

Course 10985B:

# Introduction to SQL Databases

— Course details

## Course 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 Modelling

This module describes data modelling techniques.

## **Lessons**

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

## **Lab : Entity relationship modelling**

After completing this module, you will be able to:

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

## **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

## **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