Introduction to SQL Databases

Duration: 3 Days Course Code: M55315

Overview:

The M55315 instructor-led course is provided as an introductory class for anyone getting started with databases. It will be useful to programmers and other IT professionals whose job roles are expanding into database management. Students will learn fundamental database concepts through demonstrations and hands-on labs on a SQL Server instance. The material updates and replaces course 10985C previously published under the same title.

Target Audience:

The primary audience for this course is people who are moving into a database role, or whose role has expanded to include database technologies. Developers that deliver content from SQL Server databases will also benefit from this material.

Objectives:

- Describe key database concepts in the context of SQL Server
- Describe database languages used in SQL Server
- Describe data modelling techniques
- Describe normalization and denormalization techniques
- Describe relationship types and effects in database design
- Describe the effects of database design on performance
- Describe commonly used database objects

Prerequisites:

This is a foundation level course and therefore only requires general computer literacy.

Content:

Module 1: Introduction to databases

This module introduces key database concepts in the context of SQL Server.

- Introduction to Relational Databases
- Other Databases and Storage
- Data Analysis
- SQL Server Database Languages

Lab of Module 1:

- Exploring SQL Server Databases and Tables
- Explore SQL Server
- Query Databases and Tables

After completing this module 1, students will be able to:

- Describe what a database is
- Understand basic relational aspects
- Describe database languages used in SQL Server
- Describe data analytics

Module 2: Data Modeling

This module describes data modelling techniques.

- Data Modelling
- Designing a Database
- Relationship Modeling

Lab of Module 2:

- Identify Components in Relationship Modeling
- Modeling a database

After completing this module 2, students will be able to:

- Understand the common data modeling techniques
- Describe the ANSI/SPARC database model
- Describe entity relationship modeling

Module 3: Normalization

This module describes normalization and denormalization techniques.

- Fundamentals of Normalization
- Normal Form
- Denormalization

Lab of Module 3:

- Normalizing Data
- Normalizing Tables

After completing this module 3, students will be able to:

- Describe normalization benefits and notation
- Describe important normalization terms
- Describe the normalization levels
- Describe the role of denormalization

Module 4: Relationships

This module describes relationship types and effects in database design.

- Introduction to Relationships
- Planning Referential Integrity

Lab of Module 4:

- Planning and Implementing Referential Integrity
- Implementing Referential Integrity

After completing this module 4, students will be able to:

- Describe relationship types
- Describe the use, types, and effects of referential integrity

Module 5: Performance

This module introduces the effects of database design on performance.

- Indexing
- Query Performance
- Concurrency

Lab of Module 5:

- Performance Issues
- Using Indexes

After completing this module 5, students will be able to:

- Discuss the performance effects of indexing
- Describe the performance effects of join and search types
- Describe the performance effects of concurrency

Module 6: Database Objects

This module introduces commonly used database objects.

- Tables
- Views
- Stored Procedures, Triggers and Functions

Lab of Module 6:

- Using SQL Server Objects
- Using Tables
- Using Views
- Using Stored Procedures

After completing this module 6, students will be able to:

- Describe the use of tables in SQL Server
- Describe the use of views in SQL Server
- Describe the use of stored procedures in SQL Server
- Describe other database objects commonly used in SQL Server

Further Information:

For More information, or to book your course, please call us on Head Office 01189 123456 / Northern Office 0113 242 5931

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