

CONTENTS

Chapter 1 ■ Getting Started with SQL Server 2008	1
Basic Database Concepts.....	2
DBMS	2
RDBMS	2
Database Designing.....	3
Tables	4
E-R Diagrams	4
Normalization.....	6
Overview of SQL Server 2008	10
New Features in SQL Server 2008	11
New Data Types	11
Large UDTs.....	12
Compound Operators	12
MERGE Statement.....	13
Sparse Columns	13
Table-Valued Parameters	13
Integrated Full-Text Search	13
IntelliSense	14
Transparent Data Encryption.....	14
Resource Governor.....	14
Policy-Based Management.....	14
LINQ.....	14
SQL Server 2008 Editions	14
Enterprise Edition	15
Standard Edition.....	15
Workgroup Edition.....	15
Web Edition.....	15
Developer Edition.....	15
Express Edition.....	15
SQL Server Compact Edition 3.5.....	16
SQL Server 2008 Instances	16
Default Instance.....	16
Installing SQL Server 2008	17
Summary	32
Chapter 2 ■ Introducing SQL Server Management Studio	33
Opening SQL Server Management Studio.....	34
SQL Server Management Studio User Interface.....	36
Toolbars.....	36
Object Explorer.....	38
Query Editor Window.....	40



Registered Servers	41
Server Operations	43
Registering a Server.....	43
Grouping the Registered Servers	45
Exporting and Importing Registered Servers	46
Database Operations	51
Attaching an Existing Database	51
Creating a New Database	54
Renaming an Existing Database	57
Backing up a Database	58
Deleting a Database.....	60
Restoring a Database	61
Shrinking a Database	65
Table Operations	67
Creating a New Table	67
Renaming an Existing Table	69
Deleting a Table	71
Data Manipulation Operations	72
Inserting/Updating Records in a Table	72
Reading Records from a Table	74
Deleting Records in a Table.....	75
User Operations	76
Creating a User at Server Level	76
Creating a User at Database Level	82
Modifying the Existing User Properties.....	89
Deleting a User.....	90
Summary	96

Chapter 3 ■ Performing Basic SQL Operations	97
--	-----------

Opening the Query Editor Window	98
Working with SQL Data Statements.....	99
Retrieving Data Using the SELECT Statement	99
Inserting Data Using the INSERT Statement	103
Modifying Data Using the UPDATE Statement.....	104
Deleting Data Using the DELETE Statement.....	105
Working with Operators	105
Arithmetic Operators	106
Logical Operators	107
Comparison Operators.....	108
Assignment Operator	110
Bitwise Operators	110
String Concatenation Operators.....	111

Unary Operators	111
Compound Assignment Operator.....	112
Working with SQL Functions.....	114
Aggregate Functions	115
Comments in SQL.....	117
Summary	118
Chapter 4 ■ Performing Transact-SQL Operations	119
Data Types.....	120
Exact Numerics.....	120
Approximate Numerics.....	121
Date and Time	121
Character Strings.....	122
Unicode Character Strings	122
Binary Strings.....	123
Other Data Types.....	123
Control Flow Statements.....	123
The BEGIN...END Statement	124
The GOTO Statement	124
The IF...ELSE Statement	124
The WHILE Statement.....	124
Database Operations	125
Creating a Database.....	125
Dropping the Database.....	127
Table Operations.....	127
Creating a Table.....	127
Altering the Table	129
Truncating the Table.....	130
Dropping the Table.....	131
Keys.....	131
Primary Key	132
Foreign Key.....	132
Composite key	132
Candidate key.....	132
Data Integrity	132
Entity Integrity.....	132
Domain Integrity.....	132
Referential Integrity.....	133
User-Defined Integrity.....	133
Constraints.....	133
The PRIMARY KEY Constraint.....	133
The UNIQUE Constraint	133

The FOREIGN KEY Constraint.....	133
The CHECK Constraint.....	133
Sparse Columns	134
Rules.....	134
Creating a Rule	134
Dropping the Rule	135
Views.....	135
Creating a View	135
Altering the View	136
Dropping the View	137
Joins.....	137
Performing a Cross Join.....	138
Performing an Inner Join	138
Performing an Outer Join	139
Performing a Self-Join	141
The MERGE Statement.....	142
Summary	144

Chapter 5 ■ Working with Stored Procedures and User-Defined Functions	145
--	------------

Benefits of Stored Procedures	146
Types of Stored Procedures.....	147
System Stored Procedures	147
User-Defined Stored Procedures.....	147
Creating a Stored Procedure	147
Altering a Stored Procedure	151
Using Parameters in a Stored Procedure	152
Using Input Parameters.....	152
Using Output Parameters.....	154
Types of User-defined Functions.....	156
Scalar Functions.....	156
Table-Valued Functions	156
Creating a User-Defined Function	156
Summary	160

Chapter 6 ■ Using Triggers	161
-----------------------------------	------------

Introducing Triggers.....	162
Triggers Vs Constraints.....	162
DML Triggers.....	163
Creating DML Triggers.....	163
Using DML Triggers.....	165
DDL Triggers	166

Creating DDL Triggers	166
Using DDL Triggers	167
DML Triggers Vs DDL Triggers	168
Summary	168

Chapter 7 ■ Understanding Transaction, Locking, and Error Handling	169
---	------------

Introducing ACID Properties	170
Classifying Transactions	171
Explaining Explicit Transactions	171
Defining Autocommit Transactions	173
Creating Transactions	173
Saving Transactions	174
Understanding Locking	176
Discussing Concurrency	176
Describing Optimistic Concurrency	176
Describing Pessimistic Concurrency	177
Discussing Concurrency Problems	177
Outlining Isolation Levels	178
Locking in SQL Server 2008	178
Categorizing the Different Lock Modes	179
Managing Deadlock	180
Implementing Error Handling	183
Using the @@ERROR Function	186
Using the RAISERROR Statement	188
Using the TRY...CATCH Statement	190
Summary	194

Chapter 8 ■ Indexing, Partitioning, and Resource Governance	195
--	------------

Indexing	196
Creating an Index	196
Optimizing the Index Performance	200
Removing the Index	202
Partitioning	203
Creating a Partition Function	204
Creating Filegroups	205
Creating a Partition Scheme	208
Creating a Partitioned Table	209
Resource Governance	210
Creating a Resource Pool	210
Creating a Workload Group	211
Creating a Classifier Function	213

Configuring the Resource Governor.....	214
Summary	214
Chapter 9 ■ Policy-Based Management	215
Basic Terms and Concepts of Policy-Based Management	216
Managed Target	216
Facet	216
Condition.....	218
Policy.....	218
Policy Category.....	218
Effective Policy	218
Working with Conditions.....	218
Creating a Condition	218
Viewing a Condition	222
Working with Policies.....	223
Creating a Policy.....	223
Exporting a Policy.....	226
Importing a Policy.....	227
Viewing a Policy.....	229
Evaluating a Policy.....	230
Scheduling a Policy Compliance Check	233
Summary	236
Chapter 10 ■ SQL Server 2008 and XML	237
XML related Enhancements in SQL Server 2008	238
Schema Validation.....	238
XQuery Enhancements	239
XML DML Enhancements	239
Introducing XML Path.....	239
Retrieving Data.....	240
Using the RAW Mode	240
Using the AUTO Mode.....	241
Using the EXPLICIT Mode.....	243
Using the PATH Mode.....	244
Querying XML	245
XQuery Language.....	248
Using xml Data Type	248
Summary	255