BORANG PENGESAHAN STATUS TESIS

JUDUL: <u>Development of Prototype for Interactive Web in Learning Multimedia System</u>
<u>(using Problem Based Learning approach)</u>

SESI PENGAJIAN: <u>2007/2008</u>

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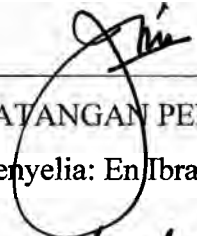
_____/____ TIDAK TERHAD

(TANDATANGAN PENULIS)

Alamat tetap: Lot 87, Kg Kasar,

17000 Pasir Mas, Kelantan.

Tarikh: 24/06/08

(TANDATANGAN PENYELIA)

Nama Penyelia: En Ibrahim Ahmad

Tarikh: 23/06/08

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DEVELOPMENT OF PROTOTYPE FOR INTERACTIVE WEB IN LEARNING MULTIMEDIA SYSTEM (USING PBL APPROACH)

WAN ROHANI BINTI WAN IBRAHIM

This report is submitted in partial of the requirements for Bachelor of Computer Science (Interactive Media)

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY
UNIVERSITI TEKNIKAL MALAYSIA MELAKA
2008

DECLARATION

I hereby declare that this project report entitled

DEVELOPMENT OF PROTOTYPE FOR INTERACTIVE WEB IN LEARNING
MULTIMEDIA SYSTEM
(USING PROBLEM BASED LEARNING APPROACH)

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

STUDENT: _____   Date: 24/06/08

(WAN ROHANI BINTI WAN IBRAHIM)

SUPERVISOR: _____   Date: 23/06/08

(EN. IBRAHIM BIN AHMAD)

DEDICATION

To my beloved family, lecturers and colleagues

Who offered me unconditional love and support that make this thesis possible. Although mere thanks are inadequate, I sincerely thank all of them.

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To my parents, thank you so much for your trust and moral support especially my mom, although you do not understand what kind of project that I do. To my sister, Diana, thank a lot for your never give up in supporting and motivate me Thanks for all the support and motivation of them throughout this project. Last but not least, I want to show my hearties gratitude to all my friends and those who helped me in one way or another towards the success of this project.

ABSTRACT

The thesis of Development of Interactive Web for Learning Multimedia System (using Problem Based Learning approach) is to fulfill the requirement for final year student of session 2007/ 2008. This project is interactive web for learning Multimedia System subject for lecturer and student Universiti Teknikal Malaysia Melaka (UTeM) who is taking subject BITM 1113 (Multimedia System). The main purpose of developing this project is to produce alternative way in learning Multimedia System besides the conventional way of learning process. This report covers for the topic of introduction of the project, the literature review, project methodology, analysis of the project, prototype design, detailed design, implementation, testing, and observation on weaknesses and strengths of the project and lastly project conclusion. Research is made in early stages of the project. It involves research about the current system scenario of learning physic. There is no existing system in this application yet, therefore the analysis is done on the existing system that using PBL approach. The main software used in developing this project is Macromedia Dreamweaver 8 and Macromedia Flash. There are lots of experience and knowledge gained in developing this project. As a conclusion, this report show all the researches and developing that achieve by student.

ABSTRAK

Tesis Pembangunan Web Interaktif untuk Sistem Multimedia (menggunakan pendekatan pembelajaran berasaskan masalah) adalah untuk memenuhi kehendak untuk projek pelajar tahun akhir sesi 2007/2008. Projek Web Interaktif untuk Pembelajaran subjek Sistem Multimedia ini adalah untuk pensyarah dan pelajar Universiti Teknikal Malaysia Melaka (UTeM) yang mengambil subject BITM 1113 (Sistem Multimedia). Tujuan utama pembinana projek ini ialah untuk menghasilkan jalan alternative dalam pembelajaran sistem multimedia selain dari kaedah biasa yang digunakan dlama proses pembelajaran. Laporan in merangkumi topic –topik pengenalan kepada projek, kajian dapatan, projek metodologi, projek analisa, rekabentuk prototaip, rekabentuk terperinci, ujian, pemerhatin pada kelemahan dan kekuatan projek, dan akhir sekali ialah kesimpulan kepada projek. Kajian telah dijalankan pada peringkat awal projek lagi. Setakat ini masih belum ada sistem yang pernah diwujudkan, oleh itu kajian telah di jalankan terhadap sistem sedia da yang menggunakan pendekatan berasaskan masalah. Perisiain utama yang digunakan di dalam pembangunan projek ini ialah Macromedia Dreamweaver 8 dan macromedia Flash 8. telah banyak pengalaman dan pengetahuan telah di peroleh dalam membangunkan projek ini. Sebagai kesimpulannya, laporan in telah menunjukkan kajian-kajian dan pembangunan yang di capai oleh pelajar.

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LIST OF ABBREVIATIONS

.gif	Graphics Interchange Format
.jpg	Joint Photographic Experts Group
.mp3	MPEG-1 Audio Layer 3
.wav	Waveform Audio Format
ADDIE	Analyze, Design, Develop, Implement, and Evaluation
CD	Compact Disc
CD-ROM	Compact Disc read-only memory
e-learning	Electronic Learning
FICTS	Faculty of Information and Communication Technology
FLA	Flash Source File
GB	Gigabyte
HDD	Hard Disc Drive
HTTP	Hypertext Transfer Protocol
ISD	Instructional System Design
LAN	Local Area Network
LMS	Learning Management System
MB	Megabyte
MHz	Megahertz
m-Learning	Mobile Learning
MMC	Multi Media Card
MMS	Multimedia Messaging Service
OS	Operating System
PBK	Pembelajaran Berasaskan Komputer

PBL	Problem Based Learning
PC	Personal Computer
PDAs	Personal digital assistants
PSM	Projek Sarjana Muda
RAM	Random Access Memory
SMS	Short Message Service
SWF	Shockwave Flash
UI	User Interface
USB	Universal Serial Bus
UTeM	Universiti Teknikal Malaysia Melaka
WAP	Wireless Application Protocol
WCDMA	Wideband Code Division Multiple Access
WiFi	Wireless Fidelity
WPM	Words per minute

CHAPTER I

INTRODUCTION

1.1   Project Background

Nowadays the internet has changed the way we communicate. The popularity of elements of the internet (such as the World Wide Web and e-mail) has created opportunities and practices that were unimaginable just a few short years ago. The way we communicate with one another, and the way we do business will never be the same because the internet and its services.

According to Andrews J, and Beck W (2004), it states that "the internet is a network. More accurately, the Internet, which began in the 1960s, is many networks connected together, all of which use the same method of communication. These interconnected networks are called an internetwork, hence the term Internet. The beginnings of the internet occurred in 1069 when the Advanced Research Projects Agency (ARPA), changed with developing an internetwork that could withstand nuclear attacks on the United States, connected two university networks to create a network called the Advanced Research Projects Agency Network (ARPANET). This first attempt at a decentralized network using common methods of communication grew over a few short years to cover the globe and become the Internet of today."

Keeping in touch with family, friends, and business associates around the world is almost effortless. Mass quantities of information are at our fingertips. More than that, the Web has become a major point of sales and business transactions for many

businesses, a trend that is expected to grow explosively in the foreseeable future. Because using the Internet has become essential in most careers today, you don't want to be left behind in gaining the necessary skills and knowledge.

Just knowing how to send an e –mail message or using Yahoo! To find a business's Web site is not enough. As more and more business use the Web advertise, serve their customers and conduct business, employees, business owners, and customers need to understand how the Internet works and how to position themselves successfully within this technology.

Most of people confuse between Internet and website. There are some of them assume that internet and website are synonyms. But, the fact is the Web is just one of the services deployed on the Internet. Just as cargo is transported by a truck on a highway, a Web page is transported by packets on the Internet, and it is divided into several types of website such as personal website, commercial website, government website and etc.

There are several methods for creating website business which fall into two broad categories which is content based sites and product or services based sites. Content based sites will not sell products or services to its users, but will provide information or other content for free. While product based sites work by offering product or services that maybe purchase by entering credit card or other payment information into a payment form on the website. Because of the increasing used of the Internet, turning a website into an income source is a common practice for web-developers and websites owners.

The usage of the Internet has given large impact not only in commercial and business sector, in fact, it has been used in educational sector to provide learning in a simple, easier end efficient way. There are a lot of approach and method used in learning process and one of them by using Problem Based Learning (PBL) methodology approach.

At the opening of the 7th International Conference on Thinking in Singapore the Prime Minister of Singapore, Mr.Goh Chok Tong, made reference to Singapore's vision

for meeting the challenges of the future in the words, "Thinking Schools, Learning Nation" (The Straits Times, June 3, 1997). Indeed, thinking has become very much the buzzword in education in Singapore over the past year or so, which is not surprising given its heavy reliance on human resource and the need to prosper in knowledge based economy.

The growth of Problem Based Learning (PBL) as an approach to curriculum planning and delivery is a popular response to this national. There are two types of ways to convey Problem Based Learning (PBL) method in learning process. The two of them is by using electronic approach and the other one is conventional approach. Nowadays, most of the university and educational organization especially in overseas has apply this methodology in their teaching guide by using conventional technique. Nevertheless, as the technology has spread out and used numerously in all over the world, problem based learning methodology also has been applied in electronic approach such as in a website. This methodology is very helpful to assist student to understand the topic they learn in a simple way and less time especially if it applied in interactive website.

Developing of interactive web is one of the efforts to provide an interactive way in learning multimedia system for student multimedia especially new student who take the subject. In PBL one is allowed to make mistakes and learn from them and because it use web based application, it is not necessarily to used the application in a classroom, the learning process can be conducted everywhere.

The application is using Problem Based Learning (PBL) methodology as an exciting alternative to the conventional learning. This application provides the user with a problem and providing resources and guidance to find the answer such as notes or video as the answer to their problem. The goal of developing this web based is to produce an interactive and interesting way of study multimedia system for multimedia student at the same time to make them engage longer with the topic.

1.2 Problem Statement

In conventional of studying multimedia system, it involves a lecturer to accompany and guide them during the learning process conducted in a classroom. The lecturer will provide students with notes, assignments and quizzes to make them understand. In this learning process, they have to focus on the subject in 20 minutes to 2 hours to understand the topic. This will occur to student to feeling bored and it is quite difficult for them to continuing engage with the lecture. Let say, a student enter the lecture hall and sit there to have a lecture in about 2 hours together with other 60 students without break. Only listen to the lecture given by the lecturer will make he or she feel bored.

Besides, there is impossible for the lecturer to make sure every single student grasp the topic given. According to this scenario, it will lead to lack of understanding of the knowledge and the goal of the study can not be achieve. In addition, learning in conventional way needed the students to come to the class every single day and punctual with the schedule that have provided to them. What will happen if they can not present on that day? The teaching process will still continue, and the student will miss the knowledge given.

Therefore, producing the website is one of the alternatives to overcome this problem. By using the website, learning process can still be happen at anytime although the student can not present in the class because the website can be reach at anywhere on anytime that appropriate for them.

1.3   Objective

- To produce an interactive web for learning multimedia system through Problem Based Learning (PBL) approach
- To provide an easy approach in learning Multimedia System where user can access the application anywhere and anytime.
- To identify the effectiveness of learning multimedia system using web based application.

1.4   Scope

The scopes that involve in the project only involve three (3) ways which is specific user, specific platform and specific functionality.

This application is specifically develop to be used by multimedia student especially first year student and the lecturer of Multimedia System in University Technical Malaysia Melaka (UTeM).

While the content of the web based application will be covered five (5) elements in multimedia system which is Text in multimedia, Digital Graphics in multimedia, Audio and Video in multimedia and Animation in multimedia system. The content of this website will followed syllabus of Multimedia System that has been used in Universiti Technikal Malaysia Melaka (UTeM).

The specific platform that will be used is Microsoft Windows XP Professional Version 2002 Service Pack 2.

Although using this application can be assume as an interesting and interactive way to learn multimedia system, using PBL methodology approach also very different to

the teaching they have already received, and so can be stressful and disorienting. In fact, students are no longer given the "answers", and this can require a change in attitude and mind-set. Some practitioners recommend that it should be introduced in a student's first year on a course.

1.5 Project Significance

The product that will be developed will give benefit to student and lecturer in Multimedia System. Other than giving knowledge in another learning technique of study multimedia system which is using Problem Based Learning (PBL) approach, it also implemented with additional media such as 2D animation. This will make the learning process more interesting and enjoyable to student.

Empirical studies shown that the way of presenting of the knowledge is one of the factors to make the student engage longer with the topic. Therefore, by producing this interactive website will fulfill the effort to make student engage as longer as they can with the topic given.

The application is one of effort to enhance student learning in multimedia system through problem solving technique to ease them to understand and prepares students to think critically and analytically.

1.6 Expected Output

The expected output of the project is to deliver a web based application in learning multimedia system. The application will be develop for multimedia student as an alternative to the existing learning technique. The application will apply problem

based learning theory by using 2D technology. By the end of the implementation of this product is to produce an interesting way for study multimedia system compared to the existing learning technique.

1.7   Conclusion

In conclusion, the purpose of developing the project is to produce an interactive website that using Problem Based Learning (PBL) methodology approach. The goal of developing the website is to create another alternative of learning multimedia system to conventional learning where the information will be provide by the lecturer before lecture begin. But, by using this application the user or student will be given problem like in their real life to solve and they are also will be provided with resources and guidance to find the answer. The user can get the answer in a few form, such as notes in PDF format, animation using 2D technology and etc. This will make the user more interested to learn multimedia system compared with the conventional learning because there will be included animation and audio as additional media.

The next chapter will covered topic literature review, that will discuss about the existing system before and what is the strength and weaknesses of the system. The literature review will help to establish the importance of the topic itself. Besides, it also covered the comparison of the existing teaching learning system with the product that will produced, the project methodology, project requirements, and also software and hardware requirements.

CHAPTER V

IMPLEMENTATION

5.1   Introduction

This chapter will discuss in detail on implementation phase of producing the prototype after completing the design phase that has being done in the last chapter. The chapter will focus on process of creation and producing the product. The chapter will focus on production of texts, image, video, audio and animation how to integrate those elements together and how to setup configuration for the product. The implementation status also will be included in this chapter which shows the details module name, description on every module and the duration taken to finish the module.

5.2   Media Creation

This subtopic involves the details explanation on process production of all five (5) element of multimedia which is text, graphics, audio, video, and animation.

5.2.1   Production of Texts

Texts in the form of words, sentences and paragraphs are used to communicate thoughts, ideas and facts in nearly every aspect of our lives. Text plays an important role