TEACHING PLAN

FAKULTI TEKNOLOGI MAKLUMAT DAN KOMUNIKASI

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

MULTIMEDIA DATABASE

BITP3353	SEMESTER 2	SESSION 2023/2024

1.0 DESCRIPTION

LO	DESCRIPTION	PROGRAMME
LO01	To explain the fundamental concept of multimedia database and its requirements	BITD
LO02	To demonstrate understanding in dealing with various multimedia data types	BITD
LO03	To apply the multimedia database design concept in storing and retrieving multimedia data	BITD

2.0 SYNOPSIS

MULTIMEDIA DATABASE MANAGEMENT SYSTEMS (MMDBMSS) IS A DBMS THAT SUPPORTS BOTH TRADITIONAL AND MULTIMEDIA DATA TYPES, AND IS CAPABLE OF HANDLING LARGE COLLECTIONS OF MULTIMEDIA ENTITIES. THIS SUBJECT REVOLVES AROUND FUNDAMENTAL COMPONENTS THAT NEED TO BE INTEGRATED INTO CONVENTIONAL DATABASE MANAGEMENT SYSTEMS TO MAKE THEM PRACTICAL FOR DEVELOPING MULTIMEDIA DATABASE APPLICATIONS. THE MOST IMPORTANT IS TO OVERVIEW VARIOUS FEATURE AND APPROACHES FOR HANDLING LARGE COLLECTIONS OF MULTIMEDIA ENTITIES BY EXISTING RELATIONAL AND OBJECT-RELATIONAL DBMSS. THEN, DEVELOPING A SET OF FEATURES AND FUNCTIONS THAT A MMDBMS SHOULD PROVIDE TO EFFECTIVELY AND EFFICIENTLY SUPPORT VARIOUS MULTIMEDIA DATA TYPES, SUCH AS TEXT DOCUMENT, IMAGES, AUDIO, AND VIDEO.

3.0 PRE-REQUISITE

PRE-REQUISITE	SUBJECT NAME	COHORT	PROGRAMME

4.0 MAIN TEXT BOOK

[1] DUNCKLEY, L. (2003), MULTIMEDIA DATABASES: AN OBJECT-RELATIONAL APPROACH, UK : PEARSON.

5.0 REFERENCES

[1] DUNCKLEY, L. (2003), MULTIMEDIA DATABASES: AN OBJECT-RELATIONAL APPROACH, UK : PEARSON. [2] CANDAN, K.S. AND SAPINO, M.L. (2010), DATA MANAGEMENT FOR MULTIMEDIA RETRIEVAL. CAMBRIDGE UNIVERSITY PRESS. [3] STEFANOS V., BENOIT H., EDWARD Y. C., IOANNIS K., (2019) BIG DATA ANALYTICS FOR LARGE-SCALE MULTIMEDIA SEARCH. WILEY [4] SATHAYE, NINAD. PYTHON MULTIMEDIA. PACKT PUBLISHING LTD, 2016. [5] YAN, LI, AND ZONGMIN MA. INTELLIGENT MULTIMEDIA DATABASES AND INFORMATION RETRIEVAL: ADVANCING APPLICATIONS AND.TECHNOLOGIES (2012).

6.0 LEARNING ACTIVITIES AND STUDENT LEARNING TIME (SLT)

Kredit : 3

INDENPENDANT LEARNING	L	LECUTURER	* 0.5 to 1 hour for each 1 hour of Lecturer	I	0.5
	T	TOTURIAL	* 0.5 to 1 hour for each 1 hour of Tutorial	II	0.5
	P	PRACTICAL	* 0.5 to 1 hour for each 1 hour of Practical	III	0.5

		GUIDED LEARNING TIME(HR)				INDEPENEDANT LEARNING(HR)								ASSESSMENT TIME(HR)				
WEEK	CLO	L	T	P	O	L	T	P	O	F	T	A	O	F	T	A	O	SLT
W1	01	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	4
W2	01	2	0	2	0	1	0	1	0	0	0	0	0	0	0	0	0	6
W3	02	2	0	2	0	1	0	1	0	0	0	0	0	0	0	0	0	6
W4	02	0	0	0	2	0	0	0	2	0	0	0	1.6	0	0	0	0.4	6
W5	02	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	4
W6	02	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	4
W7	01	0	0	0	0	0	0	0	4	0	8	0	0	0	2	0	0	14
W8	01	2	0	2	0	1	0	1	4	0	0	0	0	0	0	0	0	10
W9	01	2	0	2	0	1	0	1	0	0	0	0	0	0	0	0	0	6
W10	03	2	0	2	0	1	0	1	0	0	0	0	3.2	0	0	0	0.8	10
W11	03	2	0	2	0	1	0	1	0	0	0	0	3.2	0	0	0	0.8	10
W12	01	2	0	2	0	1	0	1	0	0	0	0	3.2	0	0	0	0.8	10
W13	03	2	0	2	0	1	0	1	0	0	0	0	3.2	0	0	0	0.8	10
W14	03	2	0	2	0	1	0	1	0	0	0	0	0	0	0	0	0	6
W15	0	0	0	0	0	0	0	0	4	8	0	0	0	2	0	0	0	14
Keseluruhan		18	0	18	4	9	0	9	24	8	8	0	14.4	2	2	0	3.6	120

SLT Credit Equivalent: 3

7.0 SUBJECT ASSESSMENTS

NO	LEARNING OUTCOME	PROGRAMME OUTCOME	ASSESSMENT METHOD	MARK CODE	PERCENTAGE (%)
1	01	06	MID TERM- MT_L01	MT-1	10
2	01	06	PEPERIKSAAN AKHIR- FA_LO1_C3	PA-1	20
3	03	09	PEPERIKSAAN AKHIR- FA1_L03_C3	PA-2	10
4	01	06	PROJEK- PRJ_L01_LL1_C2	PRJ-1	10
5	02	02	PROJEK- PRJ_L02_CTPS1	PRJ-2	5
6	03	09	PROJEK- PRJ_L03_TS1	PRJ-3	15
7	02	02	ASSIGNMENT- A1_L02_C3	TG-1	15
8	02	02	ASSIGNMENT- A2_L02_CS3	TG-2	10
9	03	09	ASSIGNMENT- A3_L03_LL	TG-3	5
TOTAL					100

8.0 WEEKLY LECTURE PLAN

Week	Session	Contents	References	Delivery Method
1 (BL)	**Lecture 1** **Lab 1**	**INTRODUCTION TO MULTIMEDIA DATABASE** **Lecture content** • Introduction • The need for multimedia database • Types of multimedia data • Applications of multimedia database • Defining Unstructured data and multimedia data **Laboratory content** • Review on multimedia database management system ***Activity :****Learning Report – NoSQL vs SQL*	[1] CHAPTER 1 [2] Chapter 1	Lecture
2	**Lecture 2** **Lab 2**	**MULTIMEDIA DATA** **Lecture content** • Multimedia data size and acquisition, dealing with media object size, reducing media object size • Real-time nature of multimedia • Problems with the semantic nature of multimedia data • Understanding digital objects format • Data compression **Laboratory content** • Creating tables containing multimedia data types ***Activity :****Project Discussion*	[1] CHAPTER 2,3 [2] Chapter 2	Lecture
3	**Lecture 3** **Lab 3**	**TECHNIQUES FOR MULTIMEDIA DATABASE CREATION** **(PART 1)** **Lecture content** • Data loading techniques • Tier architecture • Oracle table storage • Introduction to multimedia-based SQL • Creating tables and constraints • Manipulating data using SQL **Laboratory content** • Creating and applying PL/SQL stored procedures • Creating directory • Load BLOB into tables	[1] CHAPTER 4 [2] CHAPTER 5, 7	Lecture

		Activity :*Manage Media Data - Image*		
4 (BL)	**Lecture 4** **Lab 4**	**TECHNIQUES FOR MULTIMEDIA DATABASE CREATION** **(PART 2)** **Lecture content** • Constructing methods using PL/SQL stored procedures • Manipulating large objects (using DBMS_LOB package) • BLOB load methods • Directory Creation **Laboratory content** • Creating and applying PL/SQL stored procedures • Creating directory • Load BLOB into tables ***Activity :****Manage Media Data - Audio*	[1] CHAPTER 4 [2] CHAPTER 7	Lecture
5 (BL)	**Lecture 5** **Lab 5**	**QUERYING MULTIMEDIA DATA** **Lecture content** • Manipulating multimedia data • Classification problem **Laboratory content** • Applying metadata standards into tables • Manipulating large objects (using DBMS_LOB package) • Querying Multimedia attributes ***Activity :****Manage Media Data - Video*	[1] CHAPTER 5	Lecture
6 (BL)	**Lecture 6** **Lab 6**	**USING MULTIMEDIA METADATA** **Lecture content** • The main features of metadata • Classifying metadata • Generating and extracting metadata • Meta-data standards • Developing ontologies **Laboratory content** • Creating query interface to display multimedia data ***Activity :****Comparison media data and technology in learning environment*	[1] CHAPTER 7	Lecture
7	**Lecture 7**	**MULTIMEDIA DATABASE : TECHNOLOGY AND APPLICATION** **Lecture content**	[4]	Lecture

(BL)		• Discover / discuss on current and future research related to multimedia database. **Laboratory content** • Creating query interface to display multimedia data ***Activity :***Manipulate and Testing media data **MID SEMESTER EXAMINATION**		
	Lab 7			
8		**MID SEMESTER BREAK**		
9 (BL)	**Lecture 8**	**MULTIMEDIA DATABASE ARCHITECTURE AND PERFORMANCE** **Lecture content** • Multimedia architecture requirements and server requirements • Performance issues in specific implementations • Tuning methodologies **Laboratory content** • Collecting statistics for performance analysis ***Activity :***Manipulate and Testing media data	[1] CHAPTER 8 [2] CHAPTER 8	Lecture
	Lab 8			
10	**Lecture 9**	MULTIMEDIA AND THE INTERNET **Lecture content** • Transmission of multimedia data • Media streams and network protocols • Quality of service issues **Laboratory content** • Transmission of multimedia data simulation ***Activity :***Project Progress and Development	[1] CHAPTER 9	Lecture
	Lab 9			
11	**Lecture 10**	**DEALING WITH TEXT DATABASES** **Lecture content** • Manipulation of text data types • Querying multimedia text • Content-dependant metadata **Laboratory content** • Query and store text ***Activity :***Project Progress and Development	[1] CHAPTER 10	Lecture
	Lab 10			

12	**Lecture 11** **Lab 11**	**DEALING WITH IMAGE DATABASES** **Lecture content** • Technologies for image processing • Retrieval methods • Developing image media database • Why store images in database **Laboratory content** • Query and store images ***Activity :***Project Progress and Development	[1] CHAPTER 11	Lecture
13	**Lecture 12** **Lab 12**	**DEALING WITH VIDEO DATABASES (PART 1)** **Lecture content** • Role of video feature extraction • Video analysis and segmentation **Laboratory content** • Query and store videos ***Activity :***Project Progress and Development	[1] CHAPTER 12	Lecture
14	**Lecture 13** **Lab 13**	**DEALING WITH VIDEO DATABASES (PART 2)** **Lecture content** • Storage for video objects • Manipulating video data **Laboratory content** • Query and store videos ***Activity :***Project Progress and Development	[1] CHAPTER 12	Lecture
15 (BL)	**Lecture 14** **Lab 14**	**PROJECT : PRESENTATION / DEMONSTRATION**		
16-18		**REVISION WEEK** **FINAL EXAMINATION WEEK**		

9.0 CQI

PROGRAMME	SESSION (B4)	SUGGESTION OF IMPROVEMENTS	SESSION	ACTION TO BE TAKEN
BITD	2-2022/2023	1. SOME STUDENT GOT CONFUSE ON THE CONCEPT OF DETECTION AND SEGMENTATION. NEED TO ADD MORE EXERCISE ON THESE TOPIC. 2. ASSIGNMENT MANAGE MEDIA DATA HAD TO CHANGE LAST MINUTE SINCE SOMEONE ACCIDENTLY DELETE ALL THE CODES. NEED TO PROVIDE USERNAME AND PASSWORD FOR EACH STUDENT TO AVOID THE SAME INCIDENT HAPPEN AGAIN. SUGGEST THIS ASSIGNMENT BECOME FIRST FILTERING BEFORE PROCEED TO DO THEIR GROUP PROJECT.	2-2023/2024	APPLY AS SUGGESTED

10.0 STAFF DETAILS

STAFF NO.	NAME	DEPARTMENT	PHONE NO.	EMAIL
00106	TS. HIDAYAH BINTI RAHMALAN	FAKULTI TEKNOLOGI MAKLUMAT DAN KOMUNIKASI (FTMK)	+6062702451	hidayah@utem.edu.my

TEACHING PLAN APPROVAL (UNTIL END OF WEEK 2)

Comment (Optional) :		Comment (Optional) :	
Prepared By,		**Approved By,**	
Name :	TS. HIDAYAH BINTI RAHMALAN	Name :	DR. NOR HAFEIZAH BINTI HASSAN
Position :	PENSYARAH KANAN	Position :	KETUA JABATAN
Date :	15/03/2024	Date :	

TEACHING PLAN IMPLEMENTATION (FROM WEEK 3 TO WEEK 16)

Comment (Optional) :		Comment (Optional) :	
Prepared By,		**Checked By,**	
Name :		Name :	
Position :		Position :	
Date :		Date :	

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