E-GRADING AND E-DOCUMENT FOR STUDENT PROJECT

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BORANG PENGESAHAN STATUS TESIS*

JUDUL: **E-GRADING AND E-DOCUMENT FOR STUDENT PROJECT**

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(HURUF BESAR)

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Puan Nor Haslinda Ismail
Nama Penyelia

Tarikh : _____

CATATAN: * Tesis dimaksudkan sebagai Laporan Akhir Projek Sarjana Muda (PSM)
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E-GRADING AND E-DOCUMENT FOR STUDENT PROJECT

HASSAN BIN ABU BAKAR

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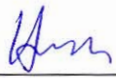Bachelor of Computer Science (Software Development)**

**FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY
UNIVERSITI TEKNIKAL MALAYSIA MELAKA
2011**

DECLARATION

I hereby declare this project report entitled

E-DOCUMENT AND E-GRADING
FOR STUDENT PROJECT

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

citations.

STUDENT   :_____ Date: 16 JULAI 2011

                         (HASSAN BIN ABU BAKAR)

SUPERVISOR   :_____ Date:_____

                       (PUAN NOR HASLINDA ISMAIL)

DEDICATION

This work is dedicated to my beloved family and my wife.

ACKNOWLEDGEMENTS

I would like to thank my parents and my family for their support along my project. Also to my beloved wife for the moral support and her expertise in software testing.

I would like to thank to my supervisor, Nor Haslinda Ismail. Her support throughout my final year project is highly appreciated and I would like to congratulate on her first baby boy.

Not to forget to my boss at Art In Software En Ahmad Amran Kapi for giving me ideas and lead me to become a good programmer.

Lastly thanks to all my classmates and friends for their assistance in this project.

ABSTRACT

Bachelor project report (PSM) explains in details for the deliverables produced which are describing in different chapters in partial fulfillment of the final project requirements. There are Chapter I, II, III, IV, V, VI and VII. Chapter I begin with the explanation of the project background, problem statements, objectives, expected output, scopes and project significance. Chapter II describes literature review finding based on materials and important to get project methodology, project requirement, and milestone. While Chapter III, use to analyze the current system problem. By using activity diagram, the project can be analyze easily. The functional and non-functional illustrated in UML diagram. Then, Chapter IV specifies data collection for application, system architecture, user interface design, software design and database design. Chapter V is describes on implementation of project. Chapter VI, a testing covered up based on test plan, test strategy, test design, test data and test analysis and result.

ABSTRAK

Laporan Projek Sarjana Muda (PSM) menerangkan tentang projek yang akan dibangunkan secara mendalam dalam bab-bab yang berbeza demi memenuhi keperluan projek tahun akhir ijazah.. Bab I bermula dengan membincangkan keterangan mengenai latar belakang projek, kenyataan masalah, objektif, hasil, skop dan kepentingan projek. Bab II menerangkan hasil kajian dapatan berdasarkan bahan-bahan tertentu dan untuk mendapatkan kaedah metodologi projek termasuk keperluan projek, dan jadual. Manakala Bab III diguna untuk menganalisis masalah system semasa. Keperluan fungsi dan bukan keperluan fungsi di keluarkan. Aliran ujikaji, keperluan fungsi dan bukan keperluan fungsi digambarkan menggunakan rajah UML. Kemudian, Bab IV menghuraikan data dan kajian untuk aplikasi, seni bina system, rekabentuk antaramuka, rekabentuk perisian dan rekabentuk pangkalan data. Chapter V menerangkan pelaksanaan projek. Ia bermula dengan huraian kepada pembangunan suasana perisian, pengurusan konfigurasi perisian and prosedur pengawalan versi. Akhir sekali Bab VI, pengujian merangkumi perancangan ujian, strategi ujian, rekabentuk ujian, data ujian dan analisis dan keputusan ujian.

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CHAPTER I

INTRODUCTION

1.1   Project Background

E-Grading and E-Document for Student Project is developing because it will be use by FTMK. The existing system called E-Document for Student Project is still lack of its functionality, especially for giving a mark and grade to the student. To make the existing system becomes more useful to the users, I propose to add new module name as grading system.

This module will be helpful to the supervisor and evaluator to give a mark to the student project. The system will automatically generate the grade for student based on mark given by them. Each module has its own criteria and admin can set it in the system.

1.2   Problem Statement

This project is developing to manage the *Projek Sarjana Muda* (PSM) and *Projek Diploma* (PD) student's project becomes easier, effective and faster. Actually, this is for enhancing the current system called as E-Document for Student Project to be more functionality. Supervisor (lecturer) is able to assign the mark on each student under them based on assessment made by administrator.

At the end of the semester, the system will evaluate the grade for student based on mark given by supervisor and evaluator. The system can generate report to the administrator. The report includes all student grade and mark in a bar chart format. The interaction of the current system will be applying the ICEfaces technology, since it is the latest technology in industries.

1.3 Objectives

Nowadays, Faculty of Information Technology and Communication (FTMK) still using a hardcopy material to manage the mark and give the grade to the student who are taking the *Projek Sarjana Muda* (PSM) and *Projek Diploma* (PD). Each semester, the marking and grading criteria on the project maybe will change due to the agreement by the FTMK committee members, dean and lecturers. This system will make the situation becomes easy to manage by online.

The problem is to know how the mark and grade are being set, who can set the criteria mark of each module, how the supervisor and evaluator give a mark to their student and what the information need to be include in the report. The objectives to be achieved in this project are:-

    i.   To develop online for *Projek Sarjana Muda* and *Projek Diploma* grading system.

ii. To manage *Projek Sarjana Muda* and *Projek Diploma* mark.

iii. To develop dynamic online marking and evaluating form for *Projek Sarjana Muda* and *Projek Diploma.*

iv. To manage security and data recovering for *Projek Sarjana Muda* and *Projek Diploma* data.

1.4 Scopes

Below will describe about scope of user that includes in manage this web base are student, lecturer and administrator. Scope of functionality will describe about module that function in this web based. To describe it more details, there are six (6) module will includes are assignation, login, assessment, reporting, grading and evaluation. Scope of platform is the specific project requirements in terms of software and hardware to develop the E-Grading and E-Document for Student Project.

1.4.1 Scope of User

The user scopes in this project are:

System scope

i. To develop new module which call as E-Grading and E-Document for Student Project.

ii.   Make the system be able to generate a report.

iii. Applying CakePHP framework to the system.

iv.   Upload the system to the FTMK server (Only after approve by faculty).

User scope

   i.   Administrator (FTMK staff).

   ii. Supervisor (lecturer).

   iii. Evaluator.

   iv. FTMK student who take *Projek Sarjana Muda* (PSM) and *Projek Diploma* (PD).

1.4.2   Scope of Functionality

This system is divided into six modules of functionality:

   i.   **Assignation Module**

   This module will be use by administrator to assign lecturer as supervisor or evaluator. Each lecturer has to position, even as supervisor or evaluator. This module will affect the marking and evaluation approach for each lecturer.

   ii. **Login Module**

   This module provide login module to verify and validate the right user. Authorized users allow interacting with this system. This module also has a validation on user session. Once log out, their

session will terminate. The types of user are administrator, lecturer and student.

iii. Assessment Module

This module will be use by administrator to create the new assessment mark and criteria for *Projek Sarjana Muda* (PSM) and *Projek Diploma* (PD) for particular batch. This assessment is different between diploma and bachelor student. This assessment will be dynamically create by final project community based on current and future criteria or category.

iv. Reporting

This module will be access by staff to make the reporting of *Projek Diploma* and *Projek Sarjana Muda* grading. Reporting is based on the mark and grade for each student. The reporting is categorized based on batch and year.

v. Grading

This module used by lecturers to give the mark for each student under his/her supervision. Grading is giving based on university grade.

vi. Evaluation

This module used by lecturers (evaluator) to evaluate the student project on final presentation at the end of the semester. Evaluation includes of their report, system and attitude based on the criteria set by the administrator.

Scope of Platform

Below are defined the specific project requirements in terms of software and hardware to develop the E-Grading and E-Document for Student Project:

    i.   Operating System - Microsoft Windows XP Pack 2

    ii.   Database System - MySQL

    iii.   Web Browser – Google Chrome,Internet Explorer, Firefox

    iv.   Software – Netbeans PHP, Adobe Photoshop CS

    v.   Server Side Scripting – CakePHP

    vi.   Client Side Scripting – jQuery

    vii.   Server - Apache

    viii. Hardware – Personal Computer

1.5   Project Significance

Based on the problem statement previously, it is obviously to make it easier compare to the existing manual system. This project will added into faculty to make to make supervisor becomes easier to give a mark to student.

For administrator, the system will help to make the system be able to generate a report. The most important, is to make the system online so it will be always available. But, this will happen only when this system is approving by the faculty.

1.6 Expected Output

This system is developed in hoping to help users in making their grading task become easier than manually. For administrator, they can manage supervision and evaluation for final project grading through online system and do not use manual system again.

As lecturer, they can give mark and evaluate the student through online and then will be checking by final project community. Furthermore, final year student can get their mark of final project without wasting time to get from final result through *Sistem Maklumat Pelajar* (SMP).

1.7 Conclusion

As a conclusion, the project will help staff of Faculty of Information and Communication Technology in managing the marking and evaluation of grading for final year student includes of *Projek Diploma* and *Projek Sarjana Muda*.

This chapter has explained the whole function of the system and how the system should works. The next chapter will discuss on literature review of the project and the methodology that is used in developing the system.

CHAPTER II

LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1   Project Background

In this chapter will cover the literature review and project methodology. It is important to discover the project methodology because methodology use to measure the possibility of the project whether success or not in the future, besides to provide the framework that enables the developer to make reasonable estimates of resources, cost and schedule. Since the development of this project is using a PHP programming language and it is an object oriented programming, the best methodology for E-Grading and E-Document for Student Project are Object-Oriented Analysis and Design (OOAD) as methodology.

A literature review is periodically integrate the findings on the topic and specific field of study or related to particular line of research by summarize studies and try to makes sense of the pattern of findings. The conclusion for literature review is about what is known, what is not, and what should be. Usually is often a good

place to begin studying the research on something. Meta-analyses are quantitative literature reviews, combining statistical findings across very different studies.

For me, it can help the researcher to know whether all relevant matter is being considered in the study of a problem. Furthermore, it will help the developer to make a hypothesis about user expectation and also help in the whole of project development. Developer will find the solution based on literature review.

To get all the information to develop E-Grading and E-Document for Student Project, the resources includes of grading form from faculty and guidance from lecturer will be referred as references. The literature studies from the resources will find more references on doing a developing process of a new system.

2.2   Facts and findings

Fact and finding is a classical set of technique used to collect information about the problems, opportunities, solution requirement and priorities. For this reason, several facts and finding had been carried out for the development of grading for final student   project.

2.3   Domain

Grading is a basic of final project management and evaluation, it is one of the task the staff must do. Final project is developed by student from Diploma and Bachelor student who take the final project before they can graduate. Each student must pass this final project before they can proceed to the industrial training. Each student have supervisor and supervisor will supervise them in developing the project.

At the end of project, each project will be presented to evaluator and evaluator will evaluate them.

2.3 Existing System

Currently, there are no grading system is implemented in Faculty of Information and Communication Technology (FTMK) for evaluate student final project. The FTMK's staffs only use manual form for grading the final project. Hence, the grading that will be developed is to help committee members for PSM and PD project to make the evaluation to final student grade.

Current manual system needs committee members to download and print out the form from faculty web site. After that, lecturer must fulfill that form and return it to the committee members. Committee members will check the evaluation during the meeting among the community. The suitable grade will be discussed together whether it is satisfied by the community or not.

2.3 Technique

The aim of gather information is to get the requirement for each different methods and techniques for develop this grading system. There are a few techniques can be use to gather information such as interview, documents and observation.

    i.   Interview

By interviewing staff and committee members for PSM and PD project, it have been made towards the opinion about this project and also have made in order to get information and requirement to develop this project.

ii. Documents

Document such as grading form, criteria evaluation form and research papers are important in order to get the information on how the process for grading student had been processed. The grading form that currently use for PSM and PD project is as show at the reference (Refer reference).

iii. Observation

Some observation was carried out in faculty to find out the reality and problem facing by faculties staff which using current manual system. By collecting the information from some committee members during meeting and discussion, it becomes easy to develop the project. As the comparison between JavaDB and MySQL below, I choose to use javaDB as my database in developing the project.

Table 2.1: Comparison between Java DB and MySQL database

Comparison	JavaDB	MySQL
Support	Sun supported version of Apache Derby with all development done with the Apache Derby Community	Has 70% market share to all open source databases and it present in every web-facing deployment in the world.
Database engine	Complete relational database engine, written	Can be written in any programming language.

	in 100% Java.	
Running On	Java EE and Java SE and more	Anything
Fitness	For embedded Java applications, multi-tier deployment, measured in terms of gigabytes.	For client-server applications, where clustering is needed and the database is measured in terabytes.
Security	High	Normal

2.4   Project Methodology

The project used the Object-Oriented Analysis and Design (OOAD) with UML approach techniques. The following sub topic will describe in details the reason of using the chosen methodology.

2.5   Approach

I had chosen Object-Oriented Analysis and Design as my project methodology, a method to design and build large programs with a long lifetime. Object Oriented Analysis and Design is often part of the development of large scale systems and programs often using Unified Modeling Language.

Object-oriented analysis and design is a approach that models a system as a group of interacting object. Each object represents some entity of interest in system being modeled and is characterized by its class, state and behavior. This system is composed of objects. The behavior of the system results from the collaboration of objects involves sending messages to each other.

2.6

Model
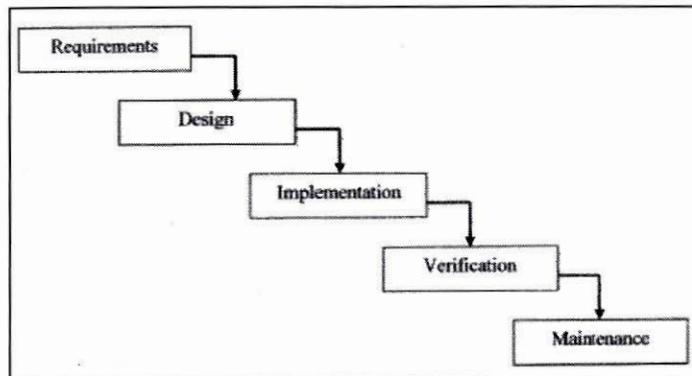
Figure 2.1: The Waterfall Model

Waterfall model is one of the methodologies that will be use to implemented and perform for this project. The waterfall is a software development model in which development seen as flowing steadily downwards such as waterfall through the phases of requirement analysis, design, implementation, testing, integration and maintenance, based on Royce W.W (1970) "Waterfall Model" Managing the Development of Large Software Systems: W.W Royce original article. The detailed explanation such as below:

i.   **Planning Phase**

Information about the requirements to build this system is gathered through interviews, document viewing, along with working environment observation.