

**SARDAR RAJA COLLEGE OF ENGINEERING
RAJA NAGAR, ALANGULAM**

DEPARTMENT OF COMPUTER APPLICATIONS



Subject Name : ADVANCED DATABASES

Subject Code : MC9276

Year : III – M.C.A

Semester : V

Prepared By,
Mr. M. Thirumeni
Asst. Prof /MCA

UNIT I PARALLEL AND DISTRIBUTED DATABASES**9**

Database System Architectures: Centralized and Client-Server Architectures – Server System Architectures – Parallel Systems- Distributed Systems – Parallel Databases: I/O Parallelism – Inter and Intra Query Parallelism – Inter and Intra operation Parallelism – Distributed Database Concepts - Distributed Data Storage – Distributed Transactions – Commit Protocols – Concurrency Control – Distributed Query Processing – Three Tier Client Server Architecture- Case Studies.

UNIT II OBJECT AND OBJECT RELATIONAL DATABASES**9**

Concepts for Object Databases: Object Identity – Object structure – Type Constructors – Encapsulation of Operations – Methods – Persistence – Type and Class Hierarchies – Inheritance – Complex Objects – Object Database Standards, Languages and Design: ODMG Model – ODL – OQL – Object Relational and Extended – Relational Systems : Object Relational feature sin SQL/Oracle – Case Studies.

UNIT III XML DATABASES**9**

XML Databases: XML Data Model – DTD - XML Schema - XML Querying – Web Databases – JDBC – Information Retrieval – Data Warehousing – Data Mining

UNIT IV MOBILE DATABASES**9**

Mobile Databases: Location and Handoff Management - Effect of Mobility on Data Management - Location Dependent Data Distribution - Mobile Transaction Models - Concurrency Control - Transaction Commit Protocols- Mobile Database Recovery Schemes

UNIT V MULTIMEDIA DATABASES**9** Multidimensional Data

Structures – Image Databases – Text/Document Databases- Video Databases – Audio Databases – Multimedia Database Design.

TOTAL : 45 PERIODS

REFERENCES:

1. R. Elmasri, S.B. Navathe, “Fundamentals of Database Systems”, Fifth Edition, Pearson Education/Addison Wesley, 2007.
2. Thomas Cannolly and Carolyn Begg, “ Database Systems, A Practical Approach to Design, Implementation and Management”, Third Edition, Pearson Education, 2007.
3. Henry F Korth, Abraham Silberschatz, S. Sudharshan, “Database System Concepts”, Fifth Edition, McGraw Hill, 2006.
4. C.J.Date, A.Kannan and S.Swamynathan,”An Introduction to Database Systems”, Eighth Edition, Pearson Education, 2006.
5. V.S.Subramanian, “Principles of Multimedia Database Systems”, Harcourt India Pvt Ltd., 2001.
6. Vijay Kumar, “ Mobile Database Systems”, John Wiley & Sons, 2006.

MC9276 ADVANCED DATABASES

Description:

- A Relational Databases describes about Relational Model, Querying, Storage Structures, and Query Processing, Normalization
- Object Oriented Databases is introduces data base which object oriented concept, Approaches Modeling and Design and explain about the Persistence ,Transaction Concurrency Recovery ,Database Administration.
- Emerging Systems it includes Enhanced Data Models, Client/Server Model, Data Warehousing, Data Mining, Web Databases and Mobile Databases.

Objectives:

- To study the advanced Database Concepts like Parallel and Distributed Data Bases.
- To study the Object and Object Relational Databases.
- To understand the concepts of Advanced XML Databases.
- To study the Mobile Transaction Models and Mobile database Recovery.
- To study the Multimedia data structures and databases.

Micro Lesson Plan

Hours	Lecture Topics	Reading
UNIT 1- PARALLEL AND DISTRIBUTED DATABASES		
1	Database System Architectures	R3
2	Centralized and Client-Server Architectures	
3	Server System Architectures, Parallel Systems	
4	Distributed Systems, Parallel Databases: I/O Parallelism	
5	Inter and Intra Query Parallelism	
6	Inter and Intra operation Parallelism	
7	Distributed Database Concepts - Distributed Data Storage, Distributed Transactions	
8	Commit Protocols , Concurrency Control	
9	Distributed Query Processing	
10	Three Tier Client Server Architecture,	
11	Case Studies	
UNIT II - OBJECT AND OBJECT RELATIONAL DATABASE		
12	Concepts for Object Databases: Object Identity	R1
13	Object structure, Type Constructors	
14	Encapsulation of Operations,	
15	Methods and Persistence,	
16	Type and Class Hierarchies, Inheritance, Complex Objects	
17	Object Database Standards, Languages and Design: ODMG Model, ODL, OQL Object Relational and Extended	
18	Relational Systems: Object Relational feature sin SQL/Oracle	
19	Case Studies	
UNIT III - XML DATABASES		
20	XML Databases	R1

21	XML Data Model	
22	DTD	
23	XML Schema	
24	XML Querying	
25	Web Databases	
26	JDBC	
27	Information Retrieval	
28	Data Warehousing	
29	Data Mining	
UNIT IV - MOBILE DATABASES		
30	Mobile Databases	R6
31	Location and Handoff Management	
32	Location and Handoff Management	
33	Effect of Mobility on Data Management	
34	Location Dependent Data Distribution	
35	Mobile Transaction Models	
36	Mobile Transaction Models	
37	Concurrency Control	
38	Transaction Commit Protocols	
39	Mobile Database Recovery Schemes	
UNIT V- MULTIMEDIA DATABASE S		
40	Multidimensional Data Structures	R5
41	Multidimensional Data Structures	
42	Image Databases	
43	Image Databases	
44	Text/Document Databases	
45	Video Databases	
46	Audio Databases	
47	Multimedia Database Design	
48	Multimedia Database Design	