UTeM STUDENT TIMETABLE SCHEDULING SYSTEM (USTSS)

LOGARAJ A/L CHAMUHENADEN

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

BORANG PENGESAHAN STATUS TESIS*

JUDUL: **UTEM STUDENT TIMETABLE SCHEDULING SYSTEM (USTSS)**

SESI PENGAJIAN: **2008/2009**

Saya _____ **LOGARAJ A/L CHAMUHENADEN** _____

(HURUF BESAR)

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

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

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

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

___/___ TIDAK TERHAD

_____   _____
(TANDATANGAN PENULIS)   (TANDATANGAN PENYELIA)

Alamat tetap : NO.6, S.E.K BATU AMPOR   NORHAZIAH MD SALLEH
               35350 TEMOH,   Nama Penyelia
               PERAK

Tarikh : _____   Tarikh : _3 Mulai 2009_

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

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

UTeM STUDENT TIMETABLE SCHEDULING SYSTEM (USTSS)

LOGARAJ A/L CHAMUHENADEN

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
2009

DECLARATION

I hereby declare that this project report entitled

UTeM STUDENT TIMETABLE SCHEDULING SYSTEM (USTSS)

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

without citations.

STUDENT   : _____   Date: _____

(LOGARAJ S/O CHAMUHENADEN)

SUPERVISOR: _____   Date: 3 July 2009

(PM NORHAZIAH BINTI MD SALLEH)

DEDICATION

To my beloved parents
Krishna Vanee D/O Vedaiyan
&
Chamuhenaden S/O Maniam

To all the UTeM's lecturers

ACKNOWLEDGEMENTS

I would like to thank my supervisor, PM Norhaziah Md.Salleh for providing assistance throughout the development of this thesis and development of UTeM Student Timetable Scheduling System (USTSS) . PM Norhaziah had been contributing brilliant ideas suggestions in developing the system.

I would also like to thank my Advance Database Programming lecturer and my examiner for this project, Dr. Yahya Ibrahim for teaching how to develop the system using Oracle 9i Developer besides providing ideas and solving complicated problems in developing this projects.

Other than that, I would like to thank my beloved parents for providing support and confidence for me in developing the system.

Besides that, I would like to thank all my course mate that contributed by sharing their knowledge in developing this system.

Last but not least, I would like to thank to all those that have contributed in this development of the project directly or indirectly.

ABSTRACT

This thesis contains the development phases of UTeM Student Timetable Scheduling System (USTSS). USTSS is developed for the Universiti Teknikal Malaysia Melaka (UTeM) in order to replace the current manual system of student timetable scheduling. Through this system the student timetable will be generated automatically by using the data provided by the staff in charge. USTSS is developed in order to solve the problems in the current system. USTSS will ease and reduce the manual work in scheduling student timetable. Administrative features are also added in the USTSS to ease the maintenance of the system. USTSS is an intranet system that can be used within the university. It uses the two-tier architecture. Only the authorized user can access the system, Database Life Cycle (DBLC) methodology is used in developing USTSS. Oracle products are used in developing USTSS. USTSS development aspect is to reduce the complexity and problems occur in the current manual student timetable scheduling system.

ABSTRAK

Projek ini mengandungi fasa pembangunan UTeM Student Timetable Scheduling System (USTSS). USTSS dibangunkan untuk Universiti Teknikal Malaysia Melaka (UTeM) untuk mengantikan sistem manual yang sekarang digunakan untuk menjana jadual waktu pelajar. Melalui sistem ini jadual waktu pelajar dapat dijana secara automatik dengan menggunakan data yang dibekalkan oleh pekerja yang bertanggung jawab untuk membuat jadual waktu pelajar. USTSS dibina untuk mengatasi masalah yang timbul dalam sistem sekarang. USTSS akan memudahkan dan mengurangkan kerja manual dalam menjana jadual waktu pelajar. Ciri-ciri pengurusan juga telah diaplikasikan di dalam USTSS untuk memudahkan kerja pengurusan sistem. USTSS merupakan satu sistem intranet yang hanya boleh digunakan di dalam kawasan universiti sahaja. USTSS mengaplikasikan senibina 2-tier. Hanya orang yang menpunyai kuasa untuk menguruskan sistem tersebut dapat menggunakan USTSS. Database Life Cycle (DBLC) merupakan pendekatan yang digunakan untuk membangunkan USTSS. Produk Oracle digunakan untuk membangunkan sistem USTSS ini. Pembangunan sistem USTSS ini diharap dapat mengurangkan masalah-masalah kompleks yang wujud di dalam sistem sekarang.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDIXS

CHAPTER I

INTRODUCTION

1.1 Project Background

The system developed is UTeM's Student Timetable Scheduling System (USTSS) for the Universiti Teknikal Malaysia Melaka (UTeM).USTSS can be used for student timetable scheduling and administrative task by using user-friendly interfaces.

Currently the timetable scheduling is done manually. This manual scheduling consumes a lot of time and man power. USTSS will generate automatically the student timetable where this will reduce the difficulty faced in scheduling student timetable. The administrative tasks such as user multi-level user controls, backup and recovery, dynamic database creation can be done using the interfaces in USTSS.

1.2 Problem Statement

Currently, the process of scheduling timetable for the student is done manually. The process of scheduling timetable was found to be time consuming and frustrating especially for the person responsible in doing the time scheduling. Plenty of steps needed to be followed in order to schedule student timetable. First of all the Bahagian Pengurusan Akademik (BPA) will send a letter to each faculty for latest list of subjects that will be offered by the faculty for the coming semester.

After all the faculties have submitted the subject list for each course, a meeting among representatives from the faculties will be held in order to determine the time and day for the classes according to subjects and courses. This is the most crucial part of timetable scheduling because unanimous agreement must be achieved in determining the courses that will accommodate the period of time in the timetable.

The timetable scheduling will not just end here. The next process will be the analysis of the timetable by each faculty through "burden" meeting. Through this meeting, the timetables are finalized and the lecturers are assigned to the subjects and courses. The assignment of lecturers will base on their "burden". Then the timetable scheduling is considered complete.

Manual process of timetable scheduling require a delicate work so that any redundancy or loss of data will not occur although sometimes mistakes might occur due to large number of paperwork.

1.3 Objective

The objectives of UTeM Student Timetable Scheduling are as follows:

1.   To provide a computerized system to ease the task of scheduling timetable

Timetable scheduling can be done using a computerized system that will auto generate timetable when sufficient information provided. This will reduce the man power and the time slice used in determining the timetable for the student.

2.   To provide interfaces for the administration purposes

By providing admin interfaces, the administrative tasks can be done through the interfaces rather than doing the tasks in conventional ways by tying the SQL commands manually. This will simplify the administrative task.

3.   To produce reports dynamically

Dynamic reports are different from static reports whereby dynamic reports give the users control to choose the content of the report which is not able to be done in static reports. Dynamic reports are important in order to provide user the information they desire.

4.   To control multi-level user

Multi-level user control is important in order to restrict the modules that can be accessed by users. Restrictions on modules are done in order to protect the confidential information and avoid alteration of data by unauthorized users.

5.   To perform backup and recovery

Backup involves making copy of database to be recovered in case of the hardware failure, program bug or system crash. This is important in order to ensure the availability and reliability of data in the system. The database backup and recovery are done using GUI of the system.

6.   To manage transaction logging

Transaction logging is a part of the database security features. All transactions done in the system can be kept track by transaction logging. Any data tempering can be detected by going through the transaction log. This method allows tracing any changes made by unauthorized user and preserve data confidentiality.

1.4 Scope

The scope of the USTSS system can be divided into two. The target users and the modules created in the system.

1.4.1   Target User

Target users are users that are allowed to use the system. In the USTSS system the target user will be the student, staff and the database administrator.

1.4.2   Modules

The modules included in USTSS are:

1.   Timetable Scheduling Module

Student timetable scheduling is done in this module. This module will be used by the staff. The time table will be automatically generated.

2.   Timetable Alteration Module

Any changes in the generated modules and insertion of missed out classes during timetable generation will be done in this module.

3. Dynamic Database Module

The database administrator will be able to create table, users dynamically by using this module. Which means the database administrator only have to enter the table name, column name and choose the data type only. Complete SQL statement does not have to be entered.

4. User Control/ Grant Privileges Module

By using this module the user access of the system can be controlled by granting and revoking the privileges of the user. This will restrict the modules that can be accessed by the user and provide confidentiality and security of data.

5. Backup and Recovery Module

The database administrator can perform database backup and recovery using this module. In this module the user only have to specify the location of the backup and the name of the backup before pressing the button. Backup will be created.

6. Dynamic Report Module

In the USTSS system the dynamic report module allow users to choose required information in generating reports. This will help in decision making.

1.5 Project Significance

The system will benefit UTeM staff that involved in student timetable scheduling. The USTSS will replace the manual method of timetable scheduling.

The main function of the USTSS system is auto generation of timetable after certain condition achieved and data is obtained. This function is very beneficial for the timetable scheduling. The time and man power will be reduced.

USTSS system will also provide administration/maintenance interfaces for the administrative tasks. Burden of administration task can be reduced by these interfaces because no complex SQL statements need to be written.

1.6 Expected Output

The expected output of this project is UTeM Student Timetable Scheduling System (USTSS). This system will be used by the staffs of UTeM in scheduling student timetable.

The authorized user can access the modules in the system as their privileges and roles. The staff in charge of scheduling can auto generate the student timetable besides editing the processed timetable.

Administration tasks can also be done using the USTSS system by the administrator. The administrative tasks include create table, create user, grant and revoke privileges, backup and recovery and transaction log view.

1.7 Conclusion

USTSS is developed in order to reduce the difficulty faced in scheduling student timetable every semester by UteM. Faster timetable scheduling can be achieved by using USTSS. The objectives and the scope for developing USTSS are stated.

The information from this chapter will be used as a guide in completing the next chapter. The next chapter will be Literature Review and Project Methodology. In that chapter, project methodology, requirements and schedule will be discussed.