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# 20762 - DEVELOPING SQL DATABASES

## CONTEÚDO PROGRAMÁTICO

### **Module 1: Introduction to Database Development**

This module is used to introduce the entire SQL Server platform and its major tools. It will cover editions, versions, basics of network listeners, and concepts of services and service accounts.

#### **Lessons**

- SQL Server Database Development Tasks

After completing this module, you will be able to:

- Use SQL Server administration tools.

### **Module 2: Designing and Implementing Tables**

This modules describes the design and implementation of tables. (Note: partitioned tables are not covered).

#### **Lessons**

- Data Types
- Creating and Altering Tables

#### **Lab : Designing and Implementing Tables**

After completing this module, you will be able to:

- Describe the various types of data

- Be able to create and amend tables

### **Module 3: Advanced Table Designs**

This module describes more advanced table designs.

#### **Lessons**

- Compressing Data
- Describe how data can be partitioned
- Describe Temporal tables

### **Module 4: Ensuring Data Integrity through Constraints**

This module describes the design and implementation of constraints.

#### **Lessons**

- Implementing Data Domain Integrity
- Describe how to enforce data integrity
- Describe how to implement entity and referential integrity

### **Module 5: Introduction to Indexes**

This module describes the concept of an index and discusses selectivity, density and statistics. It covers appropriate data type choices and choices around composite index structures.

#### **Lessons**

- Data Types and Indexes
- Single Column and Composite Indexes

#### **Lab : Implementing Indexes**

After completing this module, you will be able to:

- Choose appropriate data types for indexes
- Index Strategies
- Execution Plans
- Query Store

#### **Lab : Optimizing Indexes**

After completing this module, you will be able to:

- Implement clustered indexes and heaps

## **Module 7: Columnstore Indexes**

This module introduces Columnstore indexes.

### **Lessons**

- Creating Columnstore Indexes
- Describe suitable scenarios for Columnstore indexes
- Describe considerations for updating non-clustered Columnstore indexed tables

## **Module 8: Designing and Implementing Views**

This module describes the design and implementation of views.

### **Lessons**

- Creating and Managing Views
- Explain the concept of views
- Create Partitioned Views

## **Module 9: Designing and Implementing Stored Procedures**

This module describes the design and implementation of stored procedures.

### **Lessons**

- Working with Stored Procedures
- Controlling Execution Context

## **Lab : Designing and Implementing Stored Procedures**

After completing this module, you will be able to:

- Control the Execution Context of Stored Procedures
- Overview of Functions
- Designing and Implementing Table-Valued Functions
- Alternatives to Functions

## **Lab : Designing and Implementing User-Defined Functions**

After completing this module, you will be able to:

- Design, create and alter table-valued functions
- Designing DML Triggers
- Advanced Trigger Concepts

## **Lab : Responding to Data Manipulation by Using Triggers**

After completing this module, you will be able to:

- Implement DML triggers
- Memory-Optimized Tables
- Implement in-memory tables
- Introduction to CLR Integration in SQL Server
- Describe SQL CLR Integration
- Implement SQL CLR code

## **Module 14: Storing and Querying XML Data in SQL Server**

This module covers the XML data type, schema collections, typed and un-typed columns and appropriate use cases for XML in SQL Server.

### **Lessons**

- Storing XML Data and Schemas in SQL Server
- Using the Transact-SQL FOR XML Statement
- Shredding XML

## **Lab : Storing and Querying XML Data in SQL Server**

After completing this module, you will be able to:

- Describe how XML data and schemas can be stored in SQL Server
- Introduction to Spatial Data
- Using Spatial Data in Applications

## **Lab : Working with SQL Server Spatial Data**

After completing this module, you will be able to:

- Use basic methods of the GEOMETRY and GEOGRAPHY data types
- Considerations for BLOB Data

- Using Full-Text Search

## **Lab : Storing and Querying BLOBs and Text Documents in SQL Server**

After completing this module, you will be able to:

Perform basic full-text queries

- Implement a full-text index <li style="margin-left: 18pt;">