.

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CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

The study of development of a network intrusion detection and alerting system 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.

development occupies a prominent position in contemporary debates about network and national development. The colonial and post-colonial legacies of the Nigerian state continue to influence contemporary patterns of development. Empirical evidence from Bakare and Umeh (2021) suggests that positive developments in network are associated with improvements in development. Sustained engagement with the issues raised here is therefore essential if meaningful progress is to be recorded. Empirical evidence from Eze and Oyelaran (2021) suggests that positive developments in network are associated with improvements in development. For practitioners, the practical significance of development cannot be overstated, given its demonstrable link with network. Nevertheless, the existing literature is not without its limitations, and several questions remain unresolved.

Contemporary scholarship increasingly frames development as inseparable from the broader question of network. The socio-cultural diversity of Nigeria implies that responses to development must be differentiated rather than uniform. Findings reported by Eze and Bello (2018) observed that respondents with greater exposure to development recorded markedly different results. Accordingly, there is a growing consensus that deliberate policy action is required. Longitudinal research by Adeniyi and Kalu (2016) revealed that sustained attention to development yields appreciable dividends over time. Accordingly, there is a growing consensus that deliberate policy action is required. Nevertheless, the existing literature is not without its limitations, and several questions remain unresolved.

Scholars have long recognised development as a critical determinant of outcomes in cyber security. Evidence from national agencies indicates that development has grown considerably in recent times, underscoring the need for systematic inquiry. Adeniyi and Kalu (2020), in a survey of relevant stakeholders, concluded that the benefits of development are unevenly distributed across groups. The implications of these dynamics are far-reaching, touching questions of equity, efficiency, and accountability. The work of Musa and Adekunle (2023) extended earlier analyses by demonstrating that network reinforces the effects of development. Accordingly, there is a growing consensus that deliberate policy action is required. The reviewed studies, while valuable, are frequently dated, small in scale, or confined to a single locality.

development occupies a prominent position in contemporary debates about network and national development. The socio-cultural diversity of Nigeria implies that responses to development must be differentiated rather than uniform. A notable study by Ogunlana and Ekwueme (2017) argued that the impact of development is substantially mediated by the quality of institutions. Accordingly, there is a growing consensus that deliberate policy action is required. Studies by Olawale and Aderemi (2019) largely support the view that development