

Developing SQL 2016 Data Models (SSAS)

Duration: 24 Hours (3 Days)

Overview

The Developing SQL 2016 Data Models (SSAS) course is designed to provide learners with a comprehensive understanding and practical skill set for implementing data models using Microsoft SQL Server Analysis Services (MS SSAS). This course covers various aspects of both multidimensional and Tabular data models, diving into the creation and management of Cubes, Dimensions, and Measures. Learners will also explore the essentials of the Multidimensional Expressions (MDX) language and the Data Analysis Expressions (DAX) language for more complex data manipulation and analysis. Throughout the course, students will gain practical experience with MS SSAS through a series of labs that reinforce the lessons, enabling them to configure Dimensions, Measure groups, and implement security within their data models. Additionally, learners will delve into predictive analytics with data mining, a key feature of MS SQL Server Analysis Services. By the end of the course, participants will have the skills to build robust, efficient data models that are essential for enterprise-level business intelligence solutions.

Audience Profile

The "Developing SQL 2016 Data Models" course caters to professionals aiming to enhance their BI and data modeling skills.

- Business Intelligence (BI) Analysts
- Data Analysts
- Database Administrators
- Database Developers
- Data Architects
- Data Scientists
- IT Professionals working with SQL Server
- SQL Server Developers
- Business Analysts involved in BI projects
- System Architects
- BI Developers
- Report Developers
- Professionals preparing for Microsoft certification exams related to SQL Server Analysis Services (SSAS)

Course Syllabus

Module 1: Introduction to Business Intelligence and Data Modeling

- This module introduces key BI concepts and the Microsoft BI product suite.

Lessons

- Introduction to Business Intelligence
- The Microsoft business intelligence platform

Lab: Exploring a Data Warehouse

- After completing this module, you will be able to:
- Describe the concept of business intelligence
- Describe the Microsoft business intelligence platform

Module 2: Creating Multidimensional Databases

- This module describes the steps required to create a multidimensional database with analysis services.

Lessons

- Introduction to multidimensional analysis
- Course details
- Creating data sources and data source views
- Creating a cube
- Overview of cube security

Lab: Creating a multidimensional database

- After completing this module, you will be able to:
- Use multidimensional analysis
- Create data sources and data source views
- Create a cube
- Describe cube security

Module 3: Working with Cubes and Dimensions

- This module describes how to implement dimensions in a cube.

Lessons

- Configuring dimensions
- Define attribute hierarchies
- Sorting and grouping attributes

Lab: Working with Cubes and Dimensions

- After completing this module, you will be able to:
- Configure dimensions
- Define attribute hierarchies.
- Sort and group attributes

Module 4: Working with Measures and Measure Groups

- This module describes how to implement measures and measure groups in a cube.

Lessons

- Working with measures
- Working with measure groups

Lab: Configuring Measures and Measure Groups

- After completing this module, you will be able to:
- Work with measures
- Work with measure groups

Module 5: Introduction to MDX

- This module describes the MDX syntax and how to use MDX.

Lessons

- MDX fundamentals
- Adding calculations to a cube
- Using MDX to query a cube

Lab: Using MDX

- After completing this module, you will be able to:
- Describe the fundamentals of MDX
- Add calculations to a cube
- Query a cube using MDX

Module 6: Customizing Cube Functionality

- This module describes how to customize a cube.

Lessons

- Implementing key performance indicators
- Implementing actions
- Implementing perspectives
- Implementing translations

Lab: Customizing a Cube

- After completing this module, you will be able to:
- Implement key performance indicators
- Implement actions
- Implement perspectives
- Implement translations

Module 7: Implementing a Tabular Data Model by Using Analysis Services

- This module describes how to implement a tabular data model in PowerPivot.

Lessons

- Introduction to tabular data models
- Creating a tabular data model
- Using an analysis services tabular model in an enterprise BI solution

Lab: Working with an Analysis services tabular data model

- After completing this module, you will be able to:
- Describe tabular data models
- Create a tabular data model

- Be able to use an analysis services tabular data model in an enterprise BI solution

Module 8: Introduction to Data Analysis Expression (DAX)

- This module describes how to use DAX to create measures and calculated columns in a tabular data model.
- model.

Lessons

- DAX fundamentals
- Using DAX to create calculated columns and measures in a tabular data model

Lab: Creating Calculated Columns and Measures by using DAX

- After completing this module, you will be able to:
- Describe the fundamentals of DAX
- Use DAX to create calculated columns and measures in a tabular data model

Module 9: Performing Predictive Analysis with Data Mining

- This module describes how to use data mining for predictive analysis.

Lessons

- Overview of data mining
- Using the data mining add-in for Excel
- Creating a custom data mining solution
- Validating a data mining model
- Connecting to and consuming a data mining model

Lab: Perform Predictive Analysis with Data Mining

- After completing this module, you will be able to:
- Describe data mining
- Use the data mining add-in for Excel
- Create a custom data mining solution
- Validate a data mining solution
- Connect to and consume a data mining solution