

BORANG PENGESAHAN STATUS TESIS*

JUDUL: WORKSHOP II MANAGEMENT SYSTEM : PROGRESS SUBMISSION MODULE

SESI PENGAJIAN: 2009/2010

Saya TAN SHU YEE

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

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

 SULIT

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

 TERHAD

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

 / TIDAK TERHAD


(TANDATANGAN PENULIS)

Alamat tetap: 1, JALAN MELATI 17,
TAMAN IRI MELATI, 68100 BATU
CAVES, SELANGOR.

Tarikh: 16.06.2010


(TANDATANGAN PENYELIA)

MOHD SANUSI BIN AZMI
Nama Penyelia

Tarikh: 16.06.2010

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

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

**WORKSHOP II MANAGEMENT SYSTEM:
PROGRESS SUBMISSION MODULE
(WMSPS)**

TAN SHU YEE

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


**FACULTY OF INFORMATION AND COMMUNICATION
TECHNOLOGY
UNIVERSITI TEKNIKAL MALAYSIA MELAKA
2010**

DECLARATION

I hereby declare that this project report entitled
**WORKSHOP II MANAGEMENT SYSTEM:
PROGRESS SUBMISSION MODULE (WMSPS)**

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

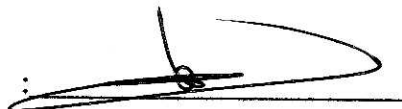
STUDENT

: 

(TAN SHU YEE)

Date: 16.06.2010

SUPERVISOR

: 

(MOHD.SANUSI BIN AZMI)

Date: 16.06.2010

DEDICATION

To my beloved parents, my family, my supportive supervisor, En. Mohd Sanusi Bin Azmi, and all of my friends. Thank you for the encouragement and guidance given throughout the completion of my Projek Sarjana Muda (PSM).

ACKNOWLEDGEMENTS

I would like to take this opportunity to express my deepest appreciations and thanks to those who help in accomplishing my Project Sarjana Muda. Without their help, the completion of this project will not be possible.

A special note of thank to my supervisor, En. Mohd Sanusi Bin Azmi for his encouragement and giving assistant to complete this project successfully. He had given me knowledge and guided me while the whole project was being carried out.

Next, I would also like to thank my beloved parents who have been giving me support and motivation throughout my project. Last but not least, I would like to thank my friends for their continued support and guidance in developing this project.

ABSTRACT

Workshop II Management System: Progress Submission Module or in abbreviation WMSPS is made especially for the benefits of lecturers of Workshop II subject in Universiti Teknikal Malaysia Melaka, UTeM and also for the students who are taking the subject. Currently, all progress report of Workshop II subject submitted by students is in paper based forms. Therefore, WMSPS was proposed to transform manual process to web based application system. WMSPS is developed by using Object Oriented Analysis and Design Method (OOAD). WMSPS is using Eclipse development platform which is a foundation to construct and run integrated Hibernate and ICEfaces. ICEfaces provides a rich web presentation environment that enhances the standard JavaServer Faces (JSF) framework and provides AJAX-based interactive features for WMSPS. WMSPS use Apache Tomcat as its web server and HSQLDB as its database with Hibernate provide mapping from Java classes to database tables in WMSPS. The purpose of WMSPS is to enable students submit progress report through web application and ease all supervisor and administrator of Workshop II subject in terms of progress report management.

ABSTRAK

Workshop II Management System: Progress Submission Module atau dengan ringkasnya WMSPS, telah dibangunkan untuk manfaat pensyarah-pensyarah mata pelajaran Bengkel II di Universiti Teknikal Malaysia Melaka, UTeM dan juga kepada para pelajar yang mengambil mata pelajaran tersebut. Pada masa kini, semua penghantaran laporan kemajuan adalah dalam bentuk berasaskan kertas. Oleh itu, WMSPS dicadangkan untuk menukar proses manual kepada sistem aplikasi berasaskan web. WMSPS dibangunkan dengan menggunakan *Object Oriented Analysis and Design Method (OOAD)*. WMPS menggunakan *Eclipse* yang merupakan asas untuk membina dan menjalankan *Hibernate* dan *ICEfaces*. *ICEfaces* mempunyai web persembahan yang menarik yang meningkatkan taraf *JavaServer Faces (JSF)* dan menyediakan kemudahan interaktif berasaskan AJAX kepada WMSPS. WMSPS menggunakan *Apache Tomcat* sebagai web server dan *HyperSQL database (HSQLDB)* sebagai pangkalan data dengan *Hibernate* memberikan pemetaan dari Java kelas kepada pangkalan data di WMSPS. Tujuan WMSPS adalah untuk membolehkan pelajar menghantar laporan kemajuan melalui web aplikasi dan untuk kemudahan semua penyelia dan pentadbir mata pelajaran Bengkel II dalam hal pengurusan laporan kemajuan.

TABLE OF CONTENTS

CHAPTER	SUBJECT	PAGE
	DECLARATION	ii
	DEDICATION	iii
	ACKNOWLEDGEMENTS	iv
	ABSTRACT	v
	ABSTRAK	vi
	TABLE OF CONTENTS	vii
	LIST OF TABLES	xi
	LIST OF FEATURES	xiii
	LIST OF ABBREVIATIONS	xv
	LIST OF APPENDICES	xvi
CHAPTER I	INTRODUCTION	
	1.1 Project Background	1
	1.2 Problem Statements	3
	1.3 Objective	4
	1.4 Scope	5
	1.5 Project Significance	6
	1.6 Expected Output	7
	1.7 Conclusion	7

CHAPTER II LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1	Introduction	8
2.2	Facts and Findings	9
2.2.1	Domain	9
2.2.2	Existing System	11
2.3	Project Methodology	13
2.3.1	Prototyping Model	14
2.4	Project Requirements	17
2.4.1	Software Requirements	17
2.4.2	Hardware Requirements	19
2.4.3	Other Requirements	19
2.5	Project Scheduling and Milestones	20
2.6	Conclusion	21

CHAPTER III ANALYSIS

3.1	Introduction	22
3.2	Problem Analysis	23
3.2.1	Flow of current system	23
3.2.1.1	Use Case Diagram of Current Manual System	23
3.2.1.2	Activity Diagram of Current Manual System	25
3.2.2	Result of Problem Analysis	28
3.3	Requirement Analysis	29
3.3.1	Data Requirements Analysis	29
3.3.2	Functional Requirement	30
3.3.2.1	Use Case Diagrams of WMSPS	32
3.3.2.2	Activity Diagrams of WMSPS	32
3.3.3	Non-functional Requirement	32
3.3.4	Other Requirement	33

3.3.4.1	Software Requirement	33
3.3.4.2	Hardware Requirement	35
3.3.4.3	Network Requirement	35
3.4	Conclusion	36

CHAPTER IV DESIGN

4.1	Introduction	37
4.2	High-Level Design	38
4.2.1	System Architecture	38
4.2.1.1	Static View of WMSPS	39
4.2.1.2	Dynamic View of WMSPS	41
4.2.2	User Interface Design	41
4.2.2.1	Navigation Design	41
4.2.2.2	Input Design	43
4.2.2.3	Output Design	47
4.2.3	Database Design	51
4.2.3.1	Data Dictionary	53
4.2.3.2	Normalization	53
4.3	Detailed Design	55
4.3.1	Software Design	55
4.3.2	Physical Database Design	65
4.4	Conclusion	68

CHAPTER V IMPLEMENTATION

5.1	Introduction	69
5.2	Software Development Environment Setup	70
5.2.1	Software and Hardware Environment Architecture	71
5.3	Software Configuration Management	72
5.3.1	Configuration Environment Setup	72
5.3.2	Version Control Procedure	73
5.4	Implementation Status	74
5.5	Conclusion	76

CHAPTER VI	TESTING	
6.1	Introduction	77
6.2	Test Plan	78
6.2.1	Test Organization	78
6.2.2	Test Environment	79
6.2.3	Test Schedule	80
6.3	Test Strategy	80
6.3.1	Classes of tests	82
6.4	Test Design	84
6.4.1	Test Description	85
6.4.2	Test Data	93
6.5	Test Result and Analysis	101
6.6	Conclusion	102
CHAPTER VII	CONCLUSION	
7.1	Observation on Weakness and Strengths	104
7.2	Propositions for Improvements	105
7.3	Contribution	105
7.3.1	Contribution to the university	105
7.3.2	Contribution to the faculty	105
7.3.3	Contribution to the lecturer	106
7.3.4	Contribution to an individual	106
7.4	Conclusion	106
	REFERENCES	108
	BIBLIOGRAPHY	109

LIST OF TABLES

TABLE	TITLE	PAGE
2.1	Strength and Weakness of Assignment Module of MMLS	12
2.2	Software Requirements	18
2.3	General Tool	18
2.4	Hardware Requirements	19
2.5	Other Requirements	19
2.6	Project Milestones	20
3.1	Functional Requirements of WMSPS	31
3.2	Non- Functional Requirements of WMSPS	33
3.3	Software Requirement of WMSPS	34
3.4	Hardware Requirement of WMSPS	35
3.5	Network Requirement of WMSPS	35
4.1	Input Designs for WMSPS	43
5.1	Software and Hardware Environment Architecture for WMSPS	71
5.2	Versions of WMSPS program	73
5.3	Implementation Status for Each Module in WMSPS	74
6.1	Responsibility of Personnel in Testing Process	78
6.2	Test Environment for WMSPS	79
6.3	Test Schedule of WMS	80
6.4	Test Cases for Authentication Management	85
6.5	Test Cases for Batch Management	86
6.6	Test Cases for Student Information Display	86

6.7	Test Cases for Submission Type Management	86
6.8	Test Cases for Upload	88
6.9	Test Cases for Download	89
6.10	Test Cases for Submission Status Display	90
6.11	Test Cases for Report	91
6.12	Test Cases for Email Remainder	92
6.13	Test Data for Authentication Management	93
6.14	Test Data for Batch Management	94
6.15	Test Data for Student Information Display	94
6.16	Test Data for Submission Type Management	95
6.17	Test Data for Upload	96
6.18	Test Data for Download	97
6.19	Test Data for Submission Status Display	98
6.20	Test Data for Report	99
6.21	Test Data for Email Remainder	100
6.22	Test Result for WMSPS	101

LIST OF FIGURES

DIAGRAM	TITLE	PAGE
2.1	Assignments page	11
2.2	Upload Page	12
2.3	Prototyping Model	14
3.1	Use case Diagram of Manual System	24
3.2	Activity Diagram for Submit Progress Report in Manual System	25
3.3	Activity Diagram for Evaluate Progress Report in Manual System	26
3.4	Activity Diagram for Check Submission Status in Manual System	27
3.5	Activity Diagram for View Submission Report in Manual System	28
3.6	ERD for WMSPS	30
4.1	System Architecture for WMSPS	38
4.2	Class Diagram for WMSPS	40
4.3	Navigation Design of WMSPS	42
4.4	Login Page of WMSPS	44
4.5	Manage Batch Page of WMSPS	44
4.6	Create Submission Page of WMSPS	45
4.7	Update Submission Page of WMSPS	46
4.8	Submit Report Page of WMSPS	46
4.9	Message of Successfully Added Submission Type	47

4.10	Message of Confirmation to delete	47
4.11	Student List Page of WMSPS	48
4.12	View Report Page of WMSPS	48
4.13	Submission Status Page of WMSPS for Students	49
4.14	Submission Submitted Page of WMSPS	49
4.15	Submission Status Page of WMSPS for Lecturer	50
4.16	View Submission Page of WMSPS for Lecturer	50
4.16	ERD of WMSPS	51
4.18	Third Normal Form Dependency Diagram of WMSPS	53
5.1	Development Environment Setup for WMSPS	70
6.1	Top Down Integration Testing Strategies in WMSPS	81

LIST OF ABBREVIATIONS

AJAX	-	Asynchronous JavaScript and XML
ANSI	-	American National Standards Institute,
EC	-	Equivalence Class
ERD	-	Entity Relationship Diagram
FTMK	-	Fakulti Teknologi Maklumat dan Komunikasi
GUI	-	Graphical User Interface
HSQLDB	-	Hyper Structured Query Language Database
ICT	-	Information and Communication Technology
JDBC	-	Java database connectivity
JDK	-	Java Development Kits
JSF	-	JavaServer Faces
LAN	-	Local Area Network
MIS	-	Management Information System
MMLS	-	Multimedia Learning System
OOADM	-	Object Oriented Analysis and Design Method
OOD	-	Object oriented design
SQL	-	Structured Query Language
TCP/IP	-	Transmission Control Protocol/Internet Protocol
UI	-	User Interface
UML	-	Unified Modelling Language
UTeM	-	Universiti Teknikal Malaysia Melaka
WMSPS	-	Progress Submission Module of Workshop II Management System

LIST OF APPENDICES

APPENDIX	TITLE	PAGE
A	Data Dictionary	110
B	Use Case Diagram	114
C	Activity Diagram	137
D	Sequence Diagram	152
E	User Manual	167
F	Feedback Form	177
G	Proposal Form	179

CHAPTER I

INTRODUCTION

1.1 Project Background

Workshop II Management System or in short, WMS is an online system that use to manage Workshop II subject in Universiti Teknikal Malaysia Melaka (UTeM). This system comprises a web base application where any user who has access to the Internet would be able to connect to WMS no matter where he or she is. Progress Submission Module of WMS also known as WMSPS is developed especially for the benefit of lecturer of Workshop II subject and also for students who taking the subject in terms of progress report management.

Currently, students who are taking the Workshop II subject require printing their progress report to hand in to their supervisor. Sometimes students need to spend long time to print their progress report due to the long queue in library especially when it is a time to hand in progress report. Besides, students have to make appointment with supervisor in order to hand in report due to reason of putting progress reports in a box outside supervisor room is not secure because there is probability of lost it or taken by others. Students also have to spend their money to reprint report each time they do any changes with their report. In the other hand, supervisor of Workshop II subject always have to search back student's progress report for evaluation. Supervisors have to check student's submission status by contact with students. In addition, AJK of Workshop II subject has to contact with all supervisor of Workshop II subject in order to know the overall submission status of students. The process of progress report management is inconvenient.

WMSPS is proposed in order to solve all the problems. WMSPS is supported by a user friendly graphical user interface and has three target users who are administrator, lecturers and students. It enable administrator who is AJK of Workshop II subject to create and activate batch so that only students in current batch taking Workshop II subject can login into the system. Besides, Administrator can create and update progress submission types for the current active batch. Delete of progress submission types that does not contain any submission is allowed. Administrator can view the submission's statistical reports in order to know number of groups has submitted progress report and not submit progress reports in chart and table form. Furthermore, administrator can send email remainder to group which have not submit progress reports and students who have not submit logbook.

On the other hand, only students in current active batch taking Workshop II subject are allowed to login into WMS to upload progress reports and logbooks. Submission status of students can always be checked. Progress reports and logbooks submitted can be downloads by students.

Supervisor of Workshop II subject can view their student's submission status at any time by login into WMSPS. Supervisor can download their student's submitted progress reports.

Therefore, with WMSPS, it helps the administrator, supervisor and student in progress report management for Workshop II subject.

1.2 Problem Statements

Currently, UTeM do not have any system that specifically manage Workshop II subject in progress submission. Therefore several problems have occurred regarding to progress report management of Workshop II subject.

i. Time consuming

Students encounter time consuming problem to print and send the report to supervisor especially when it is a time to hand in progress report. Sometimes, students have to make appointment with supervisor in order to hand in report due to reason of putting progress reports in a box outside supervisor room is not secure because there is probability of lost it or taken by others. Sometimes, there is time consuming for supervisors search back student's submission for evaluation.

ii. Cost consuming

Students also have to spend their money to reprint report each time they do any changes with their report.

iii. Difficult to check submission status

Supervisors have to contact with students in order to know student's submission status. Administrator is unable to know the overall submission status of student at any time. To know the overall submission status, administrator has to contact with all Workshop II subject's supervisor.

iv. Waste of space

There is a waste of space for supervisor to keep students' submission in hardcopy.

1.3 Objectives

- i. **To overcome time consuming problem, ease and secure submission of progress reports and logbook by online.**

Through the WMSPS, students in current active batch taking Workshop II subject can login to WMS to upload their progress reports and logbook. Supervisor can download student's submitted progress reports and logbook from system.

- ii. **To overcome cost consuming problem**

Through the WMSPS, students can resubmit their progress report to system whenever they do any changes in their progress report or logbook.

- iii. **To provide a glance of view of student submission's status**

Administrator can view statistical report which show overall submission status of Workshop II's students in table and chart form. Students can view their submission status and supervisor can view submission's status of their students.

- iv. **To create a paperless environment.**

Supervisor receives student's progress reports in softcopy rather than hardcopy.

1.4 Scope

WMSPS is a web based application that manages student's progress reports and logbooks submission by online. Progress Submission Module provides several functions for students, lecturers and administrators. The functions provided are as below:

i. Batch

Administrator can create and active batch so that only students in current active batch taking Workshop II subject are allowed to login to WMSPS.

ii. Submission

Administrator can create, update and delete submission types for current active batch. Delete of submission types is not allowed if the submission types contained student's submission. Students can login to WMSPS to upload progress reports and logbook. Students and supervisor can also download progress reports and logbook that have been submitted. Furthermore, students can always check their submission status while supervisor can check their student's submission status. Submission status is denotes by the colour of the button. Red colour button denotes not submit while green colour button denotes submitted.

iii. Report

Administrator can view statistical report which shows overall submission status of students in charts and table form. Moreover, administrator can view list of students who have submitted report and who have not submit report yet.

iv. Remainder

Administrator can email to students who have not submit reports or logbook in order to remind them to submit.

1.5 Project Significance

WMSPS is necessary because it possesses some important benefits:

i. Ease and secure the process of submission progress report and logbook.

By having WMSPS, student can submit progress report and logbook by just upload them to the system. Submission status can be check to ensure the progress report and logbooks uploaded have been received by the system. Besides that, students and lecturer can always download the progress report and logbook that have been submitted.

ii. Time and cost saving

Student can submit their progress report and logbook by upload them to system. Student does not need to spend time and money to print their progress report and logbook.

iii. Enable administrator to view the overall submission's status.

Administrator can view statistical report which shows the summary of overall submission's status of students in bar chart and table form. In addition, administrator is able to know who have submit and who have not submit their progress reports and send email to those who have no submitted.

1.6 Expected Output

A web-based application that enable administrator to create and activate batch in order to create, update or delete submission types for current active batch. Students in current active batch is able to login to the WMSPS to upload progress report and logbook, view submission's status and download progress submission and logbook submitted. In other hand, supervisor can download progress reports and logbooks submitted by students and view their student's submission status. Administrator can view the overall submission status and send email to those who have not submit progress reports or logbook.

1.7 Conclusion

In this chapter, project background, problems that occurred with current submission process of progress reports and logbook for Workshop II subject, objective, scope, project significance, expected output of this project has been discussed. In order to solve the problems exist in current submission process of progress report and logbook, WMSPS is proposed. WMSPS enables submission of progress report and logbook to be done by online and submission status can be checked at anytime.

Next chapter is concentrate on the literature review and project methodology. It discusses facts and findings that are related to the project. Besides, it also describes an existing system which has been used as a reference in developing WMSPS. Methodology that is going to be used in develops the WMSPS together with requirement for software, hardware, and network will be described. Project schedule and milestone will also be included in it.