Web-Based Course Management System

Ayada Ibrahim M. Zgouzi (807028)

UNIVERSITY UTARA MALAYSIA

2012

Web-Based Course Management System

A project submitted to dean of research and postgraduate studies office in partial fulfillment of the requirement for the degree Master of Science (Information Technology)

Universiti Utara Malaysia

 $\mathbf{B}\mathbf{y}$

Ayada Ibrahim M. Zgouzi

(807028)

Copyright © Ayada Ibrahim M. Zgouzi, 2012. All Rights Reserved

PERMISSION TO USE

In presenting this project in partial fulfillment of the requirements for a postgraduate degree from Universiti Utara Malaysia, I agree that the University Library may make it freely available for inspection. I further agree that permission for copying of this project in any manner, in whole or in part, for scholarly purpose may be granted by my supervisor(s) or, in their absence by the Dean of Postgraduate and Research. It is understood that any copying or publication or use of this project or parts thereof for financial gain shall not be allowed without my written permission. It is also understood that due recognition shall be given to me and to Universiti Utara Malaysia for any scholarly use which may be made of any material from my project.

Requests for permission to copy or to make other use of materials in this project, in whole or in part, should be addressed to

Dean of Research and Postgraduate Studies

College of Arts and Sciences

Universiti Utara Malaysia06010 UUM Sintok

Kedah Darul Aman

Malaysia

ABSTRACT

The importance of the web-based applications is notable during the last decades especially in educational institutions. This project focuses on an existing problem being faced by the members of the school of Computing (SOC) at the Universiti Utara Malaysia (UUM). In addition, it also addresses on the difficulty of obtaining information which relates lecturers, their current registered courses, and their past semesters history. Whereby this information can only be viewed by the university members according to their authorities and needs. Hence, the clerk can efficiently make a decision on specific course which needs to be allocated to a lecturer by listing the current and past teaching history of them. Clerk can register, update courses, lecturers information, and allocate courses to lecturers. Clerk also can register, update, and search ISO documents. Program coordinator can allocate the proper course coordinator and moderator to courses. Moreover, the WBCMS has search tools where users (Clerk, Program Coordinator, Lecturers, and Students) can search by course, lecturer, session, or semester.

TABLE OF CONTENTS

PER	RMISSION TO USE	iii
ABS	STRACTError! Bookmark	not defined.
CHA	APTER ONE	10
INT	RODUCTION	10
1.0	Introduction	10
1.1	Problem Statement	11
1.2	Research Question	12
1.3	Objectives	12
1.4	Significance	13
1.5	Scope	14
1.6	Thesis Organization	14
CHA	APTER TWO	15
2.0	Introduction	15
2.1	The Course Information System (CIS) of the East Tennessee State University	17
2.2	The Course Information System (CIS) of Wilhelm-Schickard Institute	19
2.3	Summary	21
CHA	APTER THREE	22
3.0	Methodology	22
3.1	Awareness of the Problem	23
3.2	Suggestions	23
3.3	Development	23

3.4	Validation	24
3.5	Conclusion	24
3.6	Summary	25
CHA	APTER FOUR	26
4.0	Introduction	26
4.1	Web-Based Course Management System (WBCMS) Requirements	26
	4.1.1 WBCMS Functional Requirements	26
	4.1.2 WBCMS Non-Functional Requirements	29
4.2	WBCMS Design	30
4.3	Summery	41
CHA	APTER FIVE	42
5.0	Introduction	42
5.1	WBCMS Prototype Interfaces	42
5.2	Summary	55
CHA	APTER SIX	56
6.0	Conclusion	56
6.1	Future Work	57

TABLE OF TABLES

Table 4.1: Functional Requirements list of the WBCMS	27
1	
Table 4.2: WBCMS Non-Functional Requirements	29

TABLE OF FIGURES

Figure 4.1: WBCMS Use Case Diagram	31
Figure 4.2: Login Sequence Diagram	32
Figure 4.3: Logout Sequence Diagram	33
Figure 4.4: View Database Sequence Diagram	34
Figure 4.5: Course Registration Sequence Diagram	35
Figure 4.6: Lecturer Registration Sequence Diagram	35
Figure 4.7: Course Allocation Sequence Diagram	36
Figure 4.8: Register ISO Document Sequence Diagram	36
Figure 4.9: Course Updating Sequence Diagram	37
Figure 4.10: Lecturer Updating Sequence Diagram	38
Figure 4.11: Allocated Course Updating Sequence Diagram	39
Figure 4.12: ISO Document Updating Sequence Diagram	39
Figure 4.13: WBCMS Class Diagram	40
Figure 5.1: The WBCMS Home Page	43
Figure 5.2: WBCMS Login Page	44
Figure 5.3: Clerk's Home Page	45
Figure 5.4: Program Coordinator Home Page	47
Figure 5.5: Course Registration Page	48
Figure 5.6: Selection Page	49
Figure 5.7: Clerk's Modify Registration Page	50
Figure 5.9: Search by Course Page	51

Figure 5.10: Search by Lecturer Page	52
Figure 5.11: Database Listing Page	.53
Figure 5.12: Results of Searching by Session and Semester	.54
Figure 5.13: Results of Searching by specific Course	55

CHAPTER ONE

INTRODUCTION

1.0 Introduction

The recent era witnesses a rapid development in the field of the information technology. This development has made the daily life to be dominated by the web-based technology. Web-based applications are intervening our daily life's starting from the reservation process in the hotels, doctors' appointments to the banking transactions and university transactions such as registration. Consequently, it is very important for the public and private sectors such as universities, hospitals, companies, and etc to keep up with the rapid development of the information technology in order to provide their members and customers with fast and practical services and to reduce the time consuming and the efforts which will positively affect the overall efficiency of the institution.

Web-based applications have now become favorite technologies which can be used to facilitate the process of data and records management. One of the most important motivations to use and develop the web-based applications is their high efficiency in handling rapid access of documents and their ability to support multiuser simultaneously which result in time saving and hassle free (Brumbulli, Topçiu, & Dalaçi, 2008; Othman, Ismail, & Raus, 2009; Othman, Othman, & A.Aziz, 2008).

The contents of the thesis is for internal user only

References

- Anton, A. I., Carter, R. A., Dagnino, A., Dempster, J. H., & Siege, D. F. (2001). Deriving Goals from a Use-Case Based Requirements Specification. *Requirements Engineering*, 6(2), 63-73.
- Athabasca University. (2012). Alfresco Course Tracking System. Retrieved April 5, 2012, from https://projects.athabascau.ca/kip/course-tracking
- Bennett, S., McRobb, S., & Farmer, R. (2002). *Object-oriented System Analysis and Design* (2nd Editio.). UK: McGraw Hill.
- Brumbulli, M., Topçiu, B., & Dalaçi, A. (2008). SMIS□: A Web-Based School Management Information System. *Analysis*, 564-569.
- Chung, L., Nixon, B. A., Yu, E., & Mylopoulos, J. (1999). *Non-Functional Requirements in Software Engineering*. Kluwer Academic Publishing.
- Dennis, A., Wixom, B. H., & Tegarden, D. (2005). System unalysis und design with UML version 2.0: an object-oriented approach with UML (2nd editio.). Hoboken, NJ: John Wiley and Sons, Inc.
- Dennis, A., Wixom, B. H., & Tegarden, D. (2010). System Analysis and Design With UML: An Oject-Oriented Approach. Asia: Wiley.
- Dutoit, A. H., & Paech, B. (2002). Rationale-Based Use Case Specification. *Requirements Engineering*, 7(1), 3-19.
- East Tennessee State University "Course Information system." (2006). Retrieved March 1, 2012, from http://www.etsu.edu/dbonline/cis/course/number.asp?Action=Text
- Gast, H., Haug, A., Simonis, V., & Weiss, R. J. (2004). CIS□: A Web-Based Course Information System.
- Johan, K. (2004). Inforination System Analysis and Design. Retrieved from
- Kumaran, V. S., & Lindquist, T. E. (2007). Web-based course information system supporting accreditation. 2007 37Th Annual Frontiers in Education Conference Global Engineering: Knowledge Without Borders, Opportunities Without Passports, 19-24. Ieee. doi:10.1109/FIE.2007.4418140
- Liu, J., Liu, Z., Jifeng, H., & Li, X. (2004). Linking UML Models of Design and Require-ment. *proceedings of ASWEC2004* (pp. 1-25). Melbourne, Australia.
- Mcgourty, J., Shuman, L., Besterfield-sacre, M., Hoare, R., Wolfe, H., Olds, B., & Miller, R. (2001). Session S2A USING TECHNOLOGY TO ENHANCE OUTCOME ASSESSMENT

- In Engineering Education 1 Session S2A. 31st ASEE/IEEE Frontiers in Education Conference (pp. 1-5). Reno, NV, USA.
- Othman, M., Ismail, S. N., & Raus, M. I. (2009). The development of the web-based Attendance Register System (ARS) for higher academic institution □: From feasibility study to the design phase. *Journal of Computer Science*, 9(10), 203-208.
- Othman, M., Othman, Z., & A.Aziz, M. N. (2008). Implementing the web-based student management system in schools: A study of system usability and its contribution to the school community. *National Seminar on Science, Technology & Social Sciences (STSS)* (pp. 577-586). Pahang, Malaysia.
- Petrova, R., Tibrewal, A., & Sobh, T. M. (2006). An Electronic Web-based Assessment System. *Journal of STEM Education*, 7(3), 44-57.
- University of Newcastle, A. (2012). Course Tracking System. Retrieved April 5, 2012, from http://www.newcastle.edu.au/service/systems-and-projects/course-tracking-system.html
- Vaishnavi, V., & Kuechler, B. (2004). Design research in information technology. Retrieved March 1, 2012, from http://desrist.org/design-research-in-information-systems/