

A Relational Database Management System (RDBMS) is a software system that allows you to create and manage a relational database. Minimum requirements for such a system are defined by both ANSI and ISO. The Structured Query Language (SQL) is the international standard language for relational database management systems. SQL is robust enough to be used by users with non-technical backgrounds, as well as by professional developers and administrators.

In this class, students will learn how to create, retrieve, and manipulate objects in Oracle 11g Structured Query Language (SQL). Students will also be introduced to Oracle 11g database features and tools.

Course Objectives:

- Describe the features of a Relational Database.
- Interact with a Relational Database Management System.
- Use SQL*Plus to connect to an Oracle database and submit SQL statements.
- Write SQL queries.
- Use SQL functions.
- Use a query to join together data items from multiple tables.
- Write nested queries.
- Perform summary analysis of data in a query.
- Add, change, and remove data in a database.
- Manage database transactions.
- Work in a multi-user database environment.
- Create and manage tables and other database objects.
- Control access to data.

Audience: Application developers, database administrators, system administrators and users who write applications and procedures that access an Oracle 11g database.

Prerequisites: Familiarity with relational database concepts is recommended.

Number of Days: 2 days

<p>1. Course Introduction Course Objectives Overview Suggested References</p>	<p>Logical and Physical Storage Structures Connecting to a SQL Database Datatypes Sample Database</p>
<p>2. Relational Database and SQL Overview Review of Relational Database Terminology Relational Database Management Systems Introduction to SQL Oracle Versioning and History</p>	<p>3. Using Oracle SQL*Plus SQL*Plus The SQL Buffer Buffer Manipulation Commands Running SQL*Plus Scripts Tailoring Your SQL*Plus Environment Viewing Table Characteristics</p>

- SQL*Plus Substitution Variables
- Interactive SQL*Plus Scripts
- SQL*Plus LOB Support
- Graphical Clients
- 4. SQL Queries – The SELECT Statement**
 - The SELECT Statement
 - The CASE...WHEN Expression
 - Choosing Rows with the WHERE Clause
 - NULL Values
 - Compound Expressions
 - IN and BETWEEN
 - Pattern Matching: LIKE and REGEXP_LIKE
 - Creating Some Order
- 5. Scalar Functions**
 - SQL Functions
 - Using SQL Functions
 - String Functions
 - Regular Expression Functions
 - Numeric Functions
 - Date Functions
 - Date Formats
 - Conversion Functions
 - Literal Values
 - Intervals
 - Oracle Pseudocolumns
- 6. SQL Queries - Joins**
 - Selecting from Multiple Tables
 - Joining Tables
 - Self Joins
 - Outer Joins
- 7. Aggregate Functions and Advanced Techniques**
 - Subqueries
 - Correlated Subqueries
 - The EXISTS Operator
 - The Aggregate Functions
 - Nulls and DISTINCT
 - Grouping Rows
 - Combining SELECT Statements
- 8. Data Manipulation and Transactions**
 - The INSERT Statement
 - The UPDATE Statement
 - The DELETE Statement
- Transaction Management
- Concurrency
- Explicit Locking
- Data Inconsistencies
- Loading Tables From External Sources
- 9. Data Definition and Control Statements**
 - Datatypes
 - Defining Tables
 - Constraints
 - Inline Constraints
 - Modifying Table Definitions
 - Deleting a Table Definition
 - Controlling Access to Your Tables
- 10. Other Database Objects**
 - Views**
 - Creating Views
 - Updatable Views
 - Sequences
 - Synonyms
- 11. Appendix A – The Data Dictionary**
 - Introducing the Data Dictionary
 - DBA, ALL, and USER Data Dictionary Views
 - Some Useful Data Dictionary Queries