

**Managing Data in Database: E-Tutorial Generator**

**BY**

**WAN MASALINDA BINTI WAN MUSTOFAR  
BACHELOR OF COMPUTER SCIENCE (HONS)**

**THESIS SUBMITTED IN PARTIAL FULFILLMENT OF  
THE REQUIREMENT FOR THE DEGREE OF  
BACHELOR OF COMPUTER SCIENCE**

**FACULTY OF COMPUTER AND MATHEMATICAL  
SCIENCES**

**UNIVERSITI TEKNOLOGI MARA**

**NOV 2010**

## **ACKNOWLEDGEMENTS**

First of all, I would like to express my highest thankfulness to Allah SWT, the Almighty for granting me the will and strength to finish this research. It will be difficult for me to complete this research without His blessing and permission.

Many thanks to my beloved family who never quit in giving me full support, understanding and courage throughout the research without hassle. Thanks also to my special friends for always supporting me.

Last but not least, I would like to thank my supervisor Puan Suzana Binti Ahmad for her support and guidance throughout the course of this project as well as providing me such a valuable advice and help to conduct this research. This research would not also be possible without help from course coordinator, Dr Noor Elaiza Binti Abdul Khalid and Dr Fakhrul Hazman bin Yusoff. Thank you for inspiring me in such means that could not be written in words.

## **ABSTRACT**

To facilitate easy access to multimedia database for building on-line tutorial, e-tutorial generator was developed. E-tutorial generator supports development of quizzes and also step by step instructions to enable user (lecturer) generate their own tutorial. Managing relational multimedia database for browsing, updating and sharing has been integrated in support of the tutorial generator. By applying the appropriate technique to manage data in database, different type of file format can be classified by using the adaptation of Binary-Tree. This application is convenience for lecturers who are having basic IT knowledge or non IT background. Users are allowed in sharing the bank of multimedia data. Part from that, end users can answer the question directly and will get the result at the end of the session. Simple mathematic calculation is applied to total up the result.

# TABLE OF CONTENTS

CHAPTER	PAGE
DECLARATION	ii
ACKNOWLEDGEMENT	iii
ABSTRACT	iv
TABLE OF CONTENTS	v
LIST OF FIGURES	x
LIST OF TABLES	xiii
CHAPTER 1 : INTRODUCTION	
1.1 Research Background	1
1.2 Problem Statement	3
1.3 Project Objective	5
1.4 Project Scope	5
1.5 Project Significance	6
1.6 Conclusion	6

CHAPTER 2: LITERATURE RIVIEW	7
2.1 Introduction	7
2.2 Online Tutorial	7
2.2.1 Characteristics of the online learning environment	7
2.3 E-generator	10
2.4 E-tutorial generator	10
2.5 Multimedia	12
2.6 Database	13
2.7 Multimedia Database	14
2.8 Difference between multimedia DBMS and traditional DBMS	15
2.9 Managing multimedia in database	16
2.10 Type of data	19
2.10.1 Structured data	19
2.10.2 Unstructured data	19
2.11 Type of database	20
2.11.1 Relational Database	20
2.11.2 Object-Relational Database	22
2.12 Related Research on Algorithm Data Structure	23
2.12.1 Binary tree (B+-tree)	23
2.12.2 NB-Tree	26
2.12.3 K-Nearest Neighbor (KNN)	27
2.13 Data Retrieval	28