



SQL-101

# SQL Fundamentals

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## OVERVIEW

<b>Skill Level</b>	: Beginner
	Anyone that wants a high-level appreciation of managing data stored
<b>Suitable for</b>	: in relational databases including developers, business analysts, QA, testers, and project managers.
<b>Duration</b>	: 2 Days

This course teaches students to understand how business requirements become database designs, and the basics of reading and writing to a relational database using SQL (Structured Query Language).

This course is not just for developers, but for anyone who wants to understand the impact of business requirements to complexity and cost.

## COURSE OUTLINE

### Data Retrieval

- Describing tables
- Capabilities of the SELECT statement: projection, selection, and joining
- Executing a basic SELECT
- SQL expressions and operators
- NULL is nothing

### Restricting and Sorting Data

- Limit the rows retrieved by a query
- The WHERE clause
- Comparison operators (equality, inequality, BETWEEN, IN, LIKE, IS NULL)
- Boolean operators (NOT, AND, OR)
- Precedence rules
- Sort the rows retrieved by a query
- ORDER BY clause
- Ascending, descending, NULLS FIRST, NULLS LAST
- Positional sorting
- Composite sorting

## Single Row and Conversion Functions

- Character, Number, and Date Functions in SELECT Statements
- Use the TO\_CHAR, TO\_NUMBER, and TO\_DATE conversion functions
- Conditional expressions in a SELECT Statement
- COALESCE (NVL) in Oracle
- CASE expression (DECODE) in Oracle)

## Aggregating Data Using Group Functions

- Describing and using the group functions: COUNT, SUM, AVG, MIN / MAX; Group Data by Using the GROUP BY Clause
- Include or Exclude Grouped Rows by Using the HAVING Clause

## Retrieving Data from Multiple Tables

- Write SELECT Statements to Access Data from More Than One Table
- Join a Table to Itself Using a Self-Join
- View Data That Does Not Meet a Join Condition Using Outer Joins
- Generate a Cartesian Product of All Rows from Two or More Tables

## Using Subqueries and Set Operators

- Define subqueries
- Types of problems that the subqueries can solve
- Types of subqueries: Single-row subqueries, Multiple-row subqueries,
- Correlated subqueries; Describe set operators: UNION, INTERSECTS, EXCEPT
- Use a set operator to combine multiple queries into a single query

## Manipulating Data and Transactions

- Insert rows into a table
- Update rows in a table
- Delete rows from a table
- Control transactions



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### Enquiries



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