

MS 10985 C: Introduction to SQL Databases



Days: 3

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

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.

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.

OUTLINE:

MODULE 1: INTRODUCTION TO DATABASES

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

LESSONS

- Introduction to relational databases
- Other types of database
- Data analysis
- Database languages

LAB: QUERYING SQL SERVER

After completing this module, you will be able to:

- Describe what a database is
- Understand basic relational aspects
- Describe database languages used in SQL Server 2016
- Describe data analytics
- Describe database languages used in SQL Server 2016

MODULE 2: DATA MODELING

This module describes data modeling techniques.

LESSONS

- Data modelling
- ANSI/SPARC database model
- Entity relationship modeling

LAB: ENTITY RELATIONSHIP MODELING

After completing this module, you will be able to:

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

MODULE 3: NORMALIZATION

This module describes normalization and denormalization techniques.

LESSONS

- Why normalize data?
- Normalization terms
- Levels of normalization
- Denormalization

LAB: NORMALIZING RAW DATA

After completing this module, you will be able to:

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

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MODULE 4: RELATIONSHIPS

This module describes relationship types and effects in database design.

LESSONS

- Schema mapping
- Referential integrity

LAB: DESIGNING RELATIONSHIPS

After completing this module, you 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.

LESSONS

- Indexing
- Query performance
- Concurrency

LAB: QUERY PERFORMANCE

After completing this module, you 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.

LESSONS

- Tables
- Views
- Stored procedures
- Other database objects

LAB: USING SQL SERVER IN A HYBRID CLOUD

After completing this module, you will be able to:

- Describe the use of tables in SQL Server 2016
- Describe the use of views in SQL Server 2016
- Describe the use of stored procedures in SQL Server 2016
- Describe other database objects commonly used in SQL Server 2016