

**Module 1: Data-Centric Applications and ADO.NET**

The following topics are covered in this module:

- Design of Data-Centric Applications
- ADO.NET Architecture
- ADO.NET and XML

After completing this module, students will be able to:

- Give examples of storage options.
- Diagram the architecture of data-centric applications.
- Choose a connected, disconnected, or mixed environment based on application requirements.
- Use the System.Data namespaces in applications.
- Diagram the ADO.NET object model.
- Analyze typical business scenarios.
- Explain how to use ADO.NET with XML.

Lab 1.1: Data-Centric Applications and ADO.NET

**Module 2: Connecting to Data Sources**

The following topics are covered in this module:

- Choosing a .NET Data Provider
- Defining a Connection
- Managing a Connection
- Handling Connection Exceptions
- Connection Pooling

After completing this module, students will be able to:

- Choose a .NET data provider.
- Connect to SQL Server.
- Connect to OLE DB data sources.
- Manage a connection.
- Handle common connection exceptions.
- Implement and control connection pooling.

Lab 2.1: Connecting to Data Sources

**Module 3: Performing Connected Database Operations**

The following topics are covered in this module:

- Working in a Connected Environment
- Building Command Objects
- Executing Commands That Return a Single Value
- Executing Commands That Return Rows
- Executing Commands That Do Not Return Rows
- Using Transactions

After completing this module, students will be able to:

- Build a command object.
- Execute a command that returns a single value.
- Execute a command that returns a set of rows, and process the result.
- Execute a command that defines database structure and permissions by using the data definition language (DDL) and data control language (DCL).

- Execute a command that modifies data.
- Use transactions.

Lab 3.1: Performing Connected Database Operations

### **Module 4: Building DataSets**

The following topics are covered in this module:

- Working in a Disconnected Environment
- Building DataSets and DataTables
- Binding and Saving a DataSet
- Defining Data Relationships
- Modifying Data in a DataTable
- Sorting and Filtering

After completing this module, students will be able to:

- Describe the disconnected environment.
- Build a DataSet and a DataTable.
- Bind a DataSet to a DataGrid.
- Open and save a DataSet.
- Define a data relationship.
- Modify data in a DataTable.
- Find and select rows in a DataTable.
- Sort and filter a DataTable by using a DataView.

Lab 4.1: Building, Binding, Opening, and Saving DataSets

Lab 4.2: Manipulating DataSets

### **Module 5: Reading and Writing XML with ADO.NET**

The following topics are covered in this module:

- Creating XSD Schemas
- Loading Schemas and Data into DataSets
- Writing XML from a DataSet

After completing this module, students will be able to:

- Generate an XSD schema from a DataSet by using graphical tools.
- Save a DataSet structure to an XSD schema file.
- Create and populate a DataSet from an XSD schema and XML data.
- Save DataSet data as XML.
- Write and load changes by using a DiffGram.

Lab 5.1: Working with XML Data in ADO.NET

### **Module 6: Building DataSets from Existing Data Sources**

The following topics are covered in this module:

- Configuring a DataAdapter to Retrieve Information
- Populating a DataSet Using a DataAdapter
- Configuring a DataAdapter to Update the Underlying Data Source
- Persisting Changes to a Data Source
- How to Handle Conflicts

After completing this module, students will be able to:

- Configure a DataAdapter to retrieve information.
- Populate a DataSet by using a DataAdapter.
- Configure a DataAdapter to modify information.
- Persist data changes to a data source.
- Manage data conflicts.

Lab 6.1: Retrieving Data into a Disconnected Application

Lab 6.2: Retrieving and Updating Customers and Orders Data

### **Module 7: Building and Consuming a Web Service That Uses ADO.NET**

The following topic is covered in this module:

- Building and Consuming a Web Service That Returns Data

After completing this module, students will be able to:

- Build a Web service.
- Consume a Web service in a client application.
- Troubleshoot errors in an ADO.NET application.

Lab 7.1: Troubleshooting an ADO.NET Application

**Contact the training coordinator for pricing and details at 613-563-NOVA (6682) Ext:250 Or [training@nova-networks.com](mailto:training@nova-networks.com)**

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