

Designing the Data Tier for Microsoft SQL Server 2005

Clinic 2783: One days; Instructor-Led

Introduction

This one-day instructor-led clinic provides students with the knowledge and skills to design the data tier for Microsoft SQL Server 2005. The clinic focuses on teaching database developers working in enterprise environments to understand and decide how application developers are going to access and consume their data. This is a major failure point of database solutions today.

Audience

This clinic is intended for current professional database developers who have three or more years of on-the-job experience developing SQL Server database solutions in an enterprise environment.

Objectives

After completing this clinic, students will be able to:

- Choose data access technologies and an object model to support an organization's business needs.
- Design an exception handling strategy.
- Choose a cursor strategy.
- Design query strategies using Multiple Active Result Sets (MARS).
- Design caching strategies for database applications.
- Design a scalable data tier for database applications.

Prerequisites

Before attending this clinic, students must:

- Have experience reading user requirements and business-need documents. For example, development project vision/mission statements or business analysis reports.
- Have basic knowledge of the Microsoft .NET Framework, .NET concepts, ADO.NET, and service oriented architecture (SOA).
- Be familiar with the tasks that application developers typically perform.
- Understand Transact-SQL syntax and programming logic.
- Have some experience with professional-level database design and know the tradeoffs when backing out of the fully normalized design (denormalization) and designing for performance and business requirements, in addition to being familiar with design models such as Star and Snowflake schemas.
- Have basic monitoring and troubleshooting skills. Specifically, how to use SQL Profiler and dynamic management views.
- Have basic knowledge of the operating system and platform. That is, how the operating system integrates with the database, what the platform or operating system can do, and how interaction between the operating system and the database works.
- Have basic knowledge of application architecture. That is, how applications can be designed in three layers, what applications can do, how interaction between the application and the database works, and how the interaction between the database and the platform or operating system works.

- Know how to use a data modeling tool.
- Be familiar with SQL Server 2005 features, tools, and technologies.
- Have a Microsoft Certified Technology Specialist: Microsoft SQL Server 2005 credential, or equivalent experience.

Clinic Outline

Session 1: Choosing Data Access Technologies and an Object Model

This session explains how to choose data access technologies and an object model to support an organization's business needs.

Session 2: Designing an Exception Handling Strategy

This session describes the various types of exceptions that can occur in a database system, how to capture them, and how to manage them appropriately.

Session 3: Choosing a Cursor Strategy

This session describes when cursors are appropriate and how to use them to optimize the use of system resources.

Session 4: Designing Query Strategies Using Multiple Active Result Sets

This session describes when Multiple Active Result Sets (MARS) can improve application response time and user satisfaction.

Session 5: Designing Caching Strategies for Database Applications

This session describes how to optimize system resources by caching data and objects in the appropriate layers.

Session 6: Designing a Scalable Data Tier for Database Applications

This session describes how to assess scalability needs and design the best architecture to scale the system to meet those needs.