Course Outline

Introduction to SQL Server MDX

Course Description:

This course provides the fundamental skills required to query cubes using the MDX SELECT statement and customize cubes with the MDX scripting language and functions.
At the end of the course delegates will be able to confidently query existing cubes as well as create their own measures and named sets derive information from stored cube data and aggregations.
The course covers the most commonly used set of MDX functions and scripting statements and provides the first step in a career of writing MDX statements and scripts.
The course covers versions of SQL Server Analysis Services up to an including SQL Server 2016.

Pre-requisites:

The course assumes no prior knowledge of MDX and provides an overview of Multi-dimensional Databases & Cubes, but it would be beneficial to have a basic knowledge and awareness of Multidimensional Databases and Cube terminology including terms such as Cubes, Facts, Measures, Measure Groups, Dimensions, Hierarchies, Members, Rollups.

Course Content:

- **Overview of Multi-Dimensional Databases & Cubes**
  - Terminology & Concepts
  - Fact Tables & Dimension Tables
  - Measures
  - Dimensions: Attributes, Hierarchies, Members, Children, Levels
  - Measure Groups
  - Dimension Usage & Relationships

- **Introduction to MDX Language**
  - Comparison of MDX & SQL
  - MDX Scripting
  - MDX Functions: Set based, method based

Course Outline

- **Basic MDX Query Structure**
  - SELECT
  - FROM
  - WHERE
  - Cells
  - Tuples
  - Sets
  - Axes: ON COLUMNS, ON ROWS
  - Slicing & Dicing

- **Member Functions**
  - Parent
  - CurrentMember
  - Children
  - Ancestor
  - FirstChild
  - LastChild
  - IsAncestor
  - IsSibling
  - NextMember
  - PrevMember
  - DefaultMember
  - UnknownMember

Course Outline

- **Set Functions**
  - Head
  - Subset
  - Order
  - Ancestors
  - Ascendants
  - Descendants
  - MeasureGroupMeasures
  - Filter
  - Union
  - Intersect
  - Except
  - CrossJoin
  - NonEmptyCrossJoin
  - Exists

- **Advanced Functions**
  - Time Functions: OpeningPeriod, ClosingPeriod, PeriodsToDate, ParallelPeriod, LastPeriod
  - String Functions: MemberToStr, StrToMember, SetToStr, StrToSet, TupleToStr, StrToTuple, StrToValue, Properties
  - Numeric Functions: Sum, max, Min, Avg, Aggregate, CoalescseEmpty, Rank, VisualTotals, RollupChildren
  - Statistical Functions: Median, Stdev, Variance, Correlation

- **MDX Scripting**
  - CALCULATE
  - Scope
  - This
  - Freeze
  - IF Statement

Course Outline

- **Customising Cubes With MDX**

  - CREATE MEMBER
  - UPDATE MEMBER
  - DROP MEMBER
  - CREATE SET
  - DROP SET
  - CELL CALCULATIONCREATE SUBCUBE
  - DROP SUBCUBE
  - WITH

- **MDX Queries as SSRS Datasets (Optional)**

  - Simple datasets
  - Parameter datasets

Course Duration: 3 Days