

SQL Server 2000

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Course description: This course is for developers coming from Microsoft Access, Visual Basic, Active Server Pages or other development backgrounds who want to learn to build successful databases solutions with SQL Server. Even developers who have already used Oracle, Sybase, DB2 or other relational database management systems will find this course useful for getting up to speed on SQL Server 2000. Learn about the features that are available in SQL Server; how to design and create a database; and how to build basic queries using Transact-SQL, the language of SQL Server. Then, you will learn how to build effective views, stored procedures, triggers, and user-defined functions, using Transact-SQL. You will also learn about the advanced features available to you for maintaining, analyzing, searching and distributing your data. Integrate your data safely with Internet and cross-platform applications.

Course outline:

Editions and Graphical Tools

- Introduction
- SQL Server Editions
- Pricing and Licensing
- SQL Server Tools
- Enterprise Manager
- Enterprise Menus
- Enterprise Wizards
- Summary

Enterprise Manager

- Databases
- Server Node
- Transformation Services
- Management
- Replication
- Security
- Support Services
- Meta Data Services
- Books Online
- Summary

Installing SQL Server

- Instances
- Multiple Instance
- Setup/Upgrade Help
- Requirements
- Backward Compatibility
- SQL Admin Properties

- Begin Installation
- Select Components
- Finish Installation
- Summary

Configuring SQL Server

- Introduction
- EnterpriseManager
- Registration Properties
- Properties
- Connections
- Server Settings
- Database Settings
- Summary

Relational Database Design

- Overview
- Organizing Facts
- Key Types
- Data Normalization
- Query Analyzer
- First Normal Form
- Adding Data
- Second Normal Form
- Third Normal Form
- Summary

Defining Relationships

- Introduction
- Diagrams
- One-to-Many

- Many-to-Many
- One-to-One
- Limiting Values
- Summary

Creating Databases

- Introduction
- Physical Storage
- Files/Filegroups
- SQL Profiler
- Create a Database
- Create with Analyzer
- Set Properties
- Recovery Models
- Summary

Tables and Data Types

- Introduction
- Begin Table Creation
- Character
- Numeric
- Fractional Numbers
- Scaled Integers
- Binary
- Identifier
- Timestamp
- Sql_variant
- Summary

Refining Table Definitions

- Introduction

- Entered Values
- Computed Values
- Constraints
- Add Constraints
- Foreign Key Constraint
- Create a Relationship
- Diagram Views
- Table Views
- Summary

Retrieving Data

- Introduction
- Attach Database
- Open Script File
- Execute Select Queries
- Concatenating
- Aliasing
- Select/Select Distinct
- Where Clause
- Like Operator
- Between Operator
- Creating Comments
- Null Values
- And/Or/Not
- In Operator
- Summary

Sorting and Grouping

- Introduction

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- Order By
- Counting
- Group By
- Having
- Top
- Summary

Joining Tables

- Introduction
- View Diagram
- Cross Join
- Joining with Where
- Inner Join
- Multiple Table Join
- Create a View
- Left Outer Join
- Right Outer Join
- Full Join
- Combining Joins
- Change Join Type
- Self Join
- Summary

Inserting Data

- Introduction
- Analyzer Setup
- Insert a row
- Identity Values
- Delimiters
- Insert Multiple Rows
- Select Into
- Create Temp Table
- Bulk Insert
- Summary

Updating and Deleting

- Update a Row
- Update Multiple Rows
- Update Another Table
- Delete Rows
- Truncate Command
- Summary

Using the Query Analyzer

- Introduction
- Customize Toolbar
- File Menu Items
- Go To Line, Bookmarks
- Templates
- Advanced
- Summary

Sets and Procedures

- Introduction
- Execution and Result Sets
- Object Browser
- Stored Procedures
- Summary

Files Tools and Options

- Introduction

- Object Search
- Manage Indexes
- Manage Statistics
- Options
- Connection Options
- Window & Help Menus
- Summary

Programming with T-SQL

- Introduction
- Batches
- DECLARE Variables
- Using CAST and CONVERT
- Using STR
- Summary

Functions and Commands

- Introduction
- Built-in Functions
- Working with NULLs
- COALESCE
- ISNUMERIC
- RAND
- ROUND
- Summary

Built-in T-SQL Functions

- Introduction
- REPLACE & STUFF
- LEN, LEFT & RIGHT
- CHARINDEX
- SPACE
- CHAR & ASCII
- LOWER & UPPER
- LTRIM & RTRIM
- Summary

More T-SQL Functions

- Date & Time Functions
- DATEPART
- DATEFIRST
- DATEADD & DATEDIFF
- @@ROWCOUNT
- @@TRANCOUNT
- @@IDENTITY
- @@ERROR
- Summary

Flow Control

- Introduction
- IF...ELSE
- BEGIN & END
- GOTO, RETURN, LABELS
- CASE
- Using CASE
- WHILE
- Summary

ERROR and Errors

- Introduction
- Error Handling

- Using @@ERROR
- Using RAISERROR
- Summary

Transaction Processing

- Introduction
- What Is a Transaction
- Transactions Defined
- Transaction Types
- How Autocommit Works
- Locks Defined
- Lock Modes
- Row Level Locking
- Summary

Locks and Users

- Introduction
- Monitoring & Locks
- Current SQL Users
- Current Issued Locks
- Summary

Attributes

- Transaction Isolation
- READCOMMITTED
- REPEATABLE READ
- SERIALIZABLE
- Committed / Uncommitted
- Using Repeatable Read
- Using Serializable
- Lock Hint
- Summary

Deadlocks

- Introduction
- Blocking and Deadlocks
- Set Deadlock Priority
- Avoidance
- Summary

What is a View?

- Introduction
- Defined
- Purpose of Views
- Security by Views
- View Syntax
- View Options
- Summary

Creating Views

- Tools for Views
- Create Basic Template
- Execute Query
- Test & Update
- Format Data
- Show View
- Summary

More on Views

- Introduction
- Learning by Views
- Group By
- Criteria & Order By

- Icon Indicators
- Verify View
- Other Views
- Correlated Subquery / Join
- Derived Tables
- Summary

Updating

- Introduction
- Updating Data
- Update with Joins
- Summary

Creating a Backup Strategy

- Overview
- The Right Questions
- Recovery Models
- Log Shipping
- Analyzing Needs
- Back Up Databases
- How Backups Work
- Restore Database
- Summary

Database Maintenance Plan

- Overview
- Launching the Wizard
- Select Databases
- Update & Integrity
- Specify Backup Plan
- Generate Reports
- Completing the Plan
- Summary

Stored Procedures

- Overview
- Definition
- Procedure Options
- Advantages
- Security & Data Integrity
- Summary

Create Alter and Execute

- Introduction
- Building Procedures
- Input Parameters
- Optional Parameters
- Handling NULLs
- Editing for NULL
- Testing
- Summary

Output

- Introduction
- Output Parameters
- Result Set
- Retrieve Variable
- Discover Parameters
- NOCOUNT / ROWCOUNT
- Summary

Advanced Stored Procedures

- Overview

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- Setup View
- Temporary Tables
- Multiple Updates
- Execution Method
- Summary

Error Handling

- Overview
- First Defense
- Return Codes
- Messages
- Trapping Errors
- RAISERROR
- Verify Procedure
- Summary

Using T-SQL Debugger

- Overview
- How to Debug
- Debug Procedure
- Debug Features
- Nested Procedures
- Step Options
- Summary

Triggers

- Overview
- Definition
- Trigger Types
- Advantages
- Disadvantages
- Summary

Building Triggers

- Introduction
- Creating Triggers
- Test Scenario
- INSTEAD OF Triggers
- INSTEAD OF UPDATE
- Set Trigger Order
- Summary

User-defined Functions

- Introduction
- Function Types
- Scalar Functions
- Adding Parameters
- Table-valued Functions
- Inline Update Options
- Multi-statement Functions
- Returns Table
- Syntax & Example
- More Examples
- Summary

Advanced Queries

- Overview
- Dynamic SQL
- Testing of Parameters
- Execute Procedure
- Execution Options

- Summary

T-SQL Cursors

- Overview
- When to use Cursors
- Using Cursors
- Verify Results
- Summary

Handling Large Data Sets

- Introduction
- Horizontal Partitions
- Horizontal Example
- Distributed Views
- Vertical Partitions
- Text in Row
- Summary

Distributed Queries

- Introduction
- Distributed Architecture
- Linked Servers
- Join Linked to Local
- OPENROWSET
- OPENQUERY
- OPEN... Examples
- Summary

Authentication

- Introduction
- Security Overview
- Security Settings
- Adding Logins
- Summary

Understanding Roles

- Overview
- Role Levels
- Fixed Server Roles
- Fixed DB Roles
- Role Properties
- Understanding Ownership
- Summary

Assigning Permissions

- Overview
- todo
- Permission Types
- Permission Statements
- Granting Permissions
- Object Permissions
- Securing Data
- Row-level Permissions
- Procedure Permissions
- Summary

Application Roles

- Introduction
- Uses for Roles
- Creating AppRoles
- Grant Permissions
- Verify Permissions
- Summary

Evaluating Performance

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- Defining Goals
- SQL Server Monitoring Tools
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SQL Server Profiler

- Introduction
- Terminology
- Toolbar Options
- Start a Trace
- Filter Options
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Tuning Queries

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- Join Types
- Performance Issues
- Summary

Indexes

- Introduction
- Index Types
- Index Recommendations
- Optimization
- Graphical Showplan
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Indexed Views

- Introduction
- Recommendations
- Requirements
- Create Indexed Views
- Summary

Index Tuning Wizard

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- Getting Started
- Recommendations
- Check Results
- Summary

Data Caching

- Introduction
- Cache
- Memory Usage
- Procedure Cache
- Summary

The System Monitor

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- Monitor Processes
- Add Counters
- System Monitor Counters
- Create Alert
- Logs
- Summary

Exploring System Objects

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- Enterprise Manager
- Stored Procedures
- User Procedures
- Object Procedures
- System Objects Table
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Information Schema Views

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- System Views
- Ownership Issues
- Using ISVs
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System Stored Procedure

- Overview
- Master Database
- Viewing Code
- SP Help
- SP Help Listings
- SP Space Used
- SP Add Message
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Extended Stored Procedure

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- sp_
- XP
- How ESPs Work
- OA
- DBCC
- Example Commands
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SQL Agent

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- Starting the Agent
- User Interface
- Agent Properties Part 1
- Agent Properties Part 2
- Defining Operators
- Creating Jobs
- Defining Jobs
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Data Transformation Svcs

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- Data Movement
- Transformed Data
- Starting Wizard
- Data Source
- Excel Example
- OLE DB Example
- Run, Schedule, Save
- Saving the Package
- Object Models
- Storing the Package
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DTS Packages

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- Opening Package
- DTS Designer
- Transformation Task
- Transformation Options
- Lookup
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- Task Tools
- Destination Connection
- Source & Destination
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- ActiveX Script
- Built-In Interfaces
- Workflow Constraints
- Verifying Results
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- Definition
- SQL Server Replication
- How It Works
- Terminology
- Topologies
- Prerequisites
- Snapshots
- Transactional
- Merge
- Other Replications
- Best Scenario
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- Distributor Wizard
- Replication Monitor
- Creating Publications 1
- Creating Publications 2
- Publication Properties
- PUSH Subscrip Wizard
- Verify & Change
- Removing & Disabling
- Cleaning Up
- Restoring Script
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- Wizard Options
- Verify & Update
- Viewing the Script
- Stored Procedures
- Job Properties
- Removing the Job
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- XML in IIS
- XML Elements
- XML Attributes
- XSLT
- Advantages
- Elements vs. Attributes
- Comparing HTML
- Summary

XML Structure and Definition

- Overview
- Well-Formed XML
- XML Schemas
- Why Namespaces
- Defining
- Summary

Queries FOR XML

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- FOR XML
- RAW or AUTO
- Security
- AUTO Attributes
- Query Analyzer
- Code Listing View
- Finished Query
- AUTO Elements
- Schema Options
- XDR
- Namespace DT
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Using FOR XML Explicit

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- Explicit Example
- Select Statement
- Extra Directive
- Union All
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Assessing HTTP

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- Virtual Directory Route
- Security
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- Settings
- Virtual Names
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Creating URL Queries

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- Direct Embedding
- Root Elements
- Query Template

- Stylesheet Template
- XSL Stylesheet
- Correct Rendering
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Annotated Schemas

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- XML View Mapper
- Related Mapping
- Through XDR
- Translating Namespace
- Annotated Example
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OpenXML and Datagrams

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- Example
- XML Source
- Get Rowsets
- In-memory Table
- Insert Values
- Updategrams
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- Definition
- Advantages
- Configuring Search
- Index Wizard
- Index Catalogs
- Modify Population
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Full-text Queries

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- Writing Queries
- Create Variables
- AND, AND NOT
- Term Variations
- Prefix Terms
- Proximity Terms
- Weight Ranking
- Summary

FREETEXT

- How to Use
- Example
- CONTAINSTABLE
- Join Results
- Weight Ranking
- FREETEXTTABLE
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- Create Table

- Visual Basic Module
- Record Sets
- FileToBlob
- Load Documents
- Full-text Index
- Query Documents
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Building an OLAP Cube

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- Analysis Services
- Storage Options
- Analysis Manager
- Begin Cube Creation
- Create Dimensions
- Finish Cube Creation
- Calculated Members
- Storage Design
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Query an OLAP Cube

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- Drag-and-Drop
- MDX Sample
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- Mining Models
- Create New Cube
- New Mining Model
- Mining Model Editor
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English Query Models

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- About English Query
- Preparing a Database
- Create New Project
- DataLink Properties
- Tables and Views
- Project Wizard
- Semantic Properties
- SQL Model Tab
- Semantics Model Tab
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- Summary

Deploy English Query

- Introduction
- Project Setup
- Deploy to Web
- Connection Properties

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- Test Application
- Create Login
- Ask Questions
- Question Builder
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