

FP 4.0 Session Plan for Focus Area - 2

Focus Area	Theme	Topic	Duration in Minutes		Assignment / Demo No: Reference to Respective Assignment Guides	Self Study
			Lecture / Demo	Hands-On / Assignments		
FA-2 (Relational Database Management System)	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: http://nptel.ac.in/courses.php Course : NPTEL >> Computer Science and Engineering >> Database Design Videos: Introduction to Database Management System Conceptual Designs Relational Model Structured Query Language Structured Query Language II ER Model to Relational Mapping Functional Dependencies and Normal Form ER Model to Relational Model Mapping Storage Structures Indexing Techniques Single Level Indexing Techniques Multi-Level Transaction Processing Concepts Foundation for Concurrency Control Case Study - Part One Database Design Case Study - Part 2 Database Design 2. Stanford: https://class.stanford.edu/courses/Home/Databases/Engineering/about
		Relational Model, Keys	45	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	45	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	45	130	SQL Basics - 1 - 5	
		Select statement with Operators - IN, LIKE, IS NULL, BETWEEN	30	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)	45	60	SQL Basics - 12, 13	
		Group By and Having Clauses	30	40	GROUP BY and HAVING - 1	

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FA-2 (Relational Database Management System)	SQL	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	15	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	60	PL/SQL - 1 to 5	
Total Duration for FA-2			20:00	20:00		