

## Implementing Business Logic with MDX in Microsoft® SQL Server™ Analysis Services 2000

### Microsoft Official Curricula: 2093A

This course is for database architects, application developers and business analysts who want to acquire the knowledge and skills to create useful MDX expressions in Microsoft® SQL Server™ 2000. Attendees will gain an understanding of how MDX expressions are constructed, the use of Sets and Tuples in an expression and practical experience of real business logic issues such as allocations and custom aggregations.

#### Prerequisites

An understanding of basic Analysis Services concepts, basic database design, administration, and implementation are recommended to take this course.

#### Duration

3 days

#### Detailed Course Agenda

#### **DAY 1**

**OLAP Review** is a quick review of essential online analytical processing (OLAP) concepts and terminology that you should already be familiar with if you meet the prerequisite. After completing this module, you will be able to: understand the basic elements of OLAP databases; understand the basic definitions and structures of an OLAP cube; understand how data flows through an organization's analytical processes.

**MDX Foundations** provides you an overview of multidimensional expressions (MDX), foundations in object and member naming conventions, instructions on how to use the Calculated Member Builder interface, and review of the characteristics of calculated members. After completing this module, you will be able to: understand the role of MDX in the overall flow of information through a data warehouse and the two specific functions it performs; understand MDX object and member naming conventions; use the Calculated Member Builder for building simple calculated members; understand the characteristics of calculated members compared to stored members.

**M<sup>2</sup> Business Intelligence Solutions Ltd,**

Abbey House,  
25 Clarendon Road,  
Redhill. Surrey RH1 1QZ +44 (0)1737 852370



+44 (0)1737 852375



training@m2bis.com



**Using MDX Expressions** will teach you how to create very simple multidimensional expressions (MDX). These will be expressions that use constant values or expressions that display the names of members. You will also learn how to work with members in a dimension, and how to use MDX member functions to navigate from one member to another. After completing this module, you will be able to: create MDX expressions within calculated members and manipulate them by using numeric and string constants; display information about a member—particularly the name of the member and the name of the level of the member; display information about the parent or other ancestor of a member; display the member property associated with a member and use the value in an arithmetic expression; create and use simple and complex conditional expressions.

## DAY 2

**Retrieving Values from a Cube** teaches you the fundamentals of tuples and then how to apply tuples for retrieving values from a cube and creating practical calculations such as percent of total and growth from period to period. After completing this module, you will be able to: understand basic concepts of multidimensional coordinates, including how to retrieve values from a cube by specifying a member from a single dimension; define a tuple—all of its rules and characteristics—and use tuple expressions to retrieve values with two or more dimensions; use tuple expressions to retrieve values for calculating percentages of a total; use tuple expressions to retrieve values for period-to-period growth percentages.

**Creating Simple MDX Queries** teaches you how to create simple MDX query statements that generate a report. You will learn the terminology that is used to create a query and then be introduced to an interface that can be used to process a query and create a report. Finally, you will learn about different types of simple query statements and how to create them. At the end of this module, you will be able to: understand MDX query statement terminology; write simple MDX query statements by using the MDX2093A application.

**Creating and Manipulating Sets** introduces you to functions that return sets of members. Some of the functions retrieve sets from the metadata defined in the cube's dimensions. Some of the functions manipulate those sets to create new sets that meet specific analytical purposes. After completing this module, you will be able to: use functions to create a set; use functions to manipulate a set; create a set from subqueries; manipulate dimension interactions by using advanced functions.

## DAY 3

**Using Aggregation Functions** teaches you how to use aggregation functions to create formulas. The multiple values retrieved from a set can be summarized—or *aggregated*—into a single value that can be used in a calculated member. Some of the most useful analytical formulas created by using MDX expressions come from aggregating sets of values. After completing this module, you will be able to: understand the use of and create calculated members from aggregation functions; understand and use Time Set functions; understand how to calculate a trend.

**Case Study—Implementing Budget Allocations** is a case study in which you and the instructor work through a single, complex project. In the course of the module, you apply many concepts and specific MDX expressions functions you have learned in previous modules. After completing this module, you will be able to: allocate values from a grand total across a dimension; allocate values from an intermediate level across a dimension; create a calculated member that allocates values across three dimensions.

**M<sup>2</sup> Business Intelligence Solutions Ltd.**

Abbey House,  
25 Clarendon Road,  
Redhill. Surrey RH1 1QZ +44 (0)1737 852370



+44 (0)1737 852375



training@m2bis.com



**Using Calculated Cells** teaches you how to work with calculated cells in Microsoft SQL Server 2000 Analysis Services. Calculated cells are a method of applying MDX expressions in an extremely sophisticated fashion within a cube. In addition, the module reviews how calculated cells differ from calculated members and custom member formulas. After completing this module, you will be able to: retrieve revenues from the *Sales* cube by using the *LookupCube* function.

**M<sup>2</sup> Business Intelligence Solutions Ltd,**

Abbey House,  
25 Clarendon Road,  
Redhill. Surrey RH1 1QZ +44 (0)1737 852370



+44 (0)1737 852375



training@m2bis.com

