



## Course Content

### Course Description:

This Oracle Database 12c: Introduction to SQL training helps you write subqueries, combine multiple queries into a single query using SET operators and report aggregated data using group functions.

Learn this and more through hands-on exercises.

### Learn To:

- Understand the basic concepts of relational databases ensure refined code by developers.
- Create reports of sorted and restricted data.
- Run data manipulation statements (DML).
- Control database access to specific objects.
- Manage schema objects.
- Manage objects with data dictionary views.
- Retrieve row and column data from tables.
- Control privileges at the object and system level.
- Create indexes and constraints; alter existing schema objects.
- Create and query external tables.

### Benefits to You:

Ensure fast, reliable, secure and easy to manage performance. Optimize database workloads, lower IT costs and deliver a higher quality of service by enabling consolidation onto database clouds.

### Learn Advanced Features of SQL:

This course will help you understand the advanced features of SQL. Learning these features will help you query and manipulate data within the database, use the dictionary views to retrieve metadata and create reports about their schema objects. Some of the date-time functions available in the Oracle Database are also covered. This course also discusses how to use the regular expression support in SQL through expert instruction.

### At Course Completion:

After competing this course, student will be able to:

- Identify the major structural components of the Oracle Database 12c
- Manage objects with data dictionary views
- Manage schema objects
- Retrieve row and column data from tables
- Run data manipulation statements (DML) in Oracle Database 12c
- Use scalar and correlated sub-queries
- Utilize views to display data



# OR5450: Introduction to Oracle SQL

Course ID #: 0370-245-DB-W

Hours: 21

- Write SELECT statements that include queries
- Write multiple-column sub-queries
- Control database access to specific objects
- Create reports of aggregated data
- Create reports of sorted and restricted data
- Create tables to store data
- Display data from multiple tables using the ANSI SQL 99 JOIN syntax
- Employ SQL functions to retrieve customized data

## Target Student:

- Application Developers
- Business Analysts
- Data Warehouse Administrator
- Developer
- Forms Developer
- PL/SQL Developer
- System Analysts

## Prerequisites:

- Data processing
- Familiarity with data processing concepts and techniques

## Topics:

### Introduction

- Course Objectives, Course Agenda and Appendixes Used in this Course
- Overview of Oracle Database 12c and Related Products
- Overview of relational database management concepts and terminologies
- Introduction to SQL and its development environments
- What is Oracle SQL Developer?
- Starting SQL\*Plus from Oracle SQL Developer
- The Human Resource (HR) Schema
- Tables used in the Course

### Working with Oracle Cloud Exadata Express Cloud Service

- Introduction to Oracle Database Exadata Express Cloud Service
- Accessing Cloud Database using SQL Workshop
- Connecting to Exadata Express Database using Database Clients

### Retrieving Data using the SQL SELECT Statement

- Capabilities of the SELECT statement
- Arithmetic expressions and NULL values in the SELECT statement
- Column aliases
- Use of concatenation operator, literal character strings, alternative quote operator, and the DISTINCT keyword



- Use of the DESCRIBE command

## Restricting and Sorting Data

- Limiting the Rows
- Rules of precedence for operators in an expression
- Substitution Variables
- Using the DEFINE and VERIFY command

## Using Single-Row Functions to Customize Output

- Describe the differences between single row and multiple row functions
- Manipulate strings with character function in the SELECT and WHERE clauses
- Manipulate numbers with the ROUND, TRUNC and MOD functions
- Perform arithmetic with date data
- Manipulate dates with the date functions

## Using Conversion Functions and Conditional Expressions

- Describe implicit and explicit data type conversion
- Use the TO\_CHAR, TO\_NUMBER, and TO\_DATE conversion functions
- Nest multiple functions
- Apply the NVL, NULLIF, and COALESCE functions to data
- Use conditional IF THEN ELSE logic in a SELECT statement

## Reporting Aggregated Data Using the Group Functions

- Group Functions
- Creating Groups of Data
- Restricting Group Results

## Displaying Data from Multiple Tables Using Joins

- Introduction to JOINS

- Types of Joins
- Natural join
- Self-join
- Non equijoins
- OUTER join

## Using Subqueries to Solve Queries

- Introduction to Subqueries
- Single Row Subqueries
- Multiple Row Subqueries

## Using the SET Operators

- Set Operators
- UNION and UNION ALL operator
- INTERSECT operator
- MINUS operator
- Matching the SELECT statements
- Using ORDER BY clause in set operations

## Managing Tables using DML statements

- Data Manipulation Language
- Database Transactions

## Introduction to Data Definition Language

- Data Definition Language

## Introduction to Data Dictionary Views

- Introduction to Data Dictionary
- Describe the Data Dictionary Structure
- Using the Data Dictionary views
- Querying the Data Dictionary Views

## Creating Sequences, Synonyms, Indexes

- Overview of sequences
- Overview of synonyms
- Overview of indexes

## Creating Views

- Overview of views



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## Managing Schema Objects

- Managing constraints
- Creating and using temporary tables
- Creating and using external tables

## Retrieving Data by Using Subqueries

- Retrieving Data by Using a Subquery as Source
- Working with Multiple-Column subqueries
- Using Scalar subqueries in SQL
- Correlated Subqueries
- Working with the WITH clause

## Manipulating Data by Using Subqueries

- Using Subqueries to Manipulate Data
- Inserting by Using a Subquery as a Target
- Using the WITH CHECK OPTION Keyword on DML Statements
- Using Correlated Subqueries to Update and Delete rows

## Controlling User Access

- System privileges
- Creating a role
- Object privileges
- Revoking object privileges

## Manipulating Data

- Overview of the Explicit Default Feature
- Using multitable INSERTs
- Using the MERGE statement
- Performing flashback operations
- Tracking Changes in Data

## Managing Data in Different Time Zones

- Working with CURRENT\_DATE, CURRENT\_TIMESTAMP, and LOCALTIMESTAMP
- Working with INTERVAL data types