SQL Beginner

Course Overview – 1-day course

A crucial skill for anyone working with data is the ability to access and analyse that data. Structured Query Language (SQL) enables users to access data from databases, combine data from multiple, related tables and to aggregate, sort, filter or limit the data retrieved as needed.

In this course, participants will also be introduced to working with an Azure SQL database, Azure Data Studio and other Azure services. Note that this course focuses primarily on commands used to access and manipulate data.

In this course, you will:

- Learn the basics of relational databases
- Create an Azure SQL Database and upload data to an Azure Data Lake Storage Gen2
- Use Azure Data Factory to transfer data from storage to the database
- Use SQL to retrieve data from the database
- Run queries from the Azure portal and from Azure Data Studio

Detailed Content

Introduction

SQL
Azure SQL Database

What is a Relational Database?

Tables
Primary keys
Foreign keys
Relationships between tables
Type of relationships
Data normalisation

SQL Overview

Type of SQL commands

Working in Azure

Create a storage account
Create a database
Create tables
Azure Data Factory

Basics of Queries

SELECT
SELECT DISTINCT
SQL clauses
Working in Azure Data Studio
Selecting specific columns

Aliases
SQL syntax rules

Filtering Data with a WHERE Clause

SQL operators
Comparison operators
Logical operators
Arithmetic operators
Operator precedence
WHERE clause

Ordering Query Results

ORDER BY clause

Group Query Results

GROUP BY clause
Aggregation functions
CASE statement

Filtering on Aggregated Values

HAVING clause
Order of evaluation of clauses in a SELECT statement

Access Data from Multiple Tables

JOIN using WHERE clause
Types of Joins
Joining with date tables

Combining multiple SELECT Results

UNION operator

Using Subqueries

Subqueries in the SELECT clause
Subqueries in the FROM clause
Subqueries in the WHERE clause

Stored Procedures

What is a stored procedure?
Parameters
Basic syntax for creating a stored procedure
Creating a stored procedure in Azure Data Studio
Calling a stored procedure