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**QR CODE STUDENT ATTENDANCE MANAGEMENT SYSTEM**

**SCHOOL OF COMPUTER SCIENCES**

**Final Project**

**BY**

**AUSTIN RADO OMBURO**

**Admission No: 19ZAD104498**

**SUPERVISOR**

**FLORENCE KIMANI**

A Project Submitted in Partial fulfillment of the requirements for the Degree in Bachelor of Business and Information Technology, School of Computing Sciences, Riara University.

Nairobi, Kenya

2023

**DECLARATION**

I, **Austin Rado Omburo,** hereby declare that the project titled "QR Code Student Attendance Management System" is solely the result of my own effort and original work. This project is undertaken as a requirement for my Bachelor of Business and Information Technology at Riara University, under the guidance of Florence Kimani, Lecturer. I affirm that all information, ideas, and concepts used in this project from external sources have been appropriately cited and referenced.

I acknowledge that any form of academic dishonesty, including plagiarism or misrepresentation, is strictly against the academic integrity policies of Riara University. This project has not been submitted for assessment in any other context or institution. I take full responsibility for the accuracy and authenticity of the content presented in this project.

Date:

Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Austin Rado Omburo**

**APPROVAL**

I, **Florence Kimani**, hereby provide my approval for the project titled "QR Code Student Attendance Management System," undertaken by Austin Omburo, 19ZAD104498. As the supervisor of this project, I have closely mentored and guided him throughout the project's development.

I attest that the student has demonstrated commendable dedication and originality in conceptualizing and executing this project. The project content reflects a comprehensive understanding of the subject matter and adheres to the academic standards of citation and referencing. I believe that this project holds academic value and contributes meaningfully to the realm of computer science and information technology.

Date:

Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Florence Kimani**

**DEDICATION**

I dedicate the culmination of my efforts in the project, "QR Code Student Attendance Management System," to my parents, Elisha Ochieng Omburo and Merceline Atieno Omburo. Your unwavering belief in my abilities, constant encouragement, and sacrifices have been the driving force behind my pursuit of excellence. Your enduring support has been the cornerstone of my achievements, and I am forever grateful for the values you've instilled in me.

To my siblings, Victor Ouma Omburo, Gian Elton Omburo, Floyd Milla Omburo, and Eden Ricardo Omburo, your companionship and camaraderie have infused my journey with warmth and shared memories. Your individuality and collective presence have created an environment of growth and learning, enriching my life in countless ways.

Additionally, I extend my heartfelt gratitude to my friends and the school community. Your companionship, insightful conversations, and shared experiences have added depth to my educational journey. To the dedicated faculty members who have guided me with knowledge and wisdom, I offer my appreciation for fostering an environment of learning and exploration.

This project's dedication reflects the profound impact my family, friends, and school have had on shaping my aspirations and accomplishments.

**ACKNOWLEDGEMENT**

I would like to express my deepest gratitude to all those who have contributed to the successful completion of my project, "QR Code Student Attendance Management System." This project has been a significant undertaking for me, and I could not have accomplished it without the support and guidance of various individuals and resources.

First and foremost, I am immensely thankful to my supervisor, Florence Kimani, for her unwavering guidance, valuable insights, and continuous encouragement throughout the project's duration. Her expertise and feedback were instrumental in shaping the direction and quality of the project. I am truly fortunate to have had her as my mentor.

I extend my appreciation to the faculty members of the school of computer sciences at Riara University for imparting the knowledge and skills that laid the foundation for this project. I also wish to acknowledge my peers and friends for their moral support and brainstorming sessions that enriched the project's ideas and implementation.

Finally, I express my heartfelt thanks to my family for their patience, understanding, and constant motivation during this endeavor. Their belief in me has been a driving force behind my achievements.

**ABSTRACT**

An abstract is usually about a page long and should give the whole picture of your research in terms of the literature review, methodology, results and conclusion.

Readers use the abstract to quickly find out what your research is about. A well written abstract is critical to pull in readers so that they can open and read your work.

**The five main elements to include in your abstract are stated below**.

***Introduction***

This is the first part of the abstract and should be brief and attractive to the reader at the same time. After reading a well written intro, the reader would be eager to read more.

***Research significance***

This usually answers the question: Why did you do this research?

***Methodology***

This usually answers the question: What did you do? How did you do it?

Abstract cont’d

***Results***

This answers the question: What did you find out after doing the research? Or what are the advantages of your method based on the results?

***Conclusion***

This usually answers the question: What do your findings mean? What have you contributed?

Read the abstract carefully and try to eliminate any sentence that doesn’t fit into any of

the categories above. Make sure all your sentences contribute to explaining the whole.

picture.

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**CHAPTER 1: INTRODUCTION**

* 1. **BACKROUND**

Education involves the deliberate facilitation of desired behavioral transformations in individuals. As a result, education and training initiatives unfold within a structured framework. Guaranteeing consistent participation in these purposefully outlined activities, each tailored to the individual and meticulously scheduled, significantly amplifies the pace of personal metamorphosis.

Education grapples with a noteworthy issue—absenteeism. Kearney and Silverman (1990) characterized absenteeism as the conscious act of nonparticipation and irregular class attendance. Conversely, Orzetin (2013) framed it as the scenario in which individuals are conspicuously absent from expected locations, including educational institutions, workplaces, and gatherings, whether justified or not. To safeguard the acquisition of students' qualifications, a proactive approach to managing absenteeism is imperative, ensuring their consistent presence in educational settings.

In the plight to manage absenteeism with ease in university, **the qr code attendance system** aims to automate the process leading to less time consumption and efficiency as compared to traditional way of recording class attendance which involves taking use pen and paper for records which required a data entry phase to generate reports.

In this era of technology, smartphones play a significant role in our day-to-day life. Nowadays smartphones can solve most of the problems very quickly and easily. There is a widespread use of smartphones among university students. The **Qr code attendance system** addresses problems such as waste in the lecturer time and proposes a system that offers to reduce it almost by 90%. It offers a qr code to be scanned by the students via specific smartphone and the student’s identity taken by the application will confirm the student’s attendance.

The proposed system also takes care of preventing unauthorized attendance registration using multifactor authentication. Qr code is generated in the server side by the instructor and student scan and get notified and can view their attendance record.

* 1. **PROBLEM STATEMENT**

In the realm of university education, the conventional method of recording class attendance using manual processes is beset by inefficiencies, leading to time wastage and the potential for inaccuracies. Considering the widespread use of smartphones, can the implementation of a QR code attendance system address these challenges by automating the attendance recording process, reducing time consumption, and ensuring greater accuracy, ultimately optimizing the attendance management process for both educators and students?

This research aims to explore the potential benefits and outcomes of such a system, evaluating its impact on attendance accuracy, time efficiency, and overall user experience to provide a meaningful contribution to the enhancement of attendance management practices in educational settings.

* 1. **MAIN OBJECTIVE**

The main objective of the automated attendance system is to computerize the traditional way of recording attendance and provide an efficient and automated method to track attendance of students, classes, and lecturers in institutions.

* + 1. **Specific Objective**

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   1. **JUSTIFICATION**

The rationale for conducting this research arises from a thorough analysis of the prevailing challenges in the domain of university attendance management. The user-friendly system which will be easy to maintain and cost effective will benefit the university and all university entities in terms of attendance management by providing accurate and efficient data.

* 1. **SCOPE OF STUDY**

This research project seeks to comprehensively investigate the implementation and efficacy of a QR code attendance system as a technologically advanced solution for optimizing attendance management in university settings. The scope of this study encompasses the exploration of various dimensions related to the proposed system. Specifically, it will delve into the feasibility of integrating QR code technology within the context of higher education institutions, the potential benefits in terms of time efficiency and accuracy, as well as the user experience from both educator and student perspectives. The research will involve the design, development, and deployment of the QR code attendance system, along with rigorous data collection and analysis to evaluate its impact on attendance recording and management.

However, it is important to acknowledge the limitations that frame the boundaries of this research. Firstly, while the study aims to provide insights into the benefits of QR code technology for attendance management, it does not intend to comprehensively address broader technological implementations within educational institutions. Additionally, due to the focus on QR code technology, this research might not fully capture the nuances of other potential attendance management solutions. Furthermore, while the study strives to assess the effectiveness of the proposed system in enhancing attendance accuracy and efficiency, factors such as technical glitches, connectivity issues, and user adaptability may pose challenges that are beyond the scope of this research.

**CHAPTER 2: LITERETURE REVIEW**