# FP 4.1 Session Plan for Module-2

| Module | Course Name | Theme | Topic | Duration in Minutes | | Assignment / Demo No: Reference to Respective Assignment Guides | Self Study |
|---|---|---|---|---|---|---|---|
| | | | | Lecture / Demo | Hands-On / Assignments | | |
| Module-2 | Relational Database Management Systems | Database Basics | Data, Data Storage, Need for DBMS, Functions of DBMS, Data Perspectives in DBMS, Types of DBMS / Data Models | 60 | 0 | NA | 1. **NPTEL Course:**<br><br>http://nptel.ac.in/courses.php<br>Course : NPTEL >> Computer Science and Engineering >> Database Design<br><br>Videos:<br><br>Introduction to Database Management System<br>Conceptual Designs<br>Relational Model<br>Structured Query Language<br>Structured Query Language II<br>ER Model to Relational Mapping<br>Functional Dependencies and Normal Form<br>ER Model to Relational Model Mapping<br>Storage Structures<br>Indexing Techniques Single Level<br>Indexing Techniques Multi-Level<br>Transaction Processing Concepts<br>Foundation for Concurrency Control<br>Case Study - Part One Database Design<br>Case Study - Part 2 Database Design<br><br>2. **Stanford**:<br><br>https://class.stanford.edu/courses/Home/Databases/Engineering/about |
| | | | Relational Model, Keys | 60 | 60 | Database Basics - 1 | |
| | | Database Design | Database Life Cycle - Data Requirements, Logical Design - ER Modeling | 90 | 60 | Database Basics - 2, 3, and 4 | |
| | | | Converting ER Model to Relational Schema | 60 | 60 | Database Basics - 5 | |
| | | | Functional Dependencies, Normalization | 120 | 80 | Database Basics - 6, 7 | |
| | | SQL | Need for SQL, Types of SQL Statements, Data Types in SQL, DDL and DML Statements | 60 | 130 | SQL Basics - 1 - 5 | |
| | | | Select statement with Operators - IN, LIKE, IS NULL, BETWEEN | 45 | 60 | SQL Basics - 6, 7 | |
| | | | Select statement with Operators - DISTINCT, ORDERBY, CASE | 60 | 120 | SQL Basics - 8 - 11 | |
| | | | Single Row Functions and Multi Row (Aggregate) | 60 | 60 | SQL Basics - 12, 13 | |
| | | | Group By and Having Clauses | 45 | 60 | GROUP BY and HAVING - 1 | |
| | | | Joins - Cross Join, Inner Join | 60 | 75 | Joins - 1a and 1b | |
| | | | Joins - Outer Join, Left Outer Join and Right Outer Join, Self Join | 60 | 90 | Joins - 2a, 2b, 3 and 4 | |
| | | | Subqueries, Independent Subqueries - Single Row and Multi Row | 45 | 40 | Sub queries - 1 | |
| | | | Independent Subqueries - Multiple Column Sub queries | 45 | 50 | Sub queries - 2 and 3 | |
| | | | Correlated Subqueries, EXISTS and NOTEXISTS | 90 | 90 | Sub queries - 4, 5 | |
| | | | Index | 30 | 30 | Index - 1 | |
| | | | SQL Best Practices | 30 | 30 | SQL Best practices - 1 | |
| | | | Views | 60 | 40 | Views - 1, 2 | |
| | | Transactions | Transactions - Properties, OLTP Requirements, Concurrency Issues, Locks | 90 | 15 | Transaction and Locks - 2 | |
| | | PL/SQL | Introduction to PL/SQL, Variables, Operations in PL/SQL block, Cursors - Implicit Cursors and attributes | 90 | 90 | PL/SQL - 1 to 5 | |
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| **Total Duration for Module-2** | | | | 22:00 | 23:00 | | |