

# Core Data Access with Microsoft Visual Studio

Course code: GOC311

The course is intended for applications developers who want to learn how to create database applications using Microsoft Visual Studio 2005 on the .NET Framework 2.0 platform.

## Who is the course for

Developers of database applications on the .NET platform, programmers of Windows and web applications designed to collaborate with databases.

## What we teach you

How to connect to an SQL server and other common data sources

How to execute database commands

How to create and work with transactions

How to download data from database servers and other sources and make them into a local database in an application (dataset)

How to use a local database

How to transfer updated data from a dataset back to the database server

How to use the XML format when working with data

How to create XML data-handling web services

## Required skills

.NET Framework fundamentals

Work with Microsoft Visual Studio

Knowledge of a language working under .NET Framework (C#, VB)

Basic knowledge of SQL

Knowledge of XML fundamentals

## Course Outline

Datacentric applications and ADO.NET

- Common databases and types
- Working with data in the connected and disconnected environment
- Data access models (layer-based structures)
- ADO.NET architecture

Working in an environment connected to a data source

- Creating a Connection object
- Handling exceptions
- Connection Pooling
- Getting and updating data using a Command object
- Types of Command object, working with parameters and saved procedures
- Obtaining ReadOnly ForwardOnly data streams using DataReader-type objects

Creating transactions

- What are transactions?
- Local and distributed transactions
- Transaction isolation

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Working in an environment disconnected from the data source

- Fundamental ADO.NET objects for working in disconnected environment - overview
- DataAdapter, TableAdapter
- Non-typed and typed datasets
- Defining tables and relations in a dataset
- Modifying data in datasets
- Saving modified data to the data server
- LastInWins technique and optimistic competition technique
- DataBinding control elements
- Working with DataGridView

Processing XML data

- XML representation of a dataset
- DiffGramy
- XML data entry and reading
- Working with XML data using a DOM model
- Designing web services using the ADO.NET model
- Web service description
- Creating a web service providing data
- Synchronous and asynchronous web service call

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