



Get Certified with Microsoft*
Exam 98-364: Database
Administration Fundamentals



Training: Querying Database with MS SQL Server

SQL Overview

- Outlining SQL as the cornerstone of database activity
- Applying the ANSI/ISO standards
- Describing the fundamental building blocks: tables, columns, primary keys and foreign keys

Building the Database Schema

- Creating tables and columns
- Building tables with CREATE TABLE
- Modifying table structure with ALTER TABLE
- Adding columns to an existing table
- Removing tables with DROP TABLE

Protecting data integrity with constraints

- Guaranteeing uniqueness with primary key constraints
- Enforcing integrity with foreign key constraints
- Imposing business rules with check constraints
- Enabling and disabling constraints
- Removing constraints with ALTER TABLE

Improving performance with indexes

- Expediting data retrieval with indexes
- Recommending guidelines for index creation

Manipulating Data

- Modifying table contents
- Adding table rows with INSERT
- Changing row content with UPDATE

- Removing rows with DELETE

Applying transactions

- Atomic Consistent Isolated Durable (ACID) rules
- Controlling transactions with COMMIT and ROLLBACK

Writing Single Table Queries

- Retrieving data with SELECT
- Restricting rows with the WHERE filter
- Sorting the result with ORDER BY
- Handling NULL values in expressions
- Avoiding NULL value pitfalls in filter conditions

Querying Multiple Tables

- Applying the ANSI/ISO standard join syntax
- Matching related rows with INNER JOIN
- Including nonmatched rows with OUTER JOIN
- Creating a Cartesian product with CROSS JOIN

Combining results with set operators

- Stacking results with UNION
- Identifying matching rows with INTERSECT
- Utilizing EXCEPT to find nonmatching rows

Employing Functions in Data Retrieval

- Processing data with row functions
- Conditional formatting with the CASE expression
- Utilizing the CASE expression to simulate IF tests
- Dealing with NULL values

Performing analysis with aggregate functions

- Summarizing data using SUM, AVG and COUNT
- Finding the highest/lowest values with MAX and MIN
- Defining the summary level with GROUP BY
- Applying filter conditions with HAVING

Constructing Nested Queries

- Applying subqueries in filter conditions
- Correlated vs. noncorrelated subqueries
- Testing the existence of rows

Including subqueries in expressions

- Placing subqueries in the column list
- Creating complex expressions containing subqueries
- Handling subqueries that return no rows

Developing In-Line and Stored Views

- Breaking down complex problems
- Selecting data from a query result set
- Subqueries in the FROM clause
- Creating views in a database
- Building reusable code
- Updateable vs. non-updateable views

Indexes

- Clustered Index
- NonClustered Index
- Create , Alter and Drop Indexes
- Using Indexes

Views

- Purpose Of Views
- Creating , Altering and Dropping Indexes
- Simple and Complex Views
- Encryption and Schema Binding Options in creating views

Transaction Management

- Introduction
- Begin Transaction
- Commit Transaction
- Rollback Transaction
- Save Transaction
- Role Of Log File In Transaction Management
- Implicit Transactions

TSQL Programming

- Drawbacks Of TSQL that leads to TSQL Programming
- Introduction To TSQL Programming
- Control statements In TSQL Programming
- Conditional Control Statements
 - If
 - Case
- Looping Control Statements
 - While

Stored Sub Programs

- Advantages Of Stored Sub Programs compared to Independent SQL Statements
- Stored Procedures
 - Creating , Altering and Dropping
 - Optional Parameters
 - Input and Output Parameters
 - Permissions on Stored Procedures
- User Defined Functions
 - Creating, Altering and Dropping
 - Types Of User Defined Functions
 - Scalar Functions
 - Table Valued Functions
 - Inline Table Valued Functions
 - Multi Statement Table Valued Functions
 - Permissions On User Defined Functions

Triggers

- Purpose of Triggers
- Differences Between Stored Procedures and User Defined Functions and Triggers
- Creating, Altering and Dropping Triggers
- Magic Tables
- Instead Of Triggers

Exception Handling

- Implementing Exception Handling
- Adding and removing User Defined Error Messages To And From SQL Server Error Messages List
- Raising Exceptions Manual