



SQL Introductory

National Competency Standard (ICT)
ICTPRG425 Use structured query language

Objectives

On completion of this course, attendees will be able to use SQL to develop complete computer reporting systems without writing a line of programming code. You should come to this course if your work involves the storage and retrieval of lists of information capable of being queried through an SQL interface (Oracle, Ingress, Access etc).

Pre-Requisites

Those attending this course require a basic understanding of relational databases and skills equivalent to those presented in NDA's Access Introductory course.

They should also be able to type text efficiently using a text editor.

Duration

One day.

Course Outcomes

1. Understand fundamental database concepts, relational tables, primary and foreign keys.
2. Describe the history of SQL.
3. Understand basic SQL structure and syntax.
4. Select simple record sets from tables.
5. Utilise SQL conditional operators.
6. Use statistical and grouping functions.
7. Create advanced multiple table queries involving both inner and outer joins.

Optional Assessment

This is a nationally recognised training program. Participants who successfully complete the optional assessment component of this course will receive a Statement of Attainment for the unit of competency outlined above (additional fee applies – please enquire when you book). Participants who choose not to be assessed will receive a Certificate of Attendance. Exercises completed during the course will be used as evidence towards unit competency.

Course Content

SQL AND RELATIONAL DATABASE

- History of SQL
- Relational Databases
- Tables
- Table Links
- The Car Pool Database

SQL QUERY FIELDS

- The SELECT Statement
- The Distinct Keyword
- Using the Car Pool database
- QAT Shortcuts
- Save the SQL Queries

THE WHERE CLAUSE

- The WHERE Clause
- Testing for Equality
- Dates in a Where clause
- Testing for Inequality
- Logical Operators
- AND
- OR

- Sorting the Result Table
- Sorting in Descending Order
- The Between Operator
- The Null Keyword
- The In Operator
- The Like Operator
- The Not Operator

CALCULATED FIELDS

- Calculating Values
- Field Name using As
- Concatenating Text

GROUPING

- Aggregate Functions
- The Count Function
- The Sum Function
- The Avg Function
- The Max/Min Functions
- Exercises- Aggregate Functions
- Grouping Records
- Exercises- Group By
- The Having Clause

MULTI TABLE QUERIES

- Joining Two Tables
- Table Aliases
- The Cartesian Product
- Joining More Than Two Tables
- Outer Joins

SUB QUERIES

- Single Row Subqueries

TABLE MANAGEMENT

- Create table
- Constraints
- Alter Table
- Insert Into
- Drop

SYNTAX SUMMARY