

Day	Date	Overview	Category in Syllabus	Content Delivery		Tools/Handouts	Syllabus	Ignore list
Mon	9-Dec-2013	Introduction	BASIC CONCEPTS	Understanding of data; problems in organising data; file organization; Organize data better in file (csv); Shortcomings of files; Spreadsheet;	Playing with Simple files, CSV, Spreadsheets, Non-digital paper organisation	(A)Objects in the room; (A)Airtel bill handouts;	BASIC CONCEPTS: Introduction to databases – Conventional file Processing - Purpose of Database system - Characteristics of database approach - Advantages of using DBMS - Database concept and architecture - Data Abstraction - Data Models - Instances and schema - Data independence - schema architecture- Components of a DBMS - Database Languages - Database Manager - Database Administrator - Database Users. (8) DATA MODELING: Introduction – Data Associations – entities, attributes, relationships – Type role and structural constraints - Weak and Strong entity types - Design of Entity relationship data models (ERD) – Generalization – Aggregation – Conversion of ERD into tables – Applications – Introduction to Network data model and Hierarchical data model. (9)	Database Manager, DBA;
Tue	10-Dec-2013	History of database systems	BASIC CONCEPTS	Data; Information; DBMS; History; Advantages; Relational data model basics(RDBMS Intro); ACID properties; Data independence;	Learning activity	(A)ATM example of withdrawing money; (E)Money transfer example; ATM withdrawal (A)Web search for various databases; Facebook, Twitter, Google search engine, Wikipedia, ircrc - Where is their data stored ?		
Wed	11-Dec-2013	Intro to MariaDB	BASIC CONCEPTS	Various databases in the market (Oracle, SQL Server, DB2, Postgres, Sybase, MySQL, TimesTen, NoSQL); MariaDB installation; Understanding client server model; Instance Vs schema; Application architecture and how database fits in	MariaDB installation			
Thu	12-Dec-2013	Components within RDBMS	BASIC CONCEPTS	User management; Database creation; sample table creation; viewing the data; listing the database objects; viewing the structure of a table; Data Vs Database; DML Vs DDL; Introduction to SQL	Connecting to the DB for the first time	Simple table create script		
Fri	13-Dec-2013	Language of the RDBMS		Basic SQL language; select, insert, update; delete;	Handson			
Sat	14-Dec-2013						FILE ORGANIZATION: Storage device Characteristics - Constituents of a file - Operations on file - Serial Files – Sequential Files - Index Sequential Files - Direct Files - Binary and Secondary Key Retrieval - Indexing using Tree Structures. (9) RELATIONAL MODEL: Introduction to Relational Data Model - Basic Concepts - Enforcing Data Integrity Constraints – Relational Algebra Operations - Extended Relational Algebra Operations - Relational Calculus: Tuple Relational calculus, Domain relational calculus – Queries in Relational calculus - Assertion and Triggers - Introduction to views. (9) RELATIONAL DATABASE MANIPULATION: Introduction to Structured Query Language (SQL) – SQL Commands for Defining Database, Constructing Database, Manipulations on Database - Basic Data Retrieval Operations – Advanced Queries in SQL - Functions in SQL - Aggregation – Categorization - Updates in SQL - Views in SQL - Different types of views - Theoretical Updatability of Views. (6) DATA BASE DESIGN THEORY: Data base design process - Relational Database Design - Relation Schema - Anomalies in a database - Functional dependencies - Axioms – Normal forms based on primary keys – Second Normal form, Third Normal form, Boyce – Codd Normal form – Examples – Multi-valued dependencies – Fourth Normal form - Reduction of an E-R schema to Tables - Converting EER Diagrams to relations - Practical database design tuning. Merging Tables. (10)	
Sun	15-Dec-2013							
Mon	16-Dec-2013	Data integrity		Duplication; Data atomicity; Unique; Primary key; NULL; Integrity constraints - CHECK, NOT NULL;				
Tue	17-Dec-2013	Intro to ER model and data design		Decomposing entity in to many tables; Relationship among tables; Foreign key purpose; ER diagram; Data abstraction; Logical Model;				
Wed	18-Dec-2013							
Thu	19-Dec-2013							
Fri	20-Dec-2013			Detailed SELECT; Distinct, Alias, expressions; WHERE clause; Sort ascending; Sort Descending; operators (Logical, arithmetic; comparison; Is-Null, is-not-null), IN, String Operator-LIKE; Mathematical functions				
Sat	21-Dec-2013							
Sun	22-Dec-2013							
Mon	23-Dec-2013			String functions; date functions; conversion functions to change data types; Set Theory; Relational Algebra; Relational Calculus; UNION, UNION ALL, MINUS, INTERSECTION				
Tue	24-Dec-2013							
Wed	12/25/2013							
Thu	26-Dec-2013			Aggregate functions; Group by; Having				
Fri	27-Dec-2013			Subqueries; (Standard; Correlated); IN, EXISTS				
Sat	28-Dec-2013							
Sun	29-Dec-2013							
Mon	30-Dec-2013							
Tue	31-Dec-2013			Normalization - 1,2,3,BCNF				
Wed	1-Jan-2014			Data Model Exercise				
Thu	2-Jan-2014							
Fri	3-Jan-2014							
Sat	4-Jan-2014							
Sun	5-Jan-2014							
Mon	6-Jan-2014							
Tue	7-Jan-2014							
Wed	8-Jan-2014							
Thu	9-Jan-2014							
Fri	10-Jan-2014							
Sat								
Sun								
Mon								
Tue								
Wed								