

Oracle DBA, Oracle Developer, Java, Android, SQL Server, Linux, C, C++, MySQL PHP, HTML, CSS, Java Script, MySQL DBA, PostgreSQL DBA, ASP.Net

Oracle Database: Introduction to SQL

Required Prerequisites:

Taken Oracle Introduction to SQL course or equivalent experience

Oracle Database: Introduction to SQL

What you will learn

This Oracle Database 11g: SQL Fundamentals I - Self-Study Course is designed to teach you the fundamentals of SQL using Oracle Database 11g database technology. Using the powerful Structured Query Language (SQL), the data contained within relational databases can be retrieved, managed and manipulated.

Learn To:

Develop essential SQL skills that enable developers to write queries against single and multiple tables.

Manipulate data in tables.

Create database objects.

Use single row functions to customize output.

Work with group functions to report aggregated data.

Use conversion functions and conditional expressions.

Manipulate queries to return required data.

Perform calculations on data.

Administer database objects.

Benefits to You

By enrolling in one of Oracle University's Self-Study Courses, you can download the course material and learn at your own pace. Build a foundation of SQL knowledge on your own time, from anywhere that's convenient for you.

Audience

Database Administrators

Database Designers

Developer

Support Engineer

Technical Administrator

Oracle DBA, Oracle Developer, Java, Android, SQL Server, Linux, C, C++, MySQL PHP, HTML, CSS, Java Script, MySql DBA, Postgresql DBA, ASP.Net

Related Training

Required Prerequisites

Familiarity with data processing concepts and techniques

Ability to use a graphical user interface (GUI)

Course Objectives

To identify the concepts and components of an Oracle Database 11g database, recognize how to retrieve information from it using SQL, and identify the steps for sorting, limiting

To recognize the steps for writing queries that convert data from one type to another, specify conditions, perform calculations on groups of rows or even tables, and return value

To identify the steps for manipulating queries to return the data you need, using subqueries and set operators, and also for manipulating the actual data using INSERT, UPDATE

To recognize the steps for creating, defining, and dropping tables, manipulating how their data can be viewed, and using schema objects to generate integers, improve queries

Course Topics

Introduction to Oracle Database

List the features of Oracle Database 11g

Discuss the basic design, theoretical, and physical aspects of a relational database

Categorize the different types of SQL statements

Describe the data set used by the course

Log on to the database using SQL Developer environment

Save queries to files and use script files in SQL Developer

Retrieve Data using the SQL SELECT Statement

List the capabilities of SQL SELECT statements

Generate a report of data from the output of a basic SELECT statement

Select All Columns

Select Specific Columns

Use Column Heading Defaults

Use Arithmetic Operators

Understand Operator Precedence

Learn the DESCRIBE command to display the table structure

Oracle DBA, Oracle Developer, Java, Android, SQL Server, Linux, C, C++, MySQL PHP, HTML, CSS, Java Script, MySql DBA, Postgresql DBA, ASP.Net

Learn to Restrict and Sort Data

- Write queries that contain a WHERE clause to limit the output retrieved
- List the comparison operators and logical operators that are used in a WHERE clause
- Describe the rules of precedence for comparison and logical operators
- Use character string literals in the WHERE clause
- Write queries that contain an ORDER BY clause to sort the output of a SELECT statement
- Sort output in descending and ascending order

Usage of 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

Invoke 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

Aggregate Data Using the Group Functions

- Use the aggregation functions to produce meaningful reports
- Divide the retrieved data in groups by using the GROUP BY clause
- Exclude groups of data by using the HAVING clause

Display Data From Multiple Tables Using Joins

- Write SELECT statements to access data from more than one table
- View data that generally does not meet a join condition by using outer joins
- Join a table to itself by using a self join

Use Sub-queries to Solve Queries

- Describe the types of problem that sub-queries can solve
- Define sub-queries
- List the types of sub-queries

Oracle DBA, Oracle Developer, Java, Android, SQL Server, Linux, C, C++, MySQL PHP, HTML, CSS, Java Script, MySql DBA, Postgresql DBA, ASP.Net

Write single-row and multiple-row sub-queries

The SET Operators

Describe the SET operators

Use a SET operator to combine multiple queries into a single query

Control the order of rows returned

Data Manipulation Statements

Describe each DML statement

Insert rows into a table

Change rows in a table by the UPDATE statement

Delete rows from a table with the DELETE statement

Save and discard changes with the COMMIT and ROLLBACK statements

Explain read consistency

Use of DDL Statements to Create and Manage Tables

Categorize the main database objects

Review the table structure

List the data types available for columns

Create a simple table

Decipher how constraints can be created at table creation

Describe how schema objects work

Other Schema Objects

Create a simple and complex view

Retrieve data from views

Create, maintain, and use sequences

Create and maintain indexes

Create private and public synonyms

Control User Access

Differentiate system privileges from object privileges

Create Users

Grant System Privileges

Create and Grant Privileges to a Role

Change Your Password

Oracle DBA, Oracle Developer, Java, Android, SQL Server, Linux, C, C++, MySQL PHP, HTML,CSS, Java Script, MySql DBA, Postgresql DBA, ASP.Net

Grant Object Privileges
How to pass on privileges?
Revoke Object Privileges

Management of Schema Objects

Add, Modify, and Drop a Column
Add, Drop, and Defer a Constraint
How to enable and Disable a Constraint?
Create and Remove Indexes
Create a Function-Based Index
Perform Flashback Operations
Create an External Table by Using ORACLE_LOADER and by Using ORACLE_DATAPUMP
Query External Tables

Manage Objects with Data Dictionary Views

Explain the data dictionary
Use the Dictionary Views
USER_OBJECTS and ALL_OBJECTS Views
Table and Column Information
Query the dictionary views for constraint information
Query the dictionary views for view, sequence, index and synonym information
Add a comment to a table
Query the dictionary views for comment information

Manipulate Large Data Sets

Use Subqueries to Manipulate Data
Retrieve Data Using a Subquery as Source
Insert Using a Subquery as a Target
Usage of the WITH CHECK OPTION Keyword on DML Statements
List the types of Multitable INSERT Statements
Use Multitable INSERT Statements
Merge rows in a table
Track Changes in Data over a period of time

Data Management in different Time Zones

Time Zones

Oracle DBA, Oracle Developer, Java, Android, SQL Server, Linux, C, C++, MySQL PHP, HTML,CSS, Java Script, MySql DBA, Postgresql DBA, ASP.Net

CURRENT_DATE, CURRENT_TIMESTAMP, and LOCALTIMESTAMP

Compare Date and Time in a Session's Time Zone

DBTIMEZONE and SESSIONTIMEZONE

Difference between DATE and TIMESTAMP

INTERVAL Data Types

Use EXTRACT, TZ_OFFSET and FROM_TZ

Invoke TO_TIMESTAMP,TO_YMINTERVAL and TO_DSINTERVAL

Retrieve Data Using Sub-queries

Multiple-Column Subqueries

Pairwise and Nonpairwise Comparison

Scalar Subquery Expressions

Solve problems with Correlated Subqueries

Update and Delete Rows Using Correlated Subqueries

The EXISTS and NOT EXISTS operators

Invoke the WITH clause

The Recursive WITH clause

Regular Expression Support

Use the Regular Expressions Functions and Conditions in SQL

Use Meta Characters with Regular Expressions

Perform a Basic Search using the REGEXP_LIKE function

Find patterns using the REGEXP_INSTR function

Extract Substrings using the REGEXP_SUBSTR function

Replace Patterns Using the REGEXP_REPLACE function

Usage of Sub-Expressions with Regular Expression Support

Implement the REGEXP_COUNT function