Course Overview

This course provides students with the knowledge and skills to empower information workers through self-service analytics and reporting. Students will learn how to implement multidimensional analysis solutions, create PowerPivot and tabular data models, deliver rich data visualizations with PowerView and SQL Server Reporting Services, and discover business insights by using data mining.

Course Introduction

Module 01 - Introduction to Business Intelligence and Data Modeling
Lesson 1: Introduction to Business Intelligence
Business Intelligence Scenarios
Trends in Business Intelligence
Business Intelligence Project Roles
Data Models
Lesson 2: The Microsoft Business Intelligence Platform
Microsoft Business Intelligence Technologies
BI Semantic Models in SQL Server 2012 Analysis Services
Installation Requirements for Common Scenarios
Considerations for SharePoint Configuration
Module 01 Review

Module 02 - Implementing Reports with SQL Server Reporting Services
Lesson 1: Introduction to Reporting Services
Reporting Scenarios
Reporting Services Modes
Reporting Roles and Authoring Tools
Report Rendering Formats
SQL Azure Reporting Services
Lesson 2: Creating a Report with Report Designer
What Is a Report?
Using the Report Wizard
The Report Designer Interface
Working with Data Sources
Working with Datasets
Tablix Data Regions
Demo - Creating a Report
Lesson 3: Grouping and Aggregating Data in a Report
Adding Groups to a Tablix Data Region
Displaying Aggregated Values
Enabling Interactive Drilldown Functionality
Configuring Page Breaks for Groups
Demo - Grouping Data in a Report

Lesson 4: Showing Data Graphically
Including Images in a Report
Working with Charts
Demo - Creating a Chart
Showing Key Values with Gauges
Summarizing Data with Data Bars and Sparklines
Using Indicators
Displaying Geographical Data with Maps

Lesson 5: Filtering Reports By Using Parameters
Overview of Parameters
Adding Parameters to a Report
Configuring Parameters
Available and Default Parameter Values
Working with Parameters
Demo - Using a Parameter

Lesson 6: Publishing and Viewing a Report
Reporting Services Project Properties
Viewing a Report
Module 02 Review

Module 03 - Supporting Self Service Reporting
Lesson 1: Introduction to Self Service Reporting
Self Service Reporting Scenarios
Report Builder
Deploying Report Builder
Demo - Using Report Builder

Lesson 2: Shared Data Sources and Datasets
Using Shared Data Items for Self Service Reporting
Creating Shared Data Sources
Demo - Using a Shared Data Source
Creating Shared Datasets
Demo - Using a Shared Dataset

Lesson 3: Report Parts
What Are Report Parts?
Publishing Report Parts
Module 04 - Managing Report Execution and Delivery 1h 25m

Lesson 1: Managing Report Security
Introduction to Report Server Security
Managing Authentication
Managing Authorization
Managing Secure Communication

Lesson 2: Managing Report Execution
Configuring Data Source Credentials
Optimizing Performance with Caching
Using Report Snapshots
Demo - Configuring Report Execution

Lesson 3: Subscriptions and Data Alerts
Introduction to Subscriptions and Data Alerts
Subscribing to a Report
Creating a Data-Driven Subscription
Demo - Using Subscriptions
Creating a Data Alert
Managing Data Alerts
Demo - Creating a Data Alert

Lesson 4: Troubleshooting Reporting Services
Reporting Services Logs
Monitoring Reporting Services Performance
Module 04 Review

Module 05 - Creating Multidimensional Databases 1h 17m

Lesson 1: Introduction to Multidimensional Analysis
The Business Problem
The Concepts of Multidimensional Analysis
Data Sources
Data Source Views
Dimensions
Measures and Measure Groups
Cubes
SQL Server Analysis Services as an OLAP Platform
Software Requirements for Multidimensional Analysis

Lesson 2: Creating Data Sources and Data Source Views
Creating a Data Source
Creating a Data Source View
Modifying a Data Source View
Demo - Creating a Data Source and a Data Source View

**Lesson 3: Creating a Cube**

Options for Creating a Cube
Considerations for Time Dimensions
The Cube Designer
Browsing a Cube
Demo - Creating and Browsing a Cube

**Lesson 4: Overview of Cube Security**

SSAS Security Model
Adding Members to the Server Role
Creating Database Roles
Granting Data Source and Cube Permissions
Granting Cell Permissions
Granting Dimension and Dimension Data Permissions
Testing Security Permissions
Demo - Applying Cube Security
Demo - Cube Administration
Demo - Backing Up

Module 05 Review

**Module 06 - Working with Cubes and Dimensions** 49m

**Lesson 1: Configuring Dimensions**

Dimension Concepts
The Dimension Designer
Configuring Dimension Storage
Configuring Dimension Attributes
Attribute Column Bindings
Dimension Types

**Lesson 2: Defining Attribute Hierarchies**

What Are Hierarchies?
Parent-Child Hierarchies
Ragged Hierarchies
Using Hierarchies
Attribute Relationships
Demo - Creating a Parent-Child Hierarchy

**Lesson 3: Sorting and Grouping Attributes**

Sorting Attributes
Grouping Attributes
Module 07 - Working with Measures and Measure Groups
Lesson 1: Working with Measures
Introducing Measures
Measure Properties
Configuring How Measures Are Displayed
Aggregation Functions

Lesson 2: Working with Measure Groups
Introducing Measure Groups
Measure Group Properties
Relationships Between Measure Groups and Dimensions
Demo - Defining Relationships Between Dimensions and Measure Groups
Aggregations
Configuring Measure Group Storage
Partitions

Module 07 Review

Module 08 - Introduction to MDX
Lesson 1: MDX Fundamentals
What Is MDX?
Basic MDX Query Syntax
Specifying Query and Slicer Axes
Establishing Cube Context

Lesson 2: Adding Calculations to a Cube
The Calculations Tab of the Cube Designer
Calculated Members
Named Sets
Demo - Using Named Sets in a Cube
Useful MDX Functions (Non-Family Functions)
Useful MDX Functions (Family Functions)
Scoped Assignments

Lesson 3: Using MDX to Query a Cube
Using MDX in SQL Server Management Studio
Using MDX in Excel
Using MDX in SQL Server Reporting Services

Module 08 Review
Module 09 - Customizing Cube Functionality
Lesson 1: Working with Key Performance Indicators
Introducing KPIs
Elements of a KPI
Browsing KPIs
Demo - Using KPIs
Lesson 2: Working with Actions
Introducing Actions
Types of Actions
Building Actions for a Cube
Lesson 3: Working with Perspectives
Introducing Perspectives
Creating a Perspective
Lesson 4: Working with Translations
Introducing Translations
Implementing Cube Translations
Implementing Dimension Translations
Module 09 Review

Module 10 - Implementing a Tabular Data Model with Microsoft PowerPivot
Lesson 1: Introduction to Tabular Data Models and PowerPivot Technologies
What Is a Tabular Data Model?
Options for Creating Tabular Data Models
PowerPivot Technologies
Installing PowerPivot for Excel
Installing PowerPivot for SharePoint
Lesson 2: Creating a Tabular Data Model by Using PowerPivot for Excel
The PowerPivot Ribbon
Importing Tables from a Data Source
Demo - Creating a PowerPivot Workbook
Refreshing Data
Adding Linked and Non-Linked Tables
Creating and Managing Table Relationships
Hierarchies
Demo - Creating a Hierarchy
Using PivotTable Tables and PivotChart Charts
Using Slicers
Demo - Creating a PivotTable Table and a Slicer
Lesson 3: Sharing a PowerPivot Workbook and Using PowerPivot Gallery
Sharing PowerPivot for Excel Workbooks
Module 11 - Introduction to DAX

Lesson 1: DAX Fundamentals
- Overview of DAX
- DAX Functions
- DAX Syntax and Data Types
- Aggregations
- Context
- DAX Queries

Lesson 2: Using DAX to Create Calculated Columns and Measures in a Tabular Data Model
- Calculated Columns
- Measures
- Demo - Creating and Using Measures and Calculated Columns
- Multiple Relationships
- Demo - Using a Specific Relationship in a Measure
- Time Intelligence
- Dynamic Measures

Module 11 Review

Module 12 - Implementing an Analysis Services Tabular Data Model

Lesson 1: Introduction to Analysis Services Tabular Data Model Projects
- What Is an Analysis Services Tabular Data Model?
- Options for Creating an Analysis Services Tabular Data Model Project
- Using SQL Server Data Tools to Develop an Analysis Services Tabular Data Model
- The Workspace Database
- Demo - Creating a Tabular Data Model Project

Lesson 2: Developing an Analysis Services Tabular Data Model in SQL Server Data Tools
- Perspectives
- Partitions
- DirectQuery Mode
- Tabular Data Model Security
- Deploying a Tabular Data Model
- Demo - Deploying a Tabular Data Model

Module 12 Review
Module 13 - Creating Data Visualizations with Power View

Lesson 1: Introduction to Power View
What Is Power View?
Considerations for Creating Tabular Data Models to Support Power View
Demo - Modifying a Tabular Data Model to Support Power View Reports

Lesson 2: Visualizing Data with Power View
The Power View User Interface
Creating a Basic Report
Enhancing a Report
Demo - Creating a Power View Report
Adding Interactive Elements to a Report
Module 13 Review

Module 14 - Performing Predictive Analysis with Data Mining

Lesson 1: Overview of Data Mining
What is the Purpose of Data Mining?
Components of an Analysis Services Data Mining Solution
Analysis Services Data Mining Algorithms
Data Mining Add-ins for Excel

Lesson 2: Creating a Data Mining Solution
Creating Data Mining Solutions
Demo - Using the Data Mining Wizard
Editing Data Mining Structures and Models

Lesson 3: Validating a Data Mining Model
Overview of Data Mining Validation
Criteria for Validating Data Mining Models
Tools for Validating Data Mining Models
Demo - Validating Data Mining Models

Lesson 4: Consuming Data Mining Data
Viewing Data Mining Results
Introduction to DMX
Demo - Querying Data Mining Models
Using Data Mining Data in Reporting Services Reports
Module 14 Review
Course Closure

Total Duration: 16h 4m