



**BUSITEMA
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BUSITEMA UNIVERSITY

FACULTY OF ENGINEERING

DEPARTMENT OF COMPUTER ENGINEERING

FINAL YEAR PROJECT REPORT

A MULTI-PURPOSE RFID BASED UNIVERSITY IDENTITY CARD SYSTEM

CASE STUDY-BUSITEMA UNIVERSITY

BY:

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**Project report submitted in partial fulfillment of the requirements for the award of the
degree of BSc. Computer Engineering of Busitema University**

DECLARATION

I NAKATUDDE SUZAN Reg.no BU/UG/2013/44 hereby declare that this project report is my original work except where explicit citation has been made and it has not been presented to any Institution of higher learning for any academic award.

Sign: _____

Date: _____

APPROVAL

This is to certify that the project report under the title “*An RFID based multipurpose ID system*” has been done under my supervision and is now ready for examination.

Mr. Bwire Felix

Department of Computer Engineering

Sign: _____

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A LIST OF ACRONYMS

AR	Academic Registrar
CLK	Chek Lap Kok
ID	Identification
IT	Information and Technology
LAN	Local Area Network
PCB	Printed Circuit Board
RF	Radio Frequency
SD	Secure Digital
RFID	Radio Frequency Identification
TFT	Thin Film Transistor
TKO	Tseug Kwan O
UID	Unique Identifier
WAN	Wide Area Network
Wi-Fi	Wireless Fidelity

TABLE OF CONTENTS

DECLARATION.....	i
APPROVAL	ii
A LIST OF ACRONYMS.....	iii
TABLE OF CONTENTS	iv
LIST OF FIGURES.....	vii
LIST OF TABLES.....	viii
CHAPTER ONE: INTRODUCTION	1
1.1 Background	1
1.2 Problem Statement	2
1.3 Objectives.....	3
1.3.1 Main Objective.....	3
1.3.2 Specific Objectives	3
1.4 Significance of study.....	3
1.4.1 To the Academic Institutions	3
1.4.2 To the University Students.....	3
1.5 Project Scope.....	4
1.5.1 Technical and Content Scope.....	4
1.5.2 Geographical Scope	4
1.5.3 Time Scope	4
CHAPTER TWO: LITERATURE REVIEW.....	5
2.1 Introduction.....	5
2.2 Key Terms	5
2.2.1 Overview of RFID	5
2.2.2 Overview of RFID TAG	6
2.2.3 Overview of RFID Reader	7
2.3.1 RFID-based Students Attendance Management System	9

2.3.3	RFID in Libraries	9
2.3.4	Bar Code identification and attendance management systems	10
CHAPTER THREE: METHODOLOGY		13
3.1	Introduction	13
3.2	Requirements Elicitation	13
3.2.1	Data collection	13
3.2.2	Requirements Analysis	13
3.3.1	System design	15
3.3	System development	15
3.4.1	Tools and software	15
3.4.1	Security	15
3.5	System testing	16
3.5.1	Unit testing	16
3.5.2	Integration testing	16
3.5.3	System testing	16
CHAPTER FOUR: SYSTEM ANALYSIS AND DESIGN		17
4.1	Existing system and its limitation	17
4.2	Requirements analysis	17
4.2.1	Functional requirements	17
4.2.2	Non-functional requirements	17
4.2.3	User needs and requirements	18
4.3	System design	19
4.3.1	Physical design	19
4.3.2	Logic design	19
CHAPTER FIVE: IMPLEMENTATION AND TESTING		22
5.1	Introduction	22
5.2	System implementation	22

5.2.1 Code design.....	23
5.3 Testing and verification.....	24
5.3.1 System operation.....	24
5.3.2 Testing.....	24
5.3.3 Verification	24
5.4 Evaluation	25
CHAPTER SIX: DISCUSSIONS AND RECOMMENDATIONS.....	26
6.1 Introduction.....	26
6.2 Summary of the work done.....	26
6.3 Critical Analysis and Comparison with other Systems.....	26
6.4 Recommendations.....	26
6.5 Challenges.....	27
6.6 Conclusions.....	27
REFERENCES.....	28
APPENDICES.....	31
APPENDIX 1: System circuit diagram.....	31
APPENDIX 2: Interviews.....	31

ABSTRACT

The multi-purpose RFID based Identity verification system was basically designed and tested using ARDUINO 1.6.5 software which makes it possible to acquire UIDs from the cards, Lab View which picks the UIDs and basic electronic components.

The system is capable of detecting RFID cards and distinguishing between registered and nonregistered cards. The reader transmits signals to the ARDUINO board which are sent to the application.

The circuit is being powered with a power supply of 5v since a power supply is the computer.

LIST OF FIGURES

Figure 2.1: RFID TAG [3]	6
Figure 2.2: View of data transfer in a passive RFID TAG [9].....	7
Figure 2.3: RFID card reader [3]	7
Figure 4.1: Physical design illustration of the system.....	19
Figure 4.2: System’s logic information flow chart	20
Figure 4.3: Entity Relationship diagram	21
Figure 5.1: Source code for acquiring of the UID.....	23
Figure 5.2: Communication of the application to the micro – controller.....	23
Figure 5.3: Return of information from the UID	24

LIST OF TABLES

Table 2.1: RFID Operating Frequencies 8
Table 2.2: Comparison between Barcode and RFID technology 11

CHAPTER ONE: INTRODUCTION

1.1 Background

The Education Institutions have always kept themselves in-sync with the latest technological advances. In the age of Information Technology, Institutions in Uganda have equipped themselves with excellent IT Infrastructure with good PC penetration. These institutions have well equipped IT laboratories with LAN/WAN/Wi-Fi network along with high speed connectivity. It has been observed that there are hardly any applications running on this IT infrastructure. Even though some Institutions are using online systems and software for applications like admissions, attendance, library etc. there is a need of a single integrated system. There may be high level of computerization of the process but there is further scope for automation to minimize the manual intervention and eliminate duplication of effort at various levels [1].

To achieve this, the use of a single multi-purpose RFID card to every student of the education institute to automate its process is developed. The RFID card can be used for the following applications:

- Student ID card from admissions to alumni
- Library card
- Attendance Card
- Physical access Card (hostel)
- Examination card

Every student at Busitema University is required to have an Identification card to prove that he or she is a student of the university. In order for this student to sit for exams, he or she has to be cleared by the university. Clearance is given when a student who has fully paid tuition and furthermore, one has to have registered for the course units to be done in a given semester hence issued with a registration card which leads to the issue of an examination permit that gives information about the course units registered. All these permits give clearance for a student to sit for an exam and also control access to other facilities that require these permits. The process of acquiring these permits is time consuming in addition to being tiresome. At the entrance of the examination room, invigilators have to go through a process of manually checking the permits to

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