

# بانک اطلاعاتی SQL Server مقدماتی

## 1 Background to T-SQL Querying and Programming

- Theoretical Background
  - SQL
  - Set Theory
  - Predicate Logic
  - The Relational Model
  - The Data Life Cycle
  - SQL Server Architecture
  - The ABC Flavors of SQL Server
  - SQL Server Instances
  - Databases
  - Schemas and Objects
  - Creating Tables and Defining Data Integrity
  - Creating Tables
  - Defining Data Integrity

## 2 Single-Table Queries

- Elements of the SELECT Statement
  - The FROM Clause
  - The WHERE Clause
  - The GROUP BY Clause
  - The HAVING Clause
  - The SELECT Clause
  - The ORDER BY Clause
  - The TOP and OFFSET-FETCH Filters
  - A Quick Look at Window Functions
- Predicates and Operators
- CASE Expressions
- NULL Marks
- All-at-Once Operations
- Working with Character Data
  - Data Types
  - Operators and Functions

- The LIKE Predicate
- Working with Date and Time Data
  - Date and Time Data Types
  - Literals
  - Working with Date and Time Separately
  - Filtering Date Ranges
  - Date and Time Functions
- Querying Metadata
  - Catalog Views
  - Information Schema Views
  - System Stored Procedures and Functions
- CREATE DATABASE
- CREATE TABLE

### *3 Set Operators*

- The UNION Operator
  - The UNION ALL Multiset Operator
  - The UNION Distinct Set Operator
- The INTERSECT Operator
  - The INTERSECT Distinct Set Operator
  - The INTERSECT ALL Multiset Operator
- The EXCEPT Operator
  - The EXCEPT Distinct Set Operator
  - The EXCEPT ALL Multiset Operator
- Precedence
- Circumventing Unsupported Logical Phases

### *4 Joins*

- Cross Joins
  - ANSI SQL-92 Syntax
  - ANSI SQL-89 Syntax
  - Self Cross Joins
  - Producing Tables of Numbers
- Inner Joins
  - ANSI SQL-92 Syntax

- ANSI SQL-89 Syntax
- Inner Join Safety
- More Join Examples
  - Composite Joins
  - Non-Equi Joins
  - Multi-Join Queries
- Outer Joins
  - Fundamentals of Outer Joins
  - Beyond the Fundamentals of Outer Joins

## ***5 Subqueries***

- Self-Contained Subqueries
  - Self-Contained Scalar Subquery Examples
  - Self-Contained Multivalued Subquery Examples
- Correlated Subqueries
  - The EXISTS Predicate
- Beyond the Fundamentals of Subqueries
  - Returning Previous or Next Values
  - Using Running Aggregates
  - Dealing with Misbehaving Subqueries

## ***6 Data Modification***

- Inserting Data
  - The INSERT VALUES Statement
  - The INSERT SELECT Statement
  - The INSERT EXEC Statement
  - The SELECT INTO Statement
  - The BULK INSERT Statement
  - The Identity Property and the Sequence Object
- Deleting Data
  - The DELETE Statement
  - The TRUNCATE Statement
  - DELETE Based on a Join
- Updating Data
  - The UPDATE Statement

UPDATE Based on a Join

Assignment UPDATE

Merging Data

Modifying Data Through Table Expressions

Modifications with TOP and OFFSET-FETCH

The OUTPUT Clause

INSERT with OUTPUT

DELETE with OUTPUT

UPDATE with OUTPUT

MERGE with OUTPUT

Composable DML

## *7 SQL Constraints*

NOT NULL

UNIQUE

PRIMARY KEY

FOREIGN KEY

CHECK

DEFAULT