MICROSOFT BUSINESS INTELLIGENCE

SSIS

1) Introduction to Integration Services
   - Defining sql server integration services
   - Exploring the need for migrating diverse
   - Data the role of business intelligence (bi)
2) SSIS Architecture and Tools
   - Managing heterogeneous data
     - Leveraging the Extract, Transform and Load (ETL) capabilities of SSIS
     - Running wizards for basic migrations
     - Creating packages for complex tasks
   - Illustrating SSIS architecture
     - Distinguishing between data flow pipeline and package runtime
     - Executing packages on the client side or hosted in the SSIS service
   - Upgrading legacy DTS
     - Executing existing DTS packages in the SSIS environment
     - Converting DTS packages to SSIS with the migration wizard
     - Logging migration results
   - Implementing Tasks and Containers
   - Utilizing basic SSIS objects
     - Configuring connection managers
     - Adding data flow tasks to packages
     - Reviewing progress with data viewers
     - Assembling tasks to perform complex data migrations
   - Operating system level tasks
     - Copying, moving and deleting files
     - Transferring files with the FTP task
     - Reading system information with WMI query language (WQL)
   - Communicating with external sources
     - Sending messages through mail
     - Detecting system events with WMI
   - Processing XML
     - Iterating XML nodes
     - Writing XML files from databases 3
3) Extending Capabilities with Scripting
   - Writing expressions
     - Making properties dynamic with variables
     - Building expressions in Expression Builder Script Task
     - Extending functionality with the Script Task
     - Debugging, breakpoints, watches
4) Transforming with the Data Flow Task
   - Performing transforms on columns
     - Converting and calculating columns

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- ▪ Transforming with Character Map
  - ➢ Combining and splitting data
    - ▪ Profiling data
    - ▪ Merge, Union, Conditional Split
    - ▪ Multicasting and converting data
  - ➢ Manipulating row sets and BLOB data
    - ▪ Aggregate, sort, audit and look up data
    - ▪ Importing and exporting BLOB data
    - ▪ Redirecting error rows
  - ➢ Performing database operations
    - ▪ Implementing Change Data Capture (CDC)
    - ▪ Executing a SQL task
    - ▪ Bulk inserting data from text files
5) Error Handling, Logging and Transactions
  - ➢ Organizing package work flow
    - ▪ Defining success, failure, completion and expression precedence constraints
    - ▪ Handling events and event bubbling
  - ➢ Designing robust packages
    - ▪ Choosing log providers
    - ▪ Adapting solutions with package configurations
    - ▪ Auditing package execution results
6) Administering Business Intelligence
  - ➢ Managing and securing packages
    - ▪ Storing packages in Package Store and msdb
    - ▪ Encrypting packages with passwords and user keys
  - ➢ Integrating with other BI components
    - ▪ Displaying data in Reporting Services
    - ▪ Accessing package data with ADO.NET

SSAS

7) Building and Modifying an OLAP Cube
  - ➢ Designing a Unified Dimension Model (UDM)
    - ▪ Identifying measures and their suitable granularities
    - ▪ Adding new measure groups and creating custom measures
  - ➢ Creating dimensions
    - ▪ Implementing a Star and Snowflake Schema
    - ▪ Managing Slow Changing Dimensions (SCD)
    - ▪ Identifying role-play dimensions
8) Extending the Cube with Hierarchies
  - ▪ Creating hierarchies
  - ▪ Building natural hierarchies
  - ▪ Many-to-many hierarchies
  - ▪ Creating attribute relationships
  - ▪ Distinguishing between ragged, balanced and unbalanced hierarchies

- Discretizing attribute values with the Clusters and Equal Areas algorithms
  - ➢ Parent-child relationships
    - ▪ Defining parent and key attributes
    - ▪ Generating level captions with the Naming Template feature
    - ▪ Removing repeated entries with the MembersWithData property
9) Exploiting Advanced Dimension Relationships
  - ➢ Storing dimension data in fact tables
    - ▪ Building a degenerate dimension
    - ▪ Configuring fact relationships
  - ➢ Saving space with referenced dimension relationships
    - ▪ Identifying candidates for referenced relationships
    - ▪ Utilizing the Dimension Usage tab to configure referenced relationships Including dimensions with many-to-many relationships
    - ▪ Implementing intermediate measure groups and dimensions
    - ▪ Reporting on many-to-many dimensions without double counting
10) Designing Optimal Cubes
  - ➢ Assembling cube components
    - ▪ Selecting the appropriate fact tables
    - ▪ Adding cube dimensions
    - ▪ Distinguishing between additive, semiadditive and nonadditive measures
  - ➢ Designing storage and aggregations
    - ▪ Choosing between ROLAP, MOLAP and HOLAP
    - ▪ Partitioning cubes for improved performance
    - ▪ Designing aggregations with the Aggregation Design Wizard
    - ▪ Leveraging the Usage-Based Optimization Wizard
  - ➢ Automating processing
    - ▪ Exploiting XMLA scripts and SSIS
    - ▪ Refreshing cubes with Proactive Caching
11) Securing Cube Data
  - ➢ Securing data and simplifying the user interface
    - ▪ Distinguishing between perspective feature and security
    - ▪ Creating roles for administrative privileges
    - ▪ Securing dimension data
    - ▪ Implementing cell-level security
  - ➢ Gaining Business Advantage with Data Mining
  - ➢ Determining the correct model
    - ▪ Identifying business tasks for data mining
    - ▪ Training and testing data mining algorithms
    - ▪ Comparing algorithms with the accuracy chart and classification matrix
    - ▪ Optimizing returns with the Profit Chart
    - ▪ Performing real-world predictions
    - ▪ Classifying with the Decision Trees, Neural Network and Naive Bayes algorithms
    - ▪ Predicting with the Time Series algorithm
  - ➢ Deploying models

- Predicting new cases with algorithms
- Utilizing DMX to perform batch and singleton predictions
- Exploring results with data mining viewers

SSRS

12) Introduction to SQL Server 2008 Reporting Services
   - Identifying deployment: native, integrated or single server
   - Managing Web farm deployment with/without SharePoint
13) Developing Reports
   - Designing fundamental reports
     - Connecting to relational and multidimensional data sources
     - Generating a Tablix reporting structure
     - Building an interactive chart
     - Creating reports with richly formatted text
   - Composing expressions
     - Computing custom fields
     - Managing built-in collections
     - Linking expressions to properties
     - Employing conditional formatting
   - Arranging and sorting data
     - Multiple-level grouping and categorizing the results
     - Applying aggregate functions
     - Producing various outputs from a Tablix
     - Creating parallel dynamic group report formats
     - Combining dynamic and static columns
14) Integrating Parameters and Filters
   - Incorporating parameters into reports
     - Yielding subsets of data with query parameters
     - Aligning report parameters to query parameters
     - Constructing cascading report parameters
     - Transmitting parameters to stored procedures
     - Handling multivalued parameters
   - Applying filters to report data
     - Augmenting performance with filters
     - Determining filters vs. query parameters
   - Implementing Interactive Features Combining multiple data regions in one report
     - Applying sequential and nested regions
     - Creating master/detail reports and linking subreports
   - Executing advanced data visualizations
     - Applying the radial and linear gauge
     - Customizing charts with scale breaks
     - Charting KPIs from Analysis Services
   - Showing robust data with relevant detail
     - Drilling through report detail and drilling down report data

- Navigating reports with document maps
- Reporting with hierarchical rows and dynamic headers

15) Deploying and Delivering Reports
- Deploying reports to the server
  - Publishing reports and configuring project properties
  - Verifying results with Report Manager
- Identifying delivery options
  - Electing on demand or via subscription
  - Enhancing performance with cached instances and snapshots
  - Configuring snapshot history
  - Formatting different outputs
- Dispatching subscription reports
  - Publishing reports via e-mail and fileshare
  - Seamlessly delivering reports by data-driven subscriptions
- Integrating reports with SharePoint
  - Deploying reports to SharePoint
  - Viewing results in Report Center and Data Connections libraries

16) Safeguarding Reporting Services
- Structuring content security
  - Leveraging existing Windows authentication
  - Establishing permission levels on report items
- Ensuring the RS system
  - Instituting varying levels of administrative roles
  - Allowing and withdrawing system-level permissions
- Empowering Users with Ad Hoc Reporting
- Designing models for users
  - Building personalized reports with Model Designer
  - Defining data source views
  - Creating and refining models
- Designing reports with Report Builder
  - Launching Report Builder to users across the enterprise
  - Dragging and dropping entities onto charts and tabular reports
  - Exploiting Analysis Services cubes as report models
- Delivering Reports to Users
  - Accessing and controlling reports using URLs
  - Leveraging RS Web services
  - Embedding reports in applications with the Report Viewer
  - Delivering reports through SharePoint