SQL Querying 2

Course Description

Students should have basic computer skills, SQL skills, and be familiar with concepts related to database structure and terminology.

Learning Objectives

- Use subqueries to generate query output.
- Manipulate table data by inserting and updating records in a table and deleting records from a table.
- Manipulate the table structure.
- Create views, manipulate data through views, modify the view structure, and drop views.
- Create indexes on table columns and drop inefficient indexes.

Using Nested Queries

- Search Based on Values from a Subquery
  - The IN Operator
- Compare Values from a Subquery
  - Modified Comparison Operators
  - Comparison Operators Used with ANY and ALL
- Search Based on the Existence of Records
  - The EXISTS Operator
- Generate Output Using Correlated Subqueries
  - The APPLY Operator
- Filter Grouped Data Within Subqueries
  - The GROUP BY Clause
  - The HAVING Clause
- Perform Multiple-Level Subqueries
  - Nested Subqueries

Working with Views

- Create a View
  - Views
  - The CREATE VIEW Statement
  - Encryption
  - Schema Binding
  - The TOP Keyword
  - Benefits and Disadvantages of Views
  - Guidelines for Creating a View
- Manipulate Data in Views
  - Data Insertion
  - Data Modification
  - Data Deletion
- Modify and Delete Views
  - The ALTER VIEW Statement
  - The DROP VIEW Statement

Manipulating Table Data

- Insert Rows
  - The INSERT Statement
  - Record Insertion Methods
  - The OUTPUT Clause
  - Table Value Constructors
- Modify and Delete Data
  - The UPDATE Statement
  - Data Updating Rules
  - The DELETE Statement
  - The TRUNCATE TABLE Statement
  - The MERGE Statement

Indexing Data

- Create Indexes
  - Query Execution
  - Types of Indexes
  - The Query Optimizer
  - The CREATE INDEX Statement
- Drop Indexes
  - The DROP INDEX Statement

Manipulating Table Structure

- Create a Table
  - The CREATE TABLE Statement
  - The INSERT INTO Statement
  - Displaying the Table Structure
  - SQL Data Types
  - Table Design
  - Table Backup
- Create a Table with Constraints
  - Data Integrity
  - Primary Keys
  - Constraints
  - PRIMARY KEY Constraints
  - Foreign Keys
  - FOREIGN KEY Constraints
  - DEFAULT Constraints
  - CHECK Constraints
- Modify a Table's Structure
  - The ALTER TABLE Statement
- Delete Tables
  - The DROP TABLE Statement

Managing Transactions

- Define Transactions
  - Transactions
  - ACID Properties
  - Protection for Simultaneous Database Access
  - Transaction Management
  - The ROLLBACK TRAN Statement
- Commit Transactions
  - The COMMIT TRAN Statement

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