

**E-KAWALSELIA MANAGEMENT PORTAL  
FOR INFORMATION TECHNOLOGY  
FACULTY**

A thesis submitted to the Graduate School in fulfillment of  
the requirements for the degree  
Master of Science (Information Technology)  
University Utara Malaysia

**SALEHUDDIN SHUIB**

University Utara Malaysia  
21 March 2004

## **PERMISSION TO USE**

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

Request for permission to copy or to make other use of material in this thesis, in whole or in part should be address to:

Dean of Graduate School  
Universiti Utara Malaysia  
06010 UUM Sintok  
Kedah Darul Aman

## **ABSTRACT**

This thesis described about the development of E-Kawalselia Management Portal. The application consists of three main modules that are Digital Drop Box (E-mail application), Forum and Information. The purpose of the application is to solve Unit Kawal Selia (UKS) communication problems. The Digital Drop Box is used to submit message or file through the network within members. All members can use Forum module to discuss about certain topic. For the Information module it provide latest information about courses, coordinators, and past examination question. The UML based Web Engineering (UWE) methodology was use for the development of this application. Lastly, the thesis also elaborate about an advantages and suggestion to improve the efficiency of the application.

## **ABSTRAK**

Tesis ini menghuraikan tentang pembangunan Portal Pengurusan E-Kawalselia. Aplikasi ini terdiri daripada tiga modul utama iaitu Digital Drop Box (aplikasi email), Forum dan Information. Tujuan aplikasi ini ialah untuk menyelesaikan masalah komunikasi Unit Kawal Selia (UKS). Modul Digital Drop Box digunakan bagi menghantar mesej dan fail melalui rangkaian di antara pengguna. Setiap pengguna boleh menggunakan modul Forum untuk berbincang tentang topik tertentu dan berkongsi idea. Manakala modul Information menyediakan maklumat berkaitan kursus-kursus, profile setiap Koordinator dan Penyelia Kursus serta sumber bagi soalan-soalan peperiksaan semester lepas. Kaedah UML based Web Engineering telah digunakan bagi membangunkan aplikasi ini. Akhir sekali, tesis ini juga menghuraikan tentang kebaikan dan cadangan bagi meningkatkan keberkesanan aplikasi ini.

## **ACKNOWLEDGEMENTS**

First and foremost, I would like to express my deepest gratitude to my supervisors, Mrs. Yussalita Yusop and Mr. Baharuddin Osman for their continues encouragement and contributions throughout this project. I appreciate their vast knowledge and expertise in many areas, and guidance me in writing this thesis.

My beloved wife deserved an award for her patience and support during this long journey. I am also grateful to my son for his moral support. Special thanks to my friends Abdul Halim Bohari and Hanizan Shaker Hussain, both from ITTAR Alor Setar for their patience in assisting me in coding. Finally, I also would like to thank my parent for their advice and support.

May Allah bless us.

**SALEHUDDIN SHUIB**  
Graduate School  
Universiti Utara Malaysia

March 2004

## TABLE OF CONTENTS

PERMISSION TO USE	i
ABSTRACT (ENGLISH)	ii
ABSTRAK (MALAY)	iii
ACKNOWLEDGEMENTS	iv
TABLE OF CONTENTS	v
LIST OF FIGURES	vii
<b>CHAPTER 1: INTRODUCTION</b>	<b>1</b>
1.1    An Overview about Universiti Utara Malaysia	1
1.2    Professional and Continuing Education (PACE)	2
1.3    Problem Statements	4
1.4    Objective	5
1.5    Scope	6
1.6    Significance	6
<b>CHAPTER 2: LITERATURE REVIEW</b>	<b>8</b>
2.1    Transforming E-Business: E-Services	9
<b>CHAPTER 3: METHODOLOGY</b>	<b>13</b>
3.1    UML-based Web Engineering (UWE)	13
3.2    Requirements Analysis	16
3.3    Conceptual Model	17
3.4    Navigation Space Model	17
3.5    Navigational Structure Model	19
3.6    Presentation Model	19
<b>CHAPTER 4: E-KAWALSELIA MANAGEMENT PORTAL</b>	<b>21</b>
4.1    Requirement Analysis	21
4.2    Conceptual Model	26
4.3    Navigation Space Model	30
4.4    Navigation Structure Model	34
4.5    Presentation Model	36
<b>CHAPTER 5: APPLICATION DESIGN</b>	<b>41</b>
5.1    Physical Design of The Application	41
5.2    Input Design	42
5.2.1    Members Input Design	43

5.2.2	Administrators Input Design	54
5.3	Output Design	61
5.3.1	Output Screen	61
5.4	Interface Design	66
5.5	Database Design	67
5.5.1	Mapping Class Object To Table	67
5.5.2	Table Design	72
<b>CHAPTER 6: IMPLEMENTATION</b>		<b>76</b>
6.1	E-Kawalselia Management Portal	76
6.2	Application Testing	82
<b>CHAPTER 7: CONCLUSIONS</b>		<b>85</b>
7.1	Benefit	85
7.2	Constraint	86
7.3	Review	87
7.4	Suggestion	88
<b>REFERENCES</b>		<b>89</b>
<b>APPENDICES</b>		
<b>APPENDIX A</b>		<b>90</b>
<b>APPENDIX B</b>		<b>91</b>

## **LIST OF FIGURES**

Figure 1.1:	The Structure of Supervise Unit	3
Figure 4.1:	The Use Case Model in Package	22
Figure 4.2:	Forum Use Case Package	23
Figure 4.3:	Digital Drop Box Use Case Package	24
Figure 4.4:	Information Use Case Package	25
Figure 4.5:	Activity Diagram for E-Kawalselia Application	26
Figure 4.6:	Forum View of The Conceptual Model	27
Figure 4.7:	User View of The Conceptual Model	28
Figure 4.8:	Information View of The Conceptual Model	29
Figure 4.9:	Digital Drop Box View of The Conceptual Model	30
Figure 4.10:	Navigation Space Model of a Forum	31
Figure 4.11:	Navigation Space Model of a Digital Drop Box	32
Figure 4.12:	Navigation Space Model of Information	33
Figure 4.13:	Navigation Space Model of the E-Kawalselia Management Portal	34
Figure 4.14:	Navigation Structure Model of the E-Kawalselia Management Portal	36
Figure 4.15:	Window	37
Figure 4.16:	Frameset and Frame	38
Figure 4.17:	User Interface Location Elements for The E-Kawalselia Management Portal	39
Figure 4.18:	View of The Presentation Flow of The E-Kawalselia Management Portal	40
Figure 5.1:	Physical Implementation of Application	42
Figure 5.2:	Login Screen for Members	43
Figure 5.3:	Compose Message Screen	44
Figure 5.4:	Upload Screen	45
Figure 5.5:	Display Message Screen	46



Figure 5.6:	Display Message Screen	47
Figure 5.7:	Change Password Screen	48
Figure 5.8:	Forum Display Screen	49
Figure 5.9:	Post Message Screen	50
Figure 5.10:	Reply Message Screen	51
Figure 5.11:	Profile Information Screen	52
Figure 5.12:	Courses Information Screen	53
Figure 5.13:	Courses Details Information Screen	54
Figure 5.14:	Insert Profile Screen	55
Figure 5.15:	Delete Profile Screen	56
Figure 5.16:	Create Forum Screen	57
Figure 5.17:	Delete Forum Topic Screen	58
Figure 5.18:	Register Members Screen	59
Figure 5.19:	Delete Members Screen	60
Figure 5.20:	Address Book Output Screen	61
Figure 5.21:	Profile Information Output Screen	62
Figure 5.22:	Courses Information Output Screen	63
Figure 5.23:	Syllabus Output Screen	64
Figure 5.24:	Examination Question Output Screen	65
Figure 5.25:	Main Interface for E-Kawalselia Management Portal	66
Figure 5.26:	Users Login Transaction	68
Figure 5.27:	Digital Drop Box Transaction	69
Figure 5.28:	Forum Transaction	70

Figure 5.29: Information Transaction	71
Figure 5.30: User Table	72
Figure 5.31: Forums Table	73
Figure 5.32: Messages Table	73
Figure 5.33: Information Table	74
Figure 5.34: Message Table	75
Figure 6.1: Login Error Message	82
Figure 6.2: Upload Error Message	83
Figure 6.3: Change Password Error Message	83
Figure 6.4: Data Entry Error Message	84



Sekolah Siswazah  
(Graduate School)  
Universiti Utara Malaysia

**PERAKUAN KERJA KERTAS PROJEK**  
**(Certification of Project Paper)**

Saya, yang bertandatangan, memperakukan bahawa  
(*I, the undersigned, certify that*)

**SALEHUDDIN BIN SHUIB**

calon untuk Ijazah  
(*candidate for the degree of*) Sarjana Sains (Teknologi Maklumat)

telah mengemukakan kertas projek yang bertajuk  
(*has presented his/her project paper of the following title*)

**E-KAWALSELIA MANAGEMENT PORTAL FOR INFORMATION**

**TECHNOLOGY FACULTY**

seperti yang tercatat di muka surat tajuk dan kulit kertas projek  
(*as it appears on the title page and front cover of the project paper*)

bahawa kertas projek tersebut boleh diterima dari segi bentuk serta kandungan, dan meliputi bidang ilmu dengan memuaskan.  
(*that the project paper acceptable in form and content, and that a satisfactory knowledge of the field is covered by the project paper.*)

Nama Penyelia  
(*Name of Supervisors*)

: Mrs. Yussalita Binti Yusop

Mr. Baharuddin Bin Osman

Tandatangan  
(*Signature*)

: \_\_\_\_\_

Tarikh  
(*Date*)

: \_\_\_\_\_

## **CHAPTER 1**

### **INTRODUCTION**

This chapter described about supervised programmed in UUM and the implementation of supervising. Beside, it also highlighted the problems of the supervised programmed and the important of the project. The scope, significance and objective of the project are also included in this chapter.

#### **1.1 An Overview about Universiti Utara Malaysia**

The increasing numbers of private colleges and universities has promoted supervised programmes with Universiti Utara Malaysia (UUM). UUM is a well-known university needs to maintain its quality by guiding these private colleges towards its MS ISO 9002. It will need an efficient information management service to bridge communication gap between the two parties.

Every faculty in UUM that are involved with supervised programmed will have their own programmed with private colleges. Till today, there are six colleges that have been supervised under Information Technology Faculty (ITF). Supervisors in ITF are monitoring these colleges manually. This factor will lead to many problems in the future such as communication gap, wrong information, misunderstanding and wrong interpretation of the information. A communication gap causes different ideas between ITF and private colleges, also increases cost for telephone bill and postage. The information about ITF supervisors, courses and examination questions are not well arranged.

The contents of  
the thesis is for  
internal user  
only

## References

- Baumeister, H., Koch, N., Mandel L. (1999), "*Towards a UML extension for hypermedia design*", In proceedings «UML»'99, France, R., Rumpe, B. (eds), LNCS, Vol. 1723. Springer-Verlag 614-629.
- Gellersen H-W, Gaedke M. (1999), "*Object-Oriented Web Application Development*", IEEE Internet Computing 160-68.
- IEEE. (1991), "*Standard Glossary of Software Engineering Terminology*", Springer Edition.
- Jacobson I., Booch G., Rumbaugh J.(1999), "*The Unified Software Development Process*", Addison Wesley.
- James Herman, "*The Impact of E-business on Enterprise IT Management*", from the October 1999 issue of Business Communications Review, pp. 22–24
- James R. Borck. (2000), "*Transforming e-business: E-services*", Available at: <http://archive.infoworld.com/advertise/>
- Jason Robbins. (2001), "*ArgoUML*", Available at: <http://www.tigris.org> [5 Feb, 2004].
- Koch N.(2000), "*Hypermedia systems development based on the Unified Process*", Technical Report 0003, Ludwig-Maximilians-University Munich.
- Lowe D. & Hall W. (1999), "*Hypermedia & the Web: An Engineering Approach*", John Wiley & Sons.
- Mary Johnston Turner, "*Migrating to Network-based Application Services*", from the February 1999 issue of Business Communications Review, pp. 48–51
- UML Version 1.3 (1999), "*Unified Modeling Language, The Object Management Group*", Available at: <http://www.omg.org>