

## BORANG PENGESAHAN STATUS TESIS

JUDUL: E-RESIDENCE INFORMATION SYSTEM for UiTM

SESI PENGAJIAN: 2008/2009

Saya ZURINA BINTI AHMAD

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

1. Tesis dan projek adalah hakmilik Universiti Teknikal Malaysia Melaka
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: 430 Mk 3  
Bukit Indra Muda  
14000, Bukit Mertajam  
Pulau Pinang  
Tarikh: 28.April.2008

PUAN ROSLEEN BINTI ABDUL SAMAD  
Nama Penyelia

Tarikh: 28.April.2008

CATATAN: \*Tesis dimaksudkan sebagai Laporan Akhir Projek Sarjana Muda (PSM)

\*\* Jika tesis ini SULIT atau TERHAD, sila lampirkan surat daripada pihak berkuasa.

**E-RESIDENCE INFORMATION SYSTEM for UiTM**

**ZURINA BT. AHMAD**

**This report is submitted in partial fulfillment of the requirements for the  
Bachelor of Computer Science (Database Management)**


**FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY  
UNIVERSITI TEKNIKAL MALAYSIA MELAKA  
2008**


## DECLARATION

I hereby declare that this project report entitle

### **E-RESIDENCE INFORMATION SYSTEM for UiTM**

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

STUDENT :  Date: 28/4/2008  
(ZURINA BT.AHMAD)

SUPERVISOR :  Date: 28/4/2008  
(PUAN ROSLEEN BT. ABDUL SAMAD)

## **DEDICATION**

To my beloved mother, Madam Amnah Bt. Ahmad

And also to my brother and sisters.

Thank you very much for the fully support.

## ACKNOWLEDGEMENT

Alhamdulillah to ALLAH SWT for his gratefulness and kindness for allowing me and help me in so many ways in completing my Project Sarjana Muda.

I would like to express my appreciation to Universiti Teknikal Malaysia Melaka (UTeM) for offering this course, BITU 3973 Projek Sarjana Muda (PSM) that really help me in exploring systems and develop a system. The most important person that I would like to express my thankfulness is to my supervisor Madam Rosleen bt. Abdul Samad, who has guide and help me in completing this project successfully.

My heartiest thanks to my family and all my fiends for all their support. As for my special friend, thank you so much for supporting me mentally, emotionally and spiritually.

Thank you.

## ABSTRACT

E-Residence Information System for UiTM is an application of web based database system that enable the staff, student and outsider agency to make hostel application easily by using web base system. This application is focused to be used by staff and student of UiTM for UiTM hostel application process. The staff and *Pengurus asrama* will be the administrator of the system where they have the authority to control the system fully. The scope that exist in this system are hostel application online, approving confirmation, check status online, searching rented house and generate report/statistic module. This application will be developed using PHP as the programming language and MySQL as the database in order to build this web page. Methodology that is used to build up the ERIS system using the Database Life Cycle (DBLC) while concept prototyping model is used to complete each task in this system.

## ABSTRAK

E-Residence Information System for UiTM adalah satu aplikasi pangkalan data web yang membolehkan staf, pelajar, dan juga agensi luar untuk membuat permohonan asrama dengan mudah dengan menggunakan sistem berasaskan web. Sasaran pengguna untuk aplikasi ini adalah staf dan pelajar UiTM Permatang Pauh untuk membuat proses permohonan asrama. Staf dan Pengurus Asrama memainkan peranan sebagai pentadbir sistem dimana mereka berkecenderungan untuk menggunakan sistem ini. Skop yang terdapat di dalam sistem ini adalah permohonan asrama secara *online*, kelulusan permohonan, semakan secara online, carian rumah sewa dan hasil laporan /statistik. Aplikasi ini dibangunkan dengan menggunakan bahasa pengaturcaraan PHP MyAdmin dan juga MYSQL sebagai pangkalan data untuk membina laman web ini. Metodologi yang digunakan untuk membangunkan sistem ini adalah Kitar Hayat Pembangunan Pangkalan Data manakala konsep model percubaan digunakan untuk menyiapkan setiap peringkat di dalam sistem ini.



## TABLE OF CONTENTS

<b>CHAPTER</b>	<b>SUBJECT</b>	<b>PAGE</b>
	<b>DECLARATION</b>	<b>ii</b>
	<b>DEDICATION</b>	<b>iii</b>
	<b>ACKNOWLEDGEMENTS</b>	<b>iv</b>
	<b>ABSTRACT</b>	<b>v</b>
	<b>ABSTRAK</b>	<b>vi</b>
	<b>TABLE OF CONTENTS</b>	<b>vii</b>
	<b>LIST OF TABLES</b>	<b>xiii</b>
	<b>LIST OF FIGURES</b>	<b>xv</b>
	<b>LIST OF ABBREVIATIONS</b>	<b>xviii</b>
	<b>LIST OF APPENDIXES</b>	<b>xix</b>
 <b>CHAPTER</b>		
<b>I</b>	<b>INTRODUCTION</b>	
	1.1 Project Background	1
	1.2 Problem Statements	2
	1.3 Objective	3
	1.4 Scope	4
	1.5 Project Significance	6
	1.6 Expected Output	7



1.7	Conclusion	8
-----	------------	---

**CHAPTER LITERATURE REVIEW AND PROJECT  
II METHODOLOGY**

2.1	Introduction	9
2.2	Fact and Findings	10
2.2.1	Domain	10
2.2.2	Existing System	11
2.2.2.1	Universiti Teknikal Malaysia Melaka website	11
2.2.2.2	UPM website	12
2.2.2.3	UiTM Shah Alam's website	13
2.2.2.4	Universiti Teknikal Malaysia Melaka website	15
2.2.2.5	National Low School	16
2.2.2.6	Servite Houses	17
2.2.2.7	Case study 1: Open Source Technology	18
2.2.2.8	Case study 2: Web Base Application	20
2.2.3	Technique	21
2.3	Project Methodology	22
2.3.1	Planning Phase	23
2.3.2	Analyze Phase	24
2.3.3	Design Phase	24
2.3.4	Implementation Phase	24
2.3.5	Database Initial Study	26
2.3.6	Database Design	26
2.3.7	Implementation and Loading	28
2.3.8	Testing and Evaluation	28
2.3.9	Operation	29

2.3.10	Maintenance and Evolution	29
2.4	Project Requirements	30
2.4.1	Software Requirements	30
2.4.2	Hardware Requirements	31
2.4.3	Other requirements	33
2.5	Project Schedule and Milestones	33
2.5.2	Gantt Chart	36
2.6	Conclusion	37

## **CHAPTER III**

### **ANALYSIS**

3.1	Introduction	38
3.2	Problem Analysis	39
3.2.1	Analysis of Current System	39
3.2.2	Problem statement(s) of current system	39
3.2.3	Flow chart for the Current System	40
3.3	Requirement analysis	42
3.3.1	Data Requirement	43
3.3.2	Functional Requirement	43
3.3.2.1	Scope	43
3.3.2.2	Context Diagram for System-To-Be	45
3.3.2.3	Data Flow diagram (DFD) for system-to-be	46
3.3.3	Non-functional Requirement	50
3.3.4	Others Requirement	50
3.3.4.1	Software Requirement	50
3.3.4.2	Hardware Requirement	52
3.4	Conclusion	54

**CHAPTER  
IV**

**DESIGN**

4.1	Introduction	55
4.2	High-Level Design	56
4.2.1	System Architecture	56
4.2.1.1	Software Architecture	56
4.2.2	User Interface Design	58
4.2.2.1	Navigation Design	58
4.2.2.2	Input Design	59
4.2.2.3	Output Design	61
4.2.3	Conceptual and Logical Database Design	61
4.2.3.1	Entity Relationship Diagram (ERD)	61
4.2.3.2	Logical Database Design	63
4.2.3.3	DBMS Selection	64
4.3	Detailed Design	66
4.3.1	Software Specification	66
4.3.2	Physical Database Design	66
4.3.2.1	Data Definition Language (DDL)	66
4.3.2.2	Design security Mechanism Software Architecture Database Contingency	71
4.3.2.3	(Backup and Recovery Mechanism)	74
4.4	Conclusion	78

**CHAPTER****V****IMPLEMENTATION**

5.1	Introduction	79
5.2	Software Development Environment Setup	80
5.3	Database Implementation	81
5.3.1	Query at Form Login	82
5.3.2	Query at Form view Student Application	83
5.3.3	Query at Form View Room	84
5.3.4	Query Report of Student Information	85
5.3.5	Query at Graph of Status Information	85
5.4	Software Configuration Management	86
5.4.1	Configuration Environment Setup	87
5.4.2	Version Control Procedure	87
5.5	Implementation Status	89
5.6	Conclusion	90

**CHAPTER****VI****TESTING**

6.1	Introduction	91
6.2	Test Plan	92
6.2.1	Test Organization	92
6.2.2	Test Environment	93
6.2.3	Test Schedule	93
6.3	Test Strategy	94
6.3.1	Classes of tests	95
6.4	Test Design	96
6.4.1	Test Description	96

6.4.2	Test Data	97
6.5	Test Case Result and Analysis	98
6.6	Conclusion	99
<b>CHAPTER</b>	<b>PROJECT CONCLUSION</b>	
<b>VII</b>		
7.1	Observation on Weakness and Strengths	100
7.1.1	Strengths	100
7.1.2	Weaknesses	101
7.2	Propositions for Improvement	102
7.3	Contribution	102
7.4	Conclusion	103
<b>REFERENCES</b>		104
<b>BIBLIOGRAPHY</b>		106
<b>APPENDIXES</b>		107

## LIST OF TABLES

TABLE	TITLE	PAGE
2.1	Criteria and Description of Open Source	18
2.2	Software Specification	30
2.3	Hardware Requirements for Computer Server	32
2.4	Hardware Requirements for Computer Client	32
2.5	Networking Requirement	33
2.6	Project Schedule	34
3.1	List of Software	51
3.2	Hardware Requirements for Computer Server	53
3.3	Hardware Requirements for Computer Client	53
4.1	Login Page – Input Design Field	60
4.2	Privileges for User	72
4.3	Privileges for Admin	72
5.1	Environment Setup	81
5.2	MySQL Configuration for ERIS	81
5.3	Version Control Procedure	89
6.1	Test Organization	92
6.2	Test Environment	93
6.3	Test Schedule	94
6.4	Description of Login Module	97

<b>6.5</b>	<b>Test Data for Login Module</b>	<b>98</b>
<b>6.6</b>	<b>Test Result for Login Module</b>	<b>99</b>



## LIST OF FIGURES

FIGURE	TITLE	PAGE
2.1	Universiti Teknikal Malaysia Melaka Form	12
2.2	Universiti Putra Malaysia Form	13
2.3	UiTM Shah Alam's Website	14
2.4	Universiti Teknikal Malaysia Melaka Form	15
2.5	National Low School Website	16
2.6	Servite Houses Website	17
2.7	Prototyping Model	23
2.8	The Database Life Cycle (DBLC)	25
3.1	Flow Chart of Student Application for the Current System	41
3.2	Flow Chart of Outsider Agency Application for the Current System	41
3.3	Flow Chart of Advertised Rented House for the Current System	42
3.4	Context Diagram for System to be	45
3.5	DFD Level 0 for System to be.	46
3.6	DFD Level 1 for Login	47
3.7	DFD Level 1 for Hostel Application	47

<b>3.8</b>	<b>DFD Level 1 for Approving Confirmation</b>	<b>48</b>
<b>3.9</b>	<b>DFD Level 1 for Check Result Online</b>	<b>48</b>
<b>3.10</b>	<b>DFD Level 1 for Searching Rented House</b>	<b>49</b>
<b>3.11</b>	<b>DFD Level 1 For Generate Statistic Module</b>	<b>49</b>
<b>4.1</b>	<b>Three Tier Architecture</b>	<b>57</b>
<b>4.2</b>	<b>Navigation Design</b>	<b>59</b>
<b>4.3</b>	<b>Input Design for Login Page</b>	<b>60</b>
<b>4.4</b>	<b>Entity Relationship Diagram (ERD) for the System</b>	<b>62</b>
<b>4.5</b>	<b>Create Database</b>	<b>67</b>
<b>4.6</b>	<b>Create Table login</b>	<b>67</b>
<b>4.7</b>	<b>Create Table hostel</b>	<b>67</b>
<b>4.8</b>	<b>Create Table contact</b>	<b>68</b>
<b>4.9</b>	<b>Create Table merit</b>	<b>68</b>
<b>4.10</b>	<b>Create Table nr_student</b>	<b>68</b>
<b>4.11</b>	<b>Create Table outsider_agency</b>	<b>68</b>
<b>4.12</b>	<b>Create Table qualified</b>	<b>69</b>
<b>4.13</b>	<b>Create Table rented_house</b>	<b>69</b>
<b>4.14</b>	<b>Create Table room_application</b>	<b>69</b>
<b>4.15</b>	<b>Create Table room_availability</b>	<b>69</b>
<b>4.16</b>	<b>Create Table semester</b>	<b>70</b>
<b>4.17</b>	<b>Create Table staff</b>	<b>70</b>
<b>4.18</b>	<b>Create Table student</b>	<b>70</b>
<b>4.19</b>	<b>Create Index on Table staff</b>	<b>71</b>
<b>4.20</b>	<b>Creating Privilege in phpMyAdmin</b>	<b>72</b>
<b>4.21</b>	<b>Selection Database for Creating Privilege</b>	<b>73</b>
<b>4.22</b>	<b>Edit the User Privilege</b>	<b>73</b>
<b>4.23</b>	<b>User Login Information</b>	<b>73</b>
<b>4.24</b>	<b>Check the User Privilege</b>	<b>74</b>
<b>4.25</b>	<b>Backup and Recovery in phpMyAdmin</b>	<b>75</b>

<b>4.26</b>	<b>Back up and Recovery in phpMyAdmin</b>	<b>76</b>
<b>4.27</b>	<b>Save the Database Back Up</b>	<b>76</b>
<b>4.28</b>	<b>Location of Database Back Up</b>	<b>77</b>
<b>4.29</b>	<b>Download Database Back Up</b>	<b>77</b>
<b>5.1</b>	<b>Software Architecture</b>	<b>80</b>
<b>5.2</b>	<b>Query at Form Login</b>	<b>82</b>
<b>5.3</b>	<b>Query at Form View Student Application</b>	<b>83</b>
<b>5.4</b>	<b>Output of Query from Student Application</b>	<b>84</b>
<b>5.5</b>	<b>Query form View Room</b>	<b>84</b>
<b>5.6</b>	<b>Query Report of Student Information</b>	<b>85</b>
<b>5.7</b>	<b>Query Report of Status Application</b>	<b>85</b>
<b>5.8</b>	<b>Output Graph of Querying Status Application</b>	<b>86</b>
<b>5.9</b>	<b>Tracking Source Code Version by Window</b>	<b>87</b>
<b>5.10</b>	<b>Database Back Up</b>	<b>88</b>

**LIST OF ABBREVIATIONS**

<b>TERM</b>	<b>DESCRIPTION</b>
FTMK	- Fakulti Teknologi Maklumat dan Komunikasi
ERIS	- E-Residence Information System for UiTM
DBMS	- Database Management System
DFD	- Data Flow Diagram
DDLC	- Database Life Cycle
EERD	- Extended Entity Relationship Diagram
ERD	- Entity Relationship Diagram
FK	- Foreign Key
LAN	- Local Area Network
PK	- Primary Key
SQL	- Structured Query Language
URL	- Uniform Resource Locator
UTeM	- Universiti Teknikal Malaysia Melaka
WWW	- World Wide Web
PHP	Hypertext Pre Processor

**LIST OF APPENDIXES**

<b>APPENDIX</b>	<b>TITLE</b>	<b>PAGE</b>
<b>A</b>	<b>Gantt Chart</b>	<b>107</b>
<b>B</b>	<b>Data Requirement</b>	<b>109</b>
<b>C</b>	<b>Input Design</b>	<b>116</b>
<b>D</b>	<b>Output Design</b>	<b>127</b>
<b>E</b>	<b>Data Dictionary</b>	<b>133</b>
<b>F</b>	<b>Data Normalization</b>	<b>141</b>
<b>G</b>	<b>Software Specification</b>	<b>146</b>
<b>H</b>	<b>Implementation Status</b>	<b>152</b>
<b>I</b>	<b>Test Description</b>	<b>156</b>
<b>J</b>	<b>Test Data</b>	<b>160</b>
<b>K</b>	<b>Test Result and Analysis</b>	<b>163</b>
<b>L</b>	<b>User Manual</b>	<b>167</b>

## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1 Project Background**

UiTM is Malaysia's premier institution of higher learning that has experienced a phenomenal growth since its inception in 1956. The university has expanded nationwide with 3 satellite campuses, 12 branch campuses, 8 city campuses, 19 affiliated colleges and a smart campus for the future.

The current system for UiTM college department is student needs fulfill paper forms when applying hostel during the application is open, normally before the end of semester. The paper form contains the information about students, and reason for applying hostel. After finish fulfills the form, they needs submit the form to college office for application process. This manual technique is less practical because the process using a lot of time from start apply until finish the process. Besides that, the manual technique also use a lot of paper to records every applying paper form from the student. Because of that, demanding of paper from college department will be increased especially when application hostel are opened to the student.

The idea to develop E-Residence Information system for UiTM is to make easy applying hostel from student through online. By this additional module, student will make applying hostel without fulfill the paper form like before. When applying hostel



online, student only need to fulfill form that provided in the system and submitted it for application process. Student will check their status application whether it is applicable or not to live in the hostel. Besides that, during the semester break the outsider agency request to living at the hostel. The outsider agencies request it for attend the seminar or training at the UiTM's campuses. The system will focus to student that wants to applying hostel online, but at the same time non residence student also can use this website in searching house or room to be rented. Thus, student will get the solution by searching the list that advertised in this system. Student can make searching through rent cost and also type of residence.

## **1.2 Problem Statement(s)**

There were many problems for the current system, which is limited storage to keeps all the data. Before this, all the data will be record in MS Excel. There are a lot of data in database system like basic student information, apply record information, and user record information. These data needs a huge database application to keeps all the records.

The system also is insecure because not specified which user can access the system. It is not possible way to make sure that the data is secure because unauthorized data can access it and it will affect the data is safety.

Besides that, staff used a lot of paper to prepare paper form to record the application from student. Staff need to keeps for every applying paper form from students safely to make sure all application will be process



Other than that, data about non resident student also gathered manually. Student needs to fulfill paper form that will get from college department. Thus, it will take a time to go to college department and it is not effective when student busy to attend their classes. After finish fulfills the paper form, student needs to submit it by hand to the staff.

Possibility lost the data also is very high because using manually technique to collect the application form. Staff will lost the paper form, thus it will effect the student application could not be process.

### **1.3 Objective**

- 1.3.1 To make the system more secure by using the correctly username and password that needs to created by the user when make a registration. Only authorized user will be access into the system
- 1.3.2 To provide a system that can make easy to collect data from student. The data also can be access without any delayed.
- 1.3.3 To provide a system that will record the data smoothly and reduce a time.
- 1.3.4 To make the integrated system that ability to make searching the student residence information by enters student matric number into the system.
- 1.3.5 To provide a secure system that can avoid implication of loosing the data by using the flexible and easy to use system.

## 1.4 Scope

There are two type modules in this system, which is:

a) User

i) Student:

Student can add the basic information such as academic information, vehicle and related individual information for emergency cases. Student also can apply hostel online with fulfill form that has been loaded in the system. Student also can check the result whether it is applicable to accepted or not. Student can make searching house or room that advertised in the system

ii) Staff:

Staff will receive the application form from student. Staff also needs to key in the data about the emptiness of room in the hostel through online and make placement for student application. Staff will advertise the house or room that will be rented. Staff also can generate a statistic about report of students living in hostel, status application, and specify which area that rented the most of student.

iii) Outsider agency:

The outsider agency such as the government department or education institution can apply living at the hostel during the semester break by download application form through website.

iv) Admin:

Admin is important to make sure the system maintain its functionality and it is available to use by user.