**What will you learn in this SSAS training course?**

* How SSAS helps in deploying quality BI solutions
* Designing Online Analytical Processing Cubes
* Querying and manipulating data with MDX
* Cube hierarchy extension and advanced dimension relationship
* Data source views and data schemas
* Cube operations and limitations
* In-memory analytics techniques

**MSBI SSAS Course Content**

**Getting started with SSAS**

* Understanding the concept of multidimensional analysis
* understanding SSAS Architecture and benefits,
* learn what is Cube,
* working with Tables and OLAP databases,
* understanding the concept of Data Sources,
* working with Dimension Wizard,
* understanding Dimension Structure,
* Attribute Relationships
* flexible and rigid relationship

**Structures and Processes**

* Learning about Process Dimension
* the Process database
* creation of Cube
* understanding Cube Structure
* Cube browsing, defining the various categories
* Product Key and Customer Key
* Column Naming
* processing and deploying a Cube
* Report creation with a Cube

**Hands-on Exercise – Create a Cube and name various columns Deploy a cube after applying keys and other rules Create reports with a cube**

**Type of Database Relationship**

* Understanding Data Dimensions and its importance
* the various relationships, regular, referenced, many to many, fact
* working on Data Partitions, and Data Aggregations

**SSAS Cube**

* Learning about SSAS Cube, the various types of Cubes
* the scope of Cube and comparison with Data Warehouse

**Cube: Operations & Limitations**

* The various operations on Cube,
* the limitations of OLAP Cubes,
* the architecture of in-memory analytics and its advantages

**Cube and In-memory Analytics**

* Deploying cube with existing data warehouse capabilities to get self-service business intelligence
* understanding how in-memory analytics works

**Hands-on Exercise – Deploy cube to get self-service business intelligence**

* Data Source View
* Logical model of the schema used by the Cube
* components of Cube
* understanding Named Queries and Relationships

**Dimensions**

* An overview of the Dimensions concept,
* describing the Attributes and Attributes Hierarchies,
* understanding Key/Value Pairs,
* Metadata Reload,
* logical keys and role-based dimensions

**Hands-on Exercise – Create role based dimensions, Use Attributes Hierarchies**

**Measures & Features of Cube**

* Understanding the Measure of Cube
* analyzing the Measure,
* exploring the relationship between Measure and Measure Group
* Cube features and Dimension usage

**Measures and Features of Cube Cont**

* Working with Cube Measures,
* deploying analytics,
* understanding the Key Performance Indicators,
* deploying actions and drill-through actions on data,
* working on data partitions, aggregations, translations and perspectives

Hands-on Exercise – Work with Cube Measures, Deploy analytics, Deploy actions and drill-through actions on data, Make data partitions

**Working with MDX**

* Understanding Multidimensional Expressions language,
* working with MDX queries for data retrieval,
* working with Clause, Set, Tuple, Filter condition in MDX
* Learning about MDX hierarchies,
* the functions used in MDX,
* Ancestor, Ascendant and Descendant function, performing data ordering

Hands-on Exercise – Create MDX hierarchies, Perform data ordering in ascending order, in descending order

DAX language

Data Analysis Expressions (DAX), Using the EVALUATE and CALCULATE functions, filter DAX queries, create calculated measures, perform data analysis by using DAX

Hands-on Exercise – Use the EVALUATE and CALCULATE functions, filter DAX queries, create calculated measures, perform data analysis by using DAX

BI Semantic Model

Designing and publishing a tabular data model, Designing measures relationships, hierarchies, partitions, perspectives, and calculated columns

Hands-on Exercise – Design and publish a tabular data model, Design measures relationships, hierarchies, partitions, perspectives, and calculated columns

**Plan and deploy SSAS**

Configuring and maintaining SQL Server Analysis Services (SSAS), Non-Union Memory Architecture (NUMA), Monitoring and optimizing performance, SSAS Tabular model with vNext, Excel portability, importing model from Power BI Desktop, importing a Power Pivot model, bidirectional cross-filtering relationship in MSBI.

Hands-on Exercise – Configure and maintain SQL Server Analysis Services (SSAS), Monitor and optimize performance

**SSAS Project**

**Project Title:** Cube Creation – SSAS Cube 2012

**Industry:** Sales

**Problem Statement:** How to create the SSAS Cubes for faster reporting

**Topics:** In this project you will be work on large volume of data and use it for creating reports and dashboards for sales performance in order to derive valuable insights. You will deploy the sales database in sql server and build SSAS Cubes. Upon completion of the project you will be well-versed to work in a real world business scenario to analyze various parameters and instances in order to derive business insights