



B. P. PODDAR INSTITUTE OF MANAGEMENT AND TECHNOLOGY

DEPARTMENT OF COMPUTER APPLICATION

ACADEMIC YEAR: 2018-19 [ODD SEMESTER]

COURSE OUTCOMES

Course: Distributed database management

Code: MCA E501A

Branch: Computer Application

CO	Description
MCA E501A.1	Understand distributed database architecture.
MCA E501A.2	Explain distributed data base design & data fragmentation methods.
MCA E501A.3	Develop knowledge about query processing & optimization method in distributed environment.
MCA E501A.4	Illustrate distributed transaction and concurrency control mechanism.
MCA E501A.5	Understand recovery and security mechanism in distributed database.



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LESSON PLAN

Course : Distributed Database Management

Code : MCAE501A

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1. Textbook

Te1: Distributed Databases Principles & Systems - by S. CERI, G. PELAGATTI

Te2: Principles of Distributed Database Systems – by T. OZSU, P. VALDURIEZ

Te3: Database Systems – by ELMASRI, NAVATHE

2. References

R1: Distributed database systems - by Chhanda Ray, Pearson Education India.

3: E-learning Courses

W1: <https://nptel.ac.in/courses/106106093/27>

W2: https://www.tutorialspoint.com/distributed_dbms

Lecture No. (L)	Description	Reference(s)	Teaching Aids	Teaching Methods
L1	Introduction to DDBMS, Centralized vs. Distributed DBMS	Te1	BB	Lectures
L2	Why we need DDBMS? Advantage & disadvantage	Te1	BB	Lectures
L3	Overview of Distributed Database, Overview of network	Te1	BB	Lectures, Discussion
L4	Reference architecture	Te1	BB,PPT	Lectures, Discussion
L5	Level of distribution Transparency	Te1	BB	Lectures, Discussion
L6	SQL based on different level of distribution Transparency	Te1	BB,PPT	Lectures, Discussion
L7	Example : Update Query and Insert Query	Te1	BB,PPT	Lectures, Discussion, Problem solving
L8	Integrity Constraints in DDBMS	Te1	BB	Lectures, Discussion
L9	Distributed database design- framework,	Te1	BB	Lectures, Discussion

	objectives			ion
L10	Fragmentation (Type of fragments)	Te1 ,R1	BB,PPT	Lectures,Discussion,Problem solving
L11	Tutorial on Query (Different level of transparency)	Te1,R1,W1, W2	BB,PPT	Lectures,Discussion,Problem solving
L12	Access primitives, Design fragments	Te1 ,R1	BB	Lectures
L13	Design contd., Transparency Exercise	Te1	BB	Lectures
L14	Translation of global queries, Transform global queries	Te1	BB	Lectures,Discussion
L15	Simplification of global queries based on fragments	Te1 ,Te2	BB	Lectures,Discussion
L16	Semi join and application	Te1 ,Te2,R1	BB	Lectures,Discussion
L17	Aggregate function & CUT operation	Te1 ,W1,W2	BB	Lectures,Discussion
L18	Models of queries, distributed query optimization, importance	Te1, Te2	BB	Lectures,Discussion
L19	Query optimization technique (Heuristic)	Te1 ,R1	BB	Lectures,Discussion,Problem solving
L20	Distributed Query optimization (Access strategies)	Te1	BB	Lectures,Discussion
L21	Tutorial on fragmentation and allocation	Te1 , R1,W1,W2	BB	Lectures,Discussion,Problem solving
L22	Distributed transaction issues	Te1	BB	Lectures,Discussion
L23	Transaction management, properties, goals	Te1	BB	Lectures
L24	Atomicity, Concurrency, Recovery (Overview)	Te1	BB,PPT	Lectures
L25	Failures in distributed databases & recovery	Te1	BB	Lectures,Discussion
L26	Logs and Checkpoints	Te1	BB	Lectures,Discussion
L27	2 phase locking protocol	Te1	BB	Lectures
L28	Tutorial on CUT operation	Te1 , R1,W1,W2	BB	Lectures
L29	Concurrency control	Te1,R1,W1	BB,PPT	Lectures,Discussion
L30	Concurrency control (Time Stamp Based Protocol)	Te1,R1,W2	BB	Lectures,Discussion

L31	2- phase commitment protocols	Te1	BB	Lectures,Discussion
L32	Distributed deadlock, LWFG & DWFG	Te1	BB	Lectures,Discussion
L33	Deadlock Detection using hierarchical controller	Te1	BB	Lectures,Discussion,Problem solving
L34	Distributed Reliability, 3-phase commit	Te1	BB	Lectures,Discussion
L35	Quorum based protocol	Te1	BB	Lectures,Discussion
L36	Reliability issues, checkpoints & cold restarts	Te3	BB,PPT	Lectures,Discussion,Problem solving
L37	Tutorial on optimization (Join & Semi join)	Te1 , R1,W1,W2	BB	Lectures,Discussion,Problem solving
L38	Distributed database administration – overview of catalogues	Te3	BB	Lectures
L39	Catalogue management	Te3	BB	Lectures
L40	Authorization & protection	Te3	BB	Lectures,Discussion
L41	Architectural aspects- comm., computational structure	Te4	BB	Lectures,Discussion
L42	Alternative architectures Authorization & protection	Te4	BB	Lectures,Discussion
L43	Alternative architectures Authorization & protection....	Te3	BB	Lectures,Discussion
L44	Client – server databases	Te3	BB	Lectures,Discussion
L45	ODBC	Te3	BB	Lectures,Discussion