



Department of Computer Science and Engineering

Lesson Plan

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|---|-------------------------|
| Faculty : Mr. Mohan H G | Department : CSE |
| Course : 18CS53 - Database Management System | Section : 5 B |

Status: Approved

Comments:

| SI.No | Topic | CO | Module No. | Pedagogy |
|-------|---|----|------------|--------------|
| 1 | Introduction to Databases: Introduction, Characteristics of database approach, | 1 | 1 | Presentation |
| 2 | Advantages of using the DBMS approach, | 1 | 1 | Presentation |
| 3 | History of database applications. | 1 | 1 | Presentation |
| 4 | Overview of Database Languages and Architectures: Data Models, Schemas, and Instances. | 1 | 1 | Presentation |
| 5 | Three schema architecture and data independence, database languages, and interfaces, | 1 | 1 | Presentation |
| 6 | The Database System environment. | 1 | 1 | Presentation |
| 7 | Conceptual Data Modelling using Entities and Relationships: | 1 | 1 | Presentation |
| 8 | Entity types, Entity sets, attributes, roles, | 1 | 1 | Presentation |
| 9 | structural constraints, Weak entity types, | 1 | 1 | Presentation |
| 10 | ER diagrams, examples, Specialization and Generalization. | 1 | 1 | Presentation |
| 11 | Relational Model: Relational Model Concepts, | 2 | 2 | Presentation |
| 12 | Relational Model Constraints and relational database schemas, | 2 | 2 | Presentation |
| 13 | Update operations, transactions, and dealing with constraint violations. | 2 | 2 | Presentation |
| 14 | Relational Algebra: Unary and Binary relational operations, additional relational operations | 2 | 2 | Presentation |
| 15 | Examples of Queries in relational algebra. | 2 | 2 | Presentation |
| 16 | Mapping Conceptual Design into a Logical Design: Relational Database Design using ER-to-Relational mapping. | 2 | 2 | Presentation |



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| | | | | |
|----|--|---|---|--------------|
| 17 | SQL: SQL data definition and data types, | 2 | 2 | Live Coding |
| 18 | specifying constraints in SQL, | 2 | 2 | Live Coding |
| 19 | retrieval queries in SQL, INSERT, DELETE, and UPDATE statements in SQL, | 2 | 2 | Live Coding |
| 20 | Additional features of SQL. | 2 | 2 | Live Coding |
| 21 | SQL : Advanced Queries | 2 | 3 | Live Coding |
| 22 | More complex SQL retrieval queries | 2 | 3 | Live Coding |
| 23 | Specifying constraints as assertions and action triggers | 2 | 3 | Live Coding |
| 24 | Views in SQL | 2 | 3 | Live Coding |
| 25 | Schema change statements in SQL | 2 | 3 | Live Coding |
| 26 | Database Application Development: Accessing databases from applications | 2 | 3 | Live Demo |
| 27 | An introduction to JDBC, JDBC classes and interfaces, SQLJ, Stored procedures | 2 | 3 | Live Demo |
| 28 | Case study: The internet Bookshop. | 2 | 3 | Live Demo |
| 29 | Internet Applications: The three-Tier application architecture | 3 | 3 | Presentation |
| 30 | The presentation layer, The Middle Tier | 3 | 3 | Presentation |
| 31 | Normalization: Database Design Theory, Introduction to Normalization using Functional and Multivalued Dependencies | 3 | 4 | Presentation |
| 32 | Informal design guidelines for relation schema | 3 | 4 | Presentation |
| 33 | Functional Dependencies | 3 | 4 | Presentation |
| 34 | Normal Forms based on Primary Keys, Second and Third Normal Forms | 3 | 4 | Presentation |
| 35 | Boyce-Codd Normal Form, Multivalued Dependency and Fourth Normal Form | 3 | 4 | Presentation |
| 36 | Join Dependencies and Fifth Normal Form | 3 | 4 | Presentation |
| 37 | Normalization Algorithms: Inference Rules, Equivalence, and Minimal Cover | 3 | 4 | Presentation |
| 38 | Properties of Relational Decompositions | 3 | 4 | Presentation |
| 39 | Algorithms for Relational Database Schema Design, Nulls, Dangling tuples, and alternate Relational Designs | 3 | 4 | Presentation |
| 40 | Further discussion of Multivalued dependencies and 4NF, Other dependencies and Normal Forms | 3 | 4 | Presentation |



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| | | | | |
|----|--|---|---|--------------|
| 41 | Transaction Processing: Introduction to Transaction Processing, Transaction and System concepts | 4 | 5 | Presentation |
| 42 | Desirable properties of Transactions, Characterizing schedules based on recoverability | 4 | 5 | Presentation |
| 43 | Characterizing schedules based on Serializability, Transaction support in SQL | 4 | 5 | Presentation |
| 44 | Concurrency Control in Databases: Two-phase locking techniques for Concurrency control | 4 | 5 | Presentation |
| 45 | Concurrency control based on Timestamp ordering, Multiversion Concurrency control techniques | 4 | 5 | Presentation |
| 46 | Validation Concurrency control techniques | 4 | 5 | Presentation |
| 47 | Granularity of Data items and Multiple Granularity Locking | 4 | 5 | Presentation |
| 48 | Introduction to Database Recovery Protocols: Recovery Concepts, NO-UNDO/REDO recovery based on Deferred update | 4 | 5 | Presentation |
| 49 | Recovery techniques based on immediate update, Shadow paging | 4 | 5 | Presentation |
| 50 | Database backup and recovery from catastrophic failures | 4 | 5 | Presentation |

Content Beyond Syllabus

| SL. No | Contents Planned | CO | PO |
|--------|--|----|----|
| 1 | Installation of Oracle and Managing Different Users of Database. | 3 | 5 |

Signature of Faculty Incharge

Signature of HOD