

SQL for Data Analysis

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 work with an Azure SQL database and Azure Data Studio. 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
- Use SQL to retrieve data from the database
- Run queries from the Azure portal and from Azure Data Studio
- Use standard SQL to run queries to:
 - Select data of interest using SELECT statements from one or more tables
 - Aggregate, recode and summarise data
 - Order results

Students will be provided with the data and step-by-step instructions for recreating the database in Azure so they can continue to practise skills learned, after class.

Detailed Content

Introduction SQL Azure SQL Database	Working in Azure Data Studio Selecting specific columns Aliases SQL syntax rules	Filtering on Aggregated Values HAVING clause Order of evaluation of clauses in a SELECT statement
What is a Relational Database? Tables Primary keys Foreign keys Relationships between tables Type of relationships Data normalisation	Filtering Data with a WHERE Clause SQL operators Comparison operators Logical operators Arithmetic operators Operator precedence WHERE clause	Access Data from Multiple Tables JOIN using WHERE clause Types of Joins Joining with date tables
SQL Overview Type of SQL commands	Ordering Query Results ORDER BY clause	Combining multiple SELECT Results UNION operator
Working in Azure Running queries from the Azure portal	Group Query Results GROUP BY clause Aggregation functions CASE statement	Practice Exercises Practice query writing
Basics of Queries SELECT SELECT DISTINCT SQL clauses		