Formatech
INTEGRATED LEARNING CENTERS
Learn from the Experts

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