

BORANG PENGESAHAN STATUS TESIS

JUDUL:

KUTKM POSTGRADUATE SYSTEMSESI PENGAJIAN: 1 / 2005MUHAMMAD NAZIK BIN ^{Saya} KOMLI

(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 : Batu 3 1/4 A, Jln Mata

Nama Penyelia

MOHD FADZIL BIN ZULKIFLI

Ayer, 02500 Kangar, Perlis

Tarikh : 23 / 11 / 2005

Tarikh : 23 / 11 / 2005

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

KUTKM POSTGRADUATE SYSTEM

raf

QA76.9.S88 .M52 2005



0000037755

KUTKM postgraduate system / Muhammad Nazir Romli.

MUHAMMAD NAZIR BIN ROMLI

**This report is submitted in partial fulfillment of the requirement for Bachelor of
Information Technology (Software Development)**

**FACULTY OF INFORMATION AND COMMUNICATIONS TECHNOLOGY
KOLEJ UNIVERSITI TEKNIKAL KEBANGSAAN MALAYSIA**

DECLARATION

I hereby declare that this project report entitled
KUTKM POST GRADUATE SYSTEM

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

STUDENT :  Date : 23/11/2005
(MUHAMMAD NAZIR BIN ROMLI)

SUPERVISOR :  Date : 23/11/2005
(MOHD FADZIL BIN ZULKIFLI)

DEDICATION

To my beloved parents and friends.....

ACKNOWLEDGEMENT

Firstly I want to thank my lecture and Supervisor at KUTKM En Mohd Fadzil bin Zulkifli. He helps me a lot to make sure I am well preparing for the PSM 1.

I'm also want to thanks KUTKM for provide the best service of hardware and software. Without that all things, I cannot finish my PSM well. They also have provided me the best internet connection and also good networking system.

In the PSM 1, I have done a lot of job that connect with the subject that I have learned in KUTKM. I have proposed a web based system named Postgraduate system. At last I have finished all my PSM 2 in this semester.

I'm also wanted to thank to my parents for giving the support and advice.

ABSTRACT

The project that I had proposed is KUTKM Postgraduate System. This system is replacing the old manual system of KUTKM Postgraduate System. The old system have many problem occurs. The problems are losing data, ineffective and take time. So after this there will be a new Postgraduate system for KUTKM. So the Postgraduate registration will take less time than before.

This system will the web based system. This system interface will built based on the original Postgraduate form. There will be 4 users that use this system. They are sponsor, referee, student and dean. Each user has a different function and interface. Student is the main user in this system. After register the Postgraduate, student will give referee and sponsor email to the system. After that the system will send an alert email to the referee and sponsor. The sponsor and referee will be given an id to enter the system. After that they will verify the student. Dean also will be receiving an alert email with the proposal attachment. If one the person (referee, sponsor and dean) reject or not verify the student, the student application will be rejected.

So that is the basic flow of the system. In this report also have the basic flow, diagrams, and all the things that occur to the system.

TABLE OF CONTENT

CHAPTER	SUBJECT	PAGE
CHAPTER	ACKNOWLEDGEMENTS	ii
	ABSTRACT	iii
	TABLE OF CONTENTS	iv
	LIST OF DIAGRAM	v
	LIST OF INTERFACE	vi
CHAPTER 1	INTRODUCTION	1
	1.1 PROJECT BACKGROUND	1
	1.2 PROBLEM STATEMENTS	2
	1.3 OBJECTIVE	3
	1.4 SCOPES	4
	1.5 PROJECT SIGNIFICANCE	6
	1.6 EXPECTED OUTPUT	7
	1.7 CONCLUSION	8
CHAPTER 2	LITERATURE REVIEW AND PROJECT METHODOLOGY	9
	2.1 INTRODUCTION	9
	2.2 FACT AND FINDING	9
	2.3 PROJECT METHODOLOGY	12
	2.4 PROJECT REQUIREMENTS	13
	2.5 PROJECT SCHEDULE AND MILESTONE	
	2.6 CONCLUSION	14
CHAPTER 3	ANALYSIS	15
	3.1 PROBLEM ANALYSIS	15
	3.2 REQUIREMENT ANALYSIS	18
	3.3 SOFTWARE REQUIREMENT	35
	3.4 HARDWARE REQUIREMENT	35
	3.5 NETWORK REQUIREMENT	35
CHAPTER 4	DESIGN	36
	4.1 INTRODUCTION	36
	4.2 HIGH-LEVEL DESIGN	36
	4.2.1 RAW DATA	36
	4.2.2 HIGH-LEVEL LOGICAL VIEW / ARCHITECTURE	42
	4.2.3 USER INTERFACE DESIGN	45
	4.2.4 DATABASE DESIGN	49
	4.2.5 DEPLOYMENT VIEW	50
	4.3 LOW-LEVEL DESIGN	51

4.3.1	DETAIL DESIGN	51
4.3.1.1	DATABASE ADMINISTRATOR	51
4.3.1.2	REFEREE, UNIVERSITY AND SPONSOR	54
4.3.1.3	STUDENT	56
4.3.1.4	DEAN	59
4.3.2	PHYSICAL DATABASE DESIGN	62
4.3.2.1	DATA DICTIONARY	62
4.4	CONCLUSION	68
CHAPTER 5	IMPLEMENTATION	69
5.1	INTRODUCTION	69
5.2	SOFTWARE DEVELOPMENT ENVIRONMENT SETUP	70
5.3	SOFTWARE CONFIGURATION MANAGEMENT	72
5.3.1	CONFIGURATION ENVIROMENT SETUP	72
5.3.2	VERSION CONTROL PROCEDURE	77
5.4	IMPLEMENTATION STATUS	78
5.5	CONCLUSION	79
CHAPTER 6	TESTING	80
6.1	INTRODUCTION	80
6.2	TEST PLAN	81
6.2.1	TEST ORGANIZATION	81
6.2.2	TEST ENVIRONMENT	81
6.2.3	TEST SCHEDULE	82
6.3	TEST STRATEGY	82
6.3.1	CLASSES OF TEST	83
6.4	TEST DESIGN	84
6.4.1	TEST DESCRIPTION	84
6.4.2	TEST DATA	84
6.5	TEST CASE RESULT	84
6.6	CONCLUSION	85
CHAPTER 7	CONCLUSION	86
7.1	STRENGTH AND WEAKNESS	86
7.2	IMPROVEMENT	88
7.3	CONTRIBUTION	88
7.4	CONCLUSION	89
	REFERENCES	90
	APPENDICES	91

LIST OF DIAGRAM

DIAGRAM	TITLE	PAGE
1.1	Figure 3.1.1.1 - Activity Diagram For Old Postgraduate System	17
1.2	Figure 3.2.1.1.1 – Package for Postgraduate System	19
1.3	Figure 3.2.2.1 - To be System Process Model for KUTKM Postgraduate System	20
1.4	Figure 3.2.3.1 - Global view of Use-Case Model	21
1.5	Figure 3.2.6.1 - Student Registration	29
1.6	Figure 3.2.6.2 - Student Edit the Registration	29
1.7	Figure 3.2.6.3 - Student Send Proposal	30
1.8	Figure 3.2.6.4 – Student Give information about referee, sponsor and examination result	30
1.9	Figure 3.2.6.5 – Referee verify student	31
2.0	Figure 3.2.6.6 – Sponsor Verify student	32
2.1	Figure 3.2.6.7 – Examination result verification	33
2.2	Figure 3.2.6.8 – Dean Approve application and proposal	34
2.3	Figure 4.2.2.1 High-Level Logical View / Architecture	42
2.4	Figure 4.2.2.1.1 The Postgraduate Packages	43
2.5	Figure 4.2.2.2.1 High Level Class Diagram for KUTKM Postgraduate System	44
2.6	Figure 4.2.4.1 Erd Of Postgraduate System	49
2.7	Figure 4.2.5.1 Deployment View For Postgraduate	50

LIST OF INTERFACE

INTERFACE	TITLE	PAGE
1.1	Figure 4.2.3.1 Main Interface	45
1.2	Figure 4.2.3.2 Registration Interface 1	45
1.3	Figure 4.2.3.3 Registration Interface 2	46
1.4	Figure 4.2.3.4 Registration Interface 4	46
1.5	Figure 4.2.3.5 Registration Interface 5	47
1.6	Figure 4.2.3.6 Registration Interface 6	47
1.7	Figure 4.2.3.7 Referee Interface	48
1.8	Figure 4.2.3.8 Sponsor Interface	48
1.9	Figure 5.1 Three tier architecture.	70
2.0	Figure 5.2 Macromedia Dreamweaver MX InstallShield Wizard	73
2.1	Figure 5.3 Macromedia Dreamweaver MX License Agreements	74
2.2	Figure 5.4 Macromedia Dreamweaver MX User name and Serial Number	74
2.3	Figure 5.5 Macromedia Dreamweaver MX installation folder paths	75
2.4	Figure 5.6 Macromedia Dreamweaver MX editor chooser	75
2.5	Figure 5.7 Macromedia Dreamweaver MX Installation in progress.	76
2.6	Figure 5.8 Macromedia Dreamweaver MX installation finished	76

LIST OF TABLE

TABLE	TITLE	PAGE
1.1	Table 4.1 Data Dictionary	67
1.2	Table 5.1 Implementation Status	78-79
1.3	Table 6.1 Test schedule	82
1.4	Table 6.2 Classes of test	83
1.5	Table 6.3 Test Case Result	84

CHAPTER I

INTRODUCTION

1.0 Project Background

This project mainly is want to transferring the existing manual system to electronic system. Right now KUTKM is still using the manual system for their postgraduate. The existing manual system can cause many problems such as losing data, updating data, searching data and others.

Losing data is the main problem in the manual system. It always happens in the manual system. It can cause by many factor such as missed place the data, data damaged and others. So these new system help, it is using the database to store all the important data in the system.

The other problem of manual system is to search data and updating data. In the manual system, they must search the old data by checking form one by one. So it will take more time and ineffective. The new system can reduce the time using by updating the information in the system by using search engine.

The old system is hard to maintain. The maintenance will take time because the data is not well arranged. So it is hard to maintain. But this new system is easy to maintain data. It is because the data are already well arranged by database. It will group data with different faculty and courses.

So mainly the purpose of this project is want to build the new systematic system of postgraduate in KUTKM.

1.1 Problem Statement

In the manual system, there are many problems. Some of the problem could affect the system. So the problem may or could interrupt the system or can make the system ineffective. So there are some list of the manual system problem and the solution of the problem with the new system.

Losing data is the main problem in the manual system. Mainly the data in the manual system is store in the cupboard or data store is the specific data room, which it's content many more data from other system. So the possibility of losing data is high. This thing always happens in the manual system.

So the solution is, in the new system there are database which can store data about the postgraduate. It is maintain by someone who authorized. So the data will be more secure and safe. When we want to find data, just click search and the computer will search the data in the database.

Searching data is other main problem of the manual system. Every time we want to search data, we must search one form to another in the cupboard or data store. So it is difficult and takes a long time to search it. Sometime the data that we search is miss place and we must search it one more time. So it is ineffective and not systematic.

The search engine in the new system is the solution for the searching data. Just click search button, and the data that we search is search by it self. So this system is more effective, fast and systematic.

Time management is other main problem in the system. To register the postgraduate, at least we need 3 month or more. So it takes more time and the student must wait for it. So the solution is the new system. In the new system, email is using to verify all the data from referee, university. So it can takes less time than before.

1.2 Objective

There some objective that I have target in this system. If I not achieve this objective my system will not complete and must be edit or rebuild. So these all objective are important because it is a main target for the system. The objectives of my project are:

The first objective is to transfer the existing manual to electronic system. The new electronic and online system will be build to replace the ineffective old system. Right now, many old manual systems are replacing by new electronic system. It is because the old systems have many problems such as losing data, searching data and time management. So this new electronic system can solve all the problems that occur.

The second objective is to reduce time. The new system is can reduce time is searching, updating data, manage data and registration process. This new system is using email to contact the referee and university to get all the information about the student. It's also using search engine to search data and updating data. So the management of data can become easier.

To build a new information system that using database that give more effectiveness in management, process and analyze data is other objective of my new system. All the data are store in the database, so it easy to managed and maintain. It also more secure that the old system. It is because it is well protected and only the authorized person can access to it. So all data is well secure and easy to find and maintain.

The last objective of this system is to build the system that easy to maintain by the administrator. In the old manual system, all data is store in the data room. So it is difficult to maintain. This new system is using the database. All data will store in it, so the administrator is easily maintain the data.

1.3 Scope

Scope in every project is the most important part. It is because it will scale the project and show the way of the project. If one of the scopes of the project is not accomplishing, so the project is consider fail. So scopes are important to accomplish.

The main scope of the project is to separate the level of user into 4 categories, student, student supervisor, dean and *Unit Ijazah Tinggi*. So if the system is separate to 4 different users, the administrator can easily maintain the system. Every user also can access a different menu. Some user can edit data and some user cannot edit it.

The second scope is to keep all the important student data in the well secure database. All the important will be save in the database. So the data can easily be maintained. Data also can be easily search, update, delete and save. So the data are save and only can be maintain by the authorized person only.

Other scopes are:

Authentication

- To build the login module. In this module, all 4 user can be separate when their login to system.

Registration

- To build the registration module. Student must fill the entire blank in the form and state their proposal, course, referee, sponsorship and all important data.

Verification

- Send email to the student about the result of the application
- To send referee an email to verify whether he/she support and recognized the applicant.
- Can verify whether student is qualified or not to take the postgraduate. The system will send email to the student old university to get their examination result.
- To determine whether student have a sponsor or not. System will send email to sponsor that sate by the student to verify whether they sponsor the student or not.

- To verify the proposal is suitable for master or PhD. The system will send the student proposal to dean to approve whether student can take master or PhD or not qualified for both.

Report

- Can short list all the student who their application is successful.

1.4 Project Significance

Every project has a reason and benefit. When one project was build, all the reason and benefit where consider. It is because this reason and benefit are important to the project successful. In the post graduate system, the benefit of the system have already has consider.

The benefit of the system is to make sure all the postgraduate registration is smooth and effective. Registration is taking time when we using the manual system. So this new system is reducing time. Mainly is the manual system, all the proposal, examination and sponsor approval is taking time. So in this new system all the approval is make online, mainly using an email. Not in the manual system they are using letter for the approval. So this system can reducing time and student can start their study as fast they can.

In the maintenance, this system is easily to maintain than the manual system. It is because this system is using the database to store the data. Not like the manual system, all the data is storing in the special room or cupboard and hard to maintain. So the benefit is this system is easy to maintain, systematic and effective than the old system. So it can handle more data than old system.

This system can reduce time on registration and maintenance. It is because the system is using email to contact with other person who involve in the system. It also has a time limit to reply the email. So it is using less time than the old system. Student also can get their postgraduate registration application in at least 2 month early than old system.

1.5 Expected Output

This system has expected output just like another system. The expected output is important because it will show our main scope. So mainly expected output will represent our scope. The basic expected output in this system is this system can save, delete, search, and edit data.

This system also will send email to referee to verify the student. So the system can determine the student have referees or not. The referees must reply the email. By this email system administrator can determine that the referees' state by the student is support and recognize him/her. So if the referees is support him/her, the student applicant will proceed to other stage, if not system will reject the application.

System also will send email to their old university which they have their degree to have the examination result. If the result get from the old university is fulfill the requirement, the applicant will proceed to other stage, else the student applicant will be reject. This is important because it will make sure the student is really qualified.

The sponsor that state by the student also will be sends an email to make sure they have support the student or not. If they replied email said they support the student, the student application will be proceed to the dean. They system automatically will send the student proposal through email. Dean can approve or not approve the proposal. If the student application approve, their names will short listed by system. System also sends the replied email to the student to state that their application have been accept, password and username.

1.6 Conclusion

Basically this system is built to transferring the old manual system to new web based system. This system will replace the existing manual system. This system will solve all the problem occur in the manual system such updating system, losing, searching data and hard to maintain.

This system can avoid the losing data. It is because this system will using database to store data. So the data is more saving. Data storage also will be more systematic. So student or administrator will not worry about the safety of the data. Data also will control by authorized person only. Database also will make a backup copy in case the original data is bust. But in the manual system the data has no backup at all.

This system is easy to update and search data. These systems able to search by keep in the key word. System will search the data that matching with the key word and the output will appear on the screen. So this system will take less time to search data. Updating data also are easy just click choose the data and then edit.

The new system is easy to maintain. It is because the data in the database is already well arranged by the faculty and courses. Administrator can make the maintenance is easy work because data are well arranged and easy to find. So this system is basically is very systematic.

Lastly I hope this system will help KUTKM in manage postgraduate system. So the postgraduate registration will take less time and become more effective, systematic and better than old system.

CHAPTER II

LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1 Introduction

The postgraduate system is one the most important system in KUTKM. If this system is success it will be the first electronic postgraduate system in Malaysia. Universities in Malaysia are still using the manual system. This Postgraduate System most likely the *Politeknik* application system. So in this literature review I will compare the system with the existing *Politeknik* application system.

2.2 Fact and Finding

Internet And Online System Are Important In Today Business World.

To use web based system or online system must through Internet. This year, more than half of Americans now file taxes online posted. And the manual methods that are filling out paper forms and licking stamps are in the minority for the first time ever.

(More Than Half of Americans Now File Taxes Online [online]. April 13, 2005. <http://www.iw.com> [Access 20 April 2005])

The Competition in Internet Technology

There was a competition in Internet technology that been called or known as Browser Wars, where several browser companies such as Microsoft Internet Explorer(IE), Mozilla's Firefox, Nestcape Navigator and others were rushing to

create the new next version of browser. That mean technology will change from time to time numerously. According to the article said that rumors are flying that the next version of IE will address these long-held concerns. For now, Mozilla's Firefox has become the hot browser, simply because Microsoft has been bidding its time. But just as IE stole the show from Netscape five years ago, the same will likely occur with the release of Internet Explorer 7. IE 6 is sorely in need of repair, and the quick gains in market share by Firefox and other alternative browsers were probably just the kick in the pants that Microsoft needed to get its act together. Because of that, IE has lost a few percentage points of market share. Microsoft has had the benefit of learning from Firefox and incorporating its features. Sometimes being second to market is best, especially when you have an enormous advantage over the competition in the first place.

(Microsoft Gets Its Act Together With IE 7.0 [online]. March 18, 2005. <http://www.iw.com> [Access 22 April 2005])

Macromedia Dreamweaver

It is the visual HTML editor and we are the platform for build the Postgraduate Interface. In this software, the entire functional interface will be build. It is provide many functional such as button, form, link, and other main functions. In this software, tables, forms and other things can build easily. This software also can connect the interfaces with the database. All editing the interface are easy when using this software.

MySQL

This is will be the database for the Postgraduate System. It is because MySQL can provide the fast and flexible way to access its tables. MySQL is a multiuser, multithreaded RDBMS server that uses SQL to interact with and manipulate data. It is also can support various programming language such as C, C++, Java, Perl, PHP, Coldfusion, Python and other. It also can use with Windows, Mac OS X, Linux and UNIX.

PHP

PHP is Hypertext Preprocessor. It is a server side scripting languages for creating dynamic Web pages. PHP is an open-source technology that is supported by large community of users and developers. It can be used with Windows, UNIX and Linux. It also supports a large number of databases including MySQL.

Blat

Blat is a Public Domain Windows 95/NT console utility that sends the contents of a file in an e-mail message using the SMTP protocol. Blat is useful for creating scripts where mail has to be sent automatically (CGI, backups, etc.), or just as a quick way to send a file or message quickly from the command line. It will store relevant configuration details in the registry for ease of use. Optionally, blat can also attach multiple binary files to message.

Getmail

Getmail can be used to automatically extract MIME encoded or UU encoded binary files as it downloads to mail, and is the perfect companion to BLAT, which sends mail from the command line.

2.3 Project Methodology

In this system, the methodology that suit most in Object Oriented Architecture and Design. In this methodology it divide into 5 phase. There are System Investigation, System Analysis, System Design, System Implementation and System Maintain and Review (Testing phase). The advantage of using this methodology, it will make the system well develop and more systematic. System also well plan by using this methodology.

The first of the methodology is System Investigation. This phase also known as Requirement phase. In this phase the use case diagrams, flow of events and requirements review will be built by the developer. The use case diagram will show how the system interacts with the relevant actors. The flow of event will show how the system works from start to end. In that case the programmer will know the user system process.

The second phase is System Analysis. In this phase purpose of this process is to have a detailed understanding of the current system. So the Activity Diagram will be build by the developer. In this phase the developer will recognize all objects, relationship between object and problem. So in this phase developer will find a solution to overcome all the problems that occur in the old system.

The third phase is System Design. In this phase the Sequence Diagram will be developing. But before that all the developer will recognize the entire important object that included in the system. They also try to build the relationship between objects using messages to show the interaction of all the objects.

After the System Design, all developer will advance to System Implementation. In this phase developer will start to build the software by coding the class, object and messages.

The last phase is the Testing Phase. All the coding will be test to make sure it meets the entire user requirement. In this phase, it will conduct by the real user. All the error or the requirement that do not match with the user requirement will found here. So after the testing phase, the system will be repair.

2.4 Project Requirements

Project requirement is important to make sure the system can run and execute well. This requirement is divided into three categories; software requirement, hardware requirement and other requirement. Software requirement is a list of software that is necessary, and needed to develop or execute the application, program, and system. Hardware requirement is a list of hardware and devices that been use the overcome the input output of the running or execute application, program, or system. Special device such as fingerprint scanner, retina scanner, and other device that been use when running or executing an application, a program, or a system; will be listed in the hardware requirement.

2.4.1 Software Requirement

The software requirements for developing project:

- a. Development tools
 - i. Macromedia Dreamweaver
 - ii. MySQL
 - iii. AppServ
 - iv. Blat
 - v. Getmail
- b. Operating system
 - i. Microsoft Windows XP – developer pc
 - ii. Microsoft windows 98, 2000, ME and above for users pc.

2.4.2 Hardware Requirement

The hardware requirements for developing project:

- a. Hard Disk 40GB
- b. Printer (to print output)

2.4.3 Other Requirements

The other requirement for developing project:

- a. Internet Explorer.

2.5 Project Schedule and Milestones

Show in the pages behind.

2.6 Conclusion

In this chapter all the Project Methodology has been state clearly. This chapter is important because it will help the project development process. In this chapter also has state all the requirement that need is the development the project. The project schedule and milestone also has been state here. All the project development is based on the project schedule and milestone.