

**Requirement Model of Information Portal for  
Azizia University**

**Alsewie Abdallah S.Alsayah**

**UNIVERSITY UTARA MALAYSIA**

**2008**

# **Requirement Model of Information Portal for**

## **Azizia University**

A thesis submitted to Graduate Department of Computer Science,  
College of Arts and Sciences, in partial fulfillment of the requirements  
for the degree of Master of Science (Information Technology)

University Utara Malaysia

**Alsewie Abdallah S.Alsayah**

**All rights reserved © 2008**



**KOLEJ SASTERA DAN SAINS  
(College of Arts and Sciences)  
Universiti Utara Malaysia**

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

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

**AL SEWIE ABDALLAH S. ALSAYAH**  
**(800025)**

calon untuk Ijazah  
(candidate for the degree of) **MSc. (Information Communication Technology)**

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

**REQUIREMENT MODEL OF INFORMATION  
PORTAL FOR AZIZIA UNIVERSITY**

seperti yang tercatat di muka surat tajuk dan kulit kertas projek  
(as it appears on the title page and front cover of 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 Utama  
(Name of Main Supervisor): **ASSOC. PROF. DR. WAN ROZAINI SHEIK OSMAN**

Tandatangan  
(Signature) : Rozaini Tarikh (Date) : 18/11/08

Nama Penyelia Kedua  
(Name of 2<sup>nd</sup> Supervisor): **MR. HAZARUDDIN HARUN**

Tandatangan  
(Signature) : [Signature] Tarikh (Date) : 23/11/08

## **PERMISSION TO USE**

In presenting this thesis in partial fulfillment of the requirements 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 purpose may be granted by my supervisor(s) or, in their absence by the Dean of Research and Post Graduate Studies. It is understood that any copying or publication or use of this thesis 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 University Utara Malaysia for any scholarly use which may be made of any material from my thesis.

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

**Dean of Research and Post Graduate Studies**

**College of Arts and Sciences**

**Universiti Utara Malaysia**

**06010 UUM Sintok**

**Kedah Darul Aman.**

## ABSTRACT

The primary purpose of this study is to allow students and lecturers to communicate through long distances. Students normally have to go to the university to get the information or announcements. This way to get information has many problems for students who live far from the university. This project is aimed at the development of information portal system that will allow students to get information and lecturers announcements from any where in any time.

## ACKNOWLEDGEMENT

*Firstly, I would like to express my deepest sense of gratitude to my supervisors Associate Prof. Dr. Wan Rozaini Bt Sheik Osman and Mr. Hazaruddin Harun for their patience guidance, encouragement, understanding, and advice throughout this study.*

*I am also thankful to all my colleagues and friends at UUM, especially from the Graduate Department of Computer Science, Applied Science for their help and support, with whom I shared pleasant times.*

*Thanks for the people who take care for me in my live and supported me my father and my mother, also to my brothers and sisters and all my dearest family.*

# Table of Content

|  |           |
|--|-----------|
| Abstract                                       | i         |
| Acknowledgement                                | ii        |
| List of tables                                 | iii       |
| List of Figures                                | vi        |
| <b>CHAPTER ONE: INTRODUCTION</b>               | <b>1</b>  |
| 1.1 Introduction                               | 1         |
| 1.2 Problem Statement                          | 5         |
| 1.3 Research Objectives                        | 5         |
| 1.4 Scope of the Research                      | 5         |
| 1.5 Significant                                | 6         |
| 1.6 Report Structure                           | 6         |
| <br>   |           |
| <b>CHAPTER TWO: LITERATURE REVIEW</b>          | <b>7</b>  |
| 2.1 Introduction                               | 7         |
| 2.2 Information and Communication Technology   | 7         |
| 2.3 World Wide Web                             | 12        |
| 2.4 Information Portal                         | 13        |
| 2.5 Requirement Model                          | 14        |
| <br>   |           |
| <b>CHAPTER THREE: RESEARCH METHODOLOGY</b>     | <b>17</b> |
| 3.1 The General Methodology of Design Research | 17        |
| 3.1.1 Awareness of Problem                     | 18        |
| 3.1.2 Suggestion                               | 19        |

|                   |    |
|-------------------|----|
| 3.1.3 Development | 19 |
| 3.2.4 Conclusions | 19 |

## **CHAPTER FOUR: FINDINGS** 22

|                           |    |
|---------------------------|----|
| 4.1 List of Requirements  | 22 |
| 4.2 Use case diagram      | 25 |
| 4.3 Sequence Diagram      | 26 |
| 4.4 Collaboration Diagram | 28 |
| 4.5 Database Design       | 31 |
| 4.6 Class Diagram         | 35 |

## **CHAPTER FIVE: DISCUSSION OF RESULT** 36

|                      |    |
|----------------------|----|
| 5.1 Implementation   | 36 |
| 5.2 Testing          | 45 |
| 5.3 Software Testing | 45 |

## **CHAPTER SIX: CONCLUSION** 49

|                 |    |
|-----------------|----|
| 6.1 Conclusion  | 49 |
| 6.2 Limitation  | 50 |
| 6.3 Future Work | 50 |

## **References**



## List of Figures

|   |    |
|---|----|
| <b>Figure 3.1 The General Methodology of Design Research</b>                | 18 |
| <b>Figure 4.1 Use Case Diagram</b>  | 25 |
| <b>Figure 4.2: Sequence Diagram (Login Use Case)</b>                        | 35 |
| <b>Figure 4.3: Sequence Diagram (ViewCourseInformation)</b>                 | 36 |
| <b>Figure 4.4: Sequence Diagram (ManageMessage Use Case)</b>                | 36 |
| <b>Figure 4.5: Sequence Diagram (ViewCourseInformation Use Case)</b>        | 37 |
| <b>Figure 4.6: Collaboration Diagram (Login Use Case)</b>                   | 38 |
| <b>Figure 4.7: Collaboration Diagram (ManageCourseInformation Use Case)</b> | 38 |
| <b>Figure 4.8: Collaboration Diagram (ManageMessage Use Case)</b>           | 39 |
| <b>Figure 4.9: Collaboration Diagram (ViewCourseInformation Use Case)</b>   | 39 |
| <b>Figure 4.10: Login table description</b>                                 | 40 |
| <b>Figure 4.11: lecturer table description</b>                              | 41 |
| <b>Figure 4.12: Student table description</b>                               | 41 |
| <b>Figure 4.13: Course table description</b>                                | 42 |
| <b>Figure 4.14: LecCourse table description</b>                             | 42 |
| <b>Figure 4.15: StCourse table description</b>                              | 43 |
| <b>Figure 4.16: announcement table description</b>                          | 43 |
| <b>Figure 4.17: information portal system class diagram</b>                 | 44 |
| <b>Figure 5.1: AIP Home Page</b>  | 36 |
| <b>Figure 5.2 : AIP Login Page</b>  | 37 |
| <b>Figure 5.3 :AIP Lecturer Menu Page</b>                                   | 38 |
| <b>Figure 5.4 :AIP Manage Course Page</b>                                   | 39 |
| <b>Figure 5.5:AIP Manage Course Page</b>                                    | 39 |
| <b>Figure 5.6:AIP Manage Course Page</b>                                    | 40 |
| <b>Figure 5.7:AIP Lecturer Messages Page</b>                                | 41 |
| <b>Figure 5.8 :AIP Lecturer Messages Page</b>                               | 41 |
| <b>Figure 5.9:AIP Student Menu Page</b>                                     | 42 |
| <b>Figure 5.10: Student Course Information Page</b>                         | 43 |
| <b>Figure 5.11: Student Message Page</b>                                    | 44 |
| <b>Figure 5.12: Student Messages Page</b>                                   | 44 |

## List of Tables

|  |    |
|--|----|
| <b>Table 4.1 Functional Requirements</b>     | 23 |
| <b>Table 4.2 Non-Functional Requirements</b> | 24 |
| <b>Table 5.1 List of Functionality test</b>  | 46 |

# CHAPTER ONE

## INTRODUCTION

### 1.1 Introduction

In recent years, rapid growth in the volume of data and increasing user requirements, as these regulations no longer deal with the growing volume of data and user requirements. As information is increasingly created, processed, and manipulated, the role of large-scale enterprise storage systems becomes increasingly important. One of the characteristic features of our age is the information society, than means the large number information system is caused (Emejanov, 2002). As information is increasingly created, processed, and manipulated in digital form, the role of large-scale enterprise storage systems becomes increasingly important (Sundaram, 2006). Subsequently, to address this drawback, recent efforts have focused on automating the task of detecting hotspots and triggering data migration to alleviate them.

The Internet has become an ordinary and widely accepted alternative social environment-known as cyberspace-in which many people take part in numerous activities (Barak, 2008). The Internet has had a revolutionary impact on culture,

The contents of  
the thesis is for  
internal user  
only

- iii) The system is user friendly, in a sense that the user can easily understand the system although the user is a first time user. This is because the design is simple, attractive and do not have too simple graphical items.

## **6.2 Limitation**

- This project focused only on the part of transfer information between a lecturers and a students in Azizia University.
- The system has limited functionality due to time limitation and not uploaded in the internet.

## **6.3 Future Work**

For future work, some enhancement can be done to improve this system to reduce the limitation; there are several options that can be used.

- a. The system can be improve to display more university information to the lecturer and students.
- b. The system can be improve to extend the contact to be between the lecturer and the staff, and between the student and the staff.

## References

- Ahmad, H. U., Z.M.; Yusoff, R.Z. (2001). "Integrated process design for e-learning: a case study." 488 - 491.
- Alexeev, A. (2007 ). "Concept for reconstruction of MUS portal into UESIE via creation of New University hardware modular integral system " 285.
- Azar, S. N. j., Amir Hossein; Falsafi, Sadeg; (2008). "Commercial Portals Evaluation." 2035 - 2039
- Barak A , Y., Sadovsky (2008). "Internet use and personal empowerment of hearing-impaired adolescents." 24(5): 1802-1815
- Bryce C , M. P., Karsten Tolle, Peter Werner, Roberto Zicari (2003 ). "Agent-based services for information portals." 1191 - 1198
- Cardozo, N. P., F.; Ruiz, B.; Infante, C.; Adams, S. (2005). "Work in Progress - A Model for the Development of Competencies for the Faculty at National University of Tachira (UNET) - Venezuela  
" 19(22): T3F-16 - T3F-17.
- Chang,, H.-C. H. C.-T. Y. C.-C. (2004). "Building an e-learning platform by access grid and data grid technologies." 452 - 455
- Chen,, Y. C. J. C. M. I. L. (2006). "Portlet-based Portal Design for Grid Systems."  
571 - 575
- Chung-Sheng Li; Smith, J. R. M., R.; Yuan-Chi Chang; Topol, B.; Hind, J.; Yongcheng Li; (2000 ). "Distributed application service for Internet information portal." 4: 289 - 292.
- Cravener, P. (1998). "Education on the Web: a rejoinder." 31(9): 107 - 108.
- Daniel Morales-Gómez, M. M. (1998 ). "Utilising information and communication technologies for development: the social dimensions." 8(1): 3 - 13
- Danylova, O. M., A.; Synytsya, K.; Voychenko, O.; (2004). "Information portal "Our School": a case study of IT introduction into education in Ukraine." 922 - 923
- Dave Reynolds, P. S., Steve Cayzer (2004 ). "Semantic information portals." 290 - 291
- David Del Vecchio, V. H., Marty Humphrey (2006 ). "Evaluating grid portal security."
- Detlor, B. (2000). "The corporate portal as information infrastructure: towards a framework for portal design " 20(2): 91-101

- Dias, C. (2001.). "Corporate portals: a literature review of a new concept in Information Management " 21(4): 269-287
- Diogo Casanova , J. S. P., Cláudio Teixeira ,André Monteiro (2007 ). "The new institutional portal of UA methodology of development."
- Dongming Zhang , C. Z., Hong Zhou ,Nancy K. Roderer (2004). "User information seeking behavior in a medical web portal environment: a preliminary study." 55(8): 670 - 684
- Ebrahimi. A, C. S., S. Sayeed, S. Parham, H. Akibu, A. Saeed, W. Parris ( 2007 ). "Website error analysis of colleges and universities on Long Island in New York " 39(2).
- Elias Sinderson, V. M., Ronald Mak (2004). "Middleware and web services for the collaborative information portal of NASA's Mars exploration rovers mission." 78: 1 - 17
- Fetaji, B. F., M.; (2007). "E-Learning Indicators Methodology Approach in Designing Successful e-Learning." 307 - 312
- Ganka Kossekova , I. H., Deliana Kostadinova (2004 ). "Foundations of web-based virtual medical university.: 3. distance web-based learning and planning, organizing and controlling of regular education via MUS-portal." 1 - 6
- Graziano, A. M., P. Russo, S. (2000). "Experience with the GESTALT on-line learning support system." 2: 86-93.
- Hickey, A. M. D. (2004 ). "A Unified Model of Requirements Elicitation." 20(4): 65-84
- Hufford, K. D. (2001). "CS265 web network and web site management development of a core course in the Internet technology minor curriculum." 16(4): 142 - 155
- Joubert, T.-H. (1999 ). "Electronics on the Web [education]." 2: 1239 - 1240
- Ju,, F. Z. A. W. Y. (2004). "A framework to develop a university information portal." 506 - 509
- Julie J. Ryan, J. R. H. (2006 ). "The internet technology and its potential contribution to research in saudi arabia: possible factors influencing its utilization." 133.
- Kamaljeet, S. C., B.; (2003). "User attributes in Web-based electronic service adoption model (e-sam)." 503 - 506
- Kargar, M. J. R., A.R.; Noor, S.B.; Ibrahim, H.; (2007). "An extensive review on accessing quality information." 776 - 781
- Kleijhorst, A. v. d. V., E.T.; Brobbel, C.; (1998). "Benefits of a self-developed cardiology information system." 49 - 52

- Konopnicki, D. S., O.; (1996). "Early experience with W3QS-a WWW information gathering system." 162 - 165
- Landqvist, F. S., D.; (2006). "Portal Information Integration and Ownership Misfits: A Case Study in a Tourism Setting." 8: 173 - 173
- Larkin, F. L. C., V.P. (1997). "Using the World Wide Web to link marine scientists and educators." 2: 1164 - 1168.
- Larson, R. R. (1997). "The U.C. Berkeley School of Information Management and Systems." 2: 29 - 33
- Leghris, C. M., Radouane; (2006). "Cost Comparison of E-Learning Solutions." 817 - 824
- Leo Tan Wee Hin, R. S. (2003 ). "Information and communication technology in Singapore: lessons for developing nations on the role of government." 293 - 311
- Martin Fischer, A. K. (2005 ). "Requirements management interface to building product models." 328.
- McGrath, O. G. (2002 ). "Building an instructional portal: channeling the writing lab ": 199 - 203
- Mengel, S. A. (1997). "K12 and the World Wide Web " 1: 398-403.
- Muhsin, H. K. (2008). "The Using of E-Learning Techniques to Improve the Medical Education." 1-5.
- Noor Raihan Ab Hamid, A. K. (2006 ). "Consumer behavior on internet technology adoption." 96-101
- Nora Koch , G. Z., María José Escalona (2006). "Model transformations from requirements to web system design." 263: 281 - 288
- Oscar Corcho, A. L.-C., Asunción Gómez-Pérez (2006 ). "A platform for the development of semantic web portals." 145 - 152
- Pedro Valderas, V. P., Oscar Pastor (2007). "A transformational approach to produce web application prototypes from a web requirements model." 3(1): 4-42
- Poindexter, S. E. H., B.S. (1999 ). "Using the Web in your courses: what can you do? what should you do?" 19(1): 83 - 92.
- Poovarawan, S. N. Y. (2006). "Enhancing University Competitiveness through ICT based Knowledge Management System." 1: 417 - 421.
- Qing Li, R. W. H. L., Timothy K. Shih, Frederick W. B. Li (2008 ). "Technology supports for distributed and collaborative learning over the internet." 8(2).



- Rehak, D. R. (1997). "Carnegie Mellon Online: Web-mediated education." 3: 1510 - 1516.
- Ryan Grainger, D. T. (2005 ). "Organisational factors affecting teachers' use and perception of information & communications technology." 46 13 - 22
- Schemmel, J. J. C., R.R. (2001). " Making connections through the World Wide Web [engineeringeducation marketing]  
" 1: TIG - 4-5.
- Seonyoung Shim, B. L. (2006 ). "Evolution of portals and stability of information ecology on the web." 584 - 588
- Shawn Bowers, L. D., David Maier (2002 ). "Enriching documents in an information portal using superimposed schematics." 1 - 6
- Simone Cecchini, C. S. (2003 ). "Can information and communications technology applications contribute to poverty reduction? Lessons from rural India." 10(2): 73 - 84
- Smith, M. A. (2004). "Portals: toward an application framework for interoperability." 47(10 ): 93 - 97
- Stephen Burgess, P. D. (2002 ). "Added value benefits of application of internet technologies to subject delivery." 390 - 409
- Stojanović, N. S., L.; Gonzalez, J.; (2002). "On enhancing searching for information in an information portal by tracking users' activities." 246 - 255
- Suresh K Bhavnani , C. K. B., Timothy M. Johnson ,Roderick J. Little ,Frederick A. Peck ,Jennifer L. Schwartz ,Victor J. Strecher (2006). "Strategy hubs: Domain portals to help find comprehensive information." 57(1): 4 - 24
- Sushil K. Sharma, J. N. G., Nilmini Wickramasinghe (2006 ). "A framework for designing the enterprise-wide e-commerce portal for evolving organizations." 6(2): 141 - 154
- Thomas Puschmann, R. A. (2005). "Developing an integration architecture for process portals." 14(2): 121 - 134
- Tilbury, D. M. M., W.C. (1999 ). "Control tutorials for software instruction over the World Wide Web." 42(4): 237 - 246.
- Travica, B. (1995 ). "The role of information-communication technology in a new organizational design." 178 - 188
- William H. Graves, K. H. (2003 ). "Portals: your institution's reputation depends on them." 37 - 50

- Xiao, X. F. D. P. H. X. Y. L. S. (2005). "Research of e-government information portal applications based on grid technology." 1: 384 - 389
- Xue, S. (2005). "Internet policy and diffusion in China, Malaysia and Singapore." 31(3): 238 - 250
- Ye, H. D. Y. T. D. (2005). "Investigation on biomedical engineering education of the universities in US and UK." 78 - 81.
- Yong Gu Ji, G. S. (2002). "A metadata filter for intranet portal organizational memory information systems." 56(5): 525 - 537
- Yong, J. (2005). "Workflow-based e-learning platform." 2: 1002 - 1007
- Zhilin Yang, S. C., Zheng Zhou, Nan Zhou (May 2005). "Development and validation of an instrument to measure user perceived service quality of information presenting web portals." 42(4): 575 - 589