

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

<b>1</b>	<b>Course Introduction</b> Course Objectives Course Overview Using the Workbook Suggested References	<b>3</b>	Introduction to SQL <b>Oracle Database</b> Oracle Versioning and History Logical and Physical Storage Structures Datatypes Overview of Oracle Architecture Connecting to Oracle SQL*Plus Graphical Clients The Oracle Data Dictionary Sample Database
<b>2</b>	<b>Relational Database and SQL Overview</b> Review of Relational Database Terminology Relational Database Management Systems SQL Datatypes		

<p><b>4 SQL Queries – The SELECT Statement</b>  The SELECT Statement  Choosing Rows with the WHERE Clause  NULL Values  Compound Expressions  IN and BETWEEN  Pattern Matching: LIKE and REGEXP_LIKE  The CASE...WHEN Expression  Creating Some Order</p> <p><b>5 Scalar Functions</b>  SQL Functions  Using SQL Functions  String Functions  Regular Expression Functions  Numeric Functions  Date Functions  Date Formats  Conversion Functions  Literal Values  Intervals  Oracle Pseudocolumns</p> <p><b>6 SQL Queries - Joins</b>  Selecting from Multiple Tables  Joining Tables  Self Joins  Outer Joins  Equijoins, Non-equijoins, and Antijoins</p> <p><b>7 Aggregate Functions and Advanced Techniques</b>  Subqueries  Correlated Subqueries  The EXISTS Operator  The Aggregate Functions  Nulls and DISTINCT  Grouping Rows  Combining SELECT Statements</p> <p><b>8 Data Manipulation and Transactions</b>  The INSERT Statement  The UPDATE Statement  The DELETE Statement  Transaction Management  Concurrency  Explicit Locking</p>	<p>Data Inconsistencies  Loading Tables From External Sources</p> <p><b>9 Data Definition and Control Statements</b>  Datatypes  Defining Tables  Constraints  Inline Constraints  Modifying Table Definitions  Deleting a Table Definition  Controlling Access to Your Tables</p> <p><b>10 Other Database Objects</b>  Views  Creating Views  Updatable Views  Sequences  Synonyms</p> <p><b>11 Appendix A – Using Oracle SQL*Plus</b>  SQL*Plus  The SQL Buffer  Buffer Manipulation Commands  Running SQL*Plus Scripts  Tailoring Your SQL*Plus Environment  Viewing Table Characteristics  SQL*Plus Substitution Variables  Interactive SQL*Plus Scripts  SQL*Plus LOB Support</p> <p><b>12 Appendix B – The Data Dictionary</b>  Introducing the Data Dictionary  DBA, ALL, and USER Data Dictionary Views  Some Useful Data Dictionary Queries</p>
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