

## Developing SQL Data Models (20768)

**Duration:** 3 Days

**MOC On-Demand Price:** CDN\$1,095

**Delivery Option:** Attend via [MOC On-Demand](#)

### Students Will Learn

- Describing the components, architecture, and nature of a BI solution
- Creating a multidimensional database with Analysis Services
- Implementing dimensions in a cube
- Implementing measures and measure groups in a cube
- Using MDX syntax
- Customizing a cube
- Implementing a tabular database
- Using DAX to query a tabular model
- Using data mining for predictive analysis

### Course Description

This is a Microsoft Official Course (MOC) and includes Microsoft courseware and hands-on labs. The focus of this course is on creating managed enterprise BI solutions. It describes how to implement both multidimensional and tabular data models and how to create cubes, dimensions, measures and measure groups.

The primary audience for this course are database professionals who need to fulfill a BI Developer role to create enterprise BI solutions. Their primary responsibilities will include implementing multidimensional databases by using SSAS and creating tabular semantic data models for analysis by using SSAS.

The secondary audience for this course includes IT professionals who take this course as preparation material for exam [70-768: Developing SQL Data Models](#).

### Course Prerequisites

Familiarity programming with Transact-SQL, equivalent to attending the [Microsoft Transact-SQL Programming](#) course.

### About MOC On-Demand

Microsoft Official Courses On-Demand uses a combination of streaming video, text, lab exercises and assessment checks throughout the course. MOC On-Demand courses are

available for 90 days and recommend the following system requirements:

- Browser: Current version of Internet Explorer, Microsoft Edge, Google Chrome or Firefox
- Internet: Broadband Internet connection of over 4Mbps
- Screen Resolution: 1280 x 1024 or higher

## Course Overview

### 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

#### Labs

- Exploring a Data Warehouse
- Exploring a Data Model

#### After completing this module, students will be able to:

- Describe BI scenarios, trends, and project roles.
- Describe the products that make up the Microsoft BI platform.

### Module 2: Creating Multidimensional Databases

This module describes how to create multidimensional databases using SQL Server Analysis Services.

#### Lessons

- Introduction to Multidimensional Analysis
- Data Sources and Data Source Views
- Cubes
- Overview of Cube Security
- Configure SSAS
- Monitoring SSAS

#### Labs

- Creating a Data Source
- Creating and Configuring a Data Source View
- Creating and Configuring a Cube
- Adding a Dimension to a Cube

#### After completing this module, you will be able to:

- Describe considerations for a multidimensional database
- Create data sources and data source views
- Create a cube

Implement security in a multidimensional database

- Configure SSAS to meet requirements including memory limits, NUMA and disk layout
- Monitor SSAS performance

### **Module 3: Working with Cubes and Dimensions**

This module describes how to implement dimensions in a cube.

#### **Lessons**

- Configuring Dimensions
- Defining Attribute Hierarchies
- Implementing Sorting and Grouping Attributes
- Slowly Changing Dimensions

#### **Labs**

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

#### **After completing this module, you will be able to:**

- Configure dimensions
- Define attribute hierarchies
- Implement sorting and grouping for attributes
- Implement slowly changing dimensions

### **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

#### **Labs**

- Configuring Measures
- Defining Regular Relationships
- Configuring Measure Group Storage

#### **After completing this module, you will be able to:**

- Configure measures
- Configure 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

### **Labs**

- Querying a Cube using MDX
- Adding a Calculated Member

### **After completing this module, you will be able to:**

- Use basic MDX functions
- Use MDX to add calculations to a cube
- Use MDX to query a cube.

## **Module 6: Customizing Cube Functionality**

This module describes how to customize a cube.

### **Lessons**

- Implementing Key Performance Indicators
- Implementing Actions
- Implementing Perspectives
- Implementing Translations

### **Labs**

- Implementing an action
- Implementing a perspective
- Implementing a translation

### **After completing this module, you will be able to:**

- Implement KPIs in a Multidimensional database
- Implement Actions in a Multidimensional database
- Implement perspectives in a Multidimensional database
- Implement translations in a Multidimensional database

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

This module describes how to implement a tabular data model in Power Pivot.

### **Lessons**

- Introduction to Tabular Data Models
- Creating a Tabular Data Model
- Using an Analysis Services Tabular Data Model in an Enterprise BI Solution

### **Labs**

- Creating an Analysis Services Tabular Data Model
- Configure Relationships and Attributes
- Configuring Data Model for an Enterprise BI Solution

### **After completing this module, students will be able to:**

- Describe tabular data models
- Describe how to create a tabular data model
- Use an Analysis Services Tabular 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.

### **Lessons**

- DAX Fundamentals
- Using DAX to Create Calculated Columns and Measures in a Tabular Data Model

### **Labs**

- Creating Calculated Columns
- Creating Measures
- Creating a KPI
- Creating a Parent-Child Hierarchy

### **After completing this module, students will be able to:**

- Describe the key features of DAX
- Create calculated columns and measures by using DAX

## **Module 9: Performing Predictive Analysis with Data Mining**

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

### **Lessons**

- Overview of Data Mining
- Creating a Custom Data Mining Solution
- Validating a Data Mining Model
- Connecting to and Consuming a Data-Mining Model
- Using the Data Mining add-in for Excel

### **Labs**

- Creating a Data Mining Structure and Model
- Exploring Data Mining Models
- Validating Data Mining Models
- Consuming a Data Mining Model
- Using the Excel Data Mining add-in

### **After completing this module, students will be able to:**

- Describe considerations for data mining
- Create a data mining model
- Validate a data mining model
- Connect to a data-mining model
- Use the data mining add-in for Excel

# Hands On Technology Transfer

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