

**DEVELOPMENT OF LEARNING OBJECTS
FOR TELECOMMUNICATION SYSTEM (BENT 3313)**

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**This report is submitted in partial fulfillment of the requirement for the award of
Bachelor of Electronic (Computer Engineering) With Honors**

**Faculty of Electronics and Computer Engineering
Universiti Teknikal Malaysia Melaka**

APRIL 2010



UNIVERSITI TEKNIKAL MALAYSIA MELAKA
FAKULTI KEJURUTERAAN ELEKTRONIK DAN KEJURUTERAAN KOMPUTER

BORANG PENGESAHAN STATUS LAPORAN
PROJEK SARJANA MUDA II

Tajuk Projek : DEVELOPMENT OF LEARNING OBJECTS FOR TELECOMMUNICATION SYSTEM

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Special dedication to my loving parents, Haji Romeli bin Hasan and Hajah Siti Mariam binti Othman, for giving me birth at the first place, for unconditional support and encouragement to pursue my dreams, even when the dreams went beyond boundaries of language, field and geography. Also to my siblings and my kind hearted supervisor Ms. Nurmala Irdawaty bin Hasan, all lecturers in Faculty of Electronics and Computer Engineering (FKEKK) and also to my dearest friend and my best companion at all time, Nur Farah Hidayah Badul Zaman, Octivia James, Nur Ain and last but not least Mohd Ali Hanifi bin Abdul Hamid.

ACKNOWLEDGMENT

السلام عليكم ورحمة الله

Mercy to Allah Al – Mighty for making this report a successful experience. I would like to thank everybody for lending me a helping hand throughout this time.

Firstly, I would like to thank the university, my parent, the lecturer, and last but not less my friends which have given the faith and trust to experience this wonderful period.

This is the greatest opportunity given to me and it has also been something useful to me. For that, a million thanks to all the parties which has been related and helps I have gotten until this project is finished.

Here, I would like to acknowledge Miss Nurmala Irdawaty Binti Hassan as my supervisor for supervising me.

Thank you.

ABSTRACT

The idea of this project is to come out with the development of learning objects for Telecommunication System (BENT 3313). Happens when students can hardly concern on the lectures lecture, especially when there is only word shown in front. This project aim to provide a new learning environment that is more interesting than the old school learning process, where sometimes too boring for students. Before starting the project, gantt chart are made to illustrates a project schedule. The flowchart is drawn to represents the process that used to analyzing, designing, documenting or managing a process in this project. In the end of this project, all the objectives were successfully achieved.

ABSTRAK

Projek ini adalah bertujuan untuk menghasilkan objek bantu peajaran untuk subjek Sistem Telekomunikasi (BENT 3313). Kadangkala pelajar mengalami kesukaran untuk menumpukan perhatian di dalam kelas ketika pensyarah mengajar, lebih – lebih lagi apabila penjelasan subjek tersebut hanya diterangkan dengan viliopicvilia – ratus patah perkataan. Penghasilan projek ini diharapkan dapat menyelesaikan masalah ini dengan viliopicvili pelajar suasana baru dalam proses pembelajaran dengan bantuan suara dan animasi untuk viliopic – viliopic yang telah ditentukan. Sebelum memulakan projek, carta gantt yang boleh di definasi kan sebagai jadual perkembangan projek dibuat terlebih dahulu. Projek boleh dikatakan berjalan dengan viliopicvili apabila tempoh masa yang telah ditetapkan di dalam carta gantt dipatuhi. Manakala carta alir dibuat untuk menggambarkan proses yang digunakan untuk menganalisa, merekabentuk, mendokumenkan atau mengurus sesuatu proses di dalam projek ini. Secara keseluruhannya, semua objektif yang tersenarai telah viliopicvilia dicapai.

CONTENTS

CHAPTER	TITLE	PAGE
	PROJECT TITLE	i
	STUDENT'S DECLARATION	ii
	LECTURER'S DECLARATION	iii
	DEDICATION	iv
	ACKNOWLEDGMENT	v
	ABSTRACT	vi
	ABSTRAK	vii
	CONTENTS	vii
	LIST OF TABLES	ix
	LIST OF FIGURES	xi
	LIST OF ABBREVIATION	xii
I	INTRODUCTION	
	1.1 Project Overview	1
	1.2 Project Objectives	2
	1.3 Problem Statement	3
	1.4 Project Scope	3
	1.5 Methodology	4
II	LITERATURE REVIEW	
	2.1 Learning Object	5

2.2	Macromedia Authorware 7	7
2.3	Macromedia Dreamwaever 8	39
2.4	SwiSHmax	47
III	METHODOLOGY	
3.0	Introduction	53
3.2	Gantt Chart	54
3.2	Flow Chart	57
IV	PROJECT FINDING AND ANALYSIS	
	Results	61
V	DISCUSSIONS AND CONCLUSIONS	
	Discussions	68
	Conclusions	69
	Recommendations	69
	REFERENCES	70
	APPENDIX A	72
	APPENDIX B	76

LIST OF TABLES

NO.	TITLE	PAGE
2.1	Icon descriptions	13

LIST OF FIGURES

NO.	TITLE	PAGE
2.1	Macromedia Authorware Interface	14
2.2	Example of Flowline for Adding Text	15
2.3	Example of adding text	16
2.4	Step to adding video	16
2.5	<i>Flash Asset Properties</i> pop-up window	17
2.6	Example of adding video flowline	17
2.7	Properties Sprite Icon for flash movie (Sprite)	18
2.8	Properties Sprite Icon for flash movie (Display)	18
2.9	Properties Sprite Icon for flash movie (Layout)	18
2.10	The basic flowline to add voice	19
2.11	The flowline for Knowledge Objects	19
2.12	The sequence of <i>Text scanned</i>	20
2.13	The area where the text will be read when cursor is in it	20
2.14	The code to read title and page number	21

2.15	Properties <i>Calculation Icon</i>	21
2.16	Example of main page	22
2.17	Flowline for subchapters of Introduction to Telecommunication System	23
2.18	Flowline to link between main chapters	23
2.19	Flowline inside the <i>Framework icon</i>	24
2.20	Navigation button	24
2.21	Knowledge Object for the New File	25
2.22	Knowledge Object wizard.	26
2.23	Specification of the screen size.	26
2.24	Specification of the layout style.	27
2.25	Specification of the general options of the wizard.	27
2.26	The log-in setup	28
2.27	Specification of the tracking of user progress and report.	28
2.28	Specification of the scoring and judging.	29
2.29	Specification of the positive and negative feedback.	30
2.30	Added question step.	31
2.31	The end of the wizard.	32

2.32	<i>Knowledge Object icon</i>	33
2.33	The question setup	34
2.34	The <i>Drag&Drop</i> modify option	35
2.35	The end of the wizard.	36
2.36	Macromedia Dreamweaver 8 interface	39
2.37	<i>Insert Flash Button properties</i>	40
2.38	Step to import flash button into Macromedia Authorware	42
2.39	<i>Flash Asset Properties</i>	43
2.40	Add button to screen	44
2.41	Example of button	44
2.42	Drop down menu for <i>Response Type</i>	45
2.43	The <i>Response Type</i> lists	45
2.44	The <i>hotspot</i>	46
2.45	The <i>hotspot</i> put over the flash button	46
2.46	The SWiSHmax software interface	47
4.1	The <i>Splash Screen</i>	63
4.2	The <i>Main Menu GUI</i>	63
4.3	The <i>Text-to-Speech</i> option	64

4.4	The <i>Find Screen</i> page	64
4.5	Example of animation added	65
4.6	<i>Navigation help</i> dialog box	65
4.7	<i>Logout</i>	65
4.8	The main <i>flowline</i>	66
4.9	The main menu <i>flowline</i>	66
4.10	The find screen <i>flowline</i>	66
4.11	Example of tutorial section	67
4.12	The displayed score at the end of the tutorial	67

LIST OF ABBREVIATIONS

GUI – Graphical User Interface

LIST OF APPENDIX

NO.	TITLE	PAGE
A	Learning Objects	64
B	Sharable Content Object Reference Model	68

CHAPTER 1

INTRODUCTION

1.1 Project Overview

This project is about developing teaching materials for subject Telecommunication System, BENT 3313 using Macromedia Authorware and with the aid of other useful software. The first four chapters were selected and compiled in this project. The covered chapters were, Frequency Spectrum Management, Broadcasting, Telephone and Public Switched Telephone Network (PSTN). This teaching materials will gave both students and lecturers advantages. The students will find the learning process more interesting compared to the old school learning process and will gain much faster understanding and clear view of certain topics with the help of animation in selected topics. As for the lecturers, teaching job will not be so tiring like before with all the syllabus will be compiled at one place. The added voice will be useful when new things need to be added in the learning or teaching process replacing the old methods and leave it all to the computer. Animation will be

added to appropriate topics as one of the interesting criteria. The animation will be made using Macromedia Flash or SwisMax software to make the teaching process more interesting. The Macromedia Dreamweaver software will be used to make flash link button to connect each pages and it is always be easy to go back to the main menu by just click on one single button. Adobe Photoshop is necessary when it comes to design the background and edit all the pictures to suit the concept of this project. All the chapters, including the introduction will be compiled in sequence to make it easier to access. The voice with clear pronunciation will be added as one of the advanced element of this program. All the elements stated are limited by the job scope that will be described later in the next page.

1.2 Project Objectives

The aims of this project are:

- i. To give students a new way of learning environment in much more interesting way compared to the old school learning process.
- ii. To make lecturer teach in much more convenience way to give interest to students.
- iii. To make used of appropriate software to gave features such as text, voice and animation.

1.3 Problem Statement

The old school learning process might be sometimes too bored. This interactive learning materials can overcome the problems. The development of this e-Learning Materials also gave both students and lecturer advantages. Lecturer do not have to write on the white board anymore. All the selected syllabus will be combined and be linked to one another and arranged according to chapters at the Main Menu to make program access easier and not too complicated. Students will find this way of learning much more interesting than the old way. With the help of certain animation it is much easier to understand certain topic in the chapters.

1.4 Project Scope

This e-Learning Materials covers Frequency Spectrum Management : introduction to frequency allocation, standard and license applications; Broadcasting : analogue broadcasting for audio (DAB) and video (DVB), and broadcasting for mobile receiver; Telephone : brief history, telephone development system, telephone set, call procedure, equipment; PSTN : switching, transmission system, multiplex hierarchy, and telephone service. The voice will be added if there is no time constrain and the animation will be added only at the appropriate topic. The animation will be done only with SwiSHmax software only. The Macromedia Dreamweaver will be used to make the flash link button that will be exported to Macromedia Authorware and so do the animation in the SwiSHmax.

1.5 Methodology

The project is started with familiarising and understanding of all the software which is Macromedia Authorware, Macromedia Dreamweaver, SwiSHmax, Windows Movie Maker and Any Video Converter that comes with features of voice, text, animation and voice to this project.

In this project the Macromedia Authorware will be used to make the flowline of the project. The flash button that been made earlier in Macromedia Dreamweaver will be imported into Macromedia Authorware. Animation for selected topics will be created using the SwiSHmax software and same with the flash button it will also be imported into Macromedia Authorware right after been compiled as the .SWF file. Windows Movie Maker will be useful to edit the existing movie and can select only the desired part in the movie. While the Any Video Converter used to convert the .wma format which is the output file of the edited movie of Windows Movie Maker into .mp3 format since the SwiSHmax software only support that kind of file format for audio.

Before started this project, the subject must first be understood and only then the other steps may be proceed. This subject of Telecommunication System (BENT 3313) is very useful as an additional knowledge since it does not offer for BENC students.

CHAPTER 2

LITERATURE REVIEW

2.1 Learning Object

A learning object is a resource, usually digital and web-based, that can be used and re-used to support learning. Learning objects offer a new conceptualization of the learning process: rather than the traditional "several hour chunk", they provide smaller, self-contained, re-usable units of learning. They will typically have a number of different components, which range from descriptive data to information about rights and educational level. At their core, however, will be instructional content, practice, and assessment. A key issue is the use of metadata. Learning object design raises issues of portability, and of the object's relation to a broader learning management system.^[5]

2.1.1 Learning Object Components

The following is a list of some of the types of information that may be included in a learning object and its metadata:

- General Course Descriptive Data, including: course identifiers, language of content (English, Spanish, etc.), subject area (Maths, Reading, etc.), descriptive text, descriptive keywords
- Life Cycle, including: version, status
- Instructional Content, including: text, web pages, images, sound, video
- Glossary of Terms, including: terms, definition, acronyms
- Quizzes and Assessments, including: questions, answers
- Rights, including: cost, copyrights, restrictions on Use
- Relationships to Other Courses, including prerequisite courses
- Educational Level, including: grade level, age range, typical learning time, and difficulty. [IEEE 1484.12.1:2002]

2.2 Macromedia Authorware 7

Macromedia Authorware 7 is the leading rich-media authoring tool for creating web and online learning. Authorware integrates graphics, sound, animation, text, and video into compelling rich-media learning solutions. Authorware is optimized for building e-learning applications. The Authorware interface provides a fast and easy environment for creating interactive applications. Drag-and-drop icons support rapid application prototyping and development without the need for extensive scripting. The flowline provides an an intuitive representation of the structure of large, highly branched learning applications.^[1]