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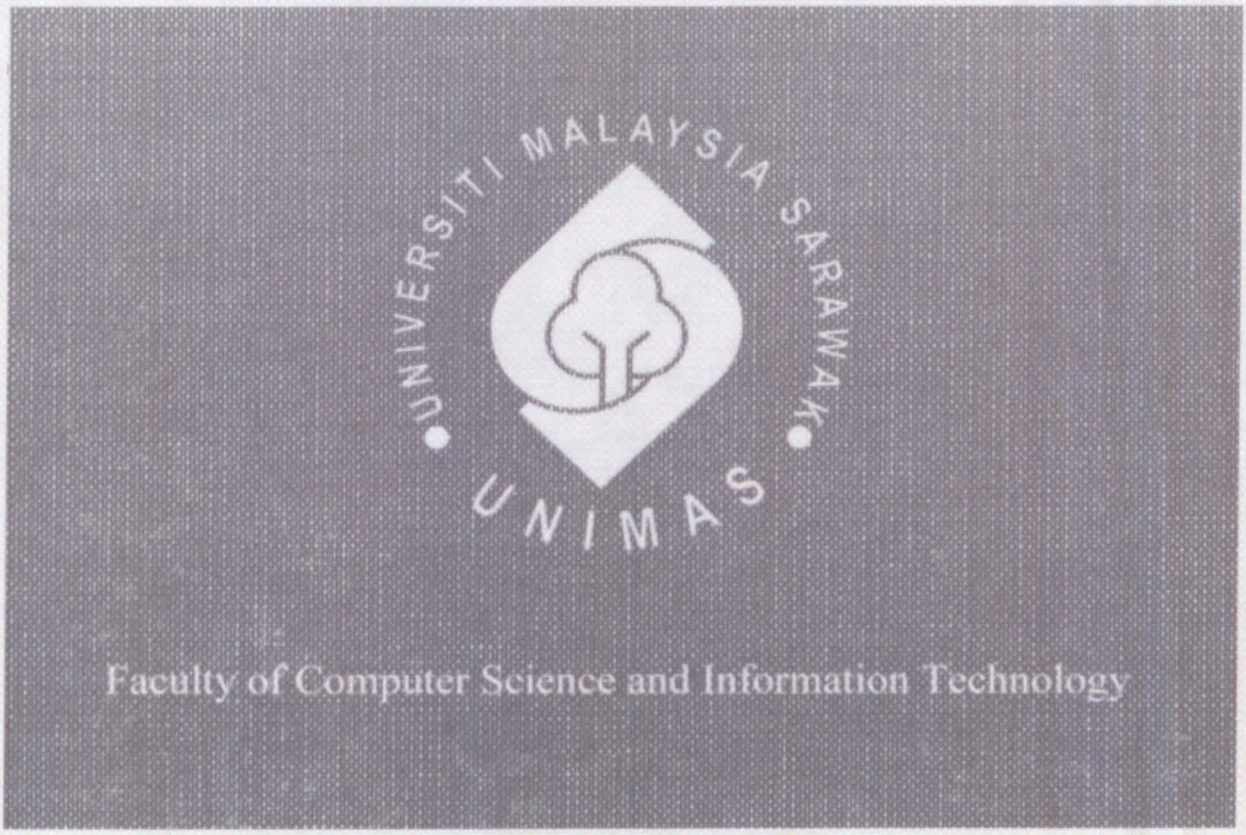

ACADEMIC PROGRAMME COMPARISON FEATURE IN E-COURSE OUTLINE SYSTEM

Chiong Poh Ching

Bachelor of Computer Science with Honours
(Software Engineering)
2014

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This project is submitted in partial fulfillment of the
requirement for the degree of
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AKADEMIK PROGRAM PERBANDINGAN CIRI DALAM SISTEM RANGKA E-KURSUS

CHIONG POH CHING

Projek ini merupakan salah satu keperluan untuk
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ABSTRACT

This report proposes an academic programme comparison feature of the E-Course outline system in University Malaysia Sarawak (UNIMAS). The proposed feature provides convenience and efficiency to the course coordinator, program coordinator in calculating the percentage of change and listing the components that have been revised. Apart from that, in order to enable the comparison feature to be implemented, improvement to the current E-course outline system database design is also one of the focuses on developing the proposed feature. Improvement to the database design is needed because currently, the database of E-Course outline system is only available for one record for each programme and programme course outline. Therefore, there is not option to store and retrieve the multiple version of academic programme and programme course outline in the system.

ABSTRAK

Laporan ini adalah satu cadangan yang mengendalikan perbandingan mengenai sistem program kurikulum yang terdapat di UNIVERSITI MALAYSIA SARAWAK (UNIMAS). Ciri yang dicadangkan adalah untuk memperuntukkan kemudahan dan kecekapan kepada penyelaras kursus dan penyelaras program dalam mengira perubahan peratusan dan menyenaraikan komponen untuk disemak semula. Selain itu, bagi membolehkan perbandingan ciri ini dilaksanakan, penambahbaikkan terhadap reka bentuk pangkalan data system E-kursus kurikulum adalah merupakan salah satu cara untuk membangunkan ciri yang telah dicadangkan. Peningkatan terhadap reka bentuk pangkalan data ini diperlukan kerana pangkalan data sistem E-kursus ini hanya membolehkan satu rekod sahaja bagi setiap program dan kursus. Oleh itu, penyimpanan dan perolehan program dan kursus dalam pelbagai versi tidak dapat dilaksanakan.

CHAPTER 1: INTRODUCTION

1.0 Project Overview

E-course outline system is an existing system used by the academic to create and edit the academic program which fulfills the requirement of Malaysia Qualify Agency (MQA) and Ministry of Higher Education (KPT). All program offers have to be approved by MQA and KPT.

Even though this system is currently in use, it still lacks some features which are very much needed to make the work of the academic, coordinator or admin in becoming more efficient and convenient. Currently, if the academic staff wants to make any improvements and amendments to the existing programmes and course outlines, they have to prepare their academic programme documents for MOHE's and MQA's perusal and approval. Then, this completed document will be sent to the respective parties for evaluation and approval. Before this, the comparison among the revised and existing programmes and course outlines were conducted manually to generate a list. The list shows the changes of the component and the percentage. The manual comparison which is currently being used is inefficient and even slows down the process for reviewing any requested changes.

Therefore, this project aims to improve the current E-course outline system by adding a feature which may generate a component and the percentage change based on the mark by the user regarding the change they have made after the document modification has been completed. Apart from that, the user may also refer to the existing version of the documentation and continue to revise the previous revised draft which had been saved in the modification process. This service is also currently not available for the current E-Course Outline system because the database design for storing the programme and programme course

outline is only available for one record for each programme and course outline, and this in turn results in inefficiency of keeping track of the older versions and saving the draft.

The goal of this project is to improve the performance of the academic, coordinator or admin in applying and managing the improved existing programme and increase the production of the quality programme and course to be offered. This improvement may indirectly increase the probability of a faculty to cultivate more students with high qualities.

1.1 Problem Statement/ Research Problem

UNIMAS has a unique web-based system called E-Course Outline, and it can be used to help all faculties and centres to prepare their academic programme documents for MOHE's and MQA's perusal and approval. However, the system does not have a feature that can be used to make a comparison between the revised and existing programme structures as well as the course outlines. Currently, the comparison work is done manually through paperwork, and this will cause the process of applying an approval to become slow and causes unnecessary delay.

Below is a list of problem statements:

i. The system can only store one record for each programme and course outline, and this in turn results in inefficiency in keeping track of the older version of the record.

ii. The comparison between the revised and existing programmes and course outlines is time consuming, and this normally causes the process of applying a program approval to become slow and causes delays.

1.2 Objectives

The objectives of this project are:

i. To improve the E-Course Outline database so that it can store multiple versions of academic programmes and course outlines.

ii. To design and develop a new feature for E-Course Outline System that can automatically generate a comparative description between a revised and an existing program as well as course outlines.

1.3 Methodology

System Development Life Cycle (SDLC) waterfall model will be used to develop this project. This is because it is easy to manage and arrange the tasks with clearly defined stages and milestones. Besides, this model is also a good choice for developing small projects with clear requirements.

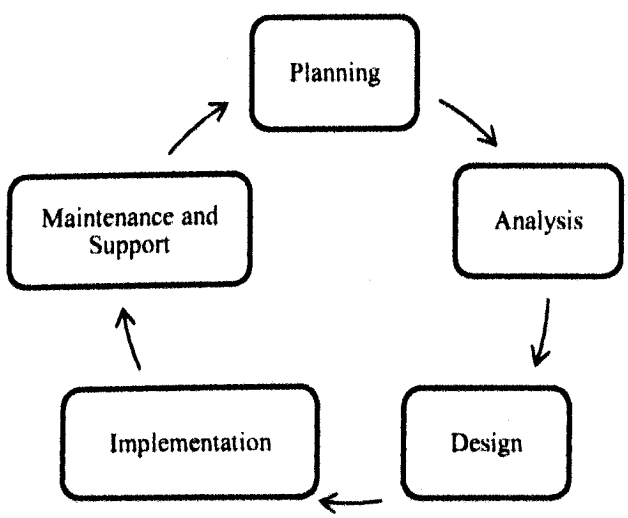

Figure 1.1: System Development Life Cycle phases

This project uses four major steps to implement a project starting from planning, analysis, design and implementation. The last phase, maintenance and support, will not be counted as a part of the scope of this project.

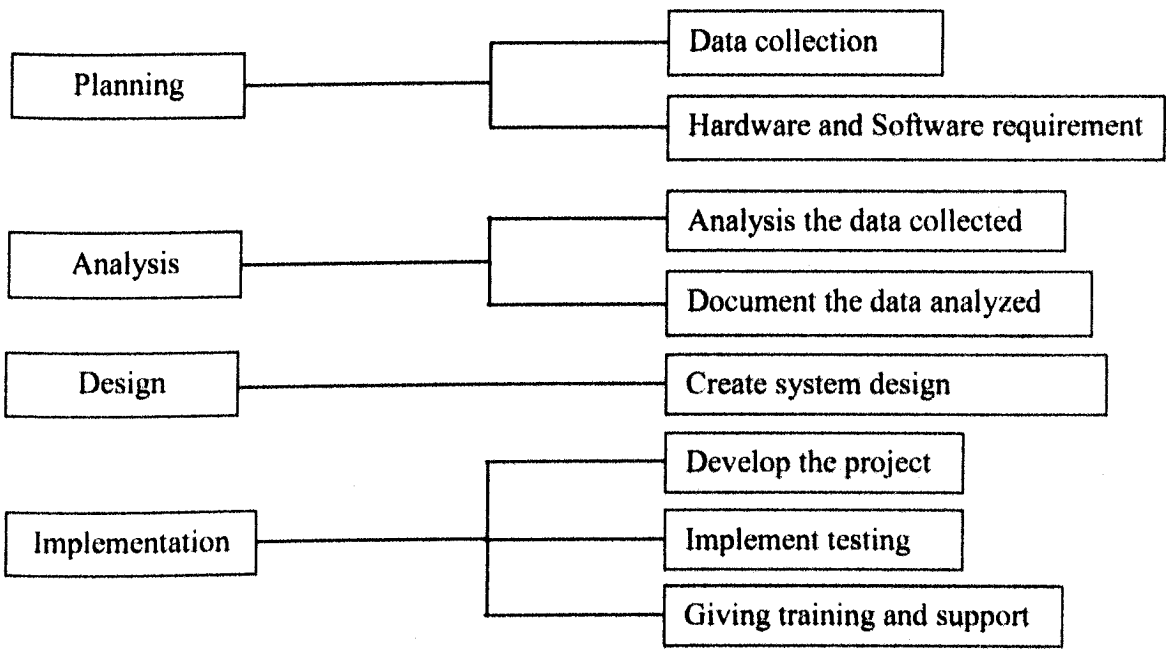

Figure 1.2: Overview of 4 phases in SDLC

1.3.1 Planning

1.3.1.1 Data Collection

The initial part of this project is to identify and collect the data or requirement needed for this project. First of all, in order to fully understand the official procedure and flow from the UNIMAS academic staff to propose or edit the existing programmes and course outlines and also the procedure to request the approval for the propose programmes and course outlines, studies and interviews were carried out.

The studies mentioned above refer to data collection by referring to the manual work that is currently in use by users, the management processes documented on their official site, and current similar existing system. Interviews will also be conducted to collect more detailed

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system requirements and opinion about the system's use and its efficiency. The targets for the interviews are the former deputy dean of CALM, Dr. Fitri Suraya.

Since the objective of this project is to add-on new features to the existing E-Course outline system, therefore, in order to synchronize the add-on feature to the existing system, meetings and discussion with supervisor as well as a study on the existing database design and system will also be carried out in order to gather the information or requirements needed. All the information and requirement collected will be analyzed and documented as a scope reference for the development phase or for future use.

1.3.1.2 Hardware and Software Requirement

Hardware Requirement

Below is the list of the hardware that will support and aid in the completion this project.

i. Laptop with 2.00 GB RAM and Intel® Core™ i3

ii. Server

Software Requirement

The integrated development environment that will be used in this project is NetBeans, and the web based system programming language that will be involved is HTML, JavaScript, CSS, JQUERY and PHP Programming.

Xampp server, which is an open-source web server package that works on various platforms is also one of the software that will be used in this project.

1.3.2 Analysis

In this phase, we will start to analyze the data collected to come up with a method concept and methodology.

Apart from that, studies and research on the similar features, relevant research papers and documentation are also carried out in order to collect more useful information.

Based on the studies, researches, and analysis, the management process flow chart and the comparison result display method will be generated and documented. This is used as a guideline and the material that may provide the basic knowledge and concept before getting into the development phase.

1.3.3 Design

Once all the requirements are agreed upon and gathered, a project design such as Use Case, Data Flow Diagram (DFD), Entity Relationship Diagram (ERD), Data Dictionary and low fidelity prototype will be created.

1.3.4 Implementation

Then, a system will be developed along with a web based user interface. The main element is to enable the system to generate the percentage of amendment among the existing and the revised programme course outline. After that, the data is compared with a certain condition to classify the party (KPT, MQA, University or etc.) in order to approve the revised programme and programme course outline. Along with the development process, testing processes will be performed frequently so that debugging can be done.

System verification and validation are carried out after the feature in the system is completely developed. This feature needs to be verified by making sure that either all requirements had been achieved and fulfilled. Testing is carried to ensure the system usability and functionality is fixed to the requirement.

Finally, the training and support will be conducted for the user or admin in order to allow them in handling the error or maintaining the performance of the system in the future.

1.4 Project scope

i. The improved E-Course Outline system is mainly designed for all faculties and centers in UNIMAS, and the system administrator in CALM.

ii. This system will be focusing on developing a prototype of automated comparison feature that compare among the existing and revised programme course outline and generate a description about the comparison result.

1.5 Significance of project

i. The high quality of all programme and course outlines in UNIMAS can easily be achieved and maintained.

ii. Reduce the workload and induce a more manageable management process.

1.6 Expected Outcome

i. Improved E-Course Outline database that enables multiple version of records.

ii. A unique feature for E-Course Outline system that can make a comparison between a revised and existing programme structure and course outline.