

Database design and SQL Course contents

1. Developing Relational Databases

- Relational Database Fundamentals
- Database Development Methodology Overview

2. Transforming to Physical Design

- Migrating Entities to Tables
- Selecting Primary Keys
- Defining Columns
- Enforcing Relationships with Foreign Keys
- Implementing Supertypes / Subtypes
- Enforcing Business Rules
- Historical and Control Tables
- Estimating Table Sizes
- Designing for Security: Users and Roles

3. Grouping and Totaling

- * Aggregates, Distinct, Group By, Having, Sorting
- * Subqueries, Correlated Subqueries
- * Union, Union All
- * Using Any, All

4. Relational Database and SQL Basics

- * Basics : =, <>, >, <, >=, <=
- * Basic Rules
- * Concept Result
- * Constants
- * Functions
- * Index, Key, Composite Key, Unique Key and Null
- * Joins: Inner, Outer, Full (Cartesian Product)
- * Between, Exists, In, Like, Is Null
- * Select
- * Sets
- * SQL, Objects: Tables, Views, Indexes, Keys, etc.
- * Unions

5. SQL Data Definition (DDL)

- * Alter Table by Adding a Column
- * Concept
- * Dropping objects
- * Keys: Unique, Primary, Foreign
- * Null and Is Not Null
- * Select with Null and Not Null
- * Table, View, Index Management
- * Updatable Views

6. SQL Queries

- * Aggregates, Distinct, Group By, Having, Sorting
- * Concept
- * Delete, Delete and Referential Integrity
- * Insert, Insert and Referential Integrity
- * Joins
- * Joins, Self-Joins
- * Relations
- * Select
- * Sorting
- * Subqueries
- * Subqueries, Correlated Subqueries
- * Union, Union All
- * Update, Update and Referential Integrity
- * Using Any, All
- * Using Distinct, Any, All
- * Using Exists, Not Exists with Subqueries
- * Using In, Between, Exists
- * Using In, Not In with Subqueries
- * Where Clause

7. Using SQL DML

- * Constants
- * Joins
- * Scalar Functions, Aggregate Functions
- * Select
- * Sorting
- * Unions
- * Using Any, All
- * Using In, B/N, Exists, Like, Is- Is Not Null