

MOC 10985 C: Introduction to SQL Databases

Course Summary

Description

This three-day instructor-led course is aimed at people looking to move into a database professional role or whose job role is expanding to encompass database elements. The course describes fundamental database concepts including database types, database languages, and database designs.

Objectives

By the end of this course, students will be able to:

- Describe key database concepts in the context of SQL Server 2016
- Describe database languages used in SQL Server 2016
- 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

Topics

- Introduction to databases
- Data Modelling
- Normalization
- Relationships
- Performance
- Database Objects

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.

Prerequisite

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

Duration

Three Days

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Course Outline

I. *Introduction to databases*

This module introduces key database concepts in the context of SQL Server 2016.

- A. Introduction to relational databases
- B. Other types of database
- C. Data analysis
- D. Database languages in SQL Server

Lab: Exploring and querying SQL Server databases

II. *Data Modelling*

This module describes data modelling techniques.

- A. Data modelling
- B. ANSI/SPARC database model
- C. Entity relationship modelling

Lab: Identify components in entity relationship modelling

III. *Normalization*

This module describes normalization and denormalization techniques.

- A. Fundamentals of Normalization
- B. Normal form
- C. Denormalization

Lab: Normalizing data

IV. *Relationships*

This module describes relationship types and effects in database design.

- A. Introduction to relationships
- B. Planning referential integrity

Lab: Planning and implementing referential integrity

V. *Performance*

This module introduces the effects of database design on performance.

- A. Indexing
- B. Query performance
- C. Concurrency

Lab: Performance issues

VI. *Database Objects*

This module introduces commonly used database objects.

- A. Tables
- B. Views
- C. Stored procedures, triggers and functions

Lab: Using SQL server