Course Title: Introduction To SQL	**Course Duration**: 3.0 Days
Exam: Included	**Exam Type**: Proctored Exam
Qualification: Introduction To SQL Certificate	

Course Syllabus

Our Introduction to SQL training course syllabus includes the following:

Module 1: SQL Overview

- Outlining SQL as the cornerstone of database activity
- Applying the ANSI/ISO standards
- Describing the fundamental building blocks: tables, columns, primary keys, and foreign keys

Module 2: Building the Database Schema

Creating tables and columns

- Building tables with CREATE TABLE
- Modifying table structure with ALTER TABLE
- Adding columns to an existing table
- Removing tables with DROP TABLE

Protecting data integrity with constraints

- Guaranteeing uniqueness with primary key constraints
- Enforcing integrity with foreign key constraints
- Imposing business rules with check constraints

Improving performance with indexes

- Expediting data retrieval with indexes
- Recommending guidelines for index creation

Module 3: Manipulating data

Modifying table contents

- Adding table rows with INSERT
- Changing row content with UPDATE
- Removing rows with DELETE

Applying transactions

- Controlling transactions with COMMIT and ROLLBACK
- Deploying BEGIN TRANSACTION in SQL Server

Module 4: Working with the SELECT Statement

Writing Single Table queries

- Retrieving data with SELECT
- Specifying column expressions
- Sorting the result with ORDER BY
- Handling NULL values in expressions

Restricting rows with the WHERE filter

- Testing for equality or inequality
- Applying wildcard characters
- Avoiding NULL value pitfalls

Module 5: Querying Multiple Tables

Applying the ANSI/ISO standard join syntax

- Matching related rows with INNER JOIN
- Including nonmatched rows with OUTER JOIN
- Creating a Cartesian product with CROSS JOIN

Combining results with set operators

- Stacking results with UNION
- Identifying matching rows with INTERSECT
- Utilising EXCEPT to find nonmatching rows

Module 6: Employing Functions in Data Retrieval

Processing data with row functions

- Conditional formatting with the CASE expression
- Utilising the CASE expression to simulate IF tests
- Dealing with NULL values

Performing analysis with aggregate functions

- Summarising data using SUM, AVG and COUNT
- Finding the highest/lowest values with MAX and MIN
- Defining the summary level with GROUP BY
- Applying filter conditions with HAVING

Module 7: Constructing Nested Queries

Applying subqueries in filter conditions

- Creating correlated vs. noncorrelated subqueries
- Testing the existence of rows

Including subqueries in expressions

- Placing subqueries in the column list
- Creating complex expressions containing subqueries
- Handling subqueries that return no rows

Module 8: Developing In-Line and Stored Views

Breaking down complex problems

- Selecting data from a query result set
- Using subqueries in the FROM clause

Creating views in a database

- Building reusable code
- Creating updateable vs. non-updateable views

Course Overview

Our three-day Introduction to SQL training course is designed to provide an introduction to the SQL programming language, which is the standard language for relational database management systems. The course covers the basics of SQL, including creating tables, manipulating data, and querying databases. Students who complete the course will be equipped to write SQL queries, work with Microsoft SQL Server or PostgreSQL

Course Learning Outcomes

Our Introduction to SQL training course offers the following outcomes:

- Write SQL code based on Wrap in ANSI/ISO standards to build database structures.
- Update database content with SQL and transaction handling.
- Retrieve data with filter conditions and from multiple tables using various types of joins.
- Process data with row and aggregate functions.
- Leverage continued support with after-course one-on-one instructor coaching and computing sandbox.

Audience

Our Introduction to SQL training course is for anyone interested in learning SQL or pursuing a career in data analysis, data engineering, or database management. It is also suitable for database administrators and SQL developers who want to improve their skills.

Entry-Level Requirements

There are no entry-level requirements for our Introduction to SQL training course.

Recommended Reading

The following reading material is not required for our Introduction to SQL training course but may help to provide further understanding for all who apply.

- "SQL in 10 Minutes a Day" by Ben Forta
- "SQL Cookbook" by Anthony Molinaro
- "Learning SQL" by Alan Beaulieu
- "SQL Queries for Mere Mortals" by John L. Viescas and Michael J. Hernandez
- SQL Performance Explained" by Markus Winand

- Head First SQL" by Lynn Beighley

What's Included

Our Introduction To SQL(Structured Query Language) training course includes includes the following:

- Pre-reading
- Course Manual
- Quizzes
- Exercises

Exam Information

Introduction to SQL Certificate Exam

Format: Multiple Choice

Questions: 40

Pass Mark: 70% (28/40 correct answers)

What's Next

You might enjoy our Querying SQL Databases Training Using T-SQL course.

T-SQL is Microsoft's implementation of SQL (Structured Query Language) used to query and manage data in the SQL Server relational database.

Our two-day Querying SQL Databases Using T-SQL training course will provide you with the basic knowledge and skills to create queries using Transact-SQL.

It will teach you how to select, filter and sort data from multiple tables and how to use views and stored procedures.

Additional Information

Learning SQL is a valuable skill that can help you pursue a career in data analysis, data engineering, or database management. SQL is widely used in the industry and is an important tool for managing and analysing data. This course will provide you with a solid foundation in SQL, which will be beneficial to your career growth.

Key Benefits of Learning SQL Include:

1. **Efficient Data Manipulation**: SQL allows you to efficiently manage and manipulate data in relational databases. You can perform tasks such as retrieving specific data, updating records, inserting new data, and deleting unnecessary data. This capability is crucial for data analysis, database administration, and application development.
2. **Data Analysis and Reporting**: SQL provides powerful querying capabilities, allowing you to extract, filter, aggregate, and sort data based on specific criteria. With SQL, you can generate meaningful reports, perform data analysis, and gain insights from large datasets. This is particularly valuable for decision-making processes and business intelligence.

3. **Seamless Database Interaction**: SQL is the standard language for interacting with relational databases. By learning SQL, you gain the ability to communicate with databases, retrieve information, and update records using a common and widely supported language. This facilitates seamless interaction with various database systems such as MySQL, PostgreSQL, Oracle, SQL Server, and more.
4. **Improved Career Opportunities**: SQL skills are highly sought after in many industries. Proficiency in SQL opens up various career opportunities, including database administration, data analysis, business intelligence, software development, data engineering, and more. SQL knowledge is often listed as a requirement or a preferred skill in job postings across these fields.
5. **Data Integration**: SQL is commonly used for data integration tasks, such as extracting and transforming data from multiple sources into a unified format. This is especially relevant in scenarios where data needs to be consolidated from different systems or databases. Understanding SQL allows you to work with data from diverse sources and consolidate it effectively.
6. **Efficient Data Management**: SQL provides mechanisms for creating and managing database tables, defining relationships between tables, and enforcing data integrity. By learning SQL, you can design and optimize database structures, ensuring efficient data storage and retrieval. This leads to better database performance and streamlined data management.
7. **Collaboration and Communication**: SQL is a standardized language used by database professionals, data analysts, and developers. Learning SQL enables effective collaboration and communication with colleagues working on database-related tasks. It allows you to understand and discuss database structures, query logic, and data requirements more effectively.