Introduction to SQL Databases

Course 10985C 3 Days Instructor-led, Hands on

Course Information

This three-day instructor-led course is aimed at people who will be moving into a database design 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.

10985C Introduction to SQL Databases course is not a prerequisite for people who will be querying or administering existing databases

The primary audience for this course is people who are moving into a database role, or whose role has expanded to include database technologies.

At Course Completion

Upon successful completion 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

Prerequisites

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

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 in SQL Server

Lab : Exploring and querying SQL Server databases

Contact ISInc for more information at 916.920.1700 or by visiting our website at http://www.isinc.com

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
- Describe data analytics

Module 2: Data Modelling

This module describes data modelling techniques.

Lessons

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

Lab : Identify components in 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

- Fundamentals of Normalization
- Normal form
- Denormalization

Lab : Normalizing 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

- Introduction to relationships
- Planning referential integrity

Lab : Planning and implementing referential integrity

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 : Performance issues

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, triggers and functions

Lab : Using SQL Server

After completing this module, you 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