Database Management System

Basic Programming Course

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Database Management System Course

About Course

The course is basically designed for developers, learners to familiarize with Database Management System using SQL Server Management Studio. The training period allows the developer to understand different features of Database Management System with SQL Queries.

Syllabus Overview

Concept and Overview of DBMS

- ❖ Data Models
- ❖ Database Languages
- ❖ Database Administrator
- ❖ Database User Three Schema Architecture of DBMS

Entity Relationship Model

- ❖ Basic Concepts
- ❖ Design Issues
- ❖ Mapping Constraints
- ❖ Keys
- ❖ Entity Relationship Diagram
- ❖ Weak Entity

Relational Model

- ❖ Relational Database
- ❖ Relational Algebra
- ❖ Relational Calculus
- ❖ Extended Relational Algebra Operation
- ❖ Views
- ❖ Modification of Database

SQL and Integrity Constraints

- ❖ Concept of DDL, DML, DCL
- ❖ Basic Structure
- ❖ Set Operations
- ❖ Aggregate Functions
- ❖ Null Values Domain Constraints
- ❖ Referential Integrity Constraints
- ❖ Assertions
- ❖ Views
- ❖ Nested Sub queries
- ❖ Stored Procedures and Triggers

Relational Database Design

- ❖ Functional Dependency
- ❖ Different Anomalies in designing a Database
- ❖ Normalization using functional dependencies
- ❖ Decomposition
- ❖ BCNF (Boyce-Code Normal Form)
- ❖ 3NF
- ❖ Normalization using Multivalued Dependency
- ❖ 4NF
- ❖ 5NF

Internals and RDBMS

- ❖ Physical Data Structures
- ❖ Query Optimization: Join Algorithm
- ❖ Transaction Processing
- ❖ Concurrency Control and Recovery Management