MOC 10778 A Implementing Data Models and Reports with MS SQL Server 2012

Course Summary

Description

Business intelligence (BI) is becoming increasingly important for companies of many different sizes and types because of the competitive edge it can help to give them. The combined capabilities of Microsoft SQL Server 2012 and Microsoft SharePoint 2010 make it easier than ever for companies to develop a BI solution that meets their specific needs, provides reduced total cost of ownership (TCO), and achieves a faster time to solution. This five-day instructor-led course teaches students how to empower information workers through self-service analytics and reporting. Students will learn how to implement multidimensional analysis solutions, create PowerPivot and tabular data models, deliver rich data visualizations with PowerView and SQL Server Reporting Services, and discover business insights by using data mining.

Objectives

At the end of this course, students will be able to:

- Describe the components, architecture, and nature of a BI solution.
- Create reports with Reporting Services.
- Create reusable report items that simplify self-service reporting.
- Manage report execution and delivery.
- Create a multidimensional database with Analysis Services.
- Implement dimensions in a cube.
- Implement measures and measure groups in a cube.
- Use MDX Syntax. Customize a cube.
- Implement a Tabular Data Model in PowerPivot.
- Use DAX to query a tabular model.
- Implement a Tabular Database.
- Use PowerView to create interactive data visualizations.
- Use Data Mining for Predictive Analysis.

Topics

- Introduction to Business Intelligence and Data Modeling
- Implementing Reports with SQL Server Reporting Services
- Supporting Self Service Reporting
- Managing Report Execution and Delivery
- Creating Multidimensional Databases
- Working with Dimensions
- Working with Measures and Measure Groups
- Introduction to MDX
- Customizing Cube Functionality
- Implementing a Tabular Data Model with Microsoft PowerPivot
- Introduction to DAX
- Implementing an Analysis Services Tabular Data Model
- Creating Data Visualizations with Power View
- Performing Predictive Analysis with Data Mining

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Course Summary (cont'd)

Audience

This course is intended for database professionals who need to fulfill a Business Intelligence Developer role to create analysis and reporting solutions. Primary responsibilities include:

- Implementing reporting solutions by using SQL Server Reporting Services.
- Implementing multidimensional databases by using SQL Server Analysis Services.
- Creating tabular semantic data models for analysis by using SQL Server Analysis Services.
- Create visualizations of data by using PowerView.
- Create data mining solutions by using SQL Server Analysis Services.

Prerequisites

At least 2 years' experience of working with relational databases, including:

- Designing a normalized database.
- Creating tables and relationships.
- Querying with Transact-SQL.

Some basic knowledge of data warehouse schema topology (including star and snowflake schemas). Some exposure to basic programming constructs (such as looping and branching). An awareness of key business priorities such as revenue, profitability, and financial accounting is desirable.

Duration

Five days

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Course Outline

I. Introduction to Business Intelligence and Data Modeling

This module provides an introduction to Business (BI) Intelligence. It describes common BI scenarios, current trends in BI, and the typical roles that are involved in creating a BI solution. It also introduces the Microsoft BI platform and describes the roles Microsoft SQL Server 2012 and Microsoft SharePoint 2010 play in Microsoft BI solutions.

A. Introduction to Business Intelligence
B. The Microsoft Business Intelligence Platform

Lab : Reporting and Analyzing Data

- Exploring a Reporting Services Repot
- Exploring a PowerPivot Workbook
- Exploring a Power View Report

II. Implementing Reports with SQL Server Reporting Services

This module discusses the tools and techniques a professional business intelligence developer can use to create and publish reports with SQL Server Reporting Services.

A. Introduction to Reporting Services
B. Creating a Report with Report Designer
C. Grouping and Aggregating Data in a Report
D. Showing Data Graphically
E. Filtering Reports by Using Parameters
F. Publishing and Viewing a Report

Lab : Creating a Report with Report Designer

- Creating a Report
- Grouping and Aggregating Data

Lab : Enhancing and Publishing a Report

- Adding a Chart to a Report
- Adding Parameters to a Report
- Publishing a Report

III. Supporting Self Service Reporting

This module describes Microsoft SQL Server Reporting Services features that you can use to enable self-service reporting.

A. Introduction to Self Service Reporting
B. Shared Data Sources and Datasets
C. Report Parts

Lab : Implementing Self Service Reporting

- Using Report Builder
- Simplifying Data Access for Business Users
- Using Report Parts

IV. Managing Report Execution and Delivery

This module describes how to apply security settings and configure reports for delivery. Lessons

A. Managing Report Security
B. Managing Report Execution
C. Subscriptions and Data Alert
D. Troubleshooting Reporting Services

Lab : Configuring Report Execution and Delivery

- Configuring Report Execution
- Implementing a Standard Subscription
- Implementing a Data-Driven Subscription

V. Creating Multidimensional Databases

The fundamental purpose of using SQL Server Analysis Services online analytical processing (OLAP) solutions is to build cubes that you can use to perform complex queries and return the results in a reasonable time. This module provides an introduction to multidimensional databases and introduces the core components of an OLAP cube.

A. Introduction to Multidimensional Analysis
B. Creating Data Sources and Data Source Views
C. Creating a Cube
D. Overview of Cube Security

Lab : Creating a Multidimensional Database

- Creating a Data Source
- Creating and Modifying a Data Source View
- Creating and Modifying a Cube

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Course Outline (cont'd)

VI. Working with Dimensions
In SQL Server Analysis Services, dimensions are a fundamental component of cubes. This module provides an insight into the creation and configuration of dimensions and dimension hierarchies.

A. Configuring Dimensions
B. Defining Attribute Hierarchies
C. Sorting and Grouping Attributes

Lab : Defining Dimensions

- Configuring Dimensions
- Defining Relationships and Hierarchies
- Sorting and Grouping Dimensions Attributes

VII. Working with Measures and Measure Groups
A measure represents a column that contains quantifiable data, usually numeric, that you can aggregate. This module describes measures and measure groups. The module also explains how you can use measures to define fact tables and associate dimensions.

A. Working with Measures
B. Working with Measure Groups

Lab : Configuring Measures and Measure Groups

- Configuring Measures
- Defining Dimension Usage and Relationships
- Configuring Measure Group Storage

VIII.Introduction to MDX
Multidimensional Expressions (MDX) is the query language that you use to work with and retrieve multidimensional data in SQL Server Analysis Services. This module describes the fundamentals of MDX. It also explains how to build calculations, such as calculated members and named sets.

A. MDX Fundamentals
B. Adding Calculations to a Cube
C. Using MDX to Query a Cube

Lab : Using MDX

- Querying a Cube by Using MDX
- Creating a Calculated Member

IX. Customizing Cube Functionality
In this module, you will learn how to customize cube functionality by using several technologies available to you in SQL Server Analysis Services. These technology customizations include: Key Performance Indicators, Actions, Perspectives, and Translations.

A. Working with Key Performance Indicators
B. Working with Actions
C. Working with Perspectives
D. Working with Translations

Lab : Customizing a Cube

- Implementing an Action
- Implementing a Perspective
- Implementing a Translation

X. Implementing a Tabular Data Model with Microsoft PowerPivot
This module introduces tabular data models, explains how to install and use the PowerPivot for Excel add-in, and describes how to share a workbook to PowerPivot Gallery.

A. Introduction to Tabular Data Models and PowerPivot Technologies
B. Creating a Tabular Data Model by Using PowerPivot for Excel
C. Sharing a PowerPivot Workbook and Using PowerPivot Gallery

Lab : Using PowerPivot for Excel

- Creating a Tabular Data Model by Using PowerPivot for Excel
- Using a Tabular Data Model in Excel
- Sharing a PowerPivot Workbook to PowerPivot Gallery
- Using a PowerPivot Workbook as a Data Source

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XI. Introduction to DAX

This module covers the fundamentals of the DAX language. It also explains how you can use DAX to create calculated columns and measures, and how you can use these in your tabular data models.

A. DAX Fundamentals
B. Using DAX to Create Calculated Column and Measures in a Tabular Data Model

Lab : Creating Calculated Columns and Measures by Using DAX

- Creating Calculated Columns
- Creating Measures
- Using Time Intelligence
- Creating a Dynamic Measure

XII. Implementing an Analysis Services Tabular Data Model

With SQL Server 2012, you can install Analysis Services in Tabular mode and create tabular data models that information workers can access by using tools such as Excel and Power View. This module describes Analysis Services tabular data models and explains how to develop a tabular data model by using the SQL Server Data Tools.

A. Introduction to Analysis Services Tabular Data Model Projects
B. Developing an Analysis Services Tabular Data Model in SQL Server Data Tools

Lab : Working with an Analysis Services Tabular Data Model

- Creating an Analysis Data Services Tabular Data Model from a PowerPivot Workbook
- Implementing a Perspective
- Implementing Partitions
- Deploying an Analysis Services Tabular Data Model
- Enabling Access to a Tabular Data Model
- Configuring DirectQuery Storage Model
- Implementing Security in a Tabular Data Model

includes data mining tools that you can use to identify patterns in your data, helping you to determine why particular things happen and to predict what will happen in the future. This module introduces data mining, describes how to create a data mining solution, how to validate data mining models, how to use the Data Mining Add-ins for Excel, and how to incorporate data mining results into Reporting Services reports.

C. Overview of Data Mining
D. Creating a Data Mining Solution
E. Validating a Data Mining Solution
F. Consuming a Data Mining Solution

Lab : Using Data Mining to Support a Marketing Campaign

- Using Table Analysis Tools
- Creating a Data Mining Model
- Using the Data Mining Add-in for Excel
- Validating Data Mining Models
- Using a Data Mining Model in a Report

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