Introduction

The SQL Concepts and Programming course is an introductory data engineering course that includes 10 lessons. The course is designed for students with little or no technical background.

The cost of this 10-lesson course is $1,295. Students may be eligible for a 20% discount.

This course is designed to teach students the key concepts, terminology and practical programming for Structured Query Language (SQL). Students will learn the key features of SQL and how to code queries in common use-case scenarios. Students will create these SQL queries using databases on MySQL and/or SQL Server.

I will be working closely with students during the entire lesson to ensure that they understand the material and complete the lesson's hands-on training.

Note: Students should have a Windows 64bit computer with a minimum of 8GB memory.

This course lessons will include:

- Reviewing and discussing the key concepts and terminology for SQL.
- Creating the MySQL and/or SQL Server database development environments using the Microsoft Windows platform.
- Understanding and using the database development platform to write and manage SQL queries.
- Reviewing the course's case-study database with either MySQL and/or SQL Server.
- Reviewing and coding database table definitions using SQL Data Definition Language (DDL).
- Writing single-table SQL Select queries using common SQL clauses.
- Writing single-table SQL Select queries using aggregate functions.
- Writing multiple-table SQL Select queries using SQL table joins (inner, left and right joins).
- Writing SQL queries to insert or update table data.
- Advanced topics including subqueries and using SQL cursors (temporary tables).

About Instructor B Robert Carmel

I have more than 25 years of experience as a senior software and data engineer, solutions architect and technical trainer. I worked for several multi-national Fortune 500 companies in the USA:

Company	Industry	Position(s)
Texaco Inc.	Oil & Gas	Programmer Analyst
Lockheed Inc	Aerospace	Senior Analyst
Price Waterhouse Coopers	Management Consulting	Senior Information Systems Consultant
Roche Inc.	Pharmaceuticals	Senior Systems Consultant
Boulder County Mental Health Dept.	Government	Lead Programmer, Technical Trainer
Century Link Inc	Telecommunications	Lead Programmer Analyst
Wipro Inc	IT Consulting	Senior Solutions Architect, Technical Trainer

Lesson 1: SQL Concepts & Terminology

Lesson 1 introduces essential SQL concepts and terminology:

- Using SQL for data definitions.
- Common SQL statements and clauses.
- Common SQL aggregate functions.
- SQL table joins (inner, left, and right).
- SQL subqueries.
- Using Aliases in SQL queries.

Lessons 2 & 3: Creating the SQL/Database Development Platform

In lessons 2 and 3, the database development environment will be set up either using the student's Windows computer. Students will review the case-study databases to be used in the course in MySQL and/or SQL Server.

Option 1: Download & Install Databases on Windows Platform

- MySQL

  MySQL and the MySQL workbench will be downloaded and then installed on the student's Windows computer.

  AND/OR

- Microsoft SQL Server

  SQL Server and the SQL Server Management Studio (SSMS) will be downloaded and installed on the student's Windows computer.

Lesson 4: SQL Data Definition Language (DDL)

Lesson 4 begins the hands-on SQL query coding practices. In Lesson 4, students will use SQL DDL to create a database schema including the database tables' columns, column data types, and the required indexes.

Lesson 5: SQL Select Queries Key Concepts: SQL Clauses and Aggregate Functions

Students will review Select statements Select, From, and the clauses WHERE, ORDER BY, and GROUP BY. Students will also review the SQL aggregate functions including count, sum, avg, min, max, etc.

Lessons 6 & 7: Writing SQL Select Queries – Clauses and Aggregate Functions

In Lessons 6 and 7, students will write SQL Select queries using common SQL clauses and aggregate functions that were reviewed in Lesson 5.

Lesson 8: Writing Multiple-Table SQL Join Queries

Lesson 8 will cover using SQL Join queries (INNER, LEFT, RIGHT) to combine multiple database tables with the respective Join type result sets.

Lesson 9: SQL Queries to Update, Insert or Delete Data

In Lesson 9, students will write SQL queries to update, insert or delete table rows from the case-study database.

Lesson 10: Advanced Topics: Subqueries and Cursors

In Lesson 10, students will write several SQL Subqueries and will review the use of database cursors in SQL programming.