WEB-BASED ALUMNI RECORD MANAGEMENT SYSTEM CASE STUDY: BUGOBERO HIGH SCHOOL IN BUGOBERO TOWN COUNCIL

BY

WANYENYA WINNIE BU/UP/2019/1726

DEPARTMENT OF COMPUTER STUDIES FACULTY OF SCIENCE AND EDUCATION

A Project Report Submitted to The Department of Computer Studies for The Study Leading to A Project in Partial Fulfillment of The Requirements for The Award of The Degree of Bachelor of Science with Education

SUPERVISOR: MR. OBOTH ANDREW

JANUARY 2023

Declaration

I, Wanyenya Winnie, Registration Number BU/UP/2019/1726, declare that the work presented in this report is my original work and has not been submitted to any institution of Higher Learning for any academic award. All work from author has been fully, properly acknowledged and cited.

Signature:

Date of submission: 02 Feb 23

Approval

This project report has been submitted to the department of Computer Studies Busitema University Nagongera Campus for examination with the approval of

Supervisor

Mr. Oboth Andrew

Signed:

date: 2/2/23

Department of Computer Studies

Faculty of Science and Education

Dedication

This project work is decided to the ALMIGHTY GOD for starting up and successfully finish with me in sound health. Also, to my family most especially my lovely Daddy and Mummy, my brother, sisters and cousin brothers for being positive in supporting me in the course of this project work both financially and spiritually, to all my church members (especially Anglican renewal fellowship) for the moral support and spiritual support with sincere prayers they made for me to attain this success, my classmates, friends and other relatives for being supportive and kind to me during the course of project work. Finally, to my dear Supervisor for the kind of support he has rendered during this work because if it would not have been you, this project would be all in vain. May the Almighty God bless you all abundantly!

Acknowledgement

My sincere gratitude goes to the ALMIGHTY GOD for His abundant guidance, mercies, favor and protection over me throughout the course of project work.

All thanks to my lovely parents Mr. MUNAILO ROBERT and Mrs. ELIZABETH MUNAILO and adorable cousin brother Mr. RONALD MACHIMBO SIMIYU for their profound help and support during the course of this project work.

Sincere gratitude and heartfelt thanks go to my supervisor Mr. Oboth Andrew for the valuable time, encouragement, guidance and supervision during the course of study. Without him, this book would not have been what it is, the Head of Department of Computer Studies and all lecturers in the department of Computer Studies for their support and inspiration in one way or the other. May God bless you abundantly (Amen).

Thanks to my brother, sisters, relatives, family as the whole and all my friends for their unconditional support. Thanks to my sincere colleagues in the computer class 2019/2022 and the whole fraternity of computer department of Nagongera Campus for their immerse contribution and unconditional support throughout the course of my project work. May God in His divine favor blesses you all (Amen).

Table of Contents

DECLARATION	I
APPROVAL	
DEDICATION	
ACKNOWLEDGEMENT	IV
TABLE OF CONTENTS	V
LIST OF TABLES	IX
LIST OF FIGURES	X
LIST OF ABBREVIATIONS	XI
ABSTRACT	XIII
CHAPTER ONE	1
1.0: Introduction	1
1.1: Background of the Study	1
1.2 Problem Statement	2
1.3 General Objective	3
1.3.1 Specific Objectives	3
1.4 Scope of the Study	3
1.5 Significance of the Study	3
CHAPTER TWO	5
LITERATURE REVIEW	5
2.0 Introduction	5
2.1 Definition of Key Terms	5
2.2 The Role of Information System in an Institution	7
2.3 Related Research Papers	
2.3.1 Harvard Alumni Portal	7
2.3.2 IIT Kanpur	8
2.3.3 Alumni Princeton university	8
2.3.4 ITMB Alumni Association	
2.3.5 UCLA Alumni Portal	
2.4 Proposed System	
CHAPTER THREE	
METHODOLOGY	
3.0 Introduction	
3.1 Area of Study	10

3.2 Study Population	10
3.2.1 Sampling Techniques	10
3.2.2 Sampling Procedures	11
3.3 Rapid Application Development (RAD)	11
3.4 Data Collection Tools	11
3.4.1 Observation	12
3.4.2 Document Review	12
3.4.3 Interviews	12
3.5 System Design	12
3.5.1 Data Flow Diagram	13
3.5.2 Context Diagram	13
3.5.3 Use Case Diagram	13
3.5.4 Entity Relationship Diagram	13
3.6 System Implementation	13
3.6.1 Front-End Tools	14
3.6.2 Back-End Tools	14
3.7 System Testing and Validation	14
3.8 Ethical Consideration	14
CHAPTER FOUR	16
SYSTEM DESIGN AND IMPLEMENTATION	16
4.0 Introduction	16
4.1 Response Rate	16
4.1.1 Parameter that Interpret the Findings	16
4.1.2 Parameter that Interpret the Challenges Faced in the Use of Current Ma	nual System 16
4.2 Description of the Current System	17
4.2.1 Strengths of the Current System	17
4.2.2 Weaknesses of the Current Manual System	17
4.2.3 Comparative Analysis of the Current System	17
4.2.4 Justification for the Proposed System	18
4.3 System Analysis	18
4.3.0 Introduction	18
4.3.1 User Requirements	18
4.3.2 Functional Requirements	19
4.3.3 Non-Functional Requirement	19

4.3.4 System Requirements	20
4.3.4.1 Hardware Requirements	20
4.3.4.2 Software Requirements	20
4.4 System Design	20
4.4.1 Context Diagram	20
4.4.2 Use Case Diagram	20
4.4.3 Data Flow Diagram	21
4.4.3 Entity Relationship Diagram	22
CHAPTER FIVE	23
SYSTEM DESIGN AND IMPLEMENTATION	23
5.1 System Implementation Results	23
5.2 Features of System Users	23
5.2.1 Admin Features	23
5.2.1.1 Login Page	23
5.2.1.2 Home Page	24
5.2.1.3 Alumni List	24
5.2.1.4 Event Page	25
5.2.1.5 Information Setting	25
5.2.2 Alumni/Student Features	26
5.2.2.1 login and create account page	26
5.2.2.1 Home Page	27
5.2.2.3 About Page	27
5.2.2.4 View of Alumni	28
5.3 Systems Testing	28
5.3.1 Unit Testing	29
5.3.2 Integration Testing	29
CHAPTER SIX	30
CONLUSION, SUMMARY AND RECOMMENDATIONS	30
6.1 Conclusion	30
6.2 Limitations	30
6.3 Recommendations	30
6.4 Further Research	31
REFERENCES	32
APPENDICES	3.4

Appendix A: Observation Guide	34
Appendix C: Interview Guide to Administrator	34
Appendix D: Sample Answers	34
Appendix C: Interview Guide to Administrator	34
Appendix D: Project Budget	35

List of Tables	
Table 1: showing the strata	10
Table 2: Categories of respondents at Bugobero High School 16Table 3: comparis	on between the
strengths and weaknesses of the current system	18

List of Figures

Figure 1: Context diagram of the proposed system	20
Figure 2: Use case diagram for the actor in Web-Based Alumni Record Management	
System	21
Figure 3: Data Flow Diagram of WARMS	22
Figure 4: Entity Relationship Diagram of WARMS	22
Figure 5: Admin login page	23
Figure 6: Admin home page	
Figure 7: Admin view page of the registered alumni	24
Figure 8: Admin verification page of the alumnus	25
Figure 9: Event upload page by admin	25
Figure 10: Information setting of about us by the admin	26
Figure 11: Alumnus registration page	26
Figure 12: Alumnus login page	27
Figure 13: Alumnus home page	27
Figure 14: About us page	28
Figure 15: View of alumni list by an alumnus	

List of Abbreviations

TPS Transaction Processing System

MIS Management Information System

DSS Decision Support System

EIS Executive Information System

CSS Cascading Stylesheets

HTML Hyper-Text Markup Language

MySQL My Structured Query Language

WARMS Web-based Alumni Record Management System

B. H. S Bugobero High School

MOE Measures of Effectiveness

MOS Measures of suitability

GB Giger Bytes

RAM Random Access Memory

CD ROM Compact Disc Read Only Memory

USE Universal Secondary Education

DFD Data low Diagram

ERD Entity Relationship Diagram

RAD Rapid Application Development

PHP Hypertext Preprocessor

UNIX (UNICS) UNiplexed Information Computing System

MAC Media Access Control Address

IE Internet Explorer

TCP/IP Transmission Control Protocol/Internet Protocol

HTTP HyperText Transfer Protocol

FTP File Transfer Protocol

NEUST Nueve Ecisa University of Science and Technology

IIT Indian Institute of Technology

ITMB Information Technology Management for Business

UCLA University of California Los Angeles

ABSTRACT

Most secondary school lack a web-based alumni system for keeping in touch with the alumni and knowing their way about, they still use traditional methods of recording through media to collect alumni data. The main object of this study was to develop a Web-based Alumni Record Management System for Bugobero High School that will enable the school easily connect and inform the large fraternity of alumni the school programs by uploading events and alumni will commit themselves to participate in the events at will and contact to know and remember their fellows.

The system was developed following the activity phases of Rapid Application Development. In this method, the system's prototype is built following the phases of events from requirement definition, software design, implementation and unit testing and operational maintenance. The prototypes were used to elicit more system and user requirements and to make necessary changes or modifications to the system to address user preferences.

The system was found to be cheaper than the existing systems especially in linking up with the alumni.

CHAPTER ONE

1.0: Introduction

Alumni are one of the most important assets to the school as they are the people who represent the school in the real country (Gunasekara 2017). Alumni form groups to promote a spirit of unit and loyalty among former students and to strengthen the ties between alumni, the community and school. These groups gained added importance in the development of the school because of their enormous outreach potential that benefits the school and helps the current students in their career paths.

According to NPOInfo,2022, Alumni record management system is a software solution that allows to manage alumni data and activities in a single space. Mostly created for schools, universities, alumni associations and foundations. Schools benefit from having all their information under one umbrella.

Previously, administrators were mostly constrained with the usual practice of accessing alumni records by checking files stored in shelves, making calls to those whom they can still access on air and media. This kind of record management supports not data update yet alumni status keeps on changing like from being student to employee or employer and time is wasted in the process of spreading information about school events.

According to (Bista, Shakya et al. 2021), alumni body plays an important role in institution by networking opportunities and contact among alumni or between the institution and alumni. However, limited communication between alumni, the administrators and students lead to less presentation of the school as alumni tend to forget. This is due to the ignorance of the alumnus about the roles alumni to the school to include promotion of professional network, academic and personal relationships that has limited data update. With advancement in technology, institution use system to align with alumni for fund, personal information and maintain records.

1.1: Background of the Study

Bugobero High School is a government aided secondary school located in Manafwa District, Bugobero town council. The school focuses on relevant and critical study of science and art subjects. At time of establishment, it was envisaged that the church of Uganda would develop and expand the school to accommodate the future population since the county did not have a secondary school. In 2007, the government of Uganda introduced Universal Secondary

REFERENCES

Bemile, R. K., et al. (2014). "Online Registration System (A Case of Methodist University College Ghana)." <u>International Journal of Research in Information Technology</u> **2**(9): 321-331.

Bhandari, E. H. and S. Mathema "Role of information System in Decision Making Process."

Bista, B., et al. (2021). "An Alumni Portal and Tracking System." <u>Journal of the Institute of Engineering</u> **16**(1): 7-14.

Doniger, W. (1999). Merriam-Webster's encyclopedia of world religions, Merriam-Webster.

Gunasekara, P. (2017). ALUMNI MANAGEMENT SYSTEM FOR WEERAKETIYA RAJAPAKSHA CENTRAL COLLEGE.

Hayes, L. J., et al. (2006). "Nurse turnover: a literature review." <u>International journal of nursing studies</u> **43**(2): 237-263.

Isakowitz, T., et al. (1998). "Web information systems." Communications of the ACM 41(7): 78-80.

Johnson, L. (2021). "What is a System?" Student Works.

Khan, A. H., et al. (2019). "Best practices in the implementation of a point of care testing program: experience from a tertiary care hospital in a developing country." EJIFCC **30**(3): 288.

Kramer, H. J. and A. P. Cracknell (2008). "An overview of small satellites in remote sensing." International journal of remote Sensing **29**(15): 4285-4337.

Loudon, M. and U. Rivett (2010). <u>Methods and conceptual tools for success in local government</u> information systems. A paper presented at the IDIA Conference. Cape Town.

Navarro, E. C. (2022). "Development of an Alumni Databank: The Case of Nueva Ecija University of Science and Technology." <u>Engineering, Technology & Applied Science Research</u> **12**(3): 8542-8547.

Ngulube, P. and V. F. Tafor (2006). "The management of public records and archives in the member countries of ESARBICA." <u>Journal of the Society of Archivists</u> **27**(1): 57-83.

Parnas, D. L. (1985). "Software aspects of strategic defense systems." <u>Communications of the ACM</u> **28**(12): 1326-1335.

Peng, X., et al. (2015). "Long-term evaluation of opioid treatment in fibromyalgia." <u>The Clinical journal of pain</u> **31**(1): 7-13.

Rai, M., et al. (2017). "Safety of vasodilator stress myocardial perfusion imaging in patients with elevated cardiac biomarkers." <u>Journal of Nuclear Cardiology</u> **24**: 724-734.

Stonier, T. (2012). <u>Information and meaning: An evolutionary perspective</u>, Springer Science & Business Media.