raf
LB1028.46 .M34 2004
0000037747
Universities' online application system / Mohd Aidil Kauzi.

© Universiti Teknikal Malaysia Melaka

TESIS APPROVAL STATUS FORM

JUDUL:
UNIVERSITIES' ONLINE APPLICATION SYSTEM

SESI PENGAJIAN: 01 2004/2005

Saya
MOHD AMDIL BIN KALIZI
(HURUF BESAR)

mengaku membenarkan tesis (PSM/Sarjana/Doktor Falsafah) ini disimpan di Perpustakaan Fakulti Teknologi Maklumat dan Komunikasi dengan syarat-syarat kegunaan seperti berikut:

1. Tesis adalah hakmilik Kolej Universiti Teknikal Kebangsaan Malaysia.
2. Perpustakaan Fakulti Teknologi Maklumat dan Komunikasi dibenarkan membuat salinan untuk tujuan pengajian sahaja.
3. Perpustakaan Fakulti Teknologi Maklumat dan Komunikasi dibenarkan membuat salinan tesis ini sebagai bahan pertukaran antara institusi pengajian tinggi.
4. ** Sila tandakan (/)

_____ SULIT (Mengandungi maklumat yang berdarjah keselamatan atau kepentingan Malaysia seperti yang termaktub di dalam AKTA RAHSIA RASMI 1972)

_____ TERHAD (Mengandungi maklumat TERHAD yang telah ditentukan oleh organisasi/badan di mana penyelidikan dijalankan)

_____ TIDAK TERHAD

(TANDATANGAN PENULIS)

(TANDATANGAN PENYELIA)

Alamat tetap : Lot 935, Ks Tok Dokang, Banggol, Jln PCB, 15350 Kota Bharu

NURUL AKMAR EMRAN
Nama Penyelia

Tarikh : 23/10/2004

Tarikh : 23/10/2004

CATATAN: ** Jika tesis ini SULIT atau TERHAD, sila lampirkan surat daripada pihak berkuasa.
^ Tesis dimaksudkan sebagai Laporan Projek Sarjana Muda (PSM)

© Universiti Teknikal Malaysia Melaka

UNIVERSITIES' ONLINE APPLICATION SYSTEM (UOAS)

MOHD AIDIL BIN KAUZI

This report is submitted in partial fulfillment of the requirements for the
Bachelor of Information And Communication Technology (Software Development)

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY
KOLEJ UNIVERSITI TEKNIKAL KEBANGSAAN MALAYSIA
2004

© Universiti Teknikal Malaysia Melaka

ADMISSION

I admitted that this project title name of

UNIVERSITIES ONLINE APPLICATION SYSTEM (UOAS)

is written by me and is my own effort and that no part has been plagiarized without citations.

STUDENT : _____ Date : 23/10/2004
(MOHD AIDIL BIN KAUZI)

SUPERVISOR : _____ Date : 23/10/2004
(PUAN NURUL AKMAR BINTI EMRAN)

© Universiti Teknikal Malaysia Melaka

ACKNOWLEDGEMENT

Syukur Alhamdullillah to Allah S.W.T for the strength, inspiration and courage has given to me throughout the completion of *Projek Sarjana Muda I (PSM I)* title Universities Online Application System (UOAS) successfully without any hard obstacle. A lot of new experience and knowledge gain while doing this project. This success cannot be achieved without the support, encouragement, spirit and co-operation from everybody that involved either directly or indirectly.

This project, the Universities Online Application System (UOAS) documentation would not be possible without the help of many people who had been very kind in giving their valuable advice and encouragement. First and foremost, I would like to thank you to my supervisor, Puan Nurul Akmar Binti Emran for her support, encouragement, advice and not to forget, patience throughout the entire project. Her excellence supervision is one of the main reasons for the success of this project.

Last but not least, I would like to take this opportunity to thank you my beloved family and friends for their encouragement and support that was so meaningful to me throughout the project. A very big thanks you also to my housemate, coursemates and members of Kolej Universiti Teknikal Kebangsaan Malaysia, Ayer Keroh, Melaka.

© Universiti Teknikal Malaysia Melaka

ABSTRACT

The Universities' Online Application System (UOAS) is an internet-based system, which enable users to use online application to further study to universities. The main purpose is to provide an easy and more reliable way for university candidate to apply to university. It is an application that used the latest available technology today. The methodology used to build the system is the System Development Life Cycle (SDLC) and used waterfall model as the modeling method. The phases start with project planning until the system is successfully implement in user environment. Keeping track on each phase is compulsory to ensure the application is develop properly. The conventional method for applying to universities is no more efficient because of increase in student's application. The new system will improve than current system to more efficient and reliable system with added features that useful to users such as online checking and links to universities website. The system architecture of UOAS can be divided into subtypes of server: web server and database server. The client use the web browser to access information by connecting to the web server, client request will be submit to the web server that interacts with the database server. The database server will process the request and sent back to the web browser and finally to the client. The Universities Online Application System (UOAS) will be the best solution to improve student's application to universities with the use of efficient and systematic method.

© Universiti Teknikal Malaysia Melaka

ABSTRAK

Universities' Online Application System (UOAS) ialah sistem yang mengaplikasikan penggunaan internet bagi membolehkan pengguna mendaftar ke pusat pengajian tinggi. Tujuan utama aplikasi ini adalah untuk memudahkan dan menyenangkan lagi urusan pelajar dalam proses mendaftar ke pusat pengajian tinggi. Ia adalah sebuah aplikasi yang menggunakan teknologi terkini dalam aplikasi pembangunan web. Pembangunan aplikasi ini adalah berdasarkan kitaran pembangunan perisian dan menggunakan model air terjun sebagai model utama. Model ini memerlukan pembangun sistem meneliti sistem pada setiap peringkat agar pembangunan aplikasi berjalan dengan lancar. Kaedah lama yang digunakan untuk pelajar mendaftar ke universiti tidak lagi sesuai memandangkan bilangan pelajar makin meningkat dari tahun ke tahun. Antara masalah yang timbul adalah memasukkan data yang salah ke dalam boring, boring tidak sampai pada pihak yang berkenaan dan sebagainya. Sistem baru yang diperkenalkan ini adalah lebih eficien dengan ciri-ciri tambahan yang dapat memudahkan lagi pengguna sistem. System ini membolehkan pelajar mengisi boring secara atas talian. Boring ini dapat mengelakkan pelajar dari memasukkan data-data yang salah ke dalam boring. Sistem ini akan membawa banyak manfaat kepada pelajar dan pihak pengurusan. Sistem ini menggunakan pangkalan data berpusat yang membolehkan data-data pelajar dikemas kini setiap hari. Sistem ini diharap dapat membantu pelajar untuk ke universiti dengan pengunaan kaedah yang lebih sistematik dan efisien.

© Universiti Teknikal Malaysia Melaka

TABLE OF CONTENTS

TITLE	PAGE
THESIS APPROVAL STATUS FORM	
PROJECT TITLE	**I**
ADMISSION	**II**
ACKNOWLEDGEMENT	**III**
ABSTRACT	**IV**
TABLE OF CONTENTS	**VI**
LIST OF TABLES	**XI**
LIST OF FIGURES	**XIII**
LIST OF ACRONYMS	**XV**
LIST OF ATTACHMENTS	
INTRODUCTION	**1**
1.1 PROJECT OVERVIEW	1
1.2 PROBLEM IN CONVENTIONAL METHOD	3
1.3 OBJECTIVE	4
1.4 PROJECT SCOPE	5
1.4.1 USERS	5
1.4.2 MODULE	5
1.4.3 MAIN TASK	6
1.4.4 PROJECT DEVELOPMENT	6
1.4.5 PROCESS	7
1.4.6 APPLICATION COMPLEXITY	7

© Universiti Teknikal Malaysia Melaka

1.5 PROJECT SIGNIFICANCE 8
1.6 PROJECT EXPECTED OUTPUT 8
1.7 CONCLUSION 9

LITERATURE REVIEW **10**
2.1 INTRODUCTION 10
2.2 DEFINITION 11
2.3 PURPOSE 11
2.4 GATHERING INFORMATION 12
2.5 SYSTEM ARCHITECTURE 14
2.5.1 CLIENT SERVER ARCHITECTURE 14
2.5.1.1 A BRIEF ON CLIENT SERVER ARCHITECTURE 14
2.5.1.2 CLIENT / SERVER ARCHITECTURE 15
2.5.1.3 TWO TIER ARCHITECTURE 15
2.5.1.4 THREE TIER ARCHITECTURE 16
2.6 PROPOSED UNIVERSITIES ONLINE APPLICATION ARCHITECTURE 17
2.7 CASE STUDY 18
2.7.1 TEACHER ONLINE REGISTRATION 19
2.7.2 POLYTECHNIC ONLINE REGISTRATION 21
2.8 CONCLUSION 23

PROJECT PLANNING AND METHODOLOGY **24**
3.1 INTRODUCTION 24
3.1.1 UNIVERSITIES ONLINE APPLICATION PROJECT PLANNING 24
3.1.2 THE IMPORTANT OF PROJECT PLANNING 26
3.2 METHODOLOGY 27
3.2.1 THE WATERFALL LIFECYCLE MODEL 27
3.3 BENEFIT OF WATERFALL LIFECYCLE MODEL 29
3.4 HARDWARE REQUIREMENT 30
3.4.1 SERVER COMPUTER HARDWARE 31

© Universiti Teknikal Malaysia Melaka

REQUIREMENTS
3.4.2 CLIENT COMPUTER HARDWARE REQUIREMENTS 31
3.5 SOFTWARE REQUIREMENT 31
3.5.1 OPERATING SYSTEM 31
3.5.2 DATABASE MANAGEMENT SYSTEM 32
3.5.3 AUTHORING TOOLS 33
3.6 SCHEDULE AND MILESTONES 33
3.6.1 GANTT CHART 35
3.7 CONCLUSION 35

ANALYSIS 36
4.1 INTRODUCTION 36
4.2 BUSINESS STUDY 37
4.2.1 CURRENT BUSINESS PROCESS 37
4.3 PROBLEM ANALYSIS 39
4.4 PROBLEM STATEMENT 41
4.5 REQUIREMENT ANALYSIS 42
4.5.1 HARDWARE REQUIREMENT 42
4.5.2 SOFTWARE REQUIREMENT 43
4.5.3 NETWORK REQUIREMENT 46
4.5.4 IMPLEMENTATION REQUIREMENT 47
4.5.5 FUNCTIONAL REQUIREMENT 48

DESIGN 49
5.1 INTRODUCTION 49
5.2 PRELIMINARY/HIGH-LEVEL DESIGN 50
5.2.1 RAW DATA / INPUT 50
5.2.2 SYSTEM ARCHITECTURE 51
5.2.2.1 THE MODEL 51
5.2.2.2 MODULES 53
5.2.3 USER INTERFACE DESIGN 57
5.2.3.1 NAVIGATION DESIGN 58

© Universiti Teknikal Malaysia Melaka

5.2.3.2 INPUT DESIGN 60
5.2.4 DATABASE DESIGN 62
5.2.4.1 DATA DICTIONARY 63

IMPLEMENTATION **66**
6.1 INTRODUCTION 66
6.2 SOFTWARE DEVELOPMENT ENVIRONMENT SETUP 67
6.3 SOFTWARE CONFIGURATION MANAGEMENT 68
6.3.1 CONFIGURATION / INSTALLATION 68
6.3.1.1 INTERNET INFORMATION SERVICES INSTALLATION 68
6.3.1.2 ORACLE 9I ENTERPRISE EDITION 69
6.3.2 SUPPORT TOOLS 72
6.3.2.1 MACROMEDIA DREAMWEAVER MX 72
6.3.2.2 ORACLE OBJECTS FOR OLE 72
6.4 IMPLEMENTATION STATUS 73

TESTING **75**
7.1 INTRODUCTION 75
7.2 TEST PLAN 76
7.2.1 TEST ORGANIZATION 76
7.2.2 TEST ENVIRONMENT 77
7.2.3 TEST SCHEDULE 78
7.3 TEST STRATEGY 79
7.3.1 CLASSES OF TESTS 79
7.4 TEST DESIGN 81
7.4.1 TEST DESCRIPTION 80
7.4.2 TEST DATA 82
7.5 TEST CASE RESULTS 84
7.5.1 TEST SUMMARY REPORT 85

© Universiti Teknikal Malaysia Melaka

CONCLUSION **90**
8.1 OBSERVATION ON STRENGTH AND WEAKNESS 90
8.2 PROPOSITIONS FOR IMPROVEMENT 92
8.3 CONCLUSION 93
REFERENCES 94
ATTACHMENTS 95

© Universiti Teknikal Malaysia Melaka

LIST OF TABLES

TABLE NO	TITLE	PAGE
4.1	Hardware Requirement	42
4.2	Software Requirement	43
4.3	Network Requirement	46
4.4	Functional Requirement	48
5.1	Data Sample	51
5.2	Navigation Menu	59
5.3	Student Table	63
5.4	Student Info	63
5.5	Applied Course	64
5.6	Course Offered	64
5.7	Student Result	65
5.8	Student Merit	65
6.1	Apply Online	73
6.2	Checking Status	73
6.3	Login	73
6.4	Creating Database	74
6.5	Database Simulation	74
6.6	Database Maintenances	74
7.0	Server and Client and Network Environment Specification.	77
7.1	Activities in test schedule	78
7.2	Test description for each module	81
7.3	Login Module	82

© Universiti Teknikal Malaysia Melaka

7.4	Register Module	82
7.5	Apply Online Module	83
7.6	Check Status Module	84
7.7	Navigation	84
7.8	Test Case Result For Login Module	85
7.9	Test Case Result For Registration Module	86
7.10	Test Case Result For Apply Online Module	87
7.11	Test Case Result For Check Status Module	88
7.12	Test Case Result For Navigation	89

© Universiti Teknikal Malaysia Melaka

LIST OF FIGURES

FIGURE NO	TITLE	PAGES
2.1	Two-Tier Architecture	16
2.2	Three-tier Architecture	17
2.3	UOAS System Architecture	18
2.4	Main page for Teacher Online Registration	19
2.5	Sample Form for Teacher Online Registration	20
2.6	Main Page for Polytechnic Online Registration	22
3.1	Waterfall Diagram	28
4.1	Current process to apply to universities	38
5.1	The Universities Online Application Process	52
5.2	System Architecture For (UOAS)	53
5.3	System Architecture For Student Module	54
5.4	System Architecture For Administrator Module	55
5.5	Navigation	58
5.6	Login	60
5.7	e-Form	61
5.6	UOAS Entity Relationship Diagram	62
6.1	The Development Environment for UOAS	67
6.2	Accessing the Control Panel	68
6.3	Accessing the Add/Remove Windows Components	68
6.4	Accessing Windows Component Wizard	69
6.5	Welcome Screen	70
6.6	Login using SQLPlus	70
6.7	Successfully login using SQLPlus	71

© Universiti Teknikal Malaysia Melaka

6.8	Login Using i*SQLPlus	71
6.9	Successfully login using i*SQLPlus	72

© Universiti Teknikal Malaysia Melaka

LIST OF ACRONYMS

Acronyms	Description
UORis	Universities Online Application System
UPU	Unit Pusat Universiti
SPM	Sijil Pelajaran Malaysia
DBMS	Database Management System
GUI	Graphical User Interface
RPC	Remote Control Procedure
SQL	Standard Query Language
LAN	Local Area Network
PIN	Personal Identity Number
DDR	Double Data Rate
NIC	Network Interface Card

© Universiti Teknikal Malaysia Melaka

LIST OF ATTACHMENTS

ATTACHMENT	PAGES
Gantt Chart	94

© Universiti Teknikal Malaysia Melaka

CHAPTER I

INTRODUCTION

1.1 PROJECT OVERVIEW

Education has become very important today and people try to find the best institutions for further study. In Malaysia, students can apply to universities through Unit Pusat Universiti. It is an organization that organizes students to local universities. With today's latest technology known as the Internet, we now have a new way to improve universities applications by applying it online through the Internet. Online applications mean an application that take place by the telecommunication network, in this project; the Internet. It is a process of filling forms, select course and others over the Internet.

With the modification in higher education institution to more e-education, the need to transform the conventional way of applying to the universities into online application is crucial. It is important since the increasing of students applying to the universities. The online registration shall give a lot of benefits to both side students and management organization.

© Universiti Teknikal Malaysia Melaka

Universities' Online Application System or in short, UOAS is a system that allow students to apply online to the universities. The medium for this system is the Internet so students can access the system wherever they are as long as there is Internet connection. After applying, students can check whether the application is in progress or successful. Since the system is web based, it will also provide link to all universities in Malaysia so that while applying online student can browse through universities web page. The system provides a very user-friendly graphical interface and any user can easily use the system.

The main purpose of Universities' Online Application System (UOAS) is to provide more easy and convenient way of applying to the universities and to propose new way of data management and data processing. This system will solve unnecessary difficulties such as long queue to buy the form, invalid form, wrong data entry and others. Since the system will be accessed through the Internet, students can access and seek for the information within 24-hours.

The main task for the system is to process all the data and provide a good result. Basically student fill the form with certain particular, the data will automatically load to the database. The data will be processed and the final output will be a list of student, which qualifies to study in universities.

© Universiti Teknikal Malaysia Melaka

1.2 PROBLEM IN CONVENTIONAL METHOD

In conventional method, in application process, a candidate must fill in forms and submit to Unit Pusat Universiti. Unit Pusat Universiti will process the forms and notify the candidate when the result is released. Candidates can also check their status through the system. The conventional method is effective if only a small amount of students apply to universities but the increasing of student application making the conventional method is no more applicable and efficient.

The main task for Unit Pusat Universiti is to process all the students' application. For example, if 1000 students apply to the universities, UPU will have to process all the 1000 form. The process includes data entry and selection, since student can choose eight courses so this will include a lot of data processing. Furthermore students applying to the universities is increases year by year, the need of more efficient and applicable way and more user-friendly online system is highly needed.

© Universiti Teknikal Malaysia Melaka

1.3 OBJECTIVE

Universities' Online Application System (UOAS) is developed in order to solve the problem faced by universities candidate and Unit Pusat Universiti in order to provide more efficient and reliable services. The objectives of UOAS are to: -

1. Provide a convenient and reliable system for Unit Pusat Universiti in order to manage student's application to the universities.
2. Help to build a system that will manage the online application to the universities in most efficient and reliable ways.
3. Manage student application to universities in more efficient and systematic environment.
4. Create a portal that will become a one-stop information center for student to collect information about universities and offered course.
5. Create an online registration for student to apply to universities
6. To promote Unit Pusat Universiti as education organization that provides the best services in order to bring the best education in Malaysia.

© Universiti Teknikal Malaysia Melaka

1.4 PROJECT SCOPE

1.4.1 Users

Universities Online Application System or UOAS specifically used by SPM candidate to apply to the universities.

1.4.2 Module

Universities Online Application System or UOAS is a web-based system and can be divided to two parts; web server and database server. The scope of the system can be divided to two modules and that are student module and administrator module.

Student Module

The student module include

- An application form for student to apply to universities
- Information about the courses offered and links to all university's website in Malaysia.
- Other utilities that enable students to check their application status and change their applications.

Administrative Module

The administrative module include

- Maintaining and updating all data in the database
- Process the information and produce the final result which is the list of student qualify to further study in universities.

© Universiti Teknikal Malaysia Melaka

1.4.3 Main Task

The main task for this system is to produce a final list of students who are qualified to study in universities according to their courses. The tasks need a proper arrangement and expertise. Using database management such as sql statement and pl/sql can help do the main task. In addition, the UOAS will provide an online checking status where students can check the status of their application when they log in to the system. The Universities Online Application System will help reduce problem that occurs in related system in more efficient and systematic ways.

1.4.4 Project Development

The Universities Online Application System (UOAS) will be develop in two phases. The first phase is documentation preparation where all documentation related to the project is prepared. This includes research, case study and presentation. The duration give for preparing documentation is 8 weeks.

The second phase is development phase. In this phase, the development of the project is based on user requirement and documentation that had been prepared during the first phase. The second phase include system implementation, system testing and system evaluation. The final output will be the fully operational system that can operate smoothly and efficiently in user environment. The duration give for development phase is not more that 18 weeks.

© Universiti Teknikal Malaysia Melaka