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FACULTY OF ENGINEERING
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SECURE LAND TITLE TRANSFER SYSTEM

BY

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DEDICATION

I dedicate this report to my beloved parents Mrs. Atereire Rose and Mr. Bamutaze Paul. Your contribution to my education has been wonderful and promising a bright future in my life. You have always been there for me even when the going seems tough, I love you all and may the almighty God reward you with abundant life.

DECLARATION

I Wambi Ivan do hereby declare that this Project Report is original and has not been submitted for any other degree award to any other University before.

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APPROVAL

I certify that the project proposal report entitled “Secure Land Title Transfer System” has been drafted and submitted to the board of examiners with my approval.

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MR. LUSIBA BADRU

Date.....

LIST OF ACRONYMS

HTTP:	Hyper Text Transfer Protocol
IDE:	Integrated Development Environment
ISP:	Internet Service Provider.
LIS:	Land Information System
LTTS:	Land Title Transfer System
MZO:	Ministerial Zonal Offices.
NIN:	National Identification Number.
NLIC:	National Land Information Center
NLIS:	National Land Information System
PHP:	Hypertext Preprocessor.

ABSTRACT.

In general societies land is not only the main means for generating a livelihood, it is also a mean to accumulate wealth and transfer it between generations. In Uganda it is a basic source of food, employment, a key agricultural input and a major determinant of a farmer's access to other productive resources.

Despite the advances in land title transfer services, the current land title transfer system used by the Ugandan government is liable to forgery of land titles which is a result of forged documents and connivance with land title registrars. There are also uncontrolled delays in the process of transferring a land title resulting from the many manual steps involved in the title transfer process. This has resulted into conflicts, destruction of property and deaths.

The developed secure land title transfer system introduces a complex set of procedures to ensure easy transfer and secure storage of land titles. This system only allows change of land title ownership after biometric authentication using a fingerprint and a NIN for the original land title owner thereby eliminating forged documents and connivance with land title registrars.

The main objective was to develop a secure land title transfer system that will enable land title owners to secure their land titles with biometric fingerprint using a fingerprint scanner and NIN.

This system will enable the holder of the land titles to become "credit worthy" and can now pledge their land rights as security for loans. If efficiently operated, land title transfer system can greatly reduce disputes and litigation over land, resulting in better social relationships, less work for overworked courts and less expenses for the individual.

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CHAPTER ONE: INTRODUCTION

1.0 Introduction.

This chapter contains background study of existing Land Title Transfer Systems, problem statement, main and specific objectives, justification and project scope.

This report discusses land title transfer system from the Ugandan perspective. Further, it considers the relative importance of a secure land title transfer system to Ugandan citizens.

1.1 Background study.

In general societies land is not only the main means for generating a livelihood, it is also a mean to accumulate wealth and transfer it between generations[1]. In Uganda it is a basic source of food, employment, a key agricultural input and a major determinant of a farmer's access to other productive resources[2]. The nature of land tenure, therefore has profound implications for the development process of nations[3].

In Uganda we have four basic land tenure systems that emerged after colonialism[4] and they include: freehold tenure which involves holding of registered land in which the holder has full ownership rights, leasehold tenure involves land leased for a specific period under certain conditions, Mailo land tenure where large tracts of land is owned by kings and customary land tenure which is land that belongs to community or specific individuals[2].

The land administration system in Uganda prior to automation was paper based and premised on the Torrens system that guarantees land title by registration. The current computerized land information system enables the conversion of existing paper-based registers to being maintained electronically[5].

These developments have improved the efficiency of land administration operations and made records more accessible[6]. However, according to the Uganda police annual crime report in 2013, a total of 891 land fraud cases were investigated compared to 616 cases in 2012 giving a 30.8% increase, eight land title cases are still registered daily in one sub region making a total of 240 cases a month[7].

The current system is liable to forgery at identification phase and does not fully allow for online transaction links to the key players in land transaction business such as banks, sellers and

buyers[8]. Many people travel long distance to reach the land offices just to have their plots of land titled and registered. Since there are few NLIC, there is crowding and other people end up leaving without their land registered and titled. Therefore, I proposed a secure land title transfer system.

A secure land title transfer system was to give the possibility of fast title transfer and registration enabling subscribers to submit land title transfer forms easily, thereby enhancing/adopting e-dealings.

1.2 Problem statement.

The current land title transfer system used by the Ugandan government is liable to forgery of land titles which is a result of forged documents and connivance with land title registrars. There are also uncontrolled delays in the process of transferring a land title resulting from the many manual steps involved in the title transfer process. This has resulted into conflicts, destruction of property and deaths.

Therefore, I proposed the solution of “secure land title transfer system” which was to introduce a complex set of procedures to ensure easy transfer and secure storage of land titles. This system was to only allow change of land title ownership after biometric authentication using a fingerprint and a NIN for the original land title owner.

1.3 Objectives.

1.3.1 Main objectives.

The main objective was to develop a secure land title transfer system that will enable land title owners to secure their land titles with biometric fingerprint. This system will eliminate forged documents and connivance with land title registrars.

1.3.2 Specific objectives.

The following were the expected deliverables in the design and implementation of a secure land title transfer system.

- i To investigate how the current Land Information System operates and analyze how land titles are being transferred by the current system so as to identify functional and non-functional system requirements.
- ii To design a secure land title transfer system in a way that each step accomplished by the subscriber leads to the next steps until title verification using biometric fingerprint and NIN.
- iii To develop a secure land title transfer system using available resources like bootstrap, Apache server and deploy the system as a prototype
- iv To unit test the different modules of a secure land title transfer system like individual hardware components, individual application forms and later carry out an integrated system testing.
- v To validate the different web application input fields and ensure user authentication during login into the system for efficient land title transfer services.

1.4 Justification.

Due to the increased land title conflicts, destruction of property and uncontrolled delays in getting a land title, there is need for a secure land title transfer system in Uganda

This justifies that the Ugandan government needs a secure land title transfer system with a level of security requiring biometrics authentication to improve on security in the land service.

This system is empowering land owners to secure their land titles with biometric fingerprint and transfer of their land titles to other people with ease.

This system is also enabling the holder of the land titles to become "credit worthy" and can now pledge their land rights as security for loans.

A well-designed and efficiently operated land title transfer system can greatly reduce disputes and litigation over land, resulting in better social relationships, less work for overworked courts and less expenses for the individual.

1.5 Scope

1.5.1 Technical scope.

This project was limited to only the design and development of a secure land title transfer system prototype using platforms like Bootstrap and programming languages like PHP, html, CSS, jQuery and JavaScript. The system is using the technology of biometric fingerprint from a fingerprint scanner.

1.5.2 Subject scope.

The Land title transfer system was subjected to error free and fully registered Mailo land titles and freehold land titles.

The system is limited to only authorized land title registrars at the different Ministerial Zonal Offices (MZO) with access to a fingerprint scanner embedded with fingerprint technology and authenticated login screen.

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