



# 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

- Aer compleng this module, you will be able to:
- Describe the concept of business intelligence
- Describe the Microso business intelligence plaorm

# **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

- Aer compleng 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

- Aer compleng this module, you will be able to:
- Configure dimensions
- Define aribute hierarchies.
- Sort and group aributes

# **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



- Aer compleng 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

- Aer compleng this module, you will be able to:
- Describe the fundamentals of MDX
- Add calculaons 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

- Aer compleng this module, you will be able to:
- Implement key performance indicators
- Implement acons
- Implement perspecves
- Implement translaons

# 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

- Aer compleng 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 soluon

# 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.

#### 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

- Aer compleng 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

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