**MSBI Regular Batch**

**SQL SERVER INTEGRATION SERVICES (SSIS)**

**SSIS - COURSE CONTENT**

* **Introduction to Data Warehouse Concepts**

o What is Data Warehouse  
o Need for Data Ware house  
o OLTP vs. OLAP  
o What is BI  
o Tools for BI  
o Goals of BI  
o Dimension and FactTables  
o Cube  
o Measure  
o Surrogate Keys   
o Data Warehouse Schemas

* Star Schema
* Snow Flake Schema

o Cube Storage

* ROLAP
* MOLAP
* HOLAP

o Data Warehouse vs. Data Marts

* **Introduction to SSIS**

o Understand BIDS Components  
o DTS vs. SSIS  
o Control Flow  
o Data Flow  
o Event Handlers  
o Package Explorer  
o Connection Managers etc

* **Introduction to ControlFlow Items**

o Containers

* + ForLoop Container
  + ForEachLoop Container
  + Sequential Container

o Predecesor Constraints  
o Control Flow Tasks

* + Data Flow
  + Execute SQL Task
  + File System Tasks
  + DBA Related Tasks etc
* **Data Flow Items**

o Data Flow Sources  
o Data Flow Destinations  
o Data Flow Transformations

* + Agregate
  + Audit
  + Sort
  + Merge
  + Merge Join
  + Union Al
  + Lokup
  + Fuzy Lokup
  + Fuzy Grouping
  + Conditonal Split
  + Export Column
  + Import Column
  + Slowly Changing Dimensions (SCD)
  + Derived Column
  + Copy Column
  + Cache Transformation etc,.
* **SIS Variables and Expresions**

o System Variables  
o Local Variables  
o Expresions  
o Transactions and Check Points in SIS packages

* **Create, Build and Deploy a package**

o Create Package  
o Build Package  
o Deploy package

* + Ad config files
  + Ad Loging
  + Ad Event Handlers
  + Ad Eror Handling and Debuging
  + Types of Deployments
  + SQL Server
  + File System
  + Schedule SIS Packages

o Introduction to SQL Server Agent Service  
o Create a Job to Schedule the Package Execution  
o Introduction to MSDB database  
o Conect o Integration Server and Execute the Package  
o Run the package using DTEXEC cm

**SRS Course Content**

* + Data Warehouse Concepts
  + Introduction to BI
  + Introduction to SRS
  + SRS Architecture
  + Tols in SRS
* Report Designer
* Report Manager
* Report Builder
  + Tols available in the Market o create Reports
  + Scenarios to use SRS
  + Lifecycle of the Report (Phases in the Report)
  + What is a Report
  + Data Sources
  + Data Sets
  + Shared Vs Embeded Data Sources/Data Sets
  + Steps to create a Report
  + SRS Data Regions
* Table
* Matrix
* List
* Chart
* Gauge
* Image
* Nested Data Regions
* Sub Reports
* Indicator etc
* **Types of Reports**
* Tabular and Matrix Reports
* Dril Down Reports
* Dril Thru Reports
* Parameterized Reports
  + Single value Parameters
  + Multiple Value Parameters

 Customized Reports using List Control

 Nested Data Region Reports

 Document Map Reports

 Chart, Gauge, Indicator, Image Reports

* **More Features in SRS**
  + Use of Row Group and Column Groups
  + Ad Report Header and Report Foter
  + Ad Page Numbers, Execution Time etc in the Foter
  + Expresions in the Reports
  + Conditonal Formating
  + Date and Curency Format
  + Using Sorting
  + Ad Page Breaks Before and After
  + Ad Background Images in the Report
  + Report Format - Changing Style, Font, Color etc
  + Report Performance Tuning
* Build and Deploy a Report o the Report Server
* Report Server Configuration
* View Reports On Line
* Export Reports to diferent formats – Excel, PDF, Tif, CSV etc,.
* Introduction to Report Manager
* Managing Reports
  + Subscriptions (for Report Delivery)
    - Push (Thru E-mail)
    - Pul (Thru Shared Folder)
  + Linked Reports
  + Snapshot of a Report
  + Report Security
  + Cache a Report
  + Report Builder to Create Ad-hoc Reports

**SSAS Course Content**

**What Is Microsoft Business Intelligence?**

Define Business Intelligence.   
Understand the Cube Structure.   
Deploy and View a Sample Cube.   
View a Cube by using Excel.   
View a Cube by using SQL Reporting Services.

**OLAP Modeling**

Understand Basic OLAP Modeling (star schema).   
Understand Dimensional Modeling (stars and snowflakes)   
Understand Measure (fact) and Cube Modeling.   
Model with SQL Server Business Intelligence Development Studio (BIDS).

**Intermediate SSAS**

Learn how to Create Key Performance Indicators (KPIs).   
Discover how to Create Perspectives.   
See how to Create Translations for Cubes and Dimensions.   
Review the three SSAS Action Object Types: Regular, Drillthrough, and Reporting.

**Cube Storage and Aggregation**

View Aggregation Designs.   
Customize Aggregation Designs.   
Implement Proactive Caching.   
Understand Writeback in Dimensions.   
Review Semi-Additive Measures in OLAP Cubes.

**Understand Basic MDX Syntax**

Understand Basic MDX Syntax.   
CUse the MDX Query Editor in SSMS.   
Understand Common MDX Functions and Tasks.   
Understand Writeback in Dimensions.

**MDX Expressions**

Understand the Calculation Subtab.   
Learn how to add Calculated Members.   
Understand Common MDX Functions and Tasks.   
Explore how to add MDX Script Commands.

**SSAS Administration**

Implement SSAS Security .   
Implement XMLA Scripts in SSMS.   
Deploy and Synchronize Databases.   
Understand SSAS Database Backup and Restore.

**SQL SERVER 2008 R2 for DEVELOPERS**

* **Introducing SQL Server 2008 R2**
* What's New in SQL Server
* SQL Server History and Editions
* **Basics of Database Design**
  + Introduction to RDBMS
  + ERD Modelling
  + Normalization and Demoralization
  + Business Integrity
  + Constraints in SQL Server
  + Data Types
  + SQL Server 2008 R2 Architecture
  + Files and File Groups
  + Transaction Logs
* **• T-SQL**
  + DDL and DML Commands
  + Operators
  + Variables
    - Local
    - Global
  + Programming Constructs
  + System Functions
* **SELECT Statements**
  + Basic Select Statements
    - Using Where Clause
    - Using GROUP BY and HAVING
  + Advanced Select Statements
    - Joins
      * Inner Join
      * Outer Join

1. Left outer join  
2. Right outer Join  
3. Full Outer Join

* Cross Join
* Self Join
* Sub Queries, Correlated Sub Queries
* Case Statements
* UNION and UNION ALL
* EXCEPT and INTERSECT
* Cube Operator
* Rollup Operator
* Triggers
  + Need
  + Features
  + Types of Triggers
    - After
    - Instead of
  + Creating, Altering, Dropping DML Triggers
  + Magic Tables
  + Recursive and Nested Triggers
* **Views**
  + Need
  + Features
  + Types of views
  + View Maintenance
* **Stored Procedures**
* Need
* Features
* Types of Stored Procedures
  + User Defined Stored Procedures
  + System Stored Procedures
* **Functions**
  + Need
  + Features
  + Types of Functions
* **Indexes**
  + What Is An Index?
  + Types Of Indexes
  + Features
  + Tuning Queries for improve Performance
  + Tuning Indexes for improve Performance
* **Transactions**
  + Need
  + Features
  + Transaction Properties (ACID)
  + Transactions Types
  + Transaction Logs
  + Checkpoint
  + Save Point
  + Distributed Transactioning
  + Nested Transactions
* **Concurrency and Locks**
  + Problems Related to Concurrency
  + Transaction Isolations
  + Locking
  + Lock Hints
  + Lock Escalation
  + Live locks
  + Deadlocks
  + Blocking
* **Advanced Transact-SQL**
  + Ranking Functions
  + Cursors
  + Common Table Expression(CTE)
  + PIVOT and Unpivot
  + Exception Handling (Error Handling)
  + Temp Tables