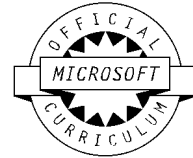


Course Outline

20767- Implementing a SQL Data Warehouse



Duration: 5 days (30 hours)

Target Audience:

This course is database professionals who need to fulfil a Business Intelligence Developer role. They will need to focus on hands-on work creating BI solutions including Data Warehouse implementation, ETL, and data cleansing.

Prerequisites:

In addition to their professional experience, students who attend this training should already have the following technical knowledge:

- At least 2 years' experience of working with relational databases, including:
- Designing a normalized database.
- Creating tables and relationships.
- Querying with Transact-SQL.
- Some exposure to basic programming constructs (such as looping and branching).
- An awareness of key business priorities such as revenue, profitability, and financial accounting is desirable.

Topics Covered:

- Module 1: Introduction to Data Warehousing
 - Overview of Data Warehousing
 - Considerations for a Data Warehouse Solution
 - Lab: Exploring a Data Warehouse Solution
 - After completing this module, you will be able to:
 - Describe the key elements of a data warehousing solution
 - Describe the key considerations for a data warehousing solution
- Module 2: Planning Data Warehouse Infrastructure
 - Considerations for Building a Data Warehouse
 - Data Warehouse Reference Architectures and Appliances
 - Lab: Planning Data Warehouse Infrastructure
 - After completing this module, you will be able to:
 - Describe the main hardware considerations for building a data warehouse
 - Explain how to use reference architectures and data warehouse appliances to create a data warehouse
- Module 3: Designing and Implementing a Data Warehouse
 - Logical Design for a Data Warehouse
 - Physical Design for a Data Warehouse
 - Lab: Implementing a Data Warehouse Schema
 - After completing this module, you will be able to:

- Implement a logical design for a data warehouse
 - Implement a physical design for a data warehouse
- Module 4: Columnstore Indexes
 - Introduction to Columnstore Indexes
 - Creating Columnstore Indexes
 - Working with Columnstore Indexes
 - Lab: Using Columnstore Indexes
 - After completing this module, you will be able to:
 - Create Columnstore indexes
 - Work with Columnstore Indexes
- Module 5: Implementing an Azure SQL Data Warehouse
 - Advantages of Azure SQL Data Warehouse
 - Implementing an Azure SQL Data Warehouse
 - Developing an Azure SQL Data Warehouse
 - Migrating to an Azure SQ Data Warehouse
 - Lab: Implementing an Azure SQL Data Warehouse
 - After completing this module, you will be able to:
 - Describe the advantages of Azure SQL Data Warehouse
 - Implement an Azure SQL Data Warehouse
 - Describe the considerations for developing an Azure SQL Data Warehouse
 - Plan for migrating to Azure SQL Data Warehouse
- Module 6: Creating an ETL Solution
 - Introduction to ETL with SSIS
 - Exploring Source Data
 - Implementing Data Flow
 - Lab: Implementing Data Flow in an SSIS Package
 - After completing this module, you will be able to:
 - Describe ETL with SSIS
 - Explore Source Data
 - Implement a Data Flow
- Module 7: Implementing Control Flow in an SSIS Package
 - Introduction to Control Flow
 - Creating Dynamic Packages
 - Using Containers
 - Lab: Implementing Control Flow in an SSIS Package
 - Lab: Using Transactions and Checkpoints
 - After completing this module, you will be able to:
 - Describe control flow
 - Create dynamic packages
 - Use containers
- Module 8: Debugging and Troubleshooting SSIS Packages
 - Debugging an SSIS Package
 - Logging SSIS Package Events
 - Handling Errors in an SSIS Package

- Lab: Debugging and Troubleshooting an SSIS Package
After completing this module, you will be able to:
 - Debug an SSIS package
 - Log SSIS package events
 - Handle errors in an SSIS package
- Module 9: Implementing an Incremental ETL Process
 - Introduction to Incremental ETL
 - Extracting Modified Data
 - Temporal Tables
 - Lab: Extracting Modified Data Lab: Loading Incremental Changes
After completing this module, you will be able to:
 - Describe incremental ETL
 - Extract modified data
 - Describe temporal tables
- Module 10: Enforcing Data Quality
 - Introduction to Data Quality
 - Using Data Quality Services to Cleanse Data
 - Using Data Quality Services to Match Data
 - Lab: Cleansing Data Lab: De-duplicating Data
After completing this module, you will be able to:
 - Describe data quality services
 - Cleanse data using data quality services
 - Match data using data quality services
 - De-duplicate data using data quality services
- Module 11: Using Master Data Services
 - Master Data Services Concepts
 - Implementing a Master Data Services Model
 - Managing Master Data
 - Creating a Master Data Hub
 - Lab: Implementing Master Data Services
After completing this module, you will be able to:
 - Describe the key concepts of master data services
 - Implement a master data service model
 - Manage master data
 - Create a master data hub
- Module 12: Extending SQL Server Integration Services (SSIS)
 - Using Custom Components in SSIS
 - Using Scripting in SSIS
 - Lab: Using Scripts and Custom Components
After completing this module, you will be able to:
 - Use custom components in SSIS
 - Use scripting in SSIS
- Module 13: Deploying and Configuring SSIS Packages
 - Overview of SSIS Deployment
 - Deploying SSIS Projects
 - Planning SSIS Package Execution

- Lab: Deploying and Configuring SSIS Packages

After completing this module, you will be able to:

- Describe an SSIS deployment
- Deploy an SSIS package
- Plan SSIS package execution

➤ Module 14: Consuming Data in a Data Warehouse

- Introduction to Business Intelligence
- Introduction to Reporting
- An Introduction to Data Analysis
- Analyzing Data with Azure SQL Data Warehouse

- Lab: Using Business Intelligence Tools

After completing this module, you will be able to:

- Describe at a high-level business intelligence
- Show an understanding of reporting
- Show an understanding of data analysis
- Analyze data with Azure SQL data warehouse