BORANG PENGESAHAN STATUS TESIS *

JUDUL: ORPHAN HOME MANAGEMENT SYSTEM

SESU PENGAYAN: 2008

NUR AISYAH BINTI NASIR

(HURUF BESAR)

mengaku membenarkan tesis (PSM/ Sarjana/ Doktor Falsafah) ini disimpan di Perpustakaan Teknologi Maklumat dan Komunikasi 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 berdasarkan 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)


86800 Mersing, Johor

Nama Peyelia

AMIR SYARIFUDDIN KASIM

Tanggal: 20/06/2008

Tanggal: 24/06/08

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

© Universiti Teknikal Malaysia Melaka
ORPHAN HOME MANAGEMENT SYSTEM

NUR AISYAH BINTI NASIR

UNIVERSITI TEKNIKAL MALAYSIA MELAKA
ORPHAN HOME MANAGEMENT SYSTEM

NUR AISYAH BINTI NASIR

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 entitled

**ORPHAN HOME MANAGEMENT SYSTEM**

is written by me and is my own effort and that no part has been plagiarized

without citations.

STUDENT : ___________________________ Date: __22/6/2008__
(NUR AISYAH BINTI NASIR)

SUPERVISOR : ___________________________ Date: __24/6/08__
(EN. AMIR SYARIFUDIN BIN KASIM)
DEDICATION

A special dedication goes to my beloved parents En. Nasir Bin Abd. Hamid and Pn. Rohana Binti Hamzah because giving support in completing my final year project which is entitled Orphan Home Management System (OHMS).

I also would like to dedicate to the people who help and support direct or indirect in finishing my project successfully.
ACKNOWLEDGEMENTS

I would like to gratefully acknowledge the contribution of several people who helped me to complete this thesis. First, I would like to convey my grateful thanks to En. Amir Syarifuddin Bin Kasim, my supervisor at Faculty of Information Technology and Communication, Universiti Teknikal Malaysia Melaka (UTeM) for his valuable contribution and assistance in the preparation of this thesis and development of my “Orphan Home Management System” (OHMS).

A note of thanks is dedicated to few lecturers in UTeM in giving me some ideas, information and also for spending their valuable time and effort. Their generosity can only be expressed by me by being thankful for having such kind lecturers who are supportive.

Last but no least, to all might have involved directly or indirectly in developing this system is much appreciated and a note of thanks from me.
ABSTRACT

The Orphan Home Management System (OHMS) is developed mainly for orphan home center which is ‘Pertubuhan Kebajikan Anak-anak Yatim Islam Daerah Jasin’ in Jasin, Malacca to manage the orphan registration and user maintenance. It is a standalone system which only can be access on a single computer which the system resides. The system is developed based on the center’s size and requirements. The main users of the system are the staffs and administrator or manager. The registration process of the orphans is managed by the staffs while the system administrator is only involved in managing the staffs record and maintenance. Only administrator has the authority and privileges to do the system maintenance such as backup and recovery if there is system failure. The methodology of this system is Structured System Analysis and Design (SSADM). An analysis study has been done based on the current manual system and all the problems statements and requirements have been identified. Moreover, OHMS is developed to solve the weakness of the current orphan registration at the orphan home at Jasin, Malacca. The interfaces for OHMS have been designed according to the requirement and needs of the orphan home. Rather than that, this system also has been tested and evaluated in real life. This Orphan Home Management System will help to improve the performance of current situation and overcome the problems that arise nowadays.
ABSTRAK

# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>CHAPTER</th>
<th>SUBJECT</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DECLARATION</td>
<td>ii</td>
</tr>
<tr>
<td></td>
<td>DEDICATION</td>
<td>iii</td>
</tr>
<tr>
<td></td>
<td>ACKNOWLEDGEMENTS</td>
<td>iv</td>
</tr>
<tr>
<td></td>
<td>ABSTRACT</td>
<td>v</td>
</tr>
<tr>
<td></td>
<td>ABSTRAK</td>
<td>vi</td>
</tr>
<tr>
<td></td>
<td>TABLE OF CONTENTS</td>
<td>vii</td>
</tr>
<tr>
<td></td>
<td>LIST OF TABLES</td>
<td>xii</td>
</tr>
<tr>
<td></td>
<td>LIST OF FIGURES</td>
<td>xiv</td>
</tr>
<tr>
<td>CHAPTER I</td>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>1.1</td>
<td>Project Background</td>
<td>1</td>
</tr>
<tr>
<td>1.2</td>
<td>Problem Statements</td>
<td>2</td>
</tr>
<tr>
<td>1.3</td>
<td>Objectives</td>
<td>3</td>
</tr>
<tr>
<td>1.4</td>
<td>Scope</td>
<td>4</td>
</tr>
<tr>
<td>1.5</td>
<td>Project Significance</td>
<td>7</td>
</tr>
<tr>
<td>1.6</td>
<td>Expected Output</td>
<td>8</td>
</tr>
<tr>
<td>1.7</td>
<td>Conclusion</td>
<td>9</td>
</tr>
</tbody>
</table>
CHAPTER II  LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1 Introduction 10
2.2 Facts and Findings 11
  2.2.1 Domain 11
  2.2.2 Existing System 11
  2.2.3 Back End 16
  2.2.4 Front End 18
  2.2.5 Techniques 19
2.3 Project Methodology 19
  2.3.1 Database Development Methodology 20
  2.3.1 System Development Methodology 21
2.4 Project Requirements 24
  2.4.1 Software Requirements 24
  2.4.2 Hardware Requirements 25
2.5 Project Schedule and Milestones 25
2.6 Conclusion 29

CHAPTER III  ANALYSIS

3.1 Introduction 30
3.2 Problem Analysis 31
3.3 Requirement Analysis 32
  3.3.1 Data Requirement 32
  3.3.2 Functional Requirement 33
  3.3.3 Non-functional Requirement 46
  3.3.4 Others Requirements 46
    3.3.4.1 Software Requirement 46
CHAPTER IV DESIGN

4.1 Introduction 49

4.2 High-Level Design 50
   4.2.1 System Architecture 50
   4.2.2 User Interface Design 52
      4.2.2.1 Navigation Design 53
      4.2.2.2 Input Design 54
      4.2.2.3 Output Design 55
   4.2.3 Conceptual and Logical Database Design 56
      4.2.3.1 Entity Relationship Diagram 57
      4.2.3.2 Data Dictionary 59
      4.2.3.3 Database Management
         Selection 68

4.3 System Architecture 70
   4.3.1 Software Design 70
      4.3.1.1 Login 70
      4.3.1.2 Staff Registration 70
      4.3.1.3 Search Staff Record 71
      4.3.1.4 Create User 71
   4.3.2 Physical Database Design 71
      4.3.2.1 Data Definition Language (DDL) 71
      4.3.2.2 User View 77
      4.3.2.3 Security Mechanism 77
      4.3.2.4 Database Contingency 81
CHAPTER V IMPLEMENTATION
5.1 Introduction 86
5.2 Software Development Environment Setup 87
  5.2.1 Software Setup 87
  5.2.2 Database Environment Setup 84
5.3 Database Implementation 91
  5.3.1 Displaying Data from Multiple Tables 91
  5.3.2 Restricting and Sorting Data 91
  5.3.3 Aggregation Data Using Group Function 92
5.4 Software Configuration Management 92
  5.4.1 Configuration Environment Setup 92
  5.4.2 Version Control Procedure 93
5.5 Implementation Status 94
5.6 Conclusion 96

CHAPTER VI TESTING
6.1 Introduction 97
6.2 Test Plan 98
  6.2.1 Test Organization 98
  6.2.2 Test Environment 99
  6.2.3 Test Schedule 101
6.3 Test Strategy 102
  6.3.1 Classes of tests 104
6.4 Test Design 105
CHAPTER VII  PROJECT CONCLUSION  119
7.1 Observation on Weaknesses and Strengths  119
  7.1.1 Strength  120
  7.1.2 Weakness  120
7.2 Propositions for Improvement  120
7.3 Contribution  121
7.4 Conclusion  121

REFERENCES  123

BIBLIOGRAPHY  124

APPENDICES  125
# LIST OF TABLES

<table>
<thead>
<tr>
<th>TABLE</th>
<th>TITLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Comparison of the existing systems</td>
<td>15</td>
</tr>
<tr>
<td>2.2</td>
<td>SQL Server Hardware Requirements</td>
<td>16</td>
</tr>
<tr>
<td>2.3</td>
<td>Comparison of Life-cycle models</td>
<td>22</td>
</tr>
<tr>
<td>3.1</td>
<td>Functional Requirements</td>
<td>33</td>
</tr>
<tr>
<td>3.2</td>
<td>Non-functional Requirements</td>
<td>46</td>
</tr>
<tr>
<td>4.1</td>
<td>Input Design</td>
<td>54</td>
</tr>
<tr>
<td>4.2</td>
<td>Data Dictionary of Student table</td>
<td>59</td>
</tr>
<tr>
<td>4.3</td>
<td>Data Dictionary of Tuition table</td>
<td>60</td>
</tr>
<tr>
<td>4.4</td>
<td>Data Dictionary of Enrollment table</td>
<td>60</td>
</tr>
<tr>
<td>4.5</td>
<td>Data Dictionary of Adopter table</td>
<td>61</td>
</tr>
<tr>
<td>4.6</td>
<td>Data Dictionary of Guardian table</td>
<td>62</td>
</tr>
<tr>
<td>4.7</td>
<td>Data Dictionary of Income table</td>
<td>63</td>
</tr>
<tr>
<td>4.8</td>
<td>Data Dictionary of Sibling table</td>
<td>64</td>
</tr>
<tr>
<td>4.9</td>
<td>Data Dictionary of Staff table</td>
<td>65</td>
</tr>
<tr>
<td>4.10</td>
<td>Data Dictionary of Users table</td>
<td>66</td>
</tr>
<tr>
<td>4.11</td>
<td>Data Dictionary of School table</td>
<td>66</td>
</tr>
<tr>
<td>4.12</td>
<td>Data Dictionary of school_history table</td>
<td>67</td>
</tr>
<tr>
<td>4.13</td>
<td>Data Dictionary of stud_guardian table</td>
<td>67</td>
</tr>
<tr>
<td>4.14</td>
<td>Data Dictionary of room table</td>
<td>68</td>
</tr>
<tr>
<td>Section</td>
<td>Title</td>
<td>Page</td>
</tr>
<tr>
<td>---------</td>
<td>-------</td>
<td>------</td>
</tr>
<tr>
<td>4.15</td>
<td>DBMS for MySQL Database</td>
<td>68</td>
</tr>
<tr>
<td>5.1</td>
<td>Implementation Status Schedule</td>
<td>95</td>
</tr>
<tr>
<td>6.1</td>
<td>Test Organization</td>
<td>98</td>
</tr>
<tr>
<td>6.2</td>
<td>OHMS Application Environment</td>
<td>100</td>
</tr>
<tr>
<td>6.3</td>
<td>System Software Environment</td>
<td>100</td>
</tr>
<tr>
<td>6.4</td>
<td>System Hardware Environment</td>
<td>100</td>
</tr>
<tr>
<td>6.5</td>
<td>Test Schedule for OHMS Testing Process</td>
<td>101</td>
</tr>
<tr>
<td>6.6</td>
<td>Student Registration module testing</td>
<td>105</td>
</tr>
<tr>
<td>6.7</td>
<td>User Authentication module testing</td>
<td>106</td>
</tr>
<tr>
<td>6.8</td>
<td>Room Selector module testing</td>
<td>107</td>
</tr>
<tr>
<td>6.9</td>
<td>Assigning subjects module testing</td>
<td>107</td>
</tr>
<tr>
<td>6.10</td>
<td>Adopter record module testing</td>
<td>108</td>
</tr>
<tr>
<td>6.11</td>
<td>Staff Registration module testing</td>
<td>109</td>
</tr>
<tr>
<td>6.12</td>
<td>Back up and recovery module testing</td>
<td>110</td>
</tr>
<tr>
<td>6.13</td>
<td>Student Registration Test Data</td>
<td>110</td>
</tr>
<tr>
<td>6.14</td>
<td>User Authentication Test Data</td>
<td>111</td>
</tr>
<tr>
<td>6.15</td>
<td>Room Selector Test Data</td>
<td>112</td>
</tr>
<tr>
<td>6.16</td>
<td>Tuition Record Test Data</td>
<td>112</td>
</tr>
<tr>
<td>6.17</td>
<td>Adopter Record Test Data</td>
<td>113</td>
</tr>
<tr>
<td>6.18</td>
<td>Staff Registration Test Data</td>
<td>113</td>
</tr>
<tr>
<td>6.19</td>
<td>Back up and Recovery Test Data</td>
<td>114</td>
</tr>
<tr>
<td>6.20</td>
<td>Test Result and Analysis for Student Registration</td>
<td>114</td>
</tr>
<tr>
<td>6.21</td>
<td>Test Result and Analysis for User Authentication</td>
<td>115</td>
</tr>
<tr>
<td>6.22</td>
<td>Test Result and Analysis for Room Selector</td>
<td>115</td>
</tr>
<tr>
<td>6.23</td>
<td>Test Result and Analysis for Tuition Record</td>
<td>116</td>
</tr>
<tr>
<td>6.24</td>
<td>Test Result and Analysis for Adopter Record</td>
<td>116</td>
</tr>
<tr>
<td>6.25</td>
<td>Test Result and Analysis for Staff Registration</td>
<td>117</td>
</tr>
<tr>
<td>6.26</td>
<td>Test Result and Analysis for Back up and Recovery</td>
<td>117</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>DIAGRAM</th>
<th>TITLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>E-school Management System</td>
<td>12</td>
</tr>
<tr>
<td>2.2</td>
<td>Health Care Management System</td>
<td>13</td>
</tr>
<tr>
<td>2.3</td>
<td>Orphan Management System</td>
<td>14</td>
</tr>
<tr>
<td>2.4</td>
<td>Database Life Cycle</td>
<td>20</td>
</tr>
<tr>
<td>2.5</td>
<td>The Waterfall Module of The Software Life Cycle</td>
<td>22</td>
</tr>
<tr>
<td>3.1</td>
<td>DFD of current system</td>
<td>31</td>
</tr>
<tr>
<td>3.2</td>
<td>Flow Chart of current system</td>
<td>31</td>
</tr>
<tr>
<td>3.3</td>
<td>Decomposition Diagram for OHMS</td>
<td>34</td>
</tr>
<tr>
<td>3.4</td>
<td>Context Diagram for OHMS</td>
<td>36</td>
</tr>
<tr>
<td>3.5</td>
<td>Level 0 DFD for OHMS</td>
<td>37</td>
</tr>
<tr>
<td>3.6</td>
<td>Level 1 DFD for process Log in</td>
<td>38</td>
</tr>
<tr>
<td>3.7</td>
<td>DFD Level 1 for Process Student Information Record</td>
<td>39</td>
</tr>
<tr>
<td>3.8</td>
<td>DFD Level 1 for Tuition Record</td>
<td>40</td>
</tr>
<tr>
<td>3.9</td>
<td>DFD Level 1 for process Record Adopter Information</td>
<td>41</td>
</tr>
<tr>
<td>3.10</td>
<td>DFD Level 1 for Generate Report</td>
<td>42</td>
</tr>
</tbody>
</table>
3.11 DFD Level 1 for Back up 43
3.12 DFD Level 1 for Recovery 44
3.13 DFD Level 1 for Manage Staff 45
4.1 The Architecture of Stand alone Application 50
4.2 Navigation Flow 53
4.3 Statistic Report 56
4.4 Entity Relationship Diagram of OHMS 57
4.5 User View for OHMS application 77
4.6 User Level 80
4.7 Database back up 81
4.8 Trigger ins_adopt 82
4.9 Trigger upd_adopt 82
4.10 Trigger adopter_delete_trigger 83
4.11 ADDSTAFF stored procedure 84
5.1 Start the Database Service Setup 88
5.2 Flow to Version Control Procedure 93
5.3 Tracking of Source Code Version by Window 94
CHAPTER I

INTRODUCTION

1.1 Project Background

The Orphan Home Management System is developing for a specific Orphan Home Care which is located in Jasin, Malacca. The system is not exists before because the center’s management is still using the file system instead of computerizing system. The Orphan Home Management System is going to be developed to overcome the problems that occur in the center’s management. It is purposely to handle the registration, orphan’s records as well as staff’s records and the others important details that are necessary to be keep.

The propose Orphan Home Management System is expected to overcome the general problems in handling data such as data redundancy, security of data, time consuming and recovery manners. To implement the objectives of the system, a few aspects will be included as well as the database because database is the most important part of system. A database is a vital thing since it holds all the data kept.
1.2 Problem Statements

As the current system is a manual filing system, there are several problems that are state for the current system:

i. Lack of security
   Usually for normal filing system there is lack of security as there is no limitation on who can access the files. Anyone can change the records and this may cause serious trouble in the future. For example, intruders can easily steal the important information about the orphan’s details or even an unauthorized staff may steal the sensitive information and sell it to the third party.

ii. Low data retrieval
   Through manual filing system, the data will be kept in file according to the year or company alphabetically. This may take time to search for the information needed in time as the staff may have to look the file one by one and other related file just to search for some information. For example, if the staff wants to search the donator’s name or details, the staff has to search on every file, one by one. It may consume longer time than what is expected.

iii. Data redundancy and consistency
   In a manual file system usually there are data redundancy and inconsistency. This is because the same data may be stored in various files as they are related with each other. This also causes of data anomalies and then inconsistency because the redundancy data are changed in one file but not in the others. For example, repetitive data might happen in a record of the orphanage because of unsystematic data management. Such as if a staff change their telephone number, the staff may change the information in one file but not the other which may also contain information, this may cause data anomalies.
iv. No backup and recovery

Manual files system has no backup and if the file of all the information lost or damage, the tuition center will lose all its valuable information. For example, the most important data of the home care center are the orphan's details and history records, if that data lost, the orphan home care center will face a bad impact where they may lose their important information for a future analysis.

1.3 Objectives

There are some objectives that have to be achieved through the system. The objectives are:

i) Secure system

Data stored in the home care's center database must be protected from being access by unauthorized users. In this system, users are provided with password that allows the assignment of access rights to specific authorized users. Password usually enforced at logon time.

ii) Faster data processing and accessing

To be fast in data processing and accessing by using query and index are required. This is because query and index will help to improve data retrieval and performance speed. For the solution primary and foreign key are created each time to retrieve the data from database.

iii) Data integrity

Data integrity enforced through for the proper use of primary and foreign key rule. The primary key will help to avoid data redundancy and inconsistency. So, there would not be redundancy data especially in inserting orphanage's data.
iv) Backup and recovery

Data backup and recovery create a safety values, allowing the database administrator to ensure the availability of consistent data. The system will used the centralized database and will make easy to backup the data. For example, all the information of the home care center, orphan and staffs will be back up in the external hard disc. So, if the database corrupts, we still can use the database in the external hard disc.

1.4 Scope

The system is going to be used by the staffs of the Orphan Home Care which is 'Pertubuhan Kebajikan Anak-anak Yatim' to save all the important data. Based on concepts, the system is designed especially for the chosen Orphan Home Care and it is a stand alone system. The scope includes the targeted user and function that involved in the system. The system does not cover the financial of the orphanage home.

1.4.1 User

The user of the Orphan Home Management System will be divided into high-level staff and low-level staff.

1.4.1.1 High-level staff

a) The administrator is the high-level staff, They have high level authority of using the system. Beside that, they know all the flow of the system and also can view all the details of the system.

b) The administrator has to make sure the system do not have problem and the low-level staff do not have problem when using the system.
c) The administrator will set the data policies for the company, set the standard for control and usage of data.

d) The administrator also has to make the back-up, maintenance and tuning of the system.

1.4.1.2 Low-level staff

a) Staff has to place for the registration of new orphan, such as personal details and others.

b) The staff also can add, update and search for the related data.

c) By the way, low-level staff also can delete the data that related to the registration.

1.4.2 Function

This system includes several functions which are:

1.4.2.1 Log In

Before using the system, the user needs to log in. After success, they can proceed with the system.

1.4.2.2 Registration

a) Add

The user can add new orphan or staff including the details into the database.

1.4.2.3 View Records

a) Search
The staff can search the data by id number, name of orphan or staffs. For example, the staffs can search the total orphan for each room.

b) Delete
The user can delete the data of the orphans and staffs. It includes the details of them.
c) Edit
They also can edit the changes of the orphan or staffs and save it as update data.

1.4.2.4 Tuition
a) Add
The staffs are able to add the details about the students who want to enroll for the tuition's subjects.

1.4.2.5 View Enrollment of tuition
a) Search
The staff can search the data by id number or name of subjects or orphan
b) Delete
The user can delete the data of the orphan and their enrollment.
c) Edit
They also can edit the changes of the enrollment and save it as update data.

1.4.2.6 Adopter
a) Add
The staffs are able to add the details about new adopter. The new adopter maybe a person or a family.

1.4.2.7 View Adopter
a) Search
The staff can search the data by id number or name of adopter.

b) Delete
The user can delete the data of the adopter. It includes the details of them.

c) Edit
They also can edit the changes of the adopter and save it as update data.

1.4.2.8 Back up and Recovery

a) Back up
The admin can do the database backup at any single time. The backup file will be saved based on version.

b) Recovery
The admin are able to retrieve the back up files to restore the database if the database damaged.

1.4.2.9 Monthly Report

a) Generate the reports of the orphans based on the records or the total orphans per year at the Orphan Home.

1.4.2.10 Log Out

After the user finish using the system, they need to log out from the system.

1.5 Project Significance

The projects significant of this project are:

a) Data storage management