SISTEM PENGURUSAN TANAH PERKUBURAN ISLAM

(E-KUBUR)

MEMAROZANAH BINTI MODIN

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

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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

2016

BORANG PENGESAHAN STATUS TESIS*

JUDUL: SISTEM PENGURUSAN TANAH PERKUBURAN ISLAM (E-KUBUR)

SESI PENGAJIAN: 2015/2016

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(HURUF BESAR)

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Tarikh: 25/08/16

CATATAN: * Tesis dimaksudkan sebagai Laporan Akhir Projek Sarjana Muda (PSM)
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is written by me and is my own effort and that no part has been plagiarized without citations.

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SUPERVISOR: _____ DATE: 25/08/16
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DEDICATION

To

My Parents & My Family

A strong and gentle soul who taught me to trust in Allah, believe in hard work, and that so much could be done with little. For earning an honest living for us and for supporting and encouraging me to believe in myself.

My Supervisor

Thank you for your dedication and effort has truly been my core of strength in completing my project.

My Friends

Thank you for always supporting and give the advice to be stronger.

ACKNOWLEDGEMENTS

I would like to express my appreciation to my supervisor Madam Safiza Suhana Kamal Baharin for her guidance and supporting during to complete this thesis. Without her valuable assistance, this thesis would not be complete. I am also indebted to lecturers of Faculty of Information and Communications Technology (FTMK).

I want to thank my friends for supported me in my project work and help, support and give some suggestions.

Finally, I would like to give special thanks to my parents and sibling who's always patient, helping me and give some advice to complete this thesis. Without their blessing, I would never have this chance to finish my thesis.

ABSTRAK

Sistem Pengurusan Tanah Perkuburan Islam (E-KUBUR) adalah aplikasi berasaskan web yang dibangunkan untuk membantu masjid yang menguruskan maklumat jenazah, kakitangan, dan tanah perkuburan. Matlamat utama projek ini untuk membina sistem yang boleh memaparkan maklumat mayat dan butiran tentang tanah perkuburan tersebut. E-KUBUR menggunakan V-Model sebagai metodologi pembangunan.

ABSTRACT

Sistem Pengurusan Tanah Perkuburan Islam (E-KUBUR) is a web-based application that developed to help the mosque that managing their information of the corpse, staff, lot and the cemetery. The main goal of this project to build the system that can display corpse information and lot details. E-KUBUR used V-Model as a development methodology. A programming language that used to develop this application is PHP with Oracle 11g XE. The target users of this application are mosque management such as an administrator, staff, and the public user.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATONS

E-KUBUR	**Sistem Pengurusan Tanah Perkuburan Islam**
DBMS	**Database Management System**
DFD	**Data Flow Diagram**
ERD	**Entity Relationship Diagram**
PK	**Primary Key**
FK	**Foreign Key**
SQL	**Structured Query Language**
DDL	**Data Definition Language**
DML	**Data Manipulation Language**

LIST OF ATTACHMENTS

CHAPTER I

INTRODUCTION

1.1 Project Background

The cemetery is clarified as an area of land used for burials. In Malaysia, there is the fourth category of cemetery based on religions which are Christians, Hindus, Buddha's and Muslims. For Muslim's grave used tombstone allocated at the grave to identify the owner. The area divides into several types of the cemetery and orderly by same local jurisdiction. Division under city council will give assistance for the burial. Although, the accumulated growth of population and number of death every day made the cemetery area chock-full and congested.

Nowadays, cemetery's management still neglected in this era of globalization. All the management still used manually. There are many problems with the administration of the Muslim cemetery at this time such as information's

hard to find and cause problems to the heirs who want to visit the grave. The responsible parties also do not have any data that is stored in writing or softcopy of burial plots after the funeral process is complete. The heirs will only remember their family graves site based on the tombstones in the cemetery or remember the lot location. Consequently, a database for burial and cemetery is needed to solve this problem. Therefore, this thesis to purpose a system name “Sistem Pengurusan Tanah Perkuburan Islam” or E-KUBUR.

The primary objectives of this system are to operate and manage the information and data relating to the death person among heir and managing the process for the funeral. Currently, the cemetery still using the old method to handles the death information by remembering the information. There is no sheet or hardcopy about the death information. This system is a medium between mosque management and heir. In this system, a grave lot will be calculated and get the total lot that available and non-available to the notification the mosque management how many grave lots left to the funeral on the cemetery. Besides, these systems also easily allow the mosque management to make a statistical analysis about the death that funeral on the cemetery or generate the report. Also, this system also provides the systematic and efficiently solution in managing the death record after the funeral process is complete.

Therefore, this site also distributing information about cemeteries. Scientific data related to the management bodies of Islam and most of all, it serves as a search site to grave found in the cemetery. Hence this facility will help beneficiaries identify lots that wish graves visited by including certain information and click the search button. Simplify the management of the mosque to plan the use of the cemetery in the future.

1.2 Problem Statement(s)

1. **Record all the death information and lot location still manually that are less efficient.**

   Regarding the grave position often heir of the deceased is always difficult to find the exact location of the cemetery there is always adding new graves will confuse beneficiaries. Besides that, the inheritor needs to take a lot of time to make sure the grave lot location is correct to visit.

2. **Operate and manage the death information and grave lot location still using manually.**

   The increasing growth of population and number of death daily made the cemetery area packed and crowded. Using manual system was no longer effective because the data would be redundant and management of mosque always changing. It's is difficult to find the employees that on duty to give the information than as an ordinary human, we 'II never run in making mistakes.

3. **Do not have a detailed report about the death information and grave lot location makes it difficult for management to do the data analysis.**

   All information is done with a manual; this will be tough for management to make a decision on determining the record and grave lot for analysis. Besides that, the current system does not provide the statistical analysis of death record and grave lot location.

1.3 Objective

The goals of developing E-KUBUR are identified based on the review of the problem statements. The purposes are listed as below:

i. **To develop a system that able to record the death person information after funeral complete.**

All the death record and grave location data will be stored and managed through E-KUBUR This system enable staff to add, view, on death information, a grave lot, report accordingly. Moreover, saving death and grave lot records into the system will be more secure as compared to paper-based records.

ii. **To generate a report that related to the death information and cemetery.**

This system will also produce a report relating to the death information and the grave lot. This report is to set up aims to provide useful information to management for the purpose of analysis.

iii. **To record the previous grave keeper and provide the history efficiently.**

These systems are keeping the last grave keeper or staff on duty for references.

1.4 Scope

The scope that incorporates in E-KUBUR is classified into two parts, which are involvement of user and types of module. The scope is explained as below:

i. Administrator

Admin is aiming to manage all information concerning the death information, grave lot, staff, and reporting. Admin can use the system to record and manage death information for all data in cemetery such as insert, update, delete, view and generate report documents.

ii. Staff

The staff is aiming to manage all information concerning the death information, grave lot, corpse, and reporting. Staff can use the system to record and manage death information for all data in cemetery such as insert, update, delete, view and generate report documents.

iii. Public User

Public user is aiming to search their family that related on the cemetery. The user can search the data by using the name of the death and identification card. The lot number of graves location will be displayed.

Modules that are comprised in E-KUBUR are listed as below:

a. Login Module

This module help authenticates the validity and eligibility of the administrators before he or she can use the system. Admin is required to log in using username and password. If either username or password is inserted wrongly, the system will be notification the login error message. A correct combination of username and password is needed to access the system. This is important to protect the confidentiality of the data and to prevent an unauthorized user from using, accessing and manipulating the system.

b. Registration Module

Prior utilize the system, resgistration needed for the system users proceed to the service provided.

c. Lot Module

This module manages the each lot has its lot number. These modules look like a map. The purpose to do it the map is to let the staff or management can check which lot still available and not available.

d. Calculation Module

This module provides the staff with accurate value about the lot number of lot grave cemetery. From the data, the status will be grouped and categorized accordingly. After that, the calculation process that involved is total up the lot grave number. Hence, staffs can view and read the calculated value without counting it manually.

e. Search Module

Seacrh for the burial grounds and display the details of information.

f. Generate Report Module

This module provides the report such as death list, grave list, and overall data report. All the report documents generated is completed along with the details and data needed. Therefore, staff can directly print out the report document without the need to edit or analyze.

1.5 Project Significance

The primary beneficial user that will get advantages from E-KUBUR is the staff of mosque management. The system provides a user-friendly interface to help the retrieval and management of the death data and grave lot information quickly. The goals for the duration of the structure of the system with a database that has allowed the system to be able to store an enormous record efficiently and more. Besides, the system also ensures all the data safely and ready to be displayed accordingly. Furthermore, the system eases and fastens the overall data process as the total time consuming in managing data is reduced. As a result, this enables staff of mosque to save a lot of time and energy to be spent on other meaningful works. Also, the system also ensures all the documents generated such as death record, grave lot report and a list of death.

1.6 Expected Output

The expected outcomes from E-KUBUR is as listed as below:

i. New computerized system to replace the manual data process.
ii. Death record monitoring and for staff to identify the lot graves.
iii. Accurate counting and calculation based on total cemetery area (acre).
iv. Generate document death record data.

1.7 Conclusion

Chapter introduction deliberated the introduction of the project named "E-KUBUR. This chapter is a preliminary step that describes why the system needs to build and how the system can help and solve the problems faced by cemetery management. A system that implement to transformed manual data process into a new system. The system will reduce data process time, increase the working efficiency and bring many beneficial values to both staff and heir regarding management.

For the system solves these problems, a methodological approach must be well established; necessary information must be obtained. The next chapter will describe the methodology used and the information gathered from all available resources.

CHAPTER II

PROJECT METHODOLOGY AND PLANNING

2.1 Introduction

The methodology is a method to achieve goals and planned results within a defined schedule while developing the system. This process is vital to estimate time of the system developed. For this E-KUBUR project will be applied V-Model because easy and simple to used then v-model perform testing earlier before coding (test designing). Besides, the defects are found at an early stage and make time saving. V-Model delineates a step in the software development cycle and corresponding testing stage which are user requirement, system specification, high-level design, low-level design, coding, unit testing, integration testing, system testing and acceptance testing. In this study, v-model utilize as the methodology during the develop the system.

2.2 Project Methodology

The technique that used to achieve this project is v-model. V-model is an enhanced version of the waterfall model whereby each level of the development life cycle is verified before going to the next stage. With this model, every verification phase needs to be testing on the validation phase on V-Model. The following steps that included:

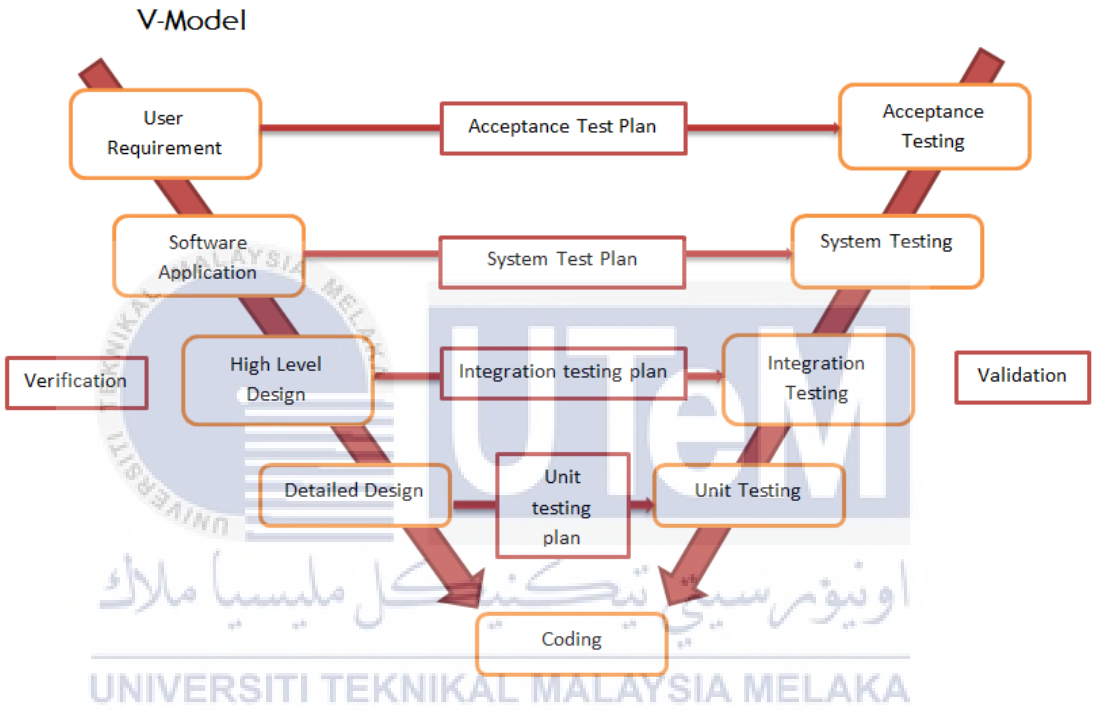


Figure 2.1 : V-Model Process

2.2.1 User Requirement

Gather information's is the first task in this stage. The requirements of the system are understood from the client perspective involves detailed communication with the customer to understand his expectations and exact condition. The acceptance test design planning is done at this stage as business requirements can be using as an input for acceptance testing.

2.2.2 System Specification

Determine the possible design and hardware specification of the E-KUBUR are going to be. If there are any functions which do not match to the design, users will be notified, and changes will be made in the system. Based on the design implementation system testing will be tested in this phase.

2.2.3 High Level Design

Design the data flow of E-KUBUR using DFD level. This task used to ensure a complexity of the system can be managed and how system functions will be fulfilling the design. This phase will be testing using integration test.

2.2.4 Detailed Design

This task considers on the functionality of each module is described in E-KUBUR. The dependency of each module determines on this level. On this level, unit tests are an essential part of any development way and assists to extinguish the most faults and errors at a very early process. Unit tests can be a plot at this step based on the internal module designs.

2.2.5 Coding

A suitable programming language is decided based on the system and architectural requirements. On this task, responsibility is to translate the specifications created in the detailed design phase into technical code. This E-KUBUR developed using PHP and Oracle database.

2.3 Project Schedule and Milestones

In this table there are project schedule and milestones required to complete the E-KUBUR development. In order to develop E-KUBUR efficiently, the project milestones has been organized as shown in table 2.1 and this system must parallel with documentation. The gantt chart have been described in Appendix A.

Table 2.1: Project Schedule and Milestones

Milestones	Expected Documents	Dates
Complete E-Kubur Proposal Report	1. Identify all requirement needed for E-Kubur. 2. Define problem, objective, and scope.	22 Feb – 11 March 2016
Complete E-Kubur Project Analyst	1. Analysis current system and requirement 2. Prepare project schedule and gantt chart. 3. Decide software and hardware that needed of the project.	14 March – 18 March 2016
Complete E-Kubur Project Design	1. Design the ERD and DFD. 2. Design the flowchart project.	21 March – 25 March 2016
Complete E-Kubur Project Development and Implementation	1. Design user interface and develop the project.	28 March – 20 May 2016
Complete E-Kubur Project Testing	1. Test the entire requirement whether it fulfil.	23 May – 30 May 2016
Project Completion	1. Complete all functional and documentation.	30 May 2016

2.4 Conclusion

This part explains about the method and technique that used in develops the project. Covers the planning of the presentation is prepares the Gantt chart details of reference on developing the system. The next part will explain the undertaking necessity which is including the product prerequisite, equipment prerequisite and another prerequisite which is a functional and non-functional requirement.

CHAPTER III

ANALYSIS

3.1 Introduction

Database framework in data analysis stage has helped to understand the information. Data analysis stage can be used as the first step of extrapolating the complexities of the real world into a model. Thus, E-KUBUR is chosen to be the fact-finding source. From the data and information that are a collect from Masjid Jamek Laksamana Hang Tuah. This stage is concerned with the different proof of the information component. The information is examined and analyzed a framework representation as a functional and non-functional which determines the structure of the information and the procedures which utilize the information. Therefore, this system can be completed within a predetermined period.

3.2 Problem Analysis

The E-KUBUR is a management system for a cemetery. There are no existing systems that provide to Masjid Jamek Laksamana Hang Tuah to manage the funeral and lot information. Therefore, this cemetery growing increases. Then arise some problem where the management of cemetery difficult to find lot information and data redundancy that cannot be avoided as an ordinary human, we are never run in making mistakes. The staff just remembers all the record without using any tools. Here is the flow how this old system works to manage the history information of the funeral.

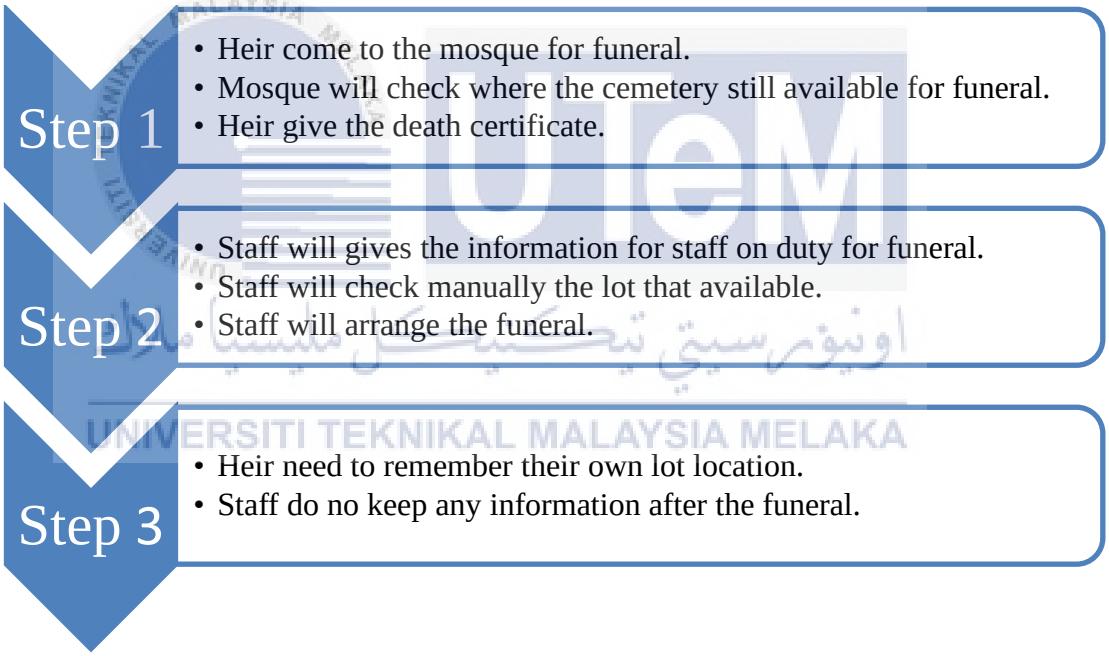


Figure 3.1: Flow of Business

3.3 The proposed improvement/solutions

Accordingly to the problem there no existing system to manage the information of the death after completes the funeral. Therefore, the mosque organization needs to have the system for administering the cemetery management to keep all record that related on the graveyard. As a document on Figure 3.2.

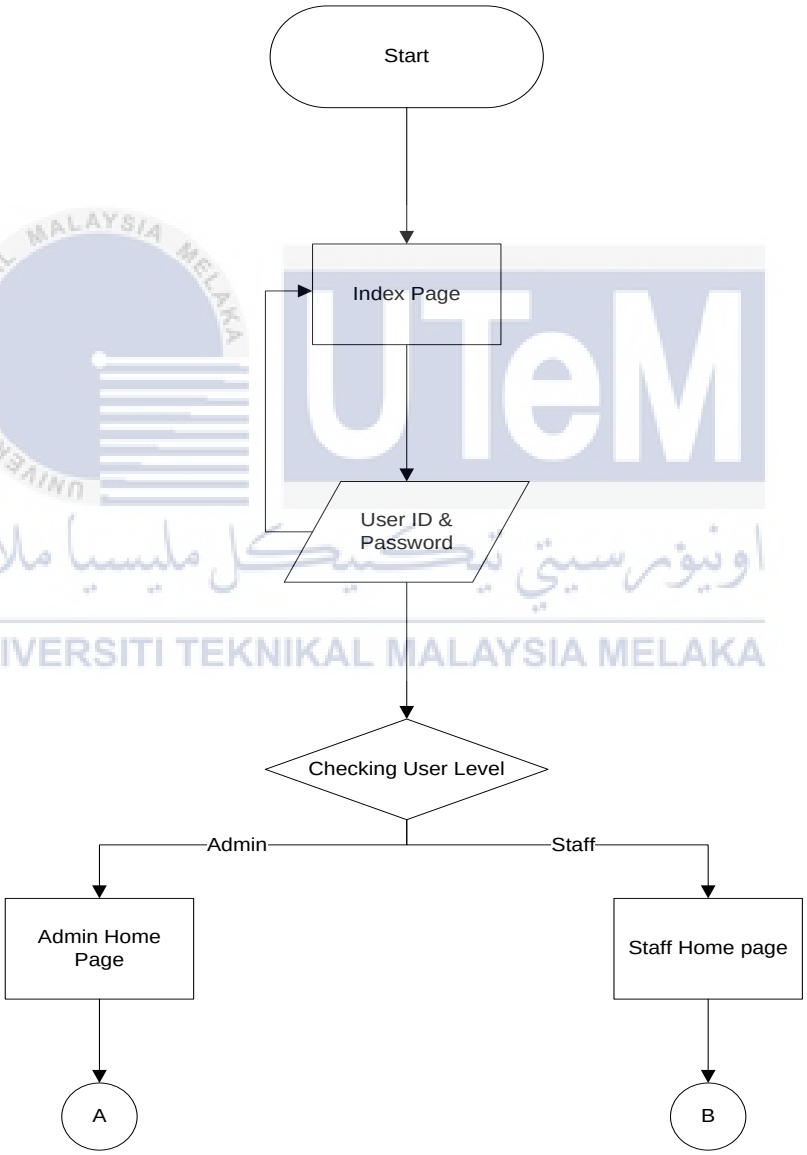


Figure 3.2: Flow chart of the login page

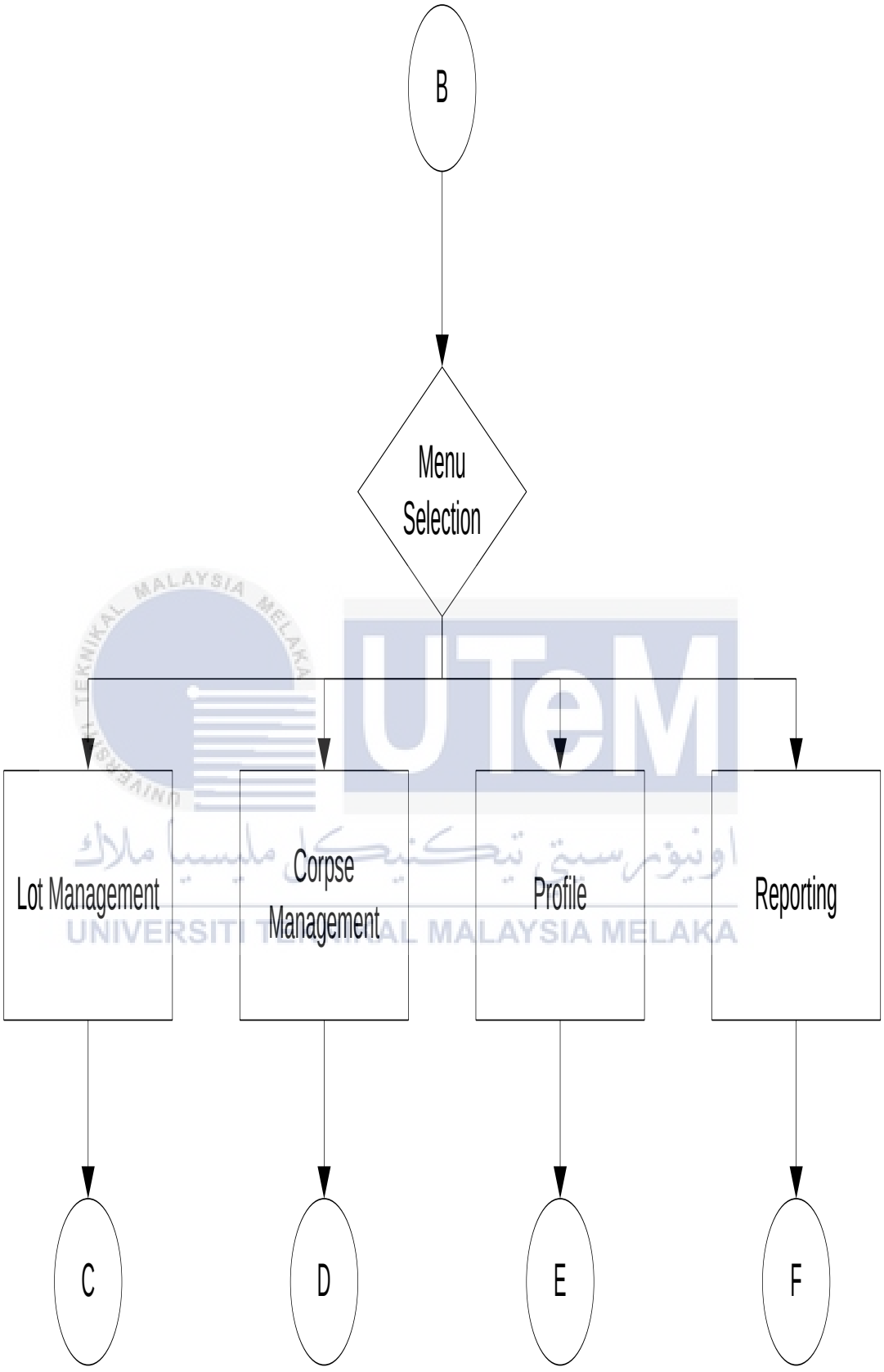


Figure 3.3: Flow chart of the admin page

3.4 Requirement analysis of the to-be system

In this section, element analysis is classified into two categories which are the functional requirement and non-functional requirement.

3.4.1 Functional Requirement

The functional element has explained the behavior of the system as it relates to the system's functionality. The functional requirement a classify into which are function of the system and data flow diagram.

3.4.1.1 Function of the System

Table 3.1: Functional Requirement

FR_No	Requirement	Description
1	Authenticate User	- The system can log in and log out. - The system can verify and validate the user id and password.
2	Lot Management	- The system can check an available and not available lot. - The system can do minus lot from total lot available. - The system can view the lot details by available or not available. - The system can calculate the total lot available from the entire acre area.
3	Corpse Management	- The system can add the new corpse information. - The system can update the existing

		beneficiary information.
4	Profile	- The system can update profile information. - The system can change the password by user id. - The system can view the staff details.
5	Reporting	- The system can generate accurate release duration with start and end time. - The system can generate the report.

3.4.1.2 Data Flow Diagram

A Dataflow Diagram (DFD) is a graphical representation of the circulation of information through data. So, context diagram and level 1 of the DFD have been illustrating in a Figure 3.4.

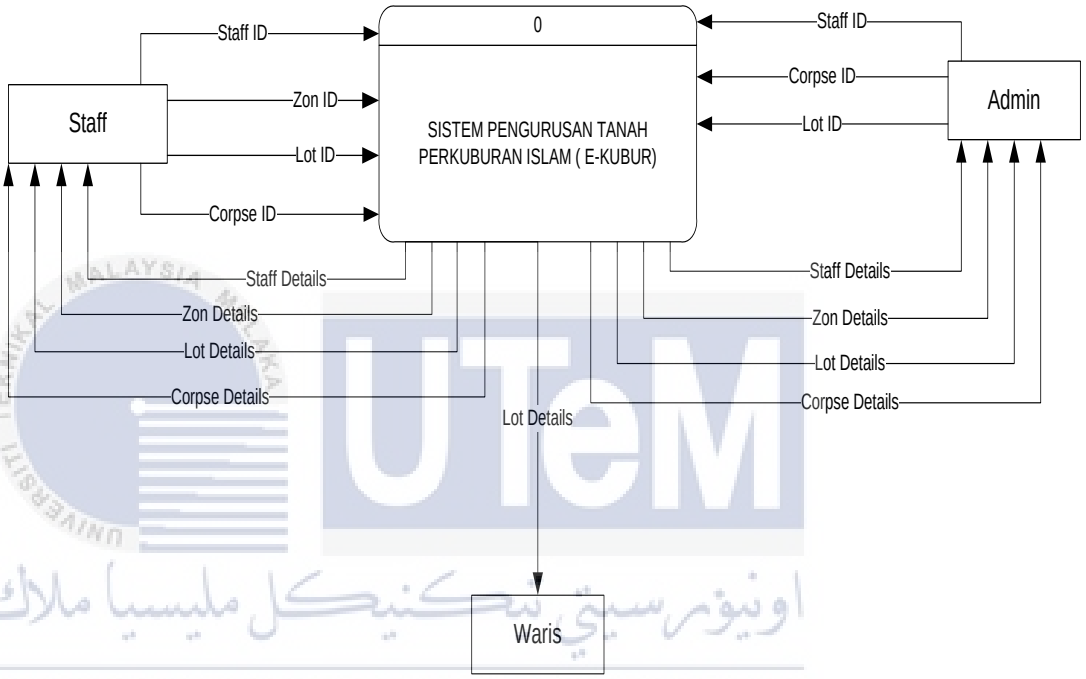


Figure 3.4: Context Diagram for E-KUBUR

Based on this Figure 3.4 there are 3 external entity involved in E-KUBUR which are staff, admin and heir. For staff entity, there can handle all the heir, corpse and lot details. Admin can register new staff and view the report about the cemetery management. Other than that, heir only can search the details about corpse their needed.

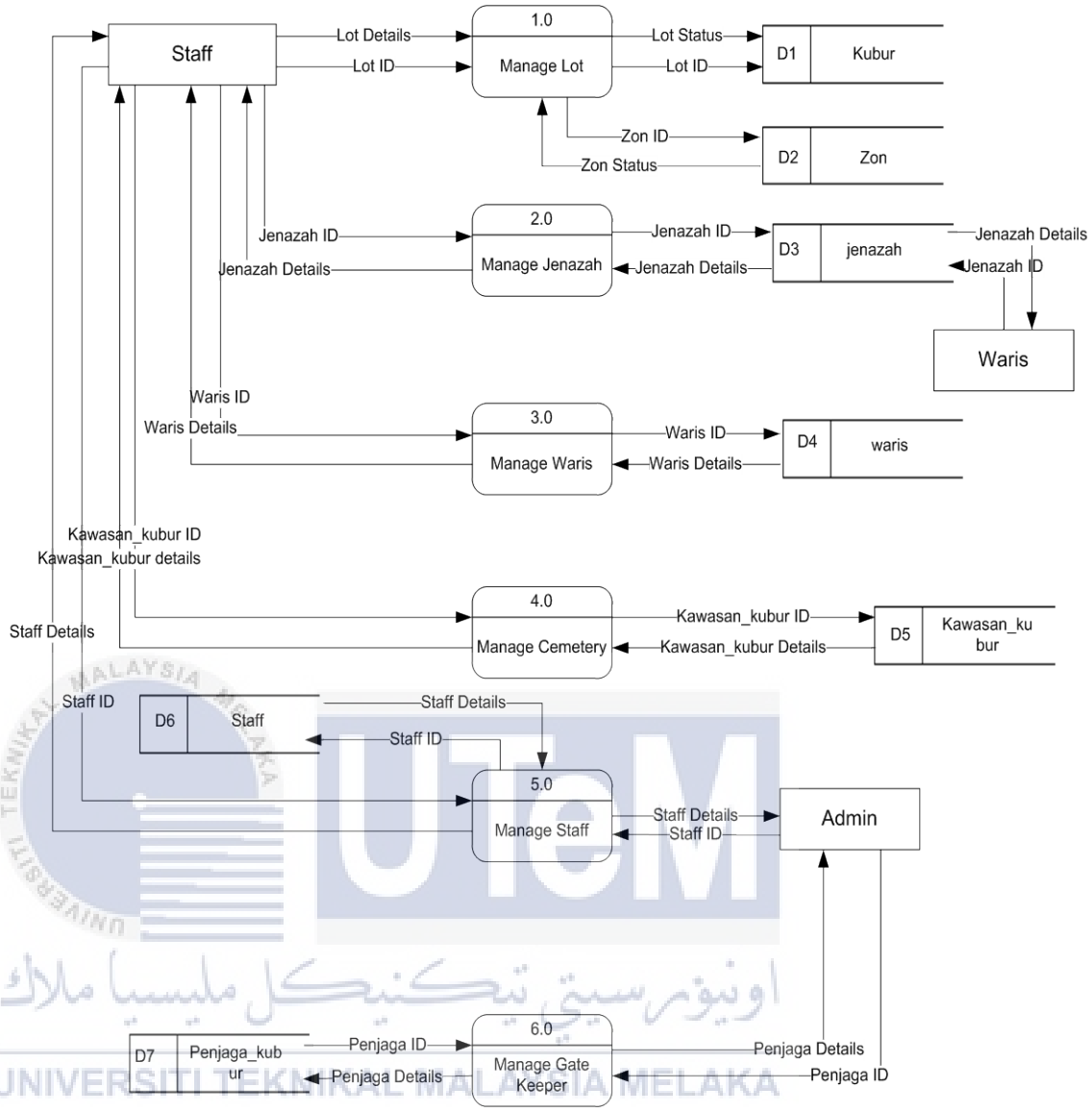


Figure 3.5: Level 1 for E-KUBUR

There are 6 processes involved in E-KUBUR, such as manage lot, manage jenazah, manage waris manage cemetery, manage staff and manage gate keeper. Each process has database table to keep the data.

3.4.2 Non-functional Requirement

In systems, the non-functional requirement is elements that identify benchmark that can be used to evaluate the activity of a system rather than specific behaviors.

Table 3.2: Non-Functional Requirement

NFR_No	Requirement	Description
1	Usability	- This system is easy to use because the system has a familiar interface and the flow is simple step by step.
2	Database	- Structure, efficiency and integrity of stored data.

3.4.3 Other Requirement

This section consists of another element which has classified into three categories such as software requirements, hardware requirements, and others requirements.

3.4.3.1 Software Requirements

Table 3.3: Software Requirements

Development Tool	Operating System	DBMS System
• Adobe Dreamweaver CC CS5 • Xampp Control Panel Server v3.2.1-win32 • Microsoft Office Visio 2007 • Microsoft Office Word 2010 • Microsoft Office PowerPoint 2010	• Windows 7 Ultimate	• Oracle Database 11g Express Edition • Oracle instant client basic win

3.4.3.2 Hardware Requirements

i. Personal Computer
   - Aspire V3 -471g Acer
   - 4GB RAM
   - Intel CORE i5

ii. Printer

iii. Scanner

iv. Mouse

v. Internet

vi. HDMI cable

vii. Thumb Drive

viii. Projector

3.4.3.3 Others Requirements

i. Mozilla Firefox
ii. Internet access
iii. Flash Plugin
iv. Java Plugin

3.5 Conclusion

In this chapter, the existing system has been modified from manually into the better system with more efficiency and functionality. A primary module which is a lot and corpse information can be recorded on the system. The next chapter will examine about the task outline which is including three main phases which are conceptual, logical and physical design.

CHAPTER IV

DESIGN

4.1 Introduction

Database design is the technique of generating a detailed data model of the database. This model contains everything the needed logical and physical design and physical storage parameters needed to produce a design in a data definition language (DDL), which can be utilized to create a database. Conceptual database design is the first phase in database design which is Entity Relationship Diagram (ERD) of the project identifies entity types, relationship types and associate attributes with entity or relationship types. It also helps the conditions of the system are stated clearly using Business Rule. Besides that, the Data Dictionary also provided in this report too that contains all the attributes in entities with its format and type. Data Definition Language (DDL) is generated based on the logical and conceptual design of the database.

4.2 System Architecture Design

This system architecture for the E-KUBUR includes all the entity of systems. Figure 4.1 show a big picture of the system architecture for E-KUBUR. The major process for this planning is focused on the staff to record all information about the cemetery after the funeral. Then after complete record all the information of grave lot, the system will change the tomb lot to not available.

The system architecture of this scheme is a two-tier structure which client server that consists the two layers; the user interfaces and the Oracle 11g DBMS. Figure 4.2 illustrate the system architecture of this framework.

i. User Interface

The interface that admin or staff uses to log in, manage area of cemetery, lot, handle heirs details which are insert, update and delete data. For the public user, the interface not needed to log in just view the lot information. The client should fill in the form that has been providing the interface to get the details.

ii. Oracle 11g DBMS

The data that stored and retrieved from the database is the details of staffs, corpses, heirs, lot and zone.

Figure 4.1: System Architecture Design for E-KUBUR Lot

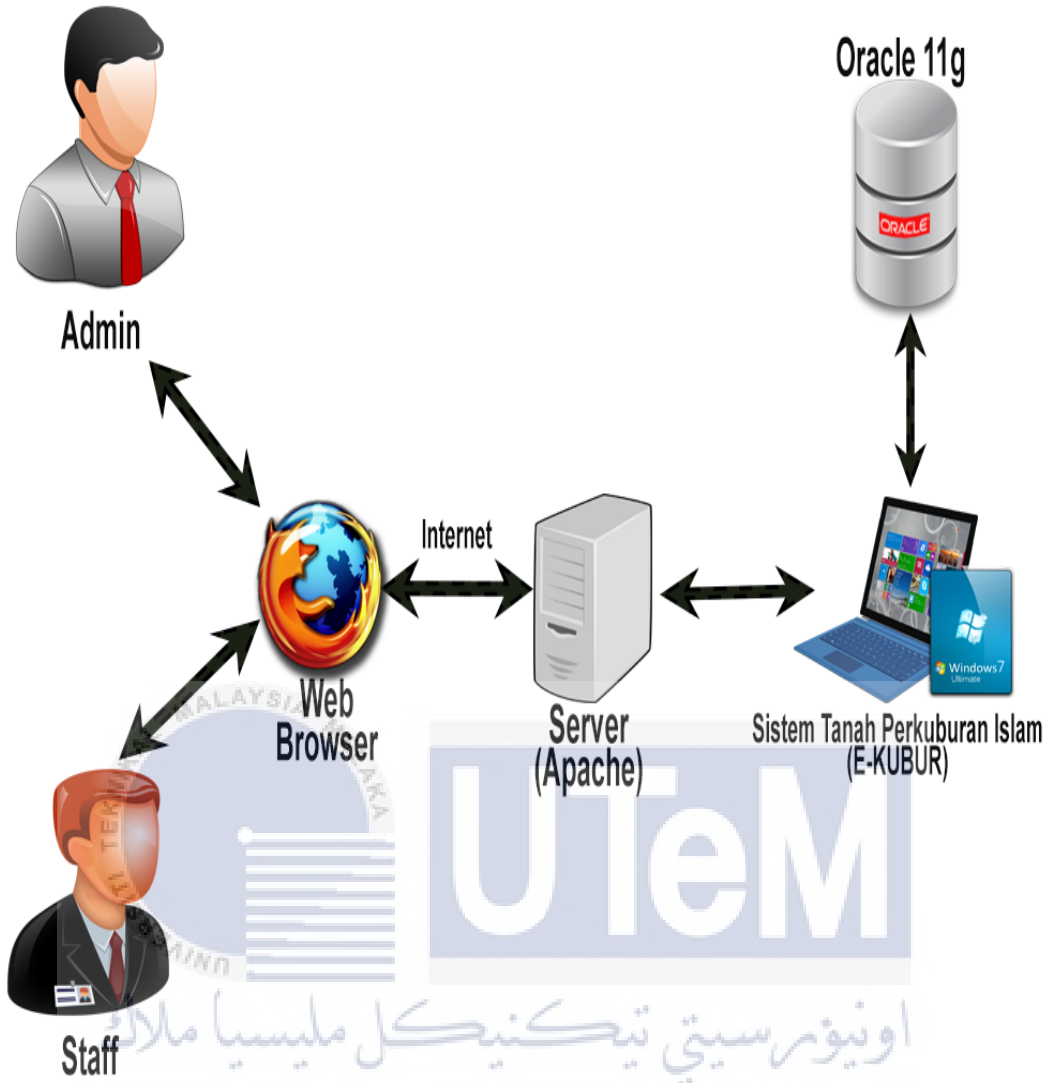


Figure 4.2: System Architecture Design for E-KUBUR

4.3 Database Design

This component was classified into three categories which are conceptual design, logical design, and physical design.

4.3.1 Conceptual Design

This component comprises two sub-component which is Entity-Relationship diagram (ERD) and business rules.

4.3.1.1 Entity Relationship Diagram (ERD)

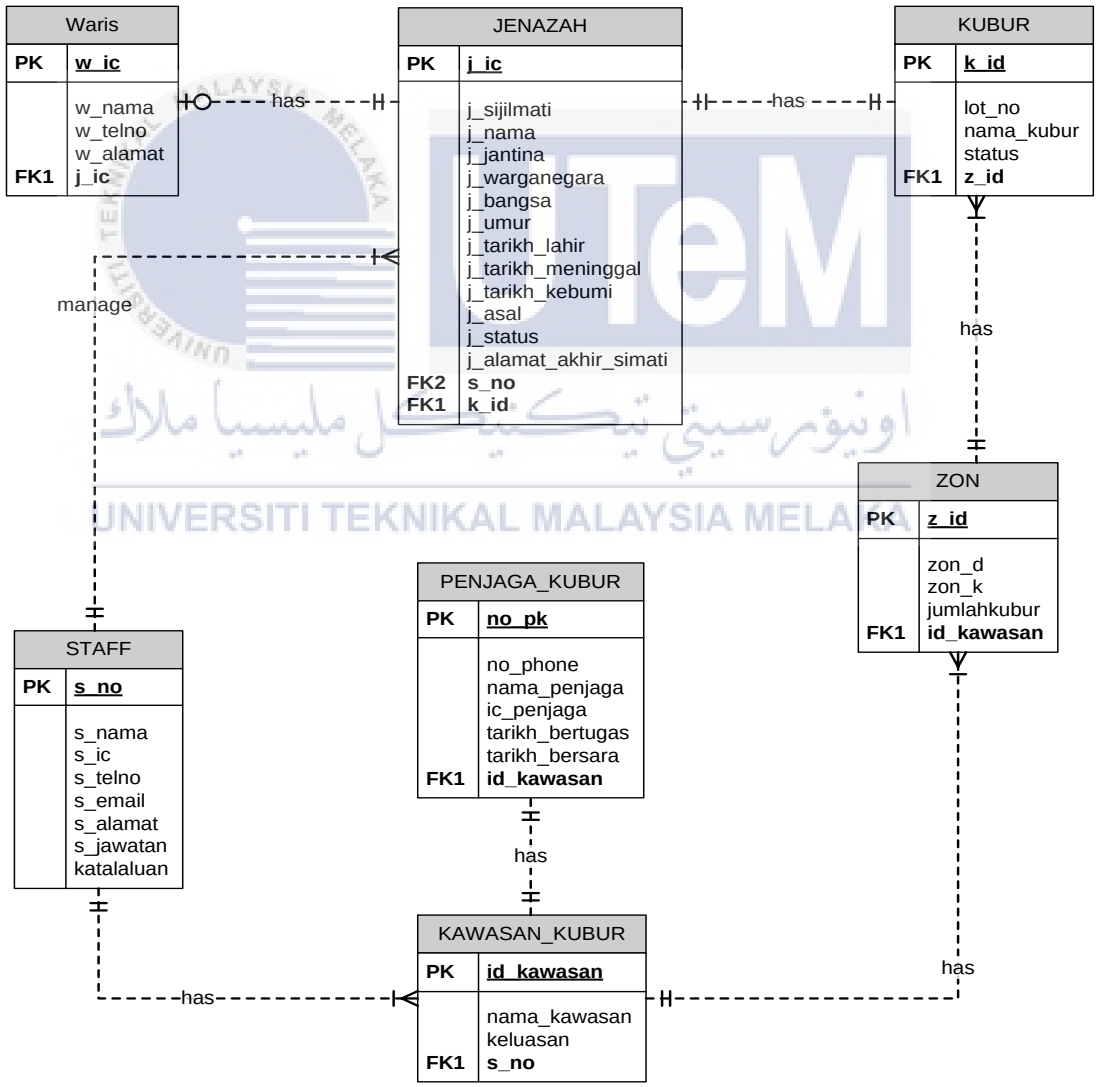


Figure 4.3: ERD for E-KUBUR

4.3.1.2 Business Rules

1. Each staff can manage one or more corpse, and one staff must handle one corpse. One staff also can handle many areas of the cemetery.

2. Each corpse can have one or maybe not have an inheritor, and one heir can have many corpses.

3. Each cemetery must be handling by one grave keeper only.

4. Each corpse can have one lot grave only based on zone.

5. Each cemetery can manage many of zones, and one zone can have a lot of lot grave.

4.3.2 Logical Design

The logical model was classified into three categories which are data dictionary and query design.

4.3.2.1 Data Dictionary

Table 4.1: Table Jenazah

No.	Name	Data Type	Length	Primary Key	Foreign Key	Null/Not Null
1	j_ic	Varchar2	12	Yes		Not Null
2	j_sijilmati	Varchar2	10			Not Null
3	j_nama	Varchar2	50			Not Null
4	j_jantina	Varchar2	12			Not Null
5	j_warganegara	Varchar2	20			Not Null
6	j_bangsa	Varchar2	20			Not Null
7	j_umur	Number				Not Null
8	j_tarikh_lahir	Date				Not Null
9	j_tarikh_meninggal	Date				Not Null
10	j_tarikh_kebumi	Date				Not Null
11	j_asal	Varchar2	50			Not Null
12	j_status	Varchar2	50			Not Null
13	j_alamat_akhir_simati	Varchar2	100			Not Null
14	w_id	Varhcar2	5		Yes	Not Null

Table 4.2: Table Staff

No.	Name	Data Type	Length	Primary Key	Foreign Key	Null/ Not Null
1	s_no	Varchar2	5	Yes		Not Null
2	s_nama	Varchar2	50			Not Null
3	s_ic	Varchar2	50			Not Null
4	s_telno	Varchar2	11			Not Null
5	s_email	Varchar2	50			Not Null
6	s_alamat	Varchar2	100			Not Null
7	s_jawatan	Varchar2	35			Not Null
8	s_katalaluan	Varchar2	12			Not Null

Table 4.3: Table Kawasan_Kubur

No.	Name	Data Type	Length	Primary Key	Foreign Key	Null/Not Null
1	Id_kawasan	Varchar2	5	Yes		Not Null
2	nama_kawasan	Varchar2	35			Not Null
3	keluasan	Number				Not Null
4	s_no	Varchar2	5		Yes	Not Null

Table 4.4: Table Zon

No.	Name	Data Type	Length	Primary Key	Foreign Key	Null/Not Null
1	z_id	Varchar2	5	Yes		Not Null
2	zon_d	Number				Not Null
3	zon_k	Number				Not Null
4	jumlahkubur	Number				Not Null
5	Id_kawasan	Varchar2	5		Yes	Not Null

Table 4.5: Table Kubur

No.	Name	Data Type	Length	Primary Key	Foreign Key	Null/Not Null
1	k_id	Varchar2	5	Yes		Not Null
2	lot_no	Varchar2	5			Not Null
3	status	Varchar2	20			Not Null
4	z_id	Varchar2	5		Yes	Not Null

Table 4.6: Table Waris

No.	Name	Data Type	Length	Primary Key	Foreign Key	Null/Not Null
1	w_id	Varchar2	5	Yes		
2	w_nama	Varchar2	50			Null
3	w_ic	Varchar2	12			Null
4	w_telno	Varchar2	11			Null
5	w_alamat	Varchar2	100			Null

Table 4.7: Table Penjaga_Kubur

No.	Name	Data type	Length	Primary Key	Foreign Key	Null/Not Null
1	no_pk	Varchar2	5	Yes		Not Null
2	nama_penjaga	Varchar2	50			Not Null
3	ic_penjaga	Varchar2	12			Not Null
4	tarikh_bertugas	Date				Not Null
5	tarikh_bersara	Date				Not Null
6	id_kawasan	Varchar2	5		Yes	Not Null
7	no_phone	Varchar2	11			Not Null

4.3.2.2 Query Design

There are variations of design queries can be carried out to generate the output. However, each query should meet the requirements of proposed user, and each of the present data should have a reason and aim of its own.

- Simple SQL Query

The SQL SELECT statement is used to choose or select the information returned from the database to application. To retrieve all of the information in the table, use the asterisk (*) as a shortcut for all of the columns. The WHERE clause to start limiting, or filtering, the information fetch from the database. The LIKE operator allows performing basic pattern-matching using wildcard characters. The OR operator shows a record if either the first and second condition is valid. To sort the files in decreasing order, use the DESC or first word. The ORDER BY clause contain one or more column names that strict the sort order.

SELECT ROW_NUMBER() OVER(ORDER BY J_NAMA) AS ROWNO, T.* FROM JENAZAH T WHERE (J_NAMA LIKE '%".$strKeyword."%' or J_IC LIKE '%".$strKeyword."%')	Search the table jenazah and display the corpse details based on j_ic.

Figure 4.4: Simple SQL Query

- Join Multiple Table SQL Query

An SQL JOIN clause is used to merge rows from two or more tables, based on a standard field between them.

SELECT ROW_NUMBER() OVER(ORDER BY J_NAMA) AS ROWNO, T.J_IC, T.J_SIJILMATI, T.J_NAMA, T.J_TARIKH_MENINGGAL, T.J_TARIKH_KEBUMI, LOT_NO,KK.NAMA_KAWASAN FROM JENAZAH T, KUBUR K, ZON Z, KAWASAN_KUBUR KK WHERE (J_NAMA LIKE '%".$strKeyword."%' or J_IC LIKE '%".$strKeyword."%') and T.K_ID=K.K_ID AND Z.ID_KAWASAN=KK.ID_KAWASAN AND Z.Z_ID=T.Z_ID	Search the table jenazah and display the corpse details based on table zon, kawasan_kubur, and kubur to get more details about the corpse.

Figure 4.5: Join Multiple Query

- Aggregate Query

SQL Aggregate functions return a single value, calculated from values in a column. Useful aggregate functions:

- COUNT() – Returns the numbers of rows

SELECT count(T.J_IC),KK.NAMA_KAWASAN FROM JENAZAH T, KUBUR K, ZON Z, KAWASAN_KUBUR KK WHERE T.K_ID=K.K_ID AND Z.ID_KAWASAN=KK.ID_KAWASAN AND Z.Z_ID=T.Z_ID group by KK.NAMA_KAWASAN;	Count the total corpse that already burial at the cemetery group by ‘nama_kawasan’.

SELECT count(T.J_IC),T.J_ASAL,KK.NAMA_KAWASAN FROM JENAZAH T, KUBUR K, ZON Z, KAWASAN_KUBUR KK WHERE T.K_ID=K.K_ID AND Z.ID_KAWASAN=KK.ID_KAWASAN AND Z.Z_ID=T.Z_ID group by T.J_ASAL, KK.NAMA_KAWASAN;	Count the total corpse group by attribute 'asal'and 'nama_kawasan'.

Figure 4.6: Aggregate Query

4.3.3 Physical Design

Physical design is incorporate of three categories which are DBMS selected, trigger and store procedure.

4.3.3.1 DBMS Selected

The database management system is an application that is used to develop the project. Among the studies several project has been done such as MySQL, Microsoft SQL Server, Oracle 9i, Oracle10g, Oracle 11g and Maria DB. Oracle 11g database express edition has been chosen on the most acceptable DBMS to use based on the criteria and specific point. Therefore, oracle 11g is the most versatile and has the pools as advantages needed.

4.3.3.2 Trigger

The trigger is a set of structured Query language (SQL) elements that automatically “fires of” an activity when a specific process such as changing data in a table occurs on the structure. Therefore, E-KUBUR has been constructed a written in section 4.3.3.2.1 and 4.3.3.2.2 appropriate.

4.3.3.2.1 Trigger Before

Table 4.8: Trigger Before

No.	Trigger Name	Description
1.	trigger trig_s_no	A trigger is done to produce a unique id to be used as the primary key for table staff.
2.	trig_id_kawasan	A trigger is done to produce a unique id to be used as the primary key for table kawasan_kubur.
3.	trig_z_id	A trigger is done to produce a unique id to be used as the primary key for table zon and sum the total zon for each zon.
4.	trig_k_id	A trigger is done to produce a unique id to be used as the primary key for table kubur.
5.	trig_no_pk	A trigger is done to produce a unique id to be

		used as the primary key for table penjaga_kubur.
6.	trig_limit_penjaga	A trigger is done to produce a limitation of register the new staff in table penjaga_kubur. Must be only 1 staff(penjaga kubur) each cemetery.

4.3.3.2.2 Trigger After Insert, Update or Delete

Table 4.9: Trigger after Insert, Update or Delete

No	Trigger Name	Description
1.	trig_kira_lubang	A trigger is done to calculate the total 'lubang' from the total area.
2	trig_tolak_lubang	A trigger is done to substitute the total 'lubang' after insert the new jenazah on table jenazah category by the zon 'dewasa' and 'kanak-kanak'.
3	trig_status_kubur	A trigger is done to update the status lot (0=not available and 1=available) after insert the new corpse into cemetery or lot grave on the table jenazah.
4	trig_penjaga_backup	A trigger is done to back up the history of penjaga

		kubur after the admin update or delete the information.

4.3.3.3 Stored Procedure

Stored procedures that are implementing to this project consist of four type which are select, insert, update and delete. By using this store procedure, it will reduce the code line that implement on PHP file. Furthermore, it will speed up the process to execute the query and retrieve the data from database.

Table 4.10: Store Procedure

No	Store Procedure Name	Type
1	SELECT_USER	SELECT
2	SELECT_STAFF_ADMIN	
3	SELECT_PENJAGA_ADMIN	
4	KAWASAN1	
5	KAWASAN2	
6	KIRA_JENAZAH	
7	KIRA_JENAZAH_ASAL	
8	LIST_LOT_KUBUR	
9	LIST_STAFF	
10	PAPAR_MAKLUMAT_JENAZAH	
11	MAKLUMAT_KAWASAN_KUBUR1	
12	MAKLUMAT_KAWASAN_KUBUR2	
13	INSERT_STAFF	INSERT
14	INSERT_PENJAGA_KUBUR	
15	INSERT_JENAZAH_WARIS	

16	UPDATE_PASS_STAFF	UPDATE
17	UPDATE_PENJAGAKUBUR_ADMIN	
18	UPDATE_SINGLESTAFF	
19	UPDATE_STAFF_ADMIN	
20	DELETE_PENJAGA_KUBUR	DELETE

4.4 Graphical User Interface (GUI) Design

User interface design is the design of the software applications and sites which concentrate on the user's experience and cooperation. The objective of user interface design is to make the user's connection as straightforward and proficient as possible.

There are the examples of interface that have been implementing through this system will show in appendix B.

4.5 Conclusion

Overall on the logical and physical design that has been attach in this chapter such as the structure that created with the particular module to develop in oracle 11g database. Other than that, the conceptual design depicts the relationship of each entity will been show in this chapter and the next chapter will be discuss about the implementation database and the system configuration.

CHAPTER V

IMPLEMENTATION

5.1 Introduction

Implementation is part of activity are purposeful and are describe in more details that related to the implementation of Sistem Pengurusan Tanah Perkuburan Islam. The implementation phase will depict about the system development environment setup, software configuration, database execution and usage. Activities that comprises in the describe implementation are system coding and debugging. This chapter pledge that the system created is archive all system requirement. The objective of this part is to justify that the system is set up within of the particular condition and duration of time also avoiding from the system error or other complexity.

5.2 System Development Environment Setup

The software environment is the setup of processes and programming tools used to create or develop product or system. Sistem Tanah Perkuburan Islam is a web-based system. The system and the database structure will be demonstrated in the system which will be the essential access point. The server must have the web server which is the Apache Server. After that, the server must to likewise require the Oracle Connector to give the integration between information that inserted through the interface and the Oracle Database. Figure 5.1 depict the system framework of Sistem Tanah Perkuburan Islam.

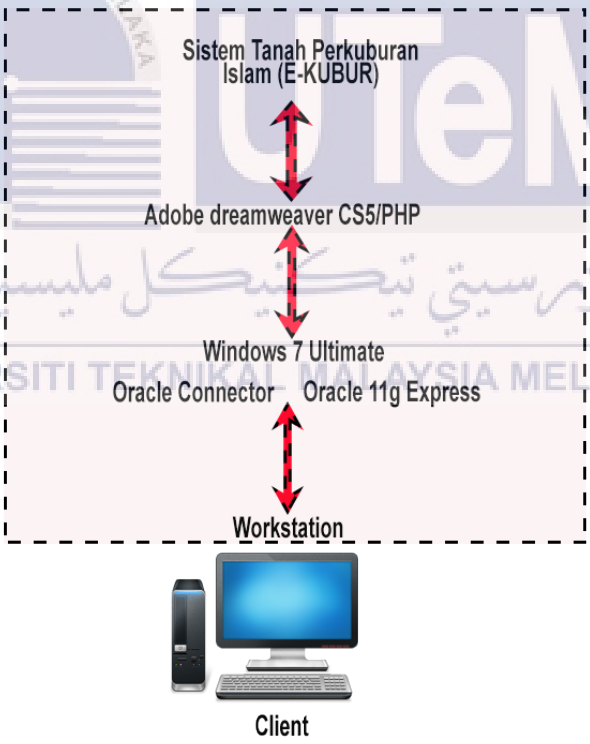


Figure 5.1: System Framework for E-KUBUR

5.3 Database Implementation

In the Database Implementation phase is done in which install Oracle 11g Express Edition in Windows 7 Ultimate. The database will be tested into hardware and software platform, create the database and load the data such as database queries for example joins, aggregate function, and sub-query to justify the stream of information in the database is correct.

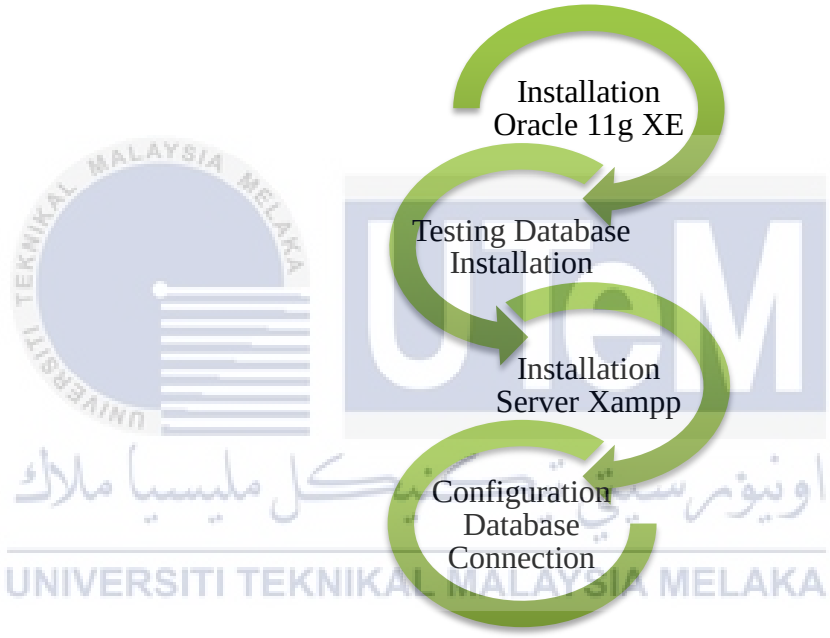


Figure 5.2: Framework for Installation Software

This section will explain about the installation database Oracle 11g XE on Windows 7 Ultimate, testing database setup, installation server xampp, and configuration database connection. First, run the Oracle 11g XE software and wait until finish. After Oracle 11g XE installation complete, perform the installation testing run using the URL that given. After completes the installation. Login the page using an account that has registered. Therefore, create an own workspace to produce the database section and develop the project. Besides, the system needs server for generating into GUI or web browser using Apache server.

5.3.1 Data Definition Language (DDL)

Data Definition Language (DDL) contains the script for creating a table, constraint, and index that include in database implementation for E-KUBUR.

5.3.1.1 Create Table

E-KUBUR contained seven tables which are *staff, waris, jenazah, kawasan_kubur, zon, kubur* and *penjaga_kubur* table. All the tables were used to store the related information to implement a for E-KUBUR Figure 5.3 shows an example of DDL script to create the staff table. Refer to Appendix C to see the create table of E-KUBUR.

```
CREATE TABLE STAFF
(
S_NO            VARCHAR2(5) NOT NULL PRIMARY KEY,
S_NAMA          VARCHAR2(50),
S_IC            VARCHAR2(12),
S_TELNO         VARCHAR2(11),
S_EMAIL         VARCHAR2(50),
S_ALAMAT        VARCHAR2(100),
S_JAWATAN       VARCHAR2(35),
S_KATALALUAN    VARCHAR2(12)
);
```

Figure 5.3: Create Table Staff

5.3.1.2 Create Constraint

The constraint is used to define an integrity constraint that restricts the values in a database. Oracle Database have six categories of restrictions which are NOT NULL constraint, a primary key constraint, a unique constraint, a foreign key constraint, a REF constraint and a check constraint. E-KUBUR has used all six categories. Below is the example of constraint used in table JENAZAH. The script is to check the date of corpse death correct.

```
ALTER TABLE JENAZAH
Add CONSTRAINT JENAZAH_WARIS_CHECK
CHECK (j_tarikh_meninggal <= j_tarikh_kebumi)
);
```

Figure 5.4: Alter Table Jenazah

5.3.2 Data Manipulation Language (DML)

A data manipulation language (DML) is a sample of syntax components equivalent to a programming language utilize for selecting, inserting, deleting and updating data in a database. Performing read-only queries of data is occasionally also considered a component of DML. For E-KUBUR the main processes of database is using stored procedure and trigger. Below is showing the samples of code that E-KUBUR implement.

5.3.2.1 Trigger

5.3.2.1.1 Trigger Before Insert

Table 5.1: Trigger Before Insert

No.	Trigger Name	Description

1.	create or replace trigger trig_s_no
	before insert on staff
	for each row
	declare
	pk_staff number;
	begin
	select
	s_no_seq.nextval into pk_staff from dual;
	if pk_staff < 10 then
	:new.s_no := 'S' || '000' || pk_staff;
	:new.s_jawatan := 'Staff';
	:new.s_katalaluan := '123456';
	elsif pk_staff < 100 then
	:new.s_no := 'S' || '00' || pk_staff;
	:new.s_jawatan := 'Staff';
	:new.s_katalaluan := '123456';
		A trigger is done to produce a unique id to be used as the primary key for table staff.

	elsif pk_staff < 1000 then
	:new.s_no := 'S' || '0' || pk_staff;
	:new.s_jawatan := 'Staff';
	:new.s_katalaluan := '123456';
	elsif pk_staff < 10000 then
	:new.s_no := 'S' ||pk_staff;
	:new.s_jawatan := 'Staff';
	:new.s_katalaluan := '123456';
	end if;
	end;	

2.	create or replace trigger trig_id_kawasan
	before insert on kawasan_kubur
	for each row
	declare
	pk_idkawasan kawasan_kubur.id_kawasan%type;
	begin
	select id_kawasan_seq.nextval into pk_idkawasan
	from dual;
	:new.id_kawasan :='KK' || pk_idkawasan;
	end;
		A trigger is done to produce a unique id to be used as the primary key for table kawasan_kubur.

3.	create or replace trigger trig_z_id
	before insert on zon
	for each row
	declare
	pk_z_id zon.z_id%type;
	begin
	select z_id_seq.nextval into pk_z_id from dual;
	:new.z_id :='Z' || pk_z_id;
	:new.jumlahkubur:=:new.zon_d+:new.zon_k;
	end;
		A trigger is done to produce a unique id to be used as the primary key for table zon and sum the total zon for each zon.

4.	create or replace trigger trig_k_id before insert on kubur for each row	A trigger is done to produce a unique id to be used as the primary key

	declare
	pk_k_id kubur.k_id%type;
	begin
	select k_id_seq.nextval into pk_k_id from dual;
	:new.k_id :='K' || pk_k_id;
	end;
		for table kubur.

5.	create or replace trigger trig_no_pk
	before insert on penjaga_kubur
	for each row
	declare
	pk_no_pk penjaga_kubur.no_pk%type;
	begin
	select no_pk_seq.nextval into pk_no_pk from dual;
	:new.no_pk :='PK' || pk_no_pk;
	end;
		A trigger is done to produce a unique id to be used as the primary key for table penjaga_kubur.

6.	create or replace trigger trig_limit_penjaga
	before insert on penjaga_kubur
	for each row
	declare
	counter number;
	begin
	select count(*) into counter
	from penjaga_kubur
	where id_kawasan=:new.id_kawasan;
	if counter>=1 then
	raise_application_error (-20001,'data exceed');
	end if;
	end;
		A trigger is done to produce a limitation of register the new staff in table penjaga_kubur. Must be only 1 staff(penjaga kubur) each cemetery.

5.3.2.1.2 Trigger After Insert Update or Delete

Table 5.2: Trigger after insert, update or delete

No	Trigger Name	Description

1.	create or replace trigger trig_kira_lubang
	after insert or update on kawasan_kubur
	for each row
	begin
	insert into zon(zon_d,zon_k,id_kawasan)
	values
	(round(:new.keluasan*0.9/1.6718),round(:new.keluasan*0.1/0.2787),(:new.id_kawasan));
	end;
		A trigger is done to calculate the total 'lubang' from the total area.

2	create or replace trigger trig_tolak_lubang
	after insert on jenazah
	for each row
	begin
	if (:new.j_kategori='Dewasa') then
	update zon
	set zon_d=zon_d-1 where z_id=:new.z_id;
	elsif (:new.j_kategori='Kanak-kanak') then
	update zon
	set zon_k=zon_k-1 where z_id=:new.z_id;
	end if;
	end;
		A trigger is done to substitute the total 'lubang' after insert the new jenazah on table jenazah category by the zon 'dewasa' and 'kanak-kanak'.

3	create or replace trigger trig_status_kubur
	after insert on jenazah
	for each row
	begin
	update kubur set status=0
	where k_id=:new.k_id;
	end;
		A trigger is done to update the status lot (0=not available and 1=available) after insert the new corpse into cemetery or lot grave on the table jenazah.

4	create or replace trigger trig_penjaga_backup	A trigger is done to back

	after insert or update or delete on penjaga_kubur
	for each row
	declare
	begin
	insert into hist_penjaga_kubur values
	(:new.no_pk,:new.nama_penjaga,
	:new.ic_penjaga, :new.tarikh_bertugas,
	:new.tarikh_bersara, :new.id_kawasan);
	end;
		up the history of penjaga kubur after the admin update or delete the information.

5.3.2.2 Store Procedure

Store procedures that are implementing to this project consist of four type which is select insert, update, and delete. By using this store procedure, it will reduce the code line that implements on PHP file. Furthermore, it will speed up the process to execute the query and retrieve the data from the database. Below is example some samples that be use.

Table 5.3: Store Procedure

No	Store Procedure	Type	Description
1	create or replace PROCEDURE "SELECT_USER" (id IN varchar2, p1 OUT SYS_REFCURSOR) AS BEGIN OPEN p1 FOR select * from staff where s_no=id; END;	Select	This store procedure will retrieve all data that match to staff id.
2	create or replace PROCEDURE "INSERT_STAFF"(staff_nama in staff.s_nama%type, staff_ic in staff.s_ic%type, staff_telno in staff.s_telno%type, staff_email in staff.s_email%type, staff_alamat in staff.s_alamat%type) IS begin insert into staff(s_nama, s_ic, s_telno, s_email, s_alamat) values (staff_nama, staff_ic, staff_telno, staff_email, staff_alamat); end;	Insert	This store procedure is record the data on table staff.
3	create or replace PROCEDURE	Update	This procedure is

	"UPDATE_PASS_STAFF" (
	staff_no in staff.s_no%type,
	staff_katalaluan in
	staff.s_katalaluan%type
	)
	IS
	begin
	update staff set
	s_katalaluan=staff_katalaluan
	where s_no=staff_no;
	end;
			to update data that needed.

4	create or replace PROCEDURE
	"DELETE_PENJAGA_KUBUR" (
	staff_no IN
	penjaga_kubur.no_pk%TYPE)
	IS
	BEGIN
	DELETE FROM penjaga_kubur
	WHERE no_pk=staff_no;
	END;
		Delete	This procedure help to delete the data that related to the id.

5.3.3 Database Maintenance

Database maintenance is a activity which is intended to keep a database running smoothly. Database are utilized to keep up a library of data in a very much sorted out, and accessible format. In any case, changes are continually being made as information included and evacuated. After some time, this can bring about the database to begin to glitch. Database support is utilized to keep the database clean and very much composed with the goal that it won't lose functionality.

i. Alter and Delete Table

```
ALTER TABLE Staff
MODIFY s_alamat VARCHAR2(150);
DROP TABLE Staff;
```

ii. Alter and Delete Constraints

```
ALTER TABLE jenazah ADD CONTRAINT j_ic;
DROP CONTRAINT j_ic;
```

5.4 Conclusion

As a conclusion, this part examined about the software development environment setup, software configuration management, and implementation status and database implementation. It is incorporates the stage, software to be utilized to develop the application and other software used to help the running application. Every version needs alteration with a specific end goal to upgrade and fabricate a better system.

The following chapter will discuss about the test strategy, test design, test plan, test result and analysis of the project. The testing stage will test the Management System for E-KUBUR to guarantee that the system meets the product requirement detail and error had been distinguished before convey the system to the end client.

CHAPTER VI

TESTING

6.1 Introduction

The last proceedings to verify the quality of this system is testing. Testing is an action to finding out how well the system work. This testing aimed at evaluating of software item features like functionality and performance against the given set of the scheme requirements. Besides, can be defined as the intent of finding errors in the system.

The proceedings involved in testing phase are developing a test plan and test strategic which comprise of test organization, test schedule, and test environment. Test strategy explains about the used in the testing process a class of the test. For the analysis, the design includes the test description and test data. The test result and analysis explain the testing results that are analyzed and reviewed.

6.2 Test Plan

The test plan is a document describing the scope, approach, resource and schedule of intended test activities. A test plan incorporates test organization, test environment, and test schedule.

6.2.1 Test Organization

A test organization is an organization, person or company that responsible or involved in tests product, software or system according to the requirements needed. The testing organization for Sistem Tanah Perkuburan Islam comprises of:

Table 6.1: Test Organization

Tester	Task
System Developer	Manage the testing by plans, designs and handle the testing tasks and documents of the measurement outcome. (For example unit and intergration testing)
End User	Manage the user acceptance testing and comments towards the product delivery. For a client, that used the result from the system and gave their feedback. (For example, user acceptance testing)

6.2.2 Test Environment

The test environment is a framework of software and hardware which the testing is going to perform.

Table 6.2: Test Environment

Components	Equipment
Hardware	• Laptop, Mouse, Keyboard, Printer, Projector, Speaker External Hard Disk and Pendrive
Software	• Windows 7 Ultimate • Oracle 11g Express Edition • Xampp Server (Apache, PHP) • Adobe Dreamweaver CS5 • Adobe Dreamweaver CC 2015 • Adobe Photoshop CS5 • Adobe Illustrator CS5
Web Browser	• Mozilla Firefox • Google Chrome

6.2.3 Test Schedule

The test schedule is an estimation of the process and activities that need to be followed to manage each of the test plans. Additionally, the test schedule can identify the duration of the testing that will be handle. The test schedule of Sistem Pengurusan Tanah Perkuburan Islam is as follow:

Table 6.3: Test Schedule

Module	Test Activity	Duration	Cycle (Times)
Login	Test user acceptance and unit testing	1 days	7
Registration	Test user acceptance and unit testing	3 days	11
Lot	Test user acceptance and unit testing	3 days	15
Calculation	Test user acceptance and unit testing	3 days	12
Search	Test user acceptance and unit testing	3 days	5

6.3 Test Strategy

In E-KUBUR used two phases testing approach of the software development cycle which are black-box testing and white-box testing in a test strategy outlines.

1. In white box testing strategy, the structural of the system is testing that shares the similar concept of ‘clear box’ or ‘glass box’ testing. Hence, the structural of the system are visible during the testing by white box testing strategy. From the software’s structural and implementation, the test data and test cases are derived after analyzing the code. At the same time as white box testing is applicable at the unit, integration and levels, it is usually applied to the unit.

2. Other than that, the black box testing strategy is another alternative approach for testing the system. The basic concept of black box testing is that the tests are derived from the system or component specification. The related input

and output for the system can be determined the behaviors from the ‘black box’ testing. Therefore, the primary focus in ‘black box’ testing is concerned more about functionality and implementation of the system as compared to ‘white box’ testing. With the familiar approach. The ‘black box’ testing is also recognized as the behavioral, functional,opaque-box and closed-testing. Hence, the block box testing will be definitely used for the user acceptance test.

6.3.1 Classes of tests

In Sistem Pengurusan Tanah Perkuburan Islam there are fourth sorts of test which are security testing, GUI testing, error handling, user acceptance test and unit testing.

i. Security Test

This security test to verify that the program can restrict access to authorizes personnel and that the authorized personnel can access the function available to their safety level.

ii. Graphical User Interface Test

This Graphical User Interface (GUI) testing is a process to ensure that meets specifications. GUI are tested manually, often by the developers themselves.

iii. Error handling Test

This error handling was tested to verify that the system will acknowledge data from the client. The error message or cautioning will popup on the screen if any wrong information that entered by the client.

iv. User Acceptance Test

This user acceptance testing is to guarantee that this system is easy to understand for the clients which are staff, administrator and heir of a management system for E-KUBUR. The graphical user interface must be clear for all user to knowledge level among them.

v. Unit Testing

Practically, this usnit testing is mostly prepared by the developers and by end-users for the system testing. Unit testing is actually a procedure used to corroborate that the module of source code is functioning appropriately. The procedure of the unit testing is to write test cases for all function and methods to the cemetery system.

6.4 Test Design

There are two sorts of test design which area test description and test data. Test description is a defence on the activities that obliged, and it will be archived for identifying the best information process. Other than that, it will depict the test case and expected a result and test data about user acceptance.

6.4.1 Test Description

Test description explains about the expected result for every module. Refer to Appendix D to see the test description of E-KUBUR

6.4.2 Test Data

The test data is to ensure the system has no null values and errors. Besides that, by using test data users can make the assumption that, if the function performed satisfactorily and adequately for the possible testing values, it would perform satisfactorily for all similar values. Below is the example of test data Staff Registration Module:

Table 6.4: Test Data for Staff Registration Module

Column Name	Test Data 1	Test Data 2	Test Data 3
Nama	Mimi	Mimi	Mimi
Kad Pengenalan	910510125966	9105101259kk	91051012599999
Nombor Telefon	0172358794	017235879h	0172358794666
Email	mimi@gmail.com	mimi@gmail.com	mimi@gmail
Alamat	Melaka	Melaka	Melaka
Result Test Data	Valid	Invalid	Invalid

6.5 Test Results and Analysis

All the test results will be recorded, and document after the test phase has been completed. Sistem Pengurusan Tanah Perkuburan has been tested using many test cases to test the system and the expected output from the inputs if the system operates according to its specifications. The test case identification, tester identification, and the results have been described in Appendix D.

6.6 Conclusion

In conclusion, the testing phase been covered the testing of the database from aspects of real data as well as the database connection with the interface. The software testing also highlighted parallel with the database testing. Moreover, unit testing, and system testing are conducted to check the correctness and effectiveness of the system. Besides that, this chapter also described the testing of individual modules of all size as well as testing of functionalities of the system to ensure the modules meet the user requirements.

CHAPTER VII

CONCLUSION

7.1 Introduction

This last chapter will elucidate regarding the completion of this project. E-KUBUR has been developed successfully according to the time was given. This section will clarify about the weaknesses and strengths and improvement regarding the project. The developed will enhance the system to make this system more efficient and useful for the client.

7.2 Observation on Weaknesses and Strengths

E-KUBUR contribute an efficient arranged of management for the cemetery management. Each system respectively has their cons and pros of the functionality of the system based on a specification that choose, preserve and fixed the confidential data of the staff, corpse, and heirs and with efficient technique.

7.2.1 Strength

The strengths of E-KUBUR as below:

i. This system affords the capability to prohibit unauthorized access to the confidential data by using the username, password, and privileges.

ii. This system was developed using web-based that can be utilized at everywhere that possible to connection with the internet to access the system.

iii. The system assists mosque staff to record all data more efficiently, faster and effortless access and acquires the data needed.

iv. The system is more secure by using the data storage in a centralized database. The database is afforded to allocate and retrieval data.

7.2.2 Weaknesses

i. The system cannot add automatically new cemetery place. Only used the cemetery area that already setup on the system.

7.3 Propositions for Improvement

There are several recommendations on the E-KUBUR to make the system better. For the map part, it can be improved by adding the notification to the staff if the lot already full or less than ten lot. Also provide backup for maintanance.

Currently, the system only manages the cemetery that already setup on the system. Therefore, the system will improve better if it can enhance the new cemetery place automatically.

7.4 Contribution

E-KUBUR affords to facilitate mosque staff in managing the cemetery information such as corpse and heirs more efficiently.

7.5 Conclusion

The conclusion, E-KUBUR achieve the goal. This system can give advantages to mosque staff to store data efficiently and secure. The system also can protect the unauthorized user from access the system.

REFERENCES

1. Valeric Capels and Wayne Senville. (2006). Planning for Cemeteries. Retrieved on Jan 2006 from http://plannersweb.com/wp-content/uploads/2006/10/230.pdf

2. Brian McLaughlin. (2006). GIS Tools for Cadastral. Retrieved on Feb 2006 from http://www.esri.com/news/arcuser/1000/rainsco.html

3. Jennifer Niedert. (1999). “Web Design in a Nutshell”. O’Reilly & Associates, Inc.

4. G.D.Jordaan & L.O.K Lategan. (2010). “Modelling as Research Methodology”. Revised Edition.

5. J.J.Gordon. (2013). “Cemetery Management”. Theclassiscs Us.

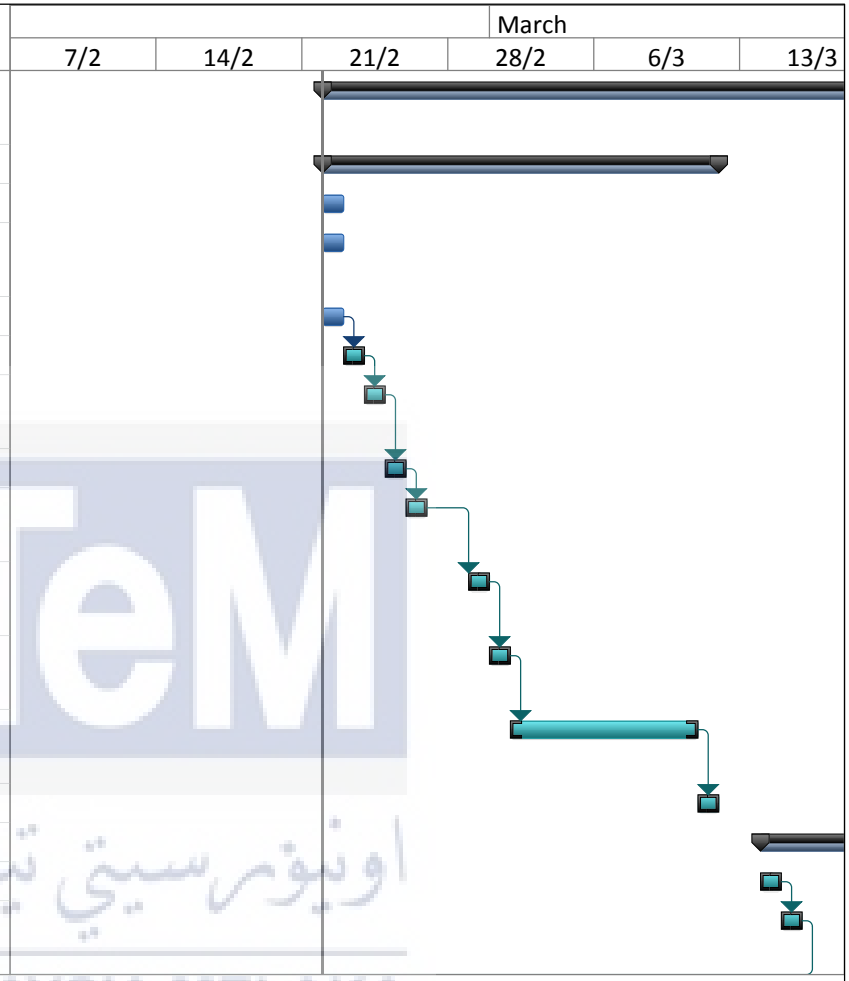
6. Saeed K.Rahimi and Frank S.Haug. (2015). “Distributed Database Management Systems: A Practical Approach”. Illustared Edition. John wiley & Sons.

7. Nagavalli Pataballa and Priya Nathan. (2001). “Oracle9i: Program with PL/SQL.” United States:Sherly Domingue.

Appendix A

Gantt Chart

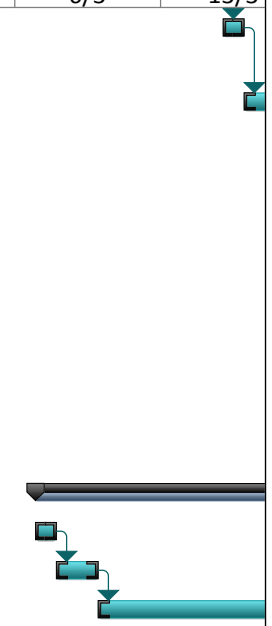
ID	Task Mode	Task Name	Duration	Start	Finish
1		**Sistem Pengurusan Tanah Perkuburan Islam**	**80 days**	**Mon 22/2/16**	**Fri 10/6/16**
2		**Initialize**	**15 days**	**Mon 22/2/16**	**Fri 11/3/16**
3		Identify proposal title	1 day	Mon 22/2/16	Mon 22/2/16
4		Submission the proposal title	1 day	Mon 22/2/16	Mon 22/2/16
5		Approval proposal title	1 day	Mon 22/2/16	Mon 22/2/16
6		Business rules	1 day	Tue 23/2/16	Tue 23/2/16
7		Define problem and contraint	1 day	Wed 24/2/16	Wed 24/2/16
8		Define objective	1 day	Thu 25/2/16	Thu 25/2/16
9		Define scope and boundaries	1 day	Fri 26/2/16	Fri 26/2/16
10		Define the methodology use	1 day	Mon 29/2/16	Mon 29/2/16
11		Deliverable : Proposal Content	1 day	Tue 1/3/16	Tue 1/3/16
12		Proposal Correction/Improvement	7 days	Wed 2/3/16	Thu 10/3/16
13		Proposal Submission	1 day	Fri 11/3/16	Fri 11/3/16
14		**Analysis**	**5 days**	**Mon 14/3/16**	**Fri 18/3/16**
15		Current system analysis	1 day	Mon 14/3/16	Mon 14/3/16
16		Plan requirement gathering	1 day	Tue 15/3/16	Tue 15/3/16



Project: Sistem Pengurusan Tanah
Date: Sat 2/4/16

Task		External Milestone		Manual Summary Rollup	
Split		Inactive Task		Manual Summary	
Milestone		Inactive Milestone		Start-only	
Summary		Inactive Summary		Finish-only	
Project Summary		Manual Task		Deadline	
External Tasks		Duration-only		Progress	

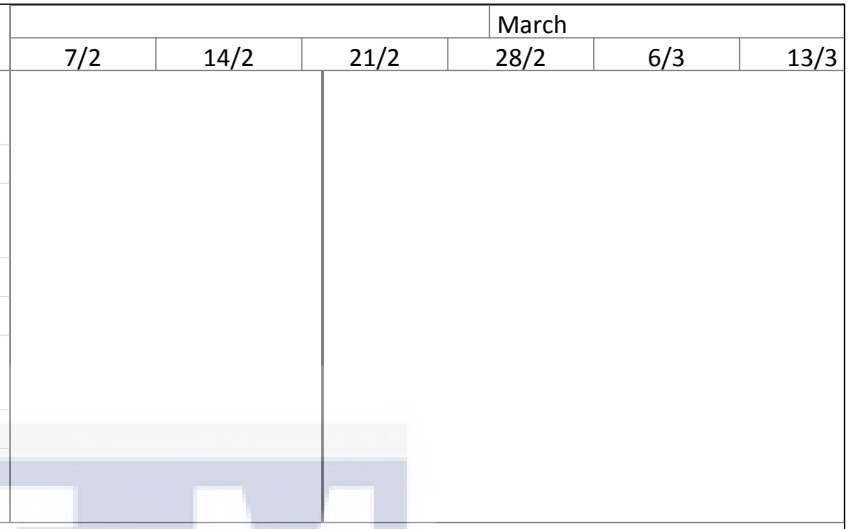
ID	Task Mode	Task Name	Duration	Start	Finish
17		Sessions for requirements gathering	1 day	Wed 16/3/16	Wed 16/3/16
18		Analyse requirement	2 days	Thu 17/3/16	Fri 18/3/16
19		**Design**	**5 days**	**Mon 21/3/16**	**Fri 25/3/16**
20		**Develop conceptual design**	**2 days?**	**Mon 21/3/16**	**Tue 22/3/16**
21		Develop ERDs	1 day	Mon 21/3/16	Mon 21/3/16
22		Data Dictionary	1 day	Tue 22/3/16	Tue 22/3/16
23		**Develop logical design**	**2 days**	**Wed 23/3/16**	**Thu 24/3/16**
24		Develop DFDs	1 day	Wed 23/3/16	Wed 23/3/16
25		**Develop physical design**	**2 days**	**Thu 24/3/16**	**Fri 25/3/16**
26		Storyboard design	1 day	Thu 24/3/16	Thu 24/3/16
27		Document design	1 day	Fri 25/3/16	Fri 25/3/16
28		**Development**	**25 days**	**Mon 7/3/16**	**Fri 8/4/16**
29		Setup infrastructure	1 day	Mon 7/3/16	Mon 7/3/16
30		Install the DBMS	2 days	Tue 8/3/16	Wed 9/3/16
31		Coding	21 days	Thu 10/3/16	Thu 7/4/16
32		Project Demo and Chapter 3	1 day	Fri 8/4/16	Fri 8/4/16
33		**Testing and Evaluation**	**30 days**	**Mon 11/4/16**	**Fri 20/5/16**
34		Test the database	7 days	Mon 11/4/16	Tue 19/4/16
35		Fine tune the database and application	7 days	Wed 20/4/16	Thu 28/4/16
36		Project demo and Chapter 4	1 day	Fri 29/4/16	Fri 29/4/16
37		Correction/Improvement	10 days	Mon 2/5/16	Fri 13/5/16



Project: Sistem Pengurusan Tanah
Date: Sat 2/4/16

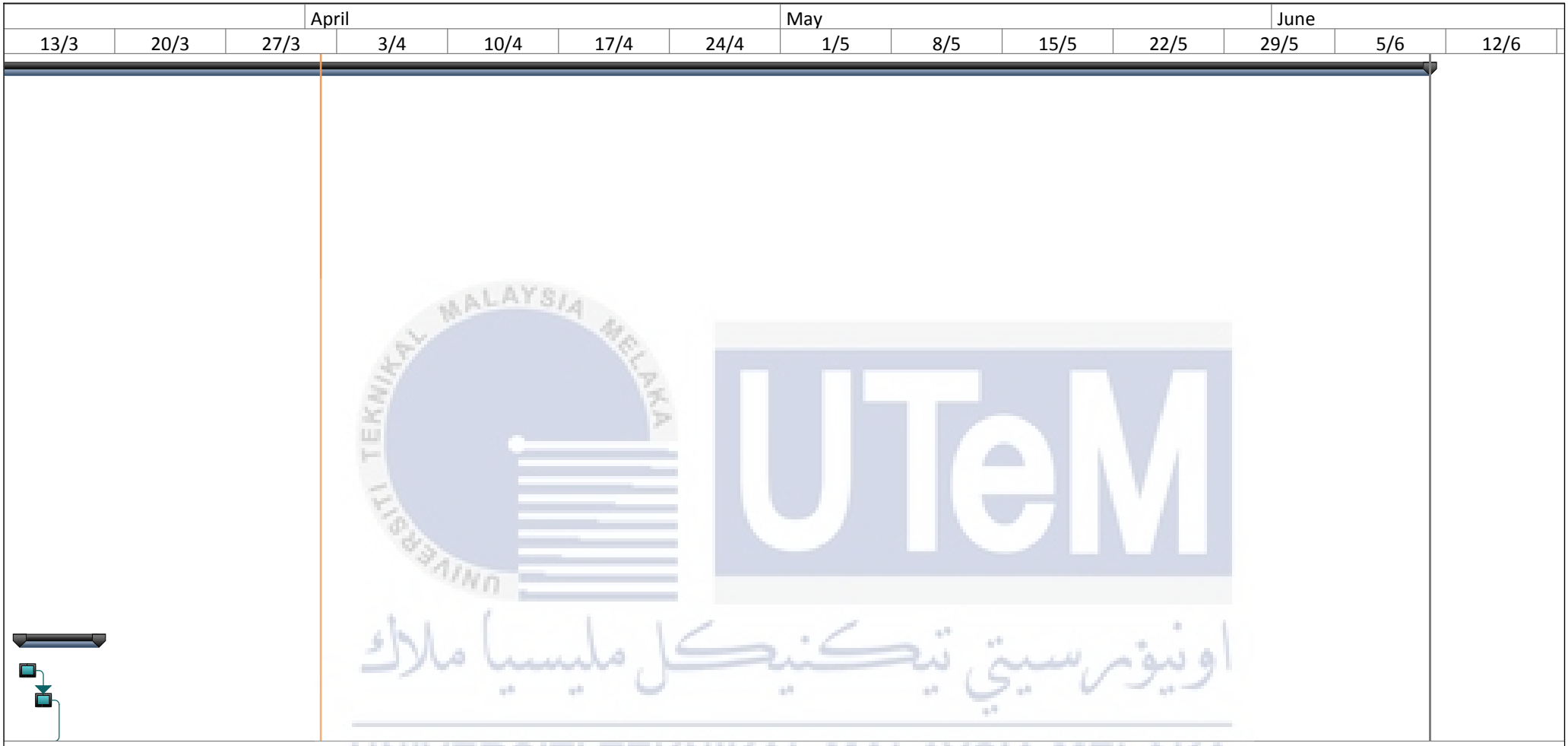
Task	External Milestone	Manual Summary Rollup
Split	Inactive Task	Manual Summary
Milestone	Inactive Milestone	Start-only
Summary	Inactive Summary	Finish-only
Project Summary	Manual Task	Deadline
External Tasks	Duration-only	Progress

ID	Task Mode	Task Name	Duration	Start	Finish
38		Project demo and PSM Report	5 days	Mon 16/5/16	Fri 20/5/16
39		**Presentation**	**6 days**	**Mon 23/5/16**	**Mon 30/5/16**
40		Project Demo and PSM Report (SV)	5 days	Mon 23/5/16	Fri 27/5/16
41		Final Presentation	1 day	Mon 30/5/16	Mon 30/5/16
42		**Report**	**9 days**	**Tue 31/5/16**	**Fri 10/6/16**
43		Submission Draft Report PSM	1 day	Tue 31/5/16	Tue 31/5/16
44		Correction/Improvement	7 days	Wed 1/6/16	Thu 9/6/16
45		Final Submission Report PSM	1 day	Fri 10/6/16	Fri 10/6/16



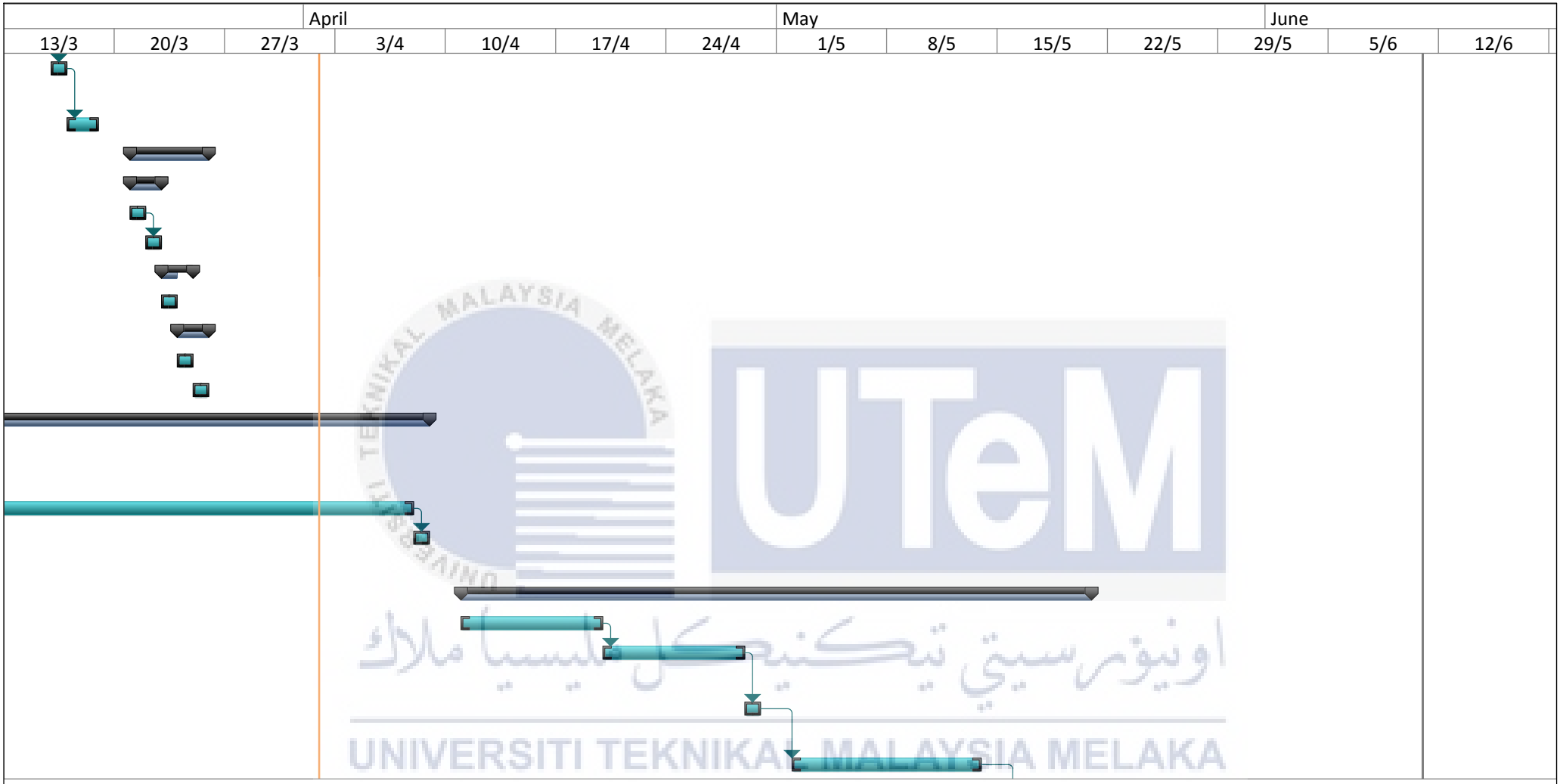
Project: Sistem Pengurusan Tanah
Date: Sat 2/4/16

Task		External Milestone		Manual Summary Rollup	
Split		Inactive Task		Manual Summary	
Milestone		Inactive Milestone		Start-only	
Summary		Inactive Summary		Finish-only	
Project Summary		Manual Task		Deadline	
External Tasks		Duration-only		Progress	



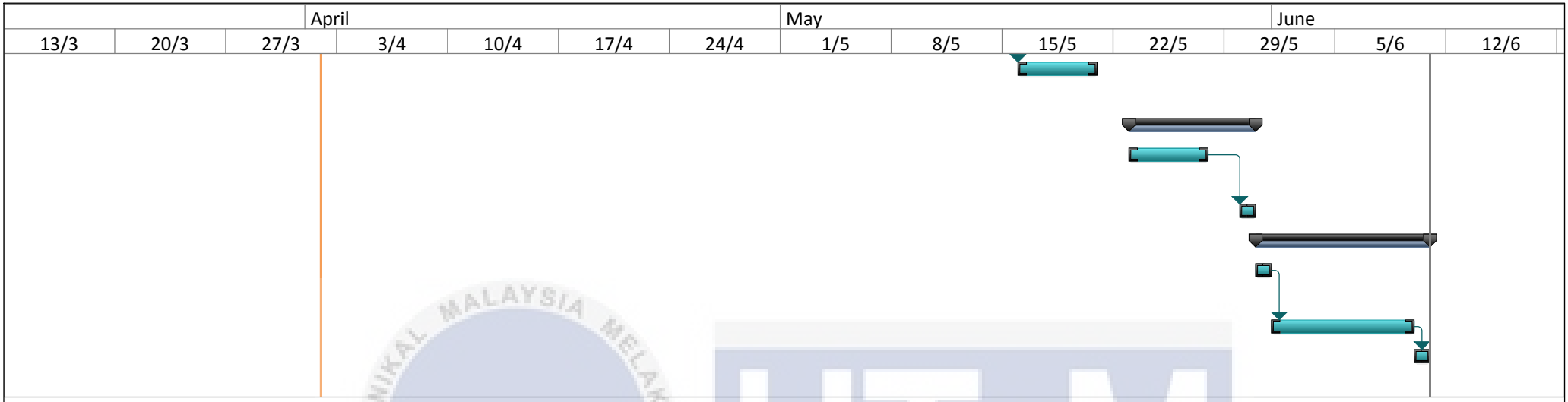
Project: Sistem Pengurusan Tanah
Date: Sat 2/4/16

Task		External Milestone		Manual Summary Rollup	
Split		Inactive Task		Manual Summary	
Milestone		Inactive Milestone		Start-only	
Summary		Inactive Summary		Finish-only	
Project Summary		Manual Task		Deadline	
External Tasks		Duration-only		Progress	



Project: Sistem Pengurusan Tanah
Date: Sat 2/4/16

Task		External Milestone		Manual Summary Rollup	
Split		Inactive Task		Manual Summary	
Milestone		Inactive Milestone		Start-only	
Summary		Inactive Summary		Finish-only	
Project Summary		Manual Task		Deadline	
External Tasks		Duration-only		Progress	



Project: Sistem Pengurusan Tanah
Date: Sat 2/4/16

Task		External Milestone		Manual Summary Rollup	
Split		Inactive Task		Manual Summary	
Milestone		Inactive Milestone		Start-only	
Summary		Inactive Summary		Finish-only	
Project Summary		Manual Task		Deadline	
External Tasks		Duration-only		Progress	

Appendix B

Graphical User Interface

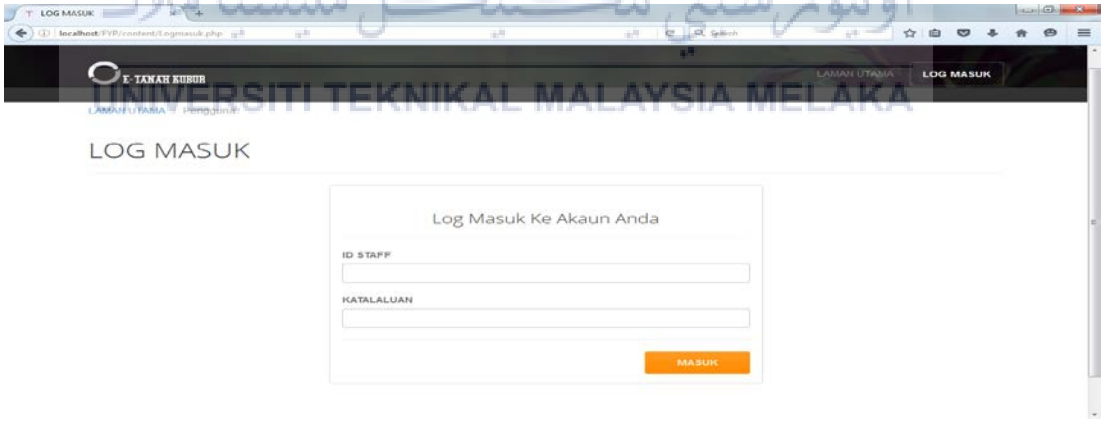
Main Page (index)

- This page contains some information about the “Sistem Pengurusan Tanah Perkuburan Islam”.

Login As STAFF

Log Masuk

- This page function to log in into system by login using id staff and the password that created by admin system.

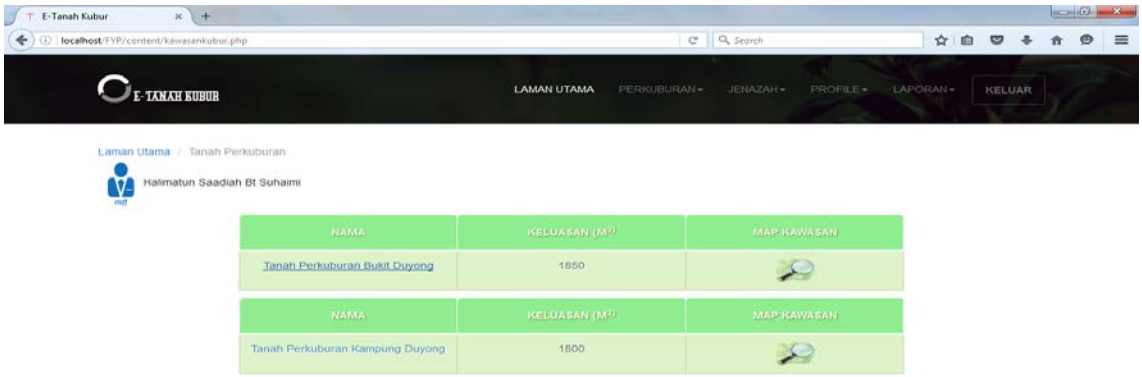


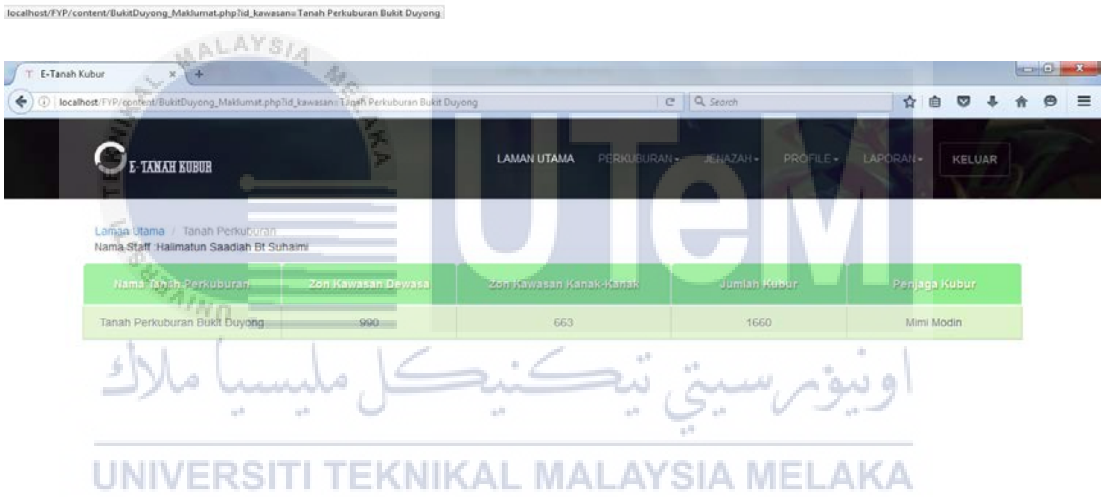
Staff Page

- This is the main page log in as staff. That contains several functions for staff.

Tanah Perkuburan Page

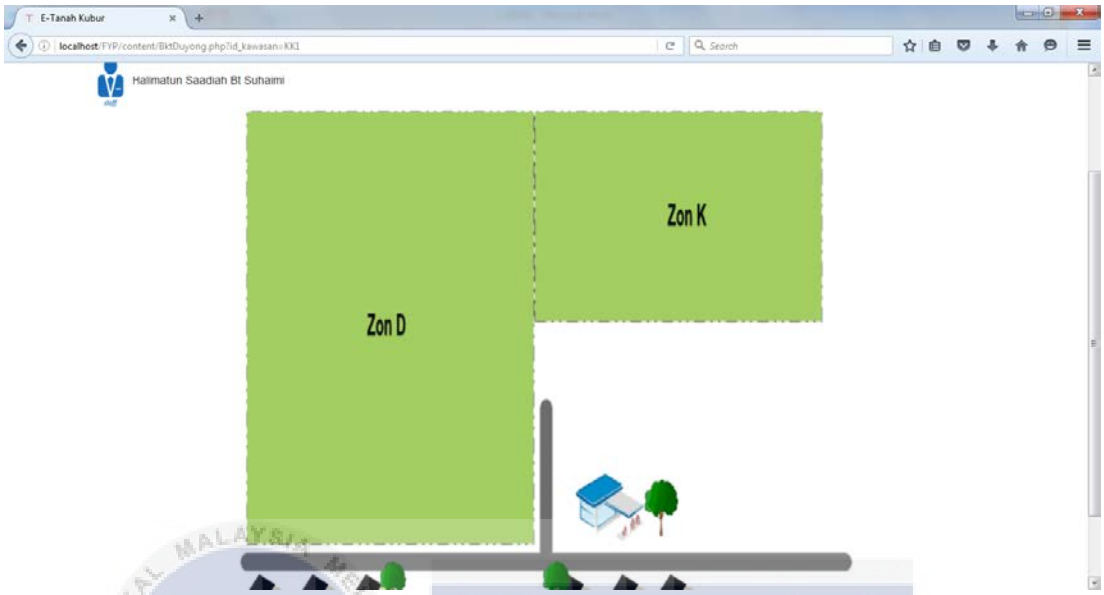
- Contain the information about the cemetery. Each of cemetery area. If click the name and more details will display.





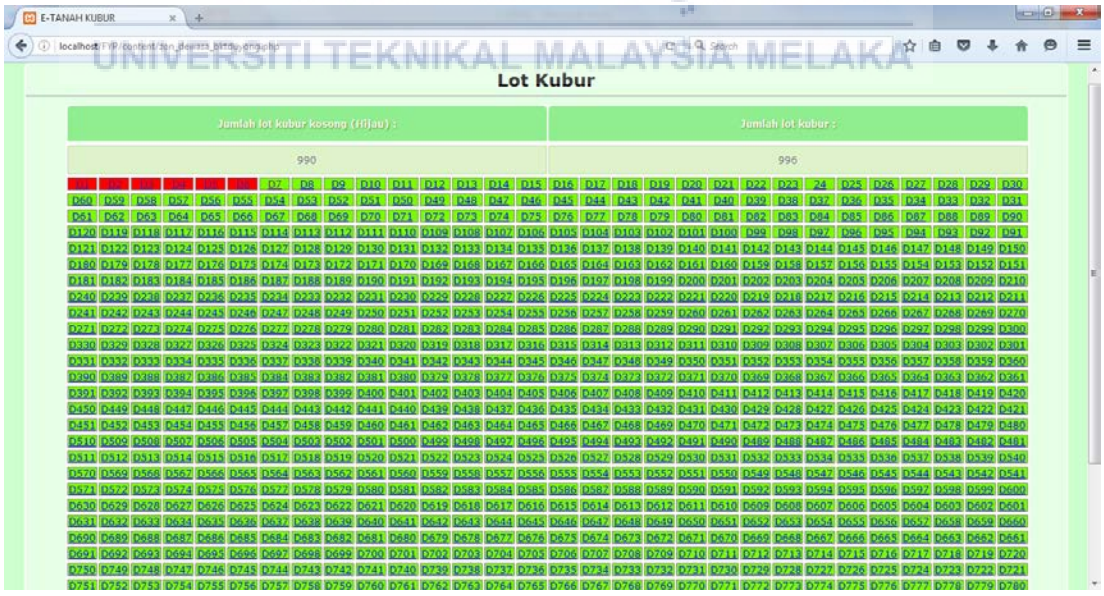
Map page (by zon)

- Contains the zon area. (Zon D=Dewasa@adult and Zon K=Kanak-kanak@children).



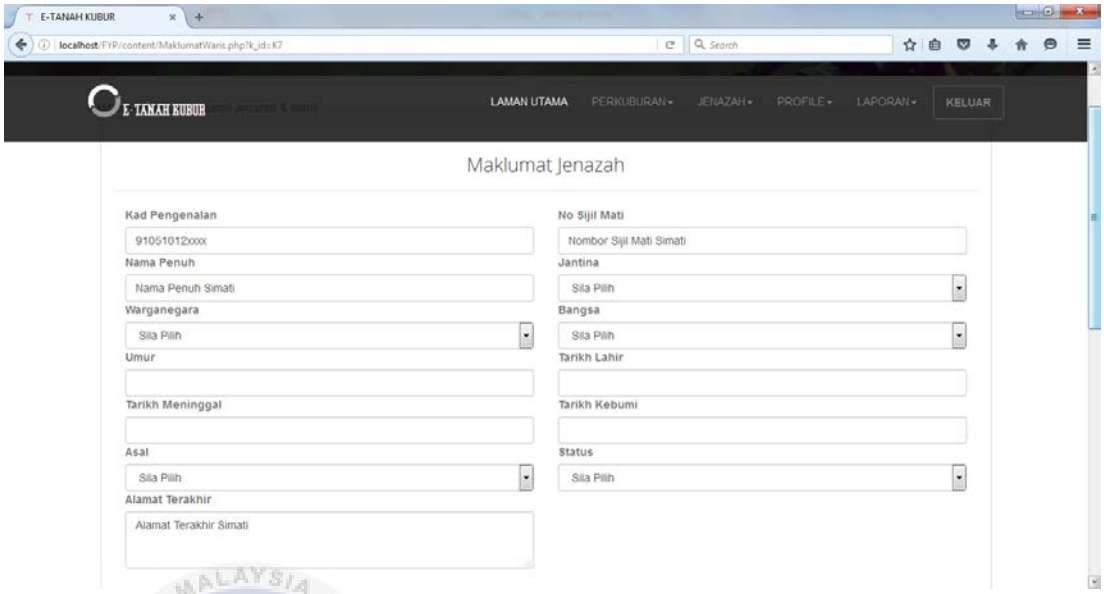
Lot Page

- Contains the guide of grave lot that has the total lot available and not available. If the lot already taken then the color change to red and the total will be deduct.



Insert corpse details page

- Contain informations about corpse and heir that need to fill.



Search page (Jenazah Details)

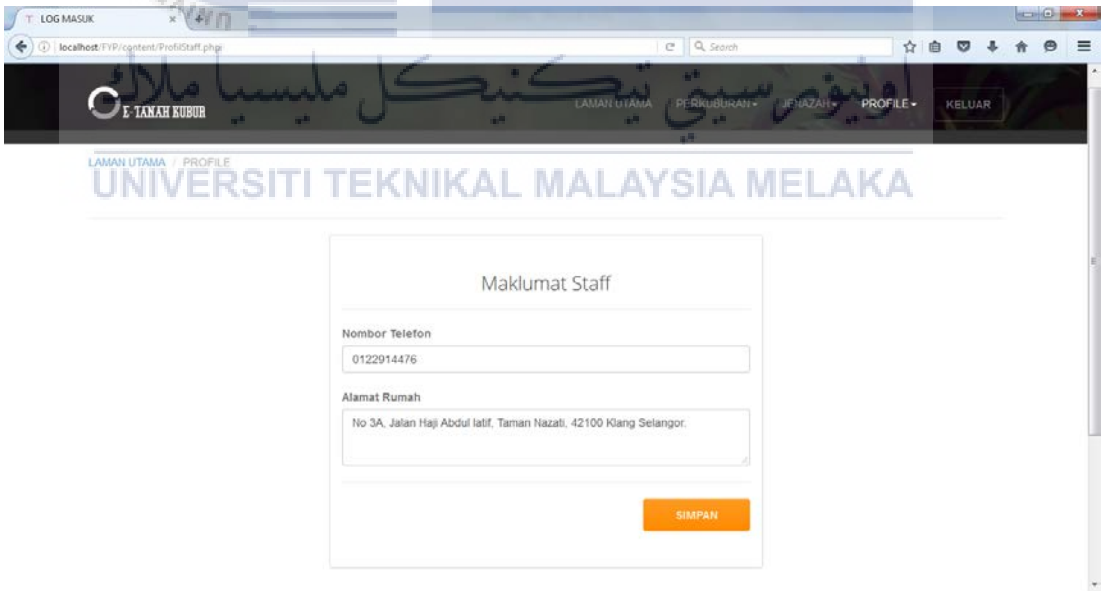
- Contains more details info about corpse after click the button INFO on column tindakan.

Lot and Cemetery Details Page

- Contains the details about lot and the cemetery

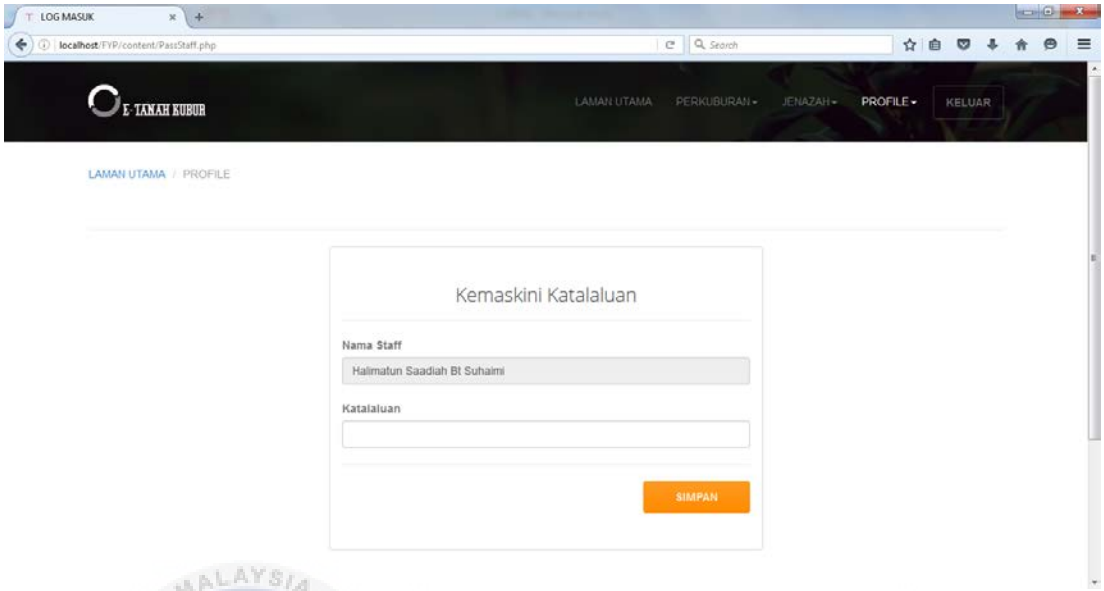
Update Staff Details Page

- Only phone number and adddress can be updated.



Change the password page

- Staff can change the password anytime their needed.



Staff Details Page

- Staff can view their own details.

Total corpse each cemetery page

- Total the copse that already burial at the cemetery.

Total each state of corpse with the cemetery

- Total the corpse group by state and cemetery.

Page Log out

- Page destroy all session and back to the main page(index).

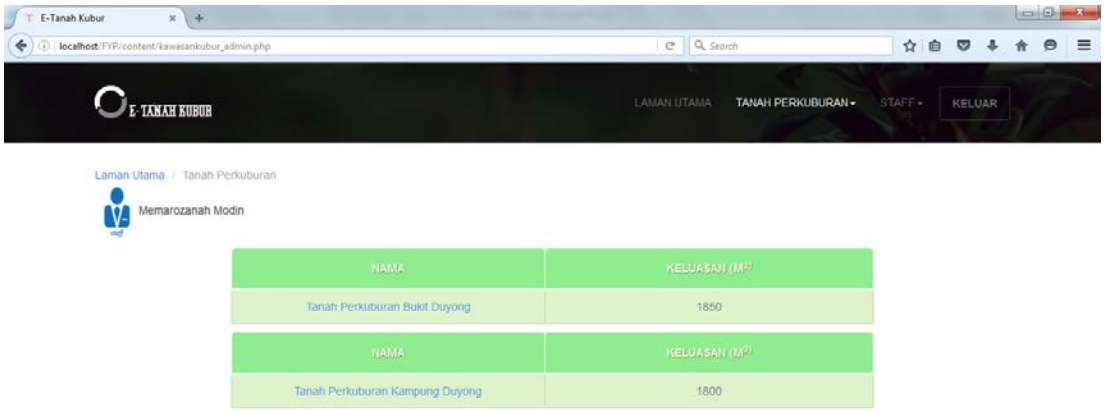
Login As Admin

Main page (index)

- This page contains several function that admin can do.

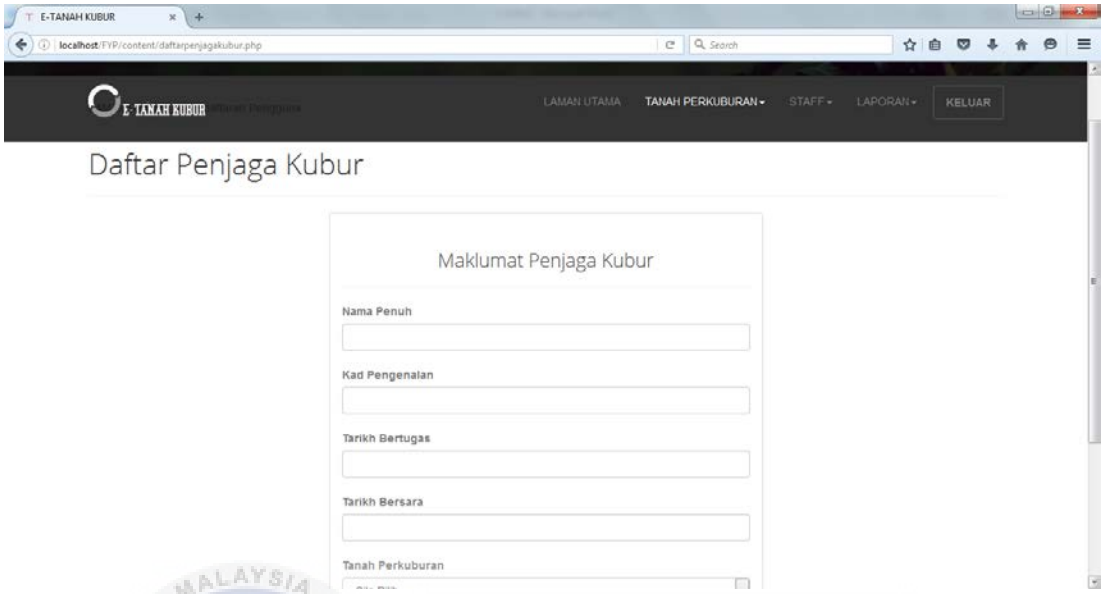
Cemetery details page

- After click the name of cemetery, system will display more information about the cemetery.



Register Penjaga Kubur

- Admin can register the details about keeper.

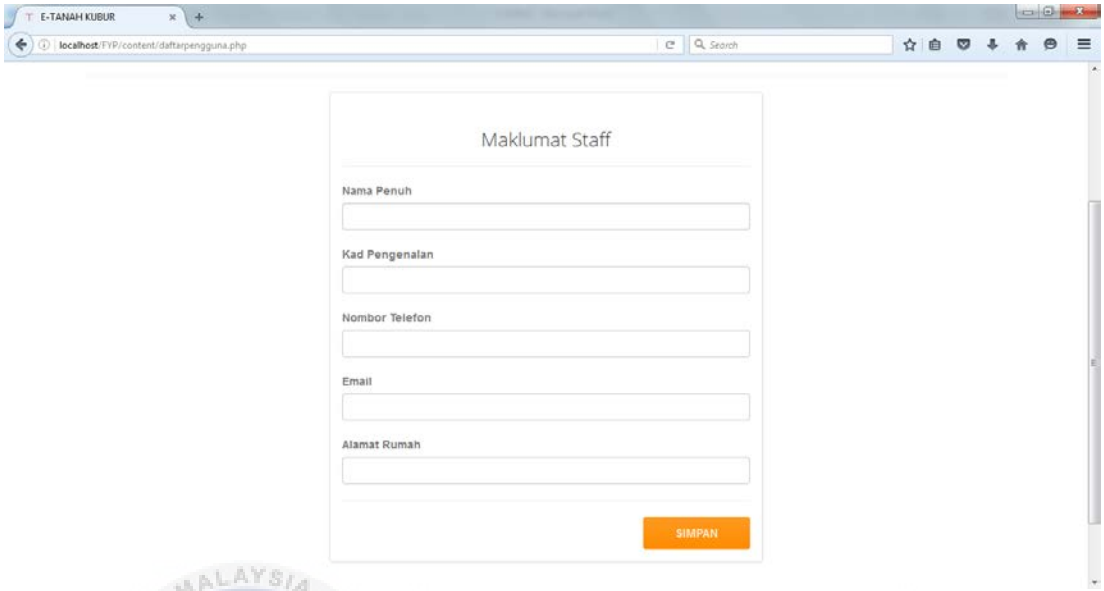


Penjaga Kubur details Page

- More details about penjaga kubur and also admin can update and delete the information.

Register new staff page

- Register new staff.



User details (staff) page

- List of staff. Can be update and delete by admin.

Appendix C

Create Table

```
CREATE TABLE WARIS
(
W_IC            VARCHAR2(5) NOT NULL PRIMARY KEY,
W_NAMA          VARCHAR2(50),
W_IC            VARCHAR2(12),
W_TELNO         VARCHAR2(11),
W_ALAMAT        VARCHAR2(100)
);
```

Figure B1: Create Table Waris

```
CREATE TABLE JENAZAH
(
J_IC            VARCHAR2(12) NOT NULL PRIMARY KEY,
J_SIJILMATI VARCHAR2(10),
J_NAMA      VARCHAR2(50),
J_JANTINA   VARCHAR2(12),
J_WARGANEGARA       VARCHAR2(20),
J_BANGSA            VARCHAR2(20),
J_UMUR              NUMBER,
J_TARIKH_LAHIR      DATE,
J_TARIKH_MENINGGALDATE,
J_TARIKH_KEBUMI     DATE,
J_ASAL      VARCHAR2(50),
J_STATUS    VARCHAR2(50),
J_ALAMAT_AKHIR_SIMATI VARCHAR2(100),
FOREIGN KEY (W_ID) REFERENCES WARIS(W_ID),
CONSTRAINT JENAZAH_WARIS_CHECK CHECK
(J_TARIKH_MENIGGAL <= J_TARIKH_KEBUMI)
);
```


Figure B2: Create Table Jenazah

```
CREATE TABLE KAWASAN_KUBUR
(
ID_KAWASAN          VARCHAR2(5) NOT NULL PRIMARY
KEY,
NAMA_KAWASAN        VARCHAR2(35),
KELUASAN            NUMBER,
S_NO                VARCHAR2(5),
FOREIGN KEY (S_NO) REFERENCES STAFF(S_NO)
);
```

Figure B3 : Create Table Kawasan_Kubur

```
CREATE TABLE ZON
(
Z_ID            VARCHAR2(5) NOT NULL PRIMARY KEY,
ZON_D           NUMBER,
ZON_K           NUMBER,
JUMLAHKUBUR     NUMBER,
ID_KAWASAN      VARCHAR2(5),
FOREIGN KEY (ID_KAWASAN) REFERENCES
KAWASAN_KUBUR(ID_KAWASAN)
);
```


Figure B4: Create Table Zon

```
CREATE TABLE KUBUR
(
K_ID          VARCHAR2(5) NOT NULL PRIMARY KEY,
LOT_NO        VARCHAR2(5),
STATUS        VARCHAR2(20),
Z_ID          VARCHAR2(5),
FOREIGN KEY (Z_ID) REFERENCES ZON (Z_ID)
);
```

Figure B5: Create Table Kubur

```
Create table Penjaga_Kubur
CREATE TABLE PENJAGA_KUBUR
(
NO_PK              VARCHAR2(5) NOT NULL PRIMARY KEY,
NAMA_PENJAGA       VARCHAR2(50),
IC_PENJAGA         VARCHAR2(12),
TARIKH_BERTUGAS    DATE,
TARIKH_BERSARA     DATE,
ID_KAWASAN         VARCHAR2(5),
FOREIGN KEY (ID_KAWASAN) REFERENCES
KAWASAN_KUBUR (ID_KAWASAN)
);
```

Figure B6: Create Table Penjaga_Kubur

Appendix D

Testing

Table C.1: Table Cases Form for User Login

Test ID	Test Cases	Input	Action	Expected Result	Actual Result	Test Result (Success/Fail)
Test_A001	Test invalid username	Username: S111 Password: ******	Click login button	Prompt failed message “ID atau katalaluan salah.”	Same result with expected result	Success
Test_A002	Test invalid password	Username: S0002 Password: ***	Click login button	Prompt failed message “ID atau katalaluan salah”	Same result with expected result	Success
Test_A003	Test blank username	Username:--------- Password: ******	Click login button	Display required field “Sila masukkan id staff”	Same result with expected result	Success
Test_A004	Test blank password	Username: S0002 Password: ---------	Click login button	Display required field “Sila masukkan katalaluan”	Same result with expected result	Success
Test_A005	Test blank username and password	Username: -------- Password: ---------	Click login button	Display required field “Sila masukkan id staff ” and “Sila masukkan katalaluan”	Same result with expected result	Success
Test_A006	Test valid username and password	Username: S0002 Password: ******	Click login button	Successful login	Same result with expected result	Success

Table C.2: Table Cases Form for Staff Registration

Test ID	Test Cases	Input	Action	Expected Result	Actual Result	Test Result (Success/Fail)
Test_B001	Test add new staff	Nama Penuh: Memarozanah Modin Kad Pengenalan: 910510125966 Nombor Telefon: 0172358794 Email: memarozanah@gmail.com Alamat Rumah: No 353E, Jalan Teratai 2, Taman Bunga Raya, 75450 Bukit Beruang Melaka.	Click SIMPAN button	Prompt 'Anda betul ingin simpan" message then click ok to save popup message will be appear "Maklumat pengguna baru disimpan." or cancel to previous page.	Same result with expected result	Success
Test_B002	Test add new staff	Leave any one or more field empty	Click SIMPAN button	Prompt 'Anda betul ingin simpan" message then click ok to save or cancel to previous page. If ok then some text field empty the required will display on below of text box.	Same result with expected result	Success

Table C.3: Table Cases Form for Corpse Registration

Test ID	Test Cases	Input	Action	Expected Result	Actual Result	Test Result (Success/Fail)
Test_C001	Test add new corpse	Kad Pengenalan: 820826045112 No Sijil Mati: G201856 Nama Penuh: Fatiha Binti Yusof Jantina: Perempuan Warganegara: Malaysia Bangsa: Melayu Umur: 33 Tarikh Lahir: 26/08/1982 Tarikh Meninggal: 30/03/2015 Tarikh Kebumi: 31/03/2015 Asal: Melaka Status: Bujang Alamat Terakhir: Taman Seri Duyung Seksyen 2.	Click SIMPAN button	Prompt message "Telah Berjaya Disimpan"	Same result with expected result	Success
Rest_C002	Test add new corpse	Leave any one or more field empty	Click SIMPAM button	Display required field empty	Same result with expected result	Success

\

Table C.4: Table Cases Form for Heir Registration

Test ID	Test Cases	Input	Action	Expected Result	Actual Result	Test Result (Success/Fail)
Test_D001	Test add new heir	Nama Penuh: Yusof Bin Osman Kad Pengenalan: 501202046777 Nombor Telefon: 0124431234 Alamat Waris: Jalan Muhibbah 12c, Taman Muhibbah Fasa 12, Melaka.	Click SIMPAM button	Prompt message "Telah Berjaya Disimpan"	Same result with expected result	Success
Test_D002	Test add new heir	Leave any one or more field empty	Click SIMPAM button	Prompt message "Telah Berjaya Disimpan"	Same result with expected result	Success

Table C.5: Table Cases Form for Lot View

Test ID	Test Cases	Input	Action	Expected Result	Actual Result	Test Result (Success/Fail)
Test_E001	Test available lot	Choose lot color green	Click the ID lot	Go to the corpse registration page	Same result with expected result	Success
Test_E002	Test not available lot	Choose lot color red	Click the ID lot	Cannot be click	Same result with expected result	Success

Table C.6: Table Cases Form for Staff Update

Test ID	Test Cases	Input	Action	Expected Result	Actual Result	Test Result (Success/Fail)
Test_F001	Test update data	Nombor Telefon: 0122914476aa Alamat Rumah: No 3A, Jalan Haji Abdul latif, Taman Nazati, 42100 Klang Selangor.	Click SIMPAN button	Display invalid format	Same result with expected result	Success
Test_F002	Test update data	Nombor Telefon: 0122914476 Alamat Rumah: --------	Click SIMPAN button	Prompt success message “Kemaskini Maklumat Berjaya.”	Same result with expected result	Success
Test_F003	Test update data	Nombor Telefon: --------- Alamat Rumah: No 3A, Jalan Haji Abdul latif, Taman Nazati, 42100 Klang Selangor.	Click SIMPAN button	Prompt success message “Kemaskini Maklumat Berjaya.”	Same result with expected result	Success
Test_F004	Test update data	Nombor Telefon: --------- Alamat Rumah: ----------	Click SIMPAN button	Prompt success message “Kemaskini Maklumat Berjaya.”	Same result with expected result	Success

Table C.7: Table Cases Form for Search

Test ID	Test Cases	Input	Action	Expected Result	Actual Result	Test Result (Success/Fail)
Test_G001	Test search data	Nama atau Kad Pengenalan : ----------	Click Cari button	Prompt message “Data tidak dijumpai”.	Same result with expected result	Success
Test_G002	Test search data	Nama atau Kad Pengenalan : 910510-12-5966	Click Cari button	Prompt message “Data tidak dijumpai”.	Same result with expected result	Success
Test_G003	Test search data	Nama atau Kad Pengenalan : 910510125966	Click Cari button	The data successfully display with details.	Same result with expected result	Success

Appendix E

Log Book

FACULTY OF INFORMATION COMMUNICATION AND TECHNOLOGY

SEMESTER 2 2015/2016

FINAL YEAR PROJECT II (BITU 3983)

BITD

LOG BOOK

PROJECT TITLE: SISTEM PENGURUSAN TANAH PERKUBURAN ISLAM (E-KUBUR)

PREPARED BY: MEMAROZANAH BINTI MODIN

SUPERVISOR NAME: DR SAFIZA SUHANA KAMAL BAHARIN

ACTIVITIES

Name of Activity: **DISCUSSION OF DRAFT REPORT CHAPTER V**

Week/Start Date: 18 July 2016

Week/End Date: 22 July 2016

Activity Description:

Discuss with the supervisor about the draft report chapter v (Implementation) that has been complete to supervisor recheck. Supervisor check and want the report to be fixed because has some lack or mistake on the report contents.

Student"s Signature

Date: 25 August 2016

Supervisor"s Signature and Stamp

SAFIZA SUHANA BT. KAMAL BAHARIN
Pensyarah
Fakulti Teknologi Maklumat dan Komunikasi
Universiti Teknikal Malaysia Melaka

Date: 25 August 2016

ACTIVITIES

Name of Activity: DISCUSSION OF DRAFT REPORT CHAPTER VI

Week/Start Date: 25 July 2016

Week/End Date: 29 July 2016

Activity Description:

Supervisor give a comment on the chapter vi (Testing). A few of contents need to be fixed on the report testing contents.

Student"s Signature

Date: : 25 August 2016

Supervisor"s Signature and Stamp

SAFIZA SUHANA BT. KAMAL BAHARIN
Pensyarah
Fakulti Teknologi Maklumat dan Komunikasi
Universiti Teknikal Malaysia Melaka

Date: 25 August 2016

ACTIVITIES

Name of Activity: DISCUSSION OF DRAFT REPORT CHAPTER VII

Week/Start Date: 1 August 2016

Week/End Date: 5 August 2016

Activity Description:

Discuss the content of conclusion in chapter vii (Conclusion). The reports content of chapter conclusion need to be fixed and add more strengths and contribution on the contents.

Student"s Signature

Date : 25 August 2016

Supervisor"s Signature and Stamp

AFIZA SUHANA BT. KAMAL BAHARIN
Pensyarah
Fakulti Teknologi Maklumat dan Komunikasi
Universiti Teknikal Malaysia Melaka

Date: 25 August 2016

ACTIVITIES

Name of Activity: DISCUSS ABOUT FULL DRAFT REPORT PSM 2

Week/Start Date: 8 August 2016

Week/End Date: 12 August 2016

Activity Description:

Discuss with supervisor about the full report contents that has been completed with correct format.

Student"s Signature

Date: : 25 August 2016

Supervisor"s Signature and Stamp

Date: 25 August 2016

ACTIVITIES

Name of Activity: DISCUSS ABOUT SLIDE PRESENTATION PSM 2

Week/Start Date: 15 August 2016

Week/End Date: 15 August 2016

Activity Description:

Discuss with supervisor about the slide presentation psm 2. The contents that needed to be present to evaluator.

Student"s Signature

Date: : 25 August 2016

Supervisor"s Signature and Stamp

SAFIZA SUHANA BT. KAMAL BAHARIN
Pensyarah
Fakulti Teknologi Maklumat dan Komunikasi
Universiti Teknikal Malaysia Melaka

Date: 25 August 2016

Appendix F

Proposal

Kod Projek :	BITU 3973

UNIVERSITI TEKNIKAL MALAYSIA MELAKA
FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY

PROJEK SARJANA MUDA 1
PROPOSAL FORM
[Incomplete form will be rejected]

A	**TITLE OF PROPOSED PROJECT:** *Tajuk projek yang dicadangkan :* **Sistem Pengurusan Tanah Perkuburan Islam (E-KUBUR)**
B	**DETAILS OF STUDENT** / *MAKLUMAT PELAJAR*
B(i)	**Name of Student: Identity card no.:** *Nama Pelajar:No. Kad Pengenalan :* **MEMAROZANAH BINTI MODIN** Student card no.: ***No. Kad Pelajar :*** **B031310035**
B(ii)	**Correspondence Address :** *Alamat Surat Menyurat :* **No.353E, Jalan Teratai 2, Taman Bunga Raya,** **Bukit Beruang, 75450 Melaka**
B(iii)	**Program Pengajian:** *Study Program:* ☐ BITC ■ BITD ☐ BITI ☐ BITM ☐ BITS
B(iv)	**Home Telephone No.:** *No. Telefon Rumah:* **-** **Handphone No.:** *No. Telefon Bimbit:* **017-2358794**
B(v)	**E-mail Address:** *Alamat e-mel:* **memarozanah@gmail.com / B031310035@student.utem.edu.my**

C	**PROJECT INFORMATION /** *MAKLUMAT PROJEK*
C(i)	**Project Area (Please tick)**: *Bidang Projek (Sila tanda (√)):* ☐ **A. Intelligent Information Systems** Sistem Informasi Pintar ☐ **B. Software Technology** Teknologi Perisian ■ **C. Database Technology** Teknologi Pangkalan Data ☐ **D. Computer System Technology** *Teknologi SistemKomputer* ☐ **E. Computer and Network Security** *Komputer dan Keselamatan Rangkaian* ☐ **F. Networking and Distributed Computing** *Rangkaian dan Pengkomputeran Teragih* ☐ **G. Immersive Technology** Teknologi Imersif
C(ii)	**Duration of this project (Maximum 12 months):** *Tempoh masa projek ini (Maksimum 12 bulan):* **Duration:** 3 months 2 Weeks 5 days *Tempoh* : **From :** 22-Feb-2016 *Dari* : **To :** 10-June-2016 *Hingga* :
C(v)	**Executive Summary of Project Proposal (maximum 300 words)** **(Please include the background of project, literature reviews, objectives, project methodology and expected outcomes from the project)** *Ringkasan Cadangan Eksekutif Projek (maksima 300 patah perkataan)* *(Meliputi latar belakang projek, kajian literatur,kaedah projek,objektif dan jangkaan hasil projek)* Muslim cemetery management system is one of the platforms to help the heirs and the person responsible for organising the funeral arrangements and make the data storage regularly and systematically. There are many problems with the management of the Muslim cemetery at this time such as information is difficult to find and cause problems to the heirs who want to visit the cemetery. The responsible parties also do not have any data that is stored in writing or softcopy of burial plots after the funeral process is complete. The heirs will only remember their own family graves site based on the tombstones in the cemetery or remember the lot location. So with the muslim cemetery management system can help search lot location for the heir if

	have any problems with remembering a grave lot location. In addition, this system will detect the available and non-available grave lot. The system will also generate statistical analysis of death record. Furthermore, the system uses the V-Model methodology is very simple and easy to use. Software is developed during the implementation phase, so no early prototypes of the software are produced. If any changes happen in midway, then the test documents along with requirement documents has to be updated. Hoped that this system can help in the management of the cemetery with a more organised and systematic and useful to the community.
C(vi)	**Detailed proposal of project:** *Cadangan maklumat projek secara terperinci:* **(a) Project background including Introduction / Problem Statements and Literature Reviews**. *Keterangan latar belakang projek termasuk pengenalan / penyataan masalah dan kajian literatur*. *1. Introduction* Muslim cemetery management systems (MCMS): This project will be developed for use in the management of Melaka Muslim cemetery. Previously, no system is used for record the death information after the funeral process is complete and tracking the grave location. Cemetery is define as tract of land used for burials. In Malaysia, there are basically three types of cemetery based on religions which are Muslims, Christians, Hindus and Buddha's. For Muslim's grave usually used tombstone allocated at the grave define to define the owner. These types of cemetery are usually separated by the area and organized by same local authority. Department under city council will give services for the burial. However, the increasing growth of population and number of death daily made the cemetery area packed and crowded. Hence database for burial and cemetery is needed to solve this problem. Hence, this system can help search a lot location for the heir if have any problems with remembering a grave lot location. In addition, this system will detect the available and non-available grave lot. The system will also generate statistical analysis of death record and keep the death information. *2. Problem Statements* Based on studies and interview there are some problems have been identified and should be resolved by using this system. Some of these problems are : 1. Difficult to find the grave lot location. In terms of the grave position often heir of the deceased is always difficult to find the exact location of the cemetery there is always adding new graves will confuse beneficiaries. Besides that, the heirs need to take a lot of time to make sure the grave lot location is correct to visit. 2. Operate and manage the death information and grave lot location still using manually.

The increasing growth of population and number of death daily made the cemetery area packed and crowded. Using manual system was no longer effective because the data would be redundant and management of mosque always changing. It's is difficult to find the employees that on duty to give the information then as an ordinary human, we 'II never run in making mistakes.

3. Do not have a detailed report about the death information and grave lot location makes it difficult for management to do the data analysis.

   All information done with manual, this will be very difficult for management to make a decision on determining the record and grave lot for analysis. Besides that, current system does not provide the statistical analysis of death record and grave lot location.

(b) Objective (s) of the Project
Objektif Projek

This project embarks on the following objectives:

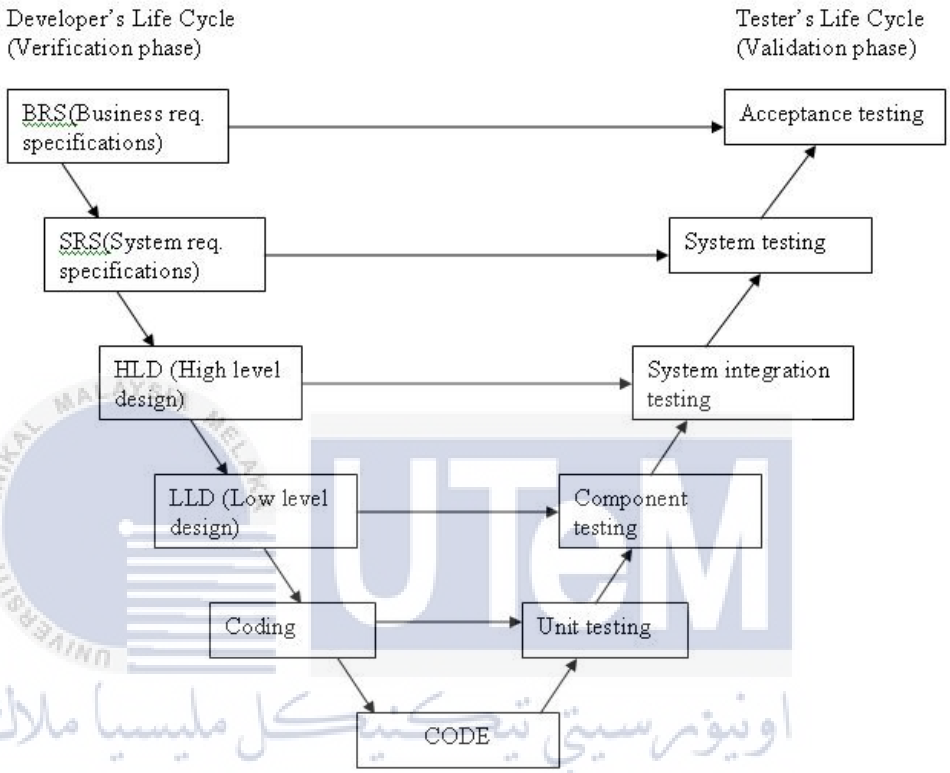
1. To provide the systematic and efficiently solution in managing the death record after the funeral process is complete.
2. To generate statistical analysis and backup data of death record.
3. To develop mapping grave lot location that availaible or non-available.

(c)Project Methodology

Kaedah projek

Please state in the form / *Sila nyatakan di borang ini*

1. *Description of Methodology*



A system development or software development requires the choosing of the appropriate methodologies, process and the techniques. For Muslim Cemetery Management System, I prefer more on V-Model for this project methodology. This is because this method is very simple and easy to use. Software is developed during the implementation phase, so no early prototypes of the software are produced. If any changes happen in midway, then the test documents along with requirement documents has to be updated.

The various phases of the V-model are as follows:

Requirements like BRS and SRS begin the life cycle model just like the waterfall model. But, in this model before development is started, a system test plan is created. The test plan focuses on meeting the functionality specified in the requirements gathering.

The high-level design (HLD) phase focuses on system architecture and design. It provide

overview of solution, platform, system, product and service/process. An integration test plan is created in this phase as well in order to test the pieces of the software systems ability to work together.

The low-level design (LLD) phase is where the actual software components are designed. It defines the actual logic for each and every component of the system. Class diagram with all the methods and relation between classes comes under LLD. Component tests are created in this phase as well.

The implementation phase is, again, where all coding takes place. Once coding is complete, the path of execution continues up the right side of the V where the test plans developed earlier are now put to use.

Coding: This is at the bottom of the V-Shape model. Module design is converted into code using PHP and Mysql.

2. *Gantt Chart of Project Activities (Please enclose in the Appendix)*

3. Milestones and Date

Week	Activity
1 -3 22 Feb -11 March	**Initialize : (Chapter 1)** Identity proposal title Submission the proposal title Approval proposal title Business rules Define problem and constraint Define objective Define scope and boundaries Define the methodology use Deliverable : Proposal Content Proposal Correction/Improvement Proposal Submission
4 14-18 Mar	**Analysis :** Current system analysis Plan requirement gathering Sessions for requirement gathering Analyze requirement
5 21 - 25 Mar	**Design : (Chapter 2)** Develop conceptual design Develop logical design Develop physical design
6-7 28 Mar - 8 April	**Development : (Chapter 3)** Setup infrastructure Install the DBMS Coding Project Demo and Chapter 3
8	**MID SEMESTER BREAK**
9 -13 18 April - 20 May	**Testing and Evaluation : (Chapter 4)** Test the database Fine tune the database and application Project Demo and Chapter 4 Correction and improvement Project demo and PSM Report
14 23 - 30 May	**Presentation :** Project Demo and PSM Report (SV) Final Presentation
15 - 16 30 May - 10 June	**Report :** Submission Draft Report Correction/Improvement Final Submission Report PSM

(d) Expected Results/Benefit

Jangkaan Hasil Projek

1. *Novel theories/New findings/Knowledge*

   At the end of the project, there is some expected findings that may be discovered. This system will help search a lot location for the heir if have any problems with remembering a grave lot location. In addition, this system will detect the available and non-available grave lot. The system will also generate statistical analysis of death record. Besides that, there is a system that can help to manage the information of the grave.

2. *Project Publications*

   There is a publication value for this muslim cemetery management system as it is very helpful in easier the heir or employee to search the grave location and manage the information of cemetery.

3. *Specific or Potential Applications (if any)*

   - None -

D **REFERENCES**

[1] NOOR SHAFIQAH MOHAMAD DAUD, NORALFISHAH SULAIMAN : "AMALAN TERBAIK SISTEM PENGURUSAN TANAH PERKUBURAN ISLAM (SPTPI) BERKONSEPKAN TAMAN TEKNOLOGI MENGGUNAKAN APLIKASI SISTEM MAKLUMAT GEOGRAFI (GIS) ". (2013)

[2] ZAKI HALIM MUBAROK : "PERANAN WAKAF DALAM MEMBANGUN IDENTITAS MUSLIM SINGAPURA".

E	ACCESS TO EQUIPMENT AND MATERIAL (PLEASE LIST IN DETAIL) / *KEMUDAHAN SEDIA ADA UNTUK KEGUNAAN BAGI PROJEK INI (SILA SENARAIKAN DENGAN TERPERINCI)*	
	University *Universiti*	**Other Sources or Places** *Lain-lain tempat/sumber*
	1. Wi-Fi	1. Library

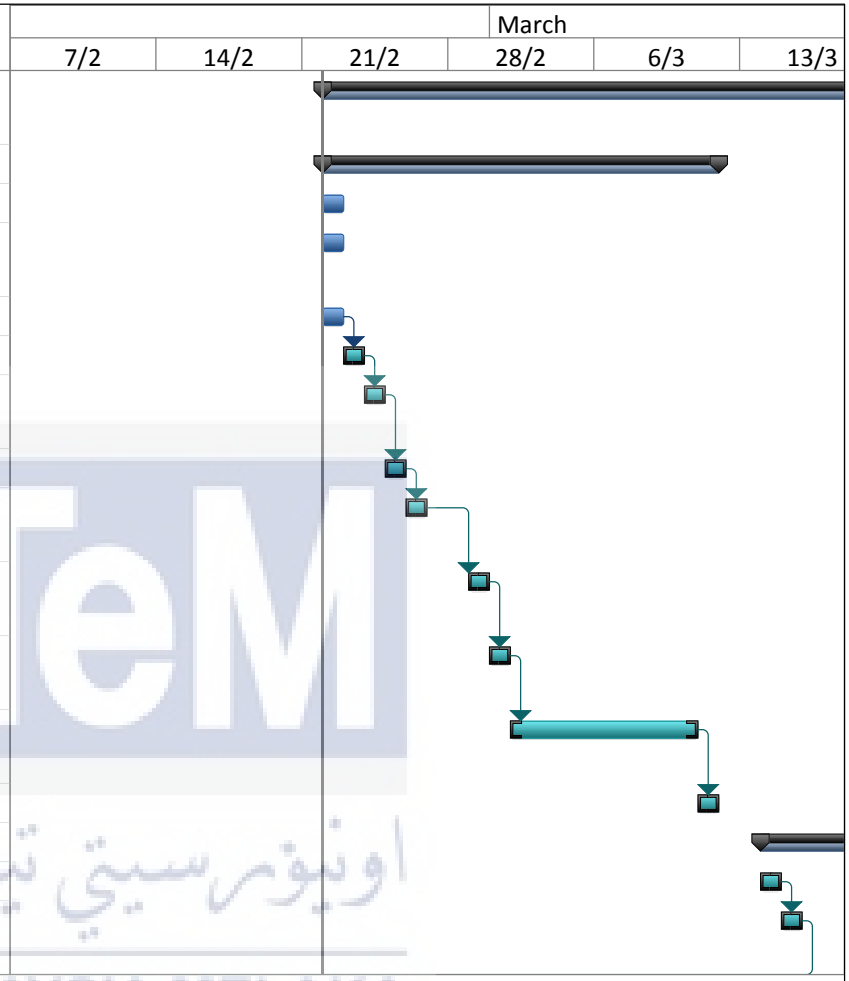
F (i)	**Declaration by applicant** / *Akuan Pemohon*
	Date : *Tarikh :* 15/03/2016 **Applicant's Signature :** *Tandatangan Pemohon :*

F (ii)	**Recommended by the Supervisor** *Perakuan oleh Penyelia*	**Recommendation by the Evaluator** *Perakuan oleh Penilai*
	Please tick (√) *Sila tandakan (√)*	**Please tick (√)** *Sila tandakan (√)*
	Recommended: *Diperakukan:*	**Recommended:** *Diperakukan:*
	☐ **A. Highly Recommended** *Sangat Disokong*	☐ **A. Highly Recommended** *Sangat Disokong*
	☒ **B. Recommended** *Disokong*	☐ **B. Recommended** *Disokong*
	☐ **C. Not Recommended (Please specify reason)** *Tidak Disokong (Sila Nyatakan Sebab)*	☐ **C. Not Recommended (Please specify reason)** *Tidak Disokong (Sila Nyatakan Sebab)*
	General Comments: *Ulasan umum:*	**General Comments:** *Ulasan umum:*

SAFIZA SUHANA KAMAL BAHARIN. **Supervisor's Name:** *Nama Penyelia:* **Signature:** *Tandatangan:* **Date:** *Tarikh:* 15/3/2016	**Evaluator's Name:** *Nama Penilai:* **Signature:** *Tandatangan:* **Date:** *Tarikh:*

PSM & PD COMMITTEE Comments

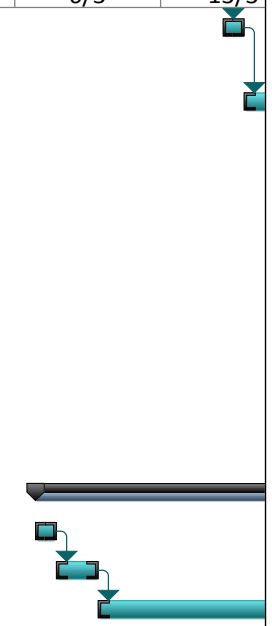
ID	Task Mode	Task Name	Duration	Start	Finish
1		**Sistem Pengurusan Tanah Perkuburan Islam**	**80 days**	**Mon 22/2/16**	**Fri 10/6/16**
2		**Initialize**	**15 days**	**Mon 22/2/16**	**Fri 11/3/16**
3		Identify proposal title	1 day	Mon 22/2/16	Mon 22/2/16
4		Submission the proposal title	1 day	Mon 22/2/16	Mon 22/2/16
5		Approval proposal title	1 day	Mon 22/2/16	Mon 22/2/16
6		Business rules	1 day	Tue 23/2/16	Tue 23/2/16
7		Define problem and contraint	1 day	Wed 24/2/16	Wed 24/2/16
8		Define objective	1 day	Thu 25/2/16	Thu 25/2/16
9		Define scope and boundaries	1 day	Fri 26/2/16	Fri 26/2/16
10		Define the methodology use	1 day	Mon 29/2/16	Mon 29/2/16
11		Deliverable : Proposal Content	1 day	Tue 1/3/16	Tue 1/3/16
12		Proposal Correction/Improvement	7 days	Wed 2/3/16	Thu 10/3/16
13		Proposal Submission	1 day	Fri 11/3/16	Fri 11/3/16
14		**Analysis**	**5 days**	**Mon 14/3/16**	**Fri 18/3/16**
15		Current system analysis	1 day	Mon 14/3/16	Mon 14/3/16
16		Plan requirement gathering	1 day	Tue 15/3/16	Tue 15/3/16



Project: Sistem Pengurusan Tanah
Date: Sat 2/4/16

Task		External Milestone		Manual Summary Rollup	
Split		Inactive Task		Manual Summary	
Milestone		Inactive Milestone		Start-only	
Summary		Inactive Summary		Finish-only	
Project Summary		Manual Task		Deadline	
External Tasks		Duration-only		Progress	

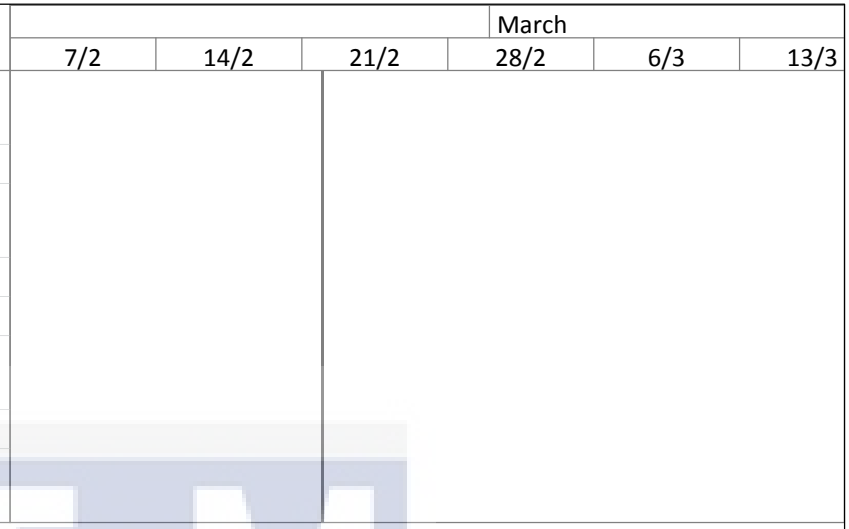
ID	Task Mode	Task Name	Duration	Start	Finish
17		Sessions for requirements gathering	1 day	Wed 16/3/16	Wed 16/3/16
18		Analyse requirement	2 days	Thu 17/3/16	Fri 18/3/16
19		**Design**	**5 days**	**Mon 21/3/16**	**Fri 25/3/16**
20		**Develop conceptual design**	**2 days?**	**Mon 21/3/16**	**Tue 22/3/16**
21		Develop ERDs	1 day	Mon 21/3/16	Mon 21/3/16
22		Data Dictionary	1 day	Tue 22/3/16	Tue 22/3/16
23		**Develop logical design**	**2 days**	**Wed 23/3/16**	**Thu 24/3/16**
24		Develop DFDs	1 day	Wed 23/3/16	Wed 23/3/16
25		**Develop physical design**	**2 days**	**Thu 24/3/16**	**Fri 25/3/16**
26		Storyboard design	1 day	Thu 24/3/16	Thu 24/3/16
27		Document design	1 day	Fri 25/3/16	Fri 25/3/16
28		**Development**	**25 days**	**Mon 7/3/16**	**Fri 8/4/16**
29		Setup infrastructure	1 day	Mon 7/3/16	Mon 7/3/16
30		Install the DBMS	2 days	Tue 8/3/16	Wed 9/3/16
31		Coding	21 days	Thu 10/3/16	Thu 7/4/16
32		Project Demo and Chapter 3	1 day	Fri 8/4/16	Fri 8/4/16
33		**Testing and Evaluation**	**30 days**	**Mon 11/4/16**	**Fri 20/5/16**
34		Test the database	7 days	Mon 11/4/16	Tue 19/4/16
35		Fine tune the database and application	7 days	Wed 20/4/16	Thu 28/4/16
36		Project demo and Chapter 4	1 day	Fri 29/4/16	Fri 29/4/16
37		Correction/Improvement	10 days	Mon 2/5/16	Fri 13/5/16



Project: Sistem Pengurusan Tanah
Date: Sat 2/4/16

Task	External Milestone	Manual Summary Rollup
Split	Inactive Task	Manual Summary
Milestone	Inactive Milestone	Start-only
Summary	Inactive Summary	Finish-only
Project Summary	Manual Task	Deadline
External Tasks	Duration-only	Progress

ID	Task Mode	Task Name	Duration	Start	Finish
38		Project demo and PSM Report	5 days	Mon 16/5/16	Fri 20/5/16
39		**Presentation**	**6 days**	**Mon 23/5/16**	**Mon 30/5/16**
40		Project Demo and PSM Report (SV)	5 days	Mon 23/5/16	Fri 27/5/16
41		Final Presentation	1 day	Mon 30/5/16	Mon 30/5/16
42		**Report**	**9 days**	**Tue 31/5/16**	**Fri 10/6/16**
43		Submission Draft Report PSM	1 day	Tue 31/5/16	Tue 31/5/16
44		Correction/Improvement	7 days	Wed 1/6/16	Thu 9/6/16
45		Final Submission Report PSM	1 day	Fri 10/6/16	Fri 10/6/16



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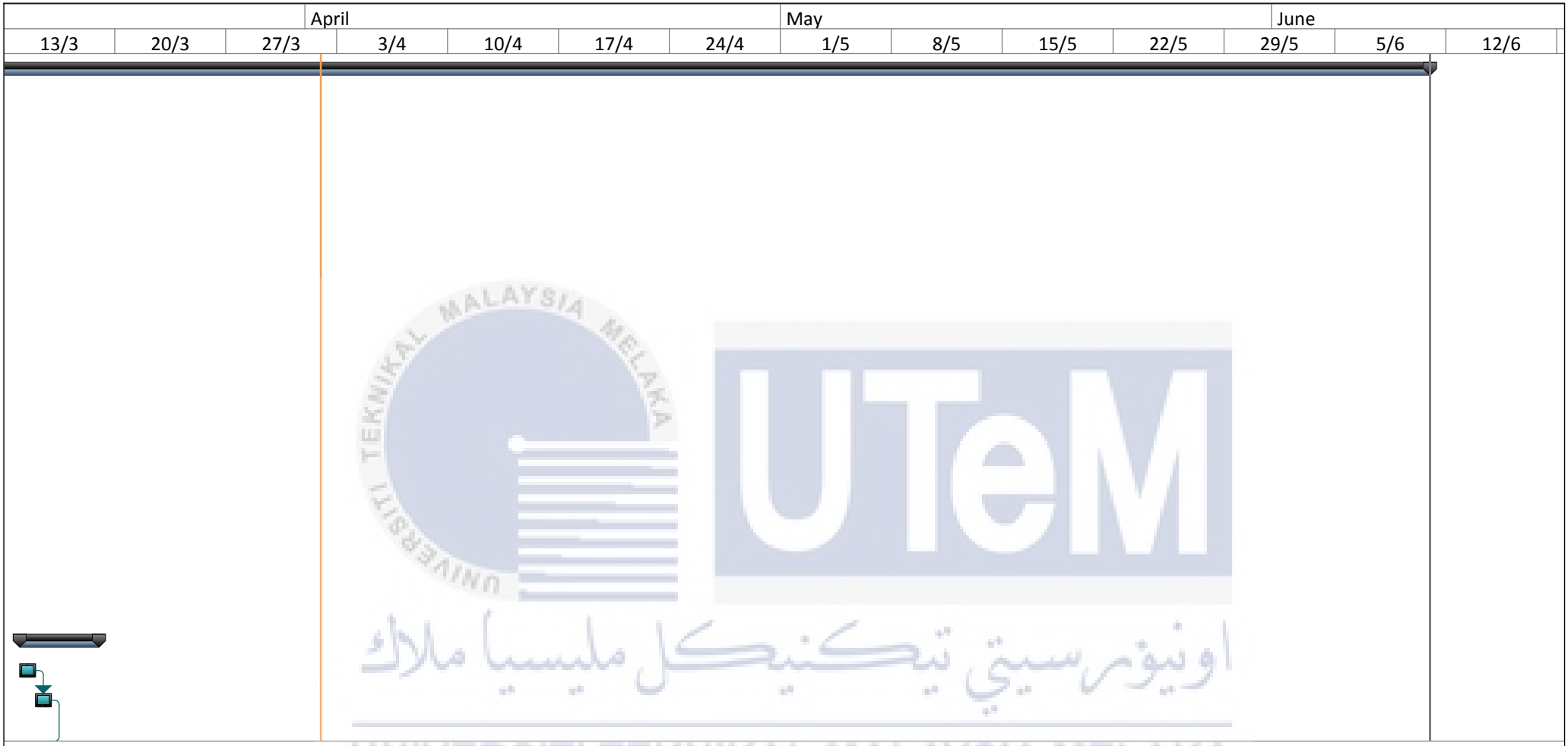

Project: Sistem Pengurusan Tanah
Date: Sat 2/4/16

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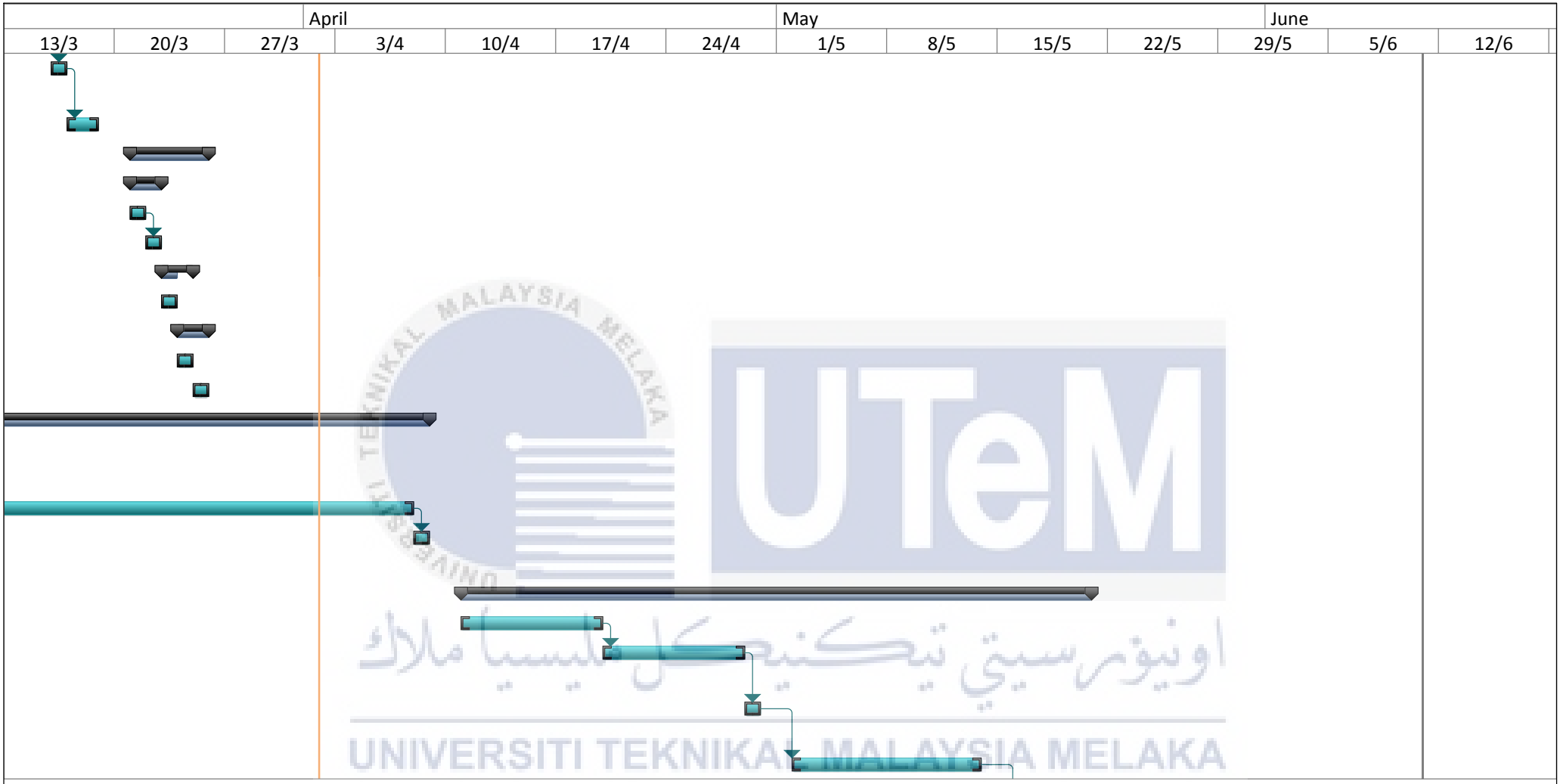

Project: Sistem Pengurusan Tanah
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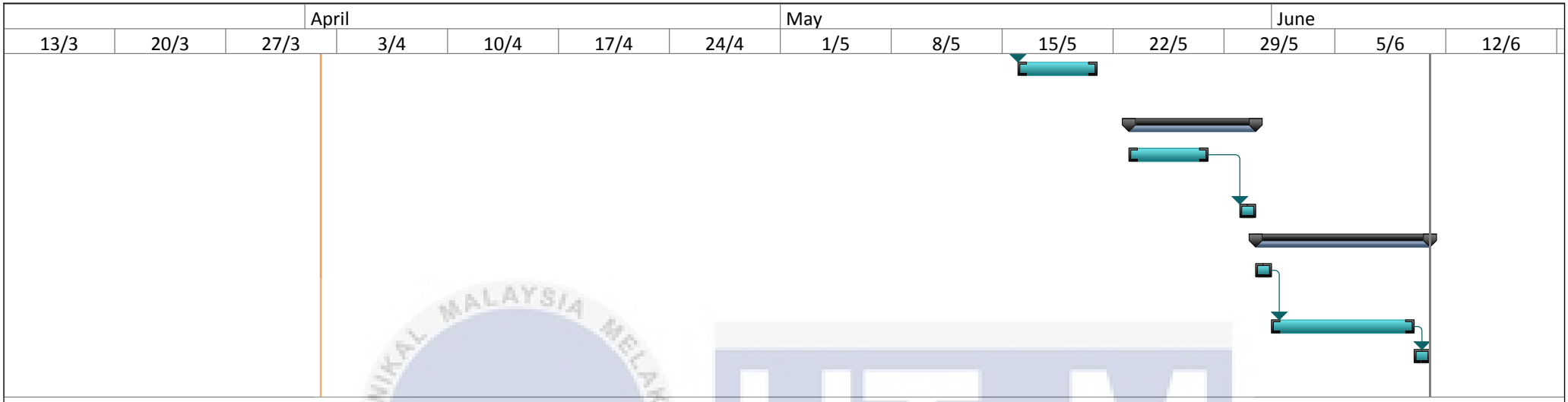

Project: Sistem Pengurusan Tanah
Date: Sat 2/4/16

Task		External Milestone		Manual Summary Rollup	
Split		Inactive Task		Manual Summary	
Milestone		Inactive Milestone		Start-only	
Summary		Inactive Summary		Finish-only	
Project Summary		Manual Task		Deadline	
External Tasks		Duration-only		Progress	