

Applied BI Semantic Model Course



The Microsoft BI Semantic Model (BISM) is an umbrella name for the two Analysis Services implementation paths: Multidimensional and Tabular. Multidimensional excels in maturity and scalability. Tabular delivers flexibility, rapid development, and a continuum from self-service BI!

Syllabus

Targeting BI developers, this intensive 5-day onsite class is designed to help you become proficient with Analysis Services and acquire the necessary skills to implement Tabular and Multidimensional semantic models. Use the opportunity to ask questions and study best practices that will help you achieve a single version of the truth by implementing scalable and secure organizational models. Bring your organizational BI to the next level by learning these two powerful BI technologies in one class!

Module 1: Introducing BI Semantic Model

- Understanding Microsoft BI Platform
- Understanding organizational BI
- BISM overview and benefits
- Lab 1: Interactive reporting with Excel
- BISM architectural view and continuum
- Feature comparison of BISM components
- Lab 2: Understanding Analysis Services tools

Module 2: Tabular Fundamentals

- When to use Tabular?
- Understanding design environment
- Understanding deployment
- Lab 1: Configuring design and deployment
- Comparing Power Pivot and Tabular
- Upgrading from Power Pivot
- Lab 2: Upgrading from Power Pivot

Module 3: Working with Data

- Importing from relational data sources
- Importing from multidimensional databases
- Lab 1: Importing data from databases
 - Importing flat files
 - Importing from Excel
 - Importing from data feeds
- Lab 2: Importing from other data sources

Module 4: Enhancing the Model

- Understanding column data types
- Performing table and column operations
- Lab 1: Working with columns
 - Understanding relationships
 - Understanding data refresh
 - Managing connections and import definitions
- Lab 2: Working with relationships
- Implementing end-user features
- Lab 3: Implementing end-user features

Module 5: DAX Fundamentals

- Understanding Data Analysis Expressions
- Understanding row and filter context
- Understanding calculated columns
- Lab 1: Implementing calculated columns
 - Understanding measures and measure functions
 - Implementing key performance indicators
- Lab 2: Implementing measures and KPIs
- Querying Tabular from external clients
- Lab 3: Querying Tabular models

Module 6: Tabular Storage and Processing

- Understanding storage modes
- Understanding partitions
- Lab 1: Working with partitions
 - Understanding processing
- Lab 2: Processing objects

Estimating and configuring memory

Lab 3: Estimating and configuring memory

Module 7: Implementing Tabular Security

Understanding roles

Understanding row filters

Lab 1: Implementing basic security

Understanding dynamic data security

Externalizing security policies

Lab 2: Implementing dynamic data security

Module 8: Multidimensional Fundamentals

When to use Multidimensional?

Understanding design environment

Understanding deployment

Lab 1: Multidimensional tools

Understanding data sources

Understanding data source views

Lab 2: Implementing data source and data source view

Module 9: Implementing Dimensions

Understanding dimensions and attributes

Lab 1: Implementing dimensions

Understanding attribute hierarchies

Configuring attributes

Working with Time dimensions

Lab 2: Creating and modifying dimensions

Understanding user-defined hierarchies

Understanding attribute relationships

Lab 3: Working with attributes

Module 10: Implementing Cubes and Measures

Understanding cubes

Understanding measures and measure groups

Understanding aggregate functions

Lab 1: Implementing measures and measure groups

Understanding dimension usage

Understanding relationships

Lab 2: Configuring dimension usage

Module 11: MDX Fundamentals

Introducing MDX

Understanding cell context

Lab 1: Querying cubes with MDX

Understanding calculated members

Lab 2: Working with calculated members

Understanding named sets

Lab 3: Working with named sets

Understanding scope assignments

Lab 4: Working with scope assignments

Module 12: Extending Cubes

Understanding Key Performance Indicators (KPIs)

Lab 1: Implementing KPIs

Understanding actions

Lab 2: Implementing actions

Understanding perspectives

Lab 3: Implementing perspectives

Understanding translations

Lab 4: Implementing translations

Module 13: Multidimensional Storage and Processing

Understanding partitions

Understanding storage modes

Lab 1: Partitioning a measure group

Understanding aggregations

Lab 2: Designing aggregations

Understanding processing

Lab 3: Processing objects

Module 14: Implementing Multidimensional Security

Understanding roles

Understanding data and cell security

Lab 1: Implementing basic security

Understanding dynamic data security

Security with factless fact tables

Lab 2: Implementing dynamic data security

Module 15: Analyzing Data

Implementing Excel reports

Lab 1: Implementing Excel reports

Implementing Power View reports

Lab 2: Implementing Power View reports

Implementing SSRS reports

Lab 3: Implementing SSRS reports

Audience

- BI professionals
- BI developers

Prerequisites

- Experience navigating the Microsoft Windows environment
- Experience in SQL Server database development

Hardware and software requirements

- Windows 7 or above
- Minimum of 4GB RAM (8GB recommended)
- SQL Server Developer Edition
- SQL Server Data Tools or Visual Studio 2012, 2013, or 2015 with SSDT-BI
- AdventureWorksDW and AdventureWorks databases installed

Detailed software setup instructions will be sent before the event.

Instructor



Teo Lachev is a consultant, author, and mentor, with a focus on Microsoft Business Intelligence. Through his Atlanta-based company “Prologika”, a Microsoft Gold Partner in Data Analytics, he designs and implements innovative solutions that unlock the power of data and bring tremendous value to his customers, ranging from small companies to Fortune 50 organizations. Teo has authored and co-authored several SQL Server BI books and he has been leading the Atlanta Microsoft Business Intelligence group since he founded it in 2010. Microsoft has recognized Teo's expertise and contributions to the technical community by awarding him the prestigious Microsoft Most Valuable Professional (MVP) award since 2004.



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