



Contact: [info@ellarr.com](mailto:info@ellarr.com)

# MDX Training Course Contents

## Introduction to BI, Data Warehousing and Analysis Services

- Data Warehouses
- Fact Tables
- Dimension Tables
- Dimensions Cubes
- Star Schemas
- Snowflake Schemas
- Normalization vs Denormalization
- Business Intelligence Semantic Model (BISM)
- SSAS Features, Tools and Terminologies

## Creating Multidimensional Analysis Solutions

- Supported Data Sources
- Data Source View (DSV) Wizard
- Dimensions
- Dimension Wizard
- Dimension Designer
- Attributes
- Attribute Relationships
- Hierarchies and Levels
- Deploying & Processing Dimensions
- Browsing Dimensions
- Time Dimensions
- Calculated Members

## Multidimensional expressions

- Basic syntax
- Using the MDX query editor in SQL Server Management Studio
- Fundamental Concepts
- Members
- Cells
- Tuples
- Sets

MDX training sessions will be conducted with Practical Examples.  
Students' practice labs will be provided separately for hands on.



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Simple MDX Queries  
Adding calculated members  
Adding scripts  
Adding named sets

## Microsoft MDX Basics

Basic MDX  
SELECT  
FROM Clause  
Where Clause  
Filters  
With Clause  
Aliasing through With Clause  
Comments

## Dimensions

Source  
MDX Functions  
Key Concepts of Dimensions  
Dimension Properties  
Dimension Attributes  
Attribute Values  
Attribute Members  
MDX Hierarchies  
User Hierarchies  
Levels  
members Function  
Members have Properties  
Intrinsic Dimension and Level Properties  
Intrinsic Member Properties  
Custom Member Properties  
Tuples  
Member Reference with Tuples  
Tuples with Multiple Dimensions  
Cells  
Sets

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MDX: Tuple Vs Set  
Set Functions  
Empty Sets  
Sets with Multipart Tuples  
Shared Dimensionality  
Using Two Axis  
Distinct Function  
MeasureGroupMeasures Function  
CrossJoin Function  
CrossJoin and Auto-Exists  
Exists Function

### **Navigating Hierarchies**

Navigation Functions of Immediate Relatives  
Function Syntax members  
Function Dimensions have  
Members Hierarchies have  
Members Levels Have  
Members Children  
function Descendants  
Function Descendants  
Syntax  
Parent Function  
Ancestor Function  
Ascendants Function  
Siblings Function  
Cousin Function  
Lastchild and Firstchild functions  
Lead, Lag, Head and Tail Functions  
Lead Function  
Lag Function  
Head Function  
Tail Function  
Prevmember, Nextmember Functions  
PrevMember Function  
NextMember

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CurrentMember Function  
Drilldown (Up)  
DrilldownLevel  
Hierarchize  
Order Function  
Rank Function  
Controlling Sort Order  
Ascending Sort  
Descending Sort  
basc  
bdesc  
Range Operator  
TopCount, BottomCount Function  
Item Function  
Filter Function  
Filter Operator Table  
NonEmpty Function  
Combining Sets  
Union  
Intersection (Intersect)  
Exception (Except)

### **MDX Calculations**

Named Calculation  
Named Set  
Scoped Assignments  
Expressions  
Nulls in expressions in MDX  
Operators supported in MDX  
Solve Order  
Calculated Members (WITH Member)  
Query-scoped  
Session-scoped  
Create Member  
Formatting through With  
Dynamic Expressions  
Using Sets In Expressions  
Existing Keyword  
IIF Function  
IsEmpty

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CurrentMember  
Level and Ordinal Function  
Statistical Functions  
Min and Max  
AVG Function  
Sum Function  
Aggregate Function  
Count Function (Counting Tuples)  
Count (Dimension)  
Count (Hierarchy Levels)  
Count (Set)  
TopCount Function

### **Working With Time**

The Time Dimension  
Current Value  
Navigating Time  
Historical Values  
ParrallelPeriod  
OpeningPeriod/ClosingPeriod  
OpeningPeriod  
ClosingPeriod  
PeriodsToDate  
(x)TD Functions  
Year-To-Date (YTD)  
Quarter-To-Date (QTD)  
Month-To-Date (MTD)  
Week-To-Date (WTD)  
LastPeriods  
Combining Functions

### **Business Insights**

Peer Ranking  
Percent of Level or Group  
Percentage of Parent  
Inventory  
Order Ranking  
Calculating Averages (AVG)  
Rolling Averages

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