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Coding · Matters

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Price: R6,300.00 excl. VAT
Duration: 3 days
Code: SQLFN

SQL Fundamentals

Description

SQL is the language you use to interact with a database management system. This course will teach you how to create tables, insert data and update data using SQL. The main focus is on learning how to find the data that you need by creating basic and advanced data queries.

Please note that the course is not specific to any particular database system.

Objectives

After you have completed the SQL Fundamentals course, you will be able to:

- Understand how data is structured in a database management system.
- Understand the role of primary keys and foreign keys.
- Create simple tables using SQL.
- Insert, update and delete data from a database using SQL.
- Use SQL to extract data that matches some criteria.
- Use SQL to sort and summarise data.
- Create SQL queries that extract data from multiple tables.

Intended Audience

You should attend the SQL Fundamentals course if:

- You often have to extract data from a system that matches some conditions.
- You are a programmer and you need to use SQL to update or query a database from inside another program, like a web application.
- You need to test data in a database.
- You want a faster and better way to query data than having thousands of rows in a spreadsheet.

Prerequisites

It will help if you have some understanding of relational databases, or have worked with data from a database, before you attend the SQL Fundamentals course, but it is not essential.

Course Contents

Database Fundamentals

- Introduction to databases and SQL.
- Tables, records, and fields.
- Relationships.
- Entity integrity: Primary keys.
- Referential integrity: Foreign keys.
- The concept of normalisation.

Data Definition Commands

- Creating the database.
- Creating table structures.
- Data types.
- Creating primary keys.
- Creating foreign keys.

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Data Management Commands

■ Inserting data into tables.

■ Saving table contents.

■ Updating table data.

■ Deleting data from tables.

Data Query Commands

■ The SELECT statement.

■ Restricting columns.

■ Using column aliases.

■ Using the WHERE clause to restrict rows.

■ Arithmetic, comparison and logical operators.

■ Special SQL operators: BETWEEN, IS NULL, LIKE, IN.

■ Sorting selected data: the ORDER BY clause.

■ Aggregate functions: SUM, AVERAGE, MAX, MIN and COUNT.

■ Grouping data in queries.

■ SQL functions for date and string manipulation.

■ CASE statements.

Advanced Data Query Commands

■ Creating sub-queries.

■ The use of ALL and ANY in subqueries.

■ Extracting data from multiple tables through table joins.

■ Using table aliases.

■ The UNION operator.

■ Limiting the number of rows and columns returned by a query.

■ Correlated sub-queries.

■ Temporary tables.

■ The WITH clause.

Advanced Data Management Commands

■ Modifying existing tables.

■ Column constraints.

■ Creating and using views.

** *The lecturer reserves the right to modify the contents of the course to suit the needs of the delegates.*