



SQL Development Using Oracle

Course Summary
















- Identify the major structural components of the Oracle Database 11g
- Create reports of aggregated data
- Write SELECT statements that include queries
- Retrieve row and column data from tables
- Run data manipulation statements (DML) in Oracle Database 11g
- Create tables to store data
- Utilize views to display data
- Control database access to specific objects
- Manage schema objects
- Display data from multiple tables using the ANSI SQL 99 JOIN syntax
- Manage objects with data dictionary views
- Write multiple-column sub-queries
- Employ SQL functions to retrieve customized data
- Use scalar and correlated sub-queries
- Create reports of sorted and restricted data

Duration

5 days

Objectives



-  Identify the major structural components of the Oracle Database 11g
-  Create reports of aggregated data
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-  Create tables to store data
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-  Control database access to specific objects
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-  Display data from multiple tables using the ANSI SQL 99 JOIN syntax
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Audience

-  Application Developers
-  Developer
-  End Users
-  PL/SQL Developer
-  Database Administrators
-  Technical Consultant
-  Forms Developer
-  Support Engineer

Pre-Requisites






Knowledge in Dbms,Rdbms .









Outline

Day1:








1. Introduction

-  Overview of Oracle Database 11g and related products
-  Overview of relational database management concepts and terminologies
-  Introduction to SQL and its development environments
-  The HR schema and the tables used in this course
-  Oracle Database documentation and additional resources

2. Select Clause

-  List the capabilities of SQL SELECT statements
-  Generate a report of data from the output of a basic SELECT statement
-  Usage of arithmetic expressions and NULL values
-  Implement Column aliases
-  Describe the concatenation operator, literal character strings, alternative quote operator, and the DISTINCT keyword
-  Display the table structure using the DESCRIBE command

3. Where and Order By Clause

-  Write queries with a WHERE clause to limit the output retrieved
-  Use the comparison operators and logical operators
-  Identify the rules of precedence for comparison and logical operators
-  Usage of character string literals in the WHERE clause
-  Write queries with an ORDER BY clause
-  Sort output in descending and ascending order
-  Substitution Variables



4. Scalar Functions

- Differentiate between single row and multiple row functions
- Manipulate strings using character functions
- Manipulate numbers with the ROUND, TRUNC, and MOD functions
- Perform arithmetic with date data
- Manipulate dates with the DATE functions

Day2:

5. Conversion Functions and Conditional Expressions

- Describe implicit and explicit data type conversion
- Describe TO_CHAR, TO_NUMBER, and TO_DATE conversion functions
- Nesting multiple functions
- Apply the NVL, NULLIF, and COALESCE functions to data
- Use conditional IF THEN ELSE logic

6. Group Functions







- How aggregation functions help to produce meaningful reports?
- Use the AVG, SUM, MIN, and MAX function
- How to handle Null Values in a group function?
- Divide the data in groups by using the GROUP BY clause
- Exclude groups of data by using the HAVING clause

7. Joins

- Write SELECT statements to access data from more than one table
- Join Tables Using SQL:1999 Syntax
- View data that does not meet a join condition by using outer joins
- Join a table to itself by using a self joins
- Create Cross Joins







8. Sub-query







-  Use a Sub query to Solve a Problem
-  Execute Single-Row Sub-queries
-  Deploy Group Functions in a Sub-query
-  Multiple-Row Sub queries
-  Use ANY and ALL Operator in Multiple-Row Sub-queries
-  Use EXISTS Operator

Day3:






9. SET Operators

-  What are SET operators?
-  Use a SET operator to combine multiple queries into a single query
-  Use UNION, UNION ALL, INTERSECT, and MINUS Operator
-  Use ORDER BY Clause in Set Operations



10. Data Manipulation

-  Add New Rows to a Table
-  Change the Data in a Table
-  Use DELETE and TRUNCATE Statements
-  Save and discard changes with the COMMIT and ROLLBACK statements
-  Implement Read Consistency
-  Describe the FOR UPDATE Clause







11. DDL Statements

-  Categorize Database Objects
-  Create Tables using the CREATE TABLE Statement
-  Identify the data types
-  Describe Constraints
-  Create a table using a sub query











-  How to alter a table?
-  Drop a table

12. Other Objects






-  Create, modify, and retrieve data from a view
-  Perform Data manipulation language (DML) operations on a view
-  Drop a view
-  Create, use, and modify a sequence
-  Create and maintain indexes
-  Create and drop synonyms

Day – 4:



13. Control User Access

-  Identify the System and Object Privileges
-  Create Users
-  Grant System Privileges
-  Create and Grant Privileges to a Role
-  Change Your Password
-  Grant Object Privileges
-  How to Pass On Your Privileges?
-  Revoke Object Privileges








14. Object Types

-  Object-Oriented Programming
-  Oracle's Object Relational Model
-  Creating Object Types
-  Querying Object Types
-  DML with Object Types










-  Object Views
-  VARRAYS

15. Temporary Tables









-  Undo and Redo
-  Temporary Tables Defined
-  Data Lifetime — Transaction vs. Session
-  Creating Temporary Tables
-  Managing Temporary Tables
-  Storage of Temporary Tables
-  Effects of DML and TRUNCATE

Day-5:

16. Indexes

-  Indexes
-  B-tree and Composite Indexes
-  Reverse Key and Unique Indexes
-  Function-Based Indexes
-  Bitmap Indexes
-  Index-Organized Tables
-  Managing Indexed

17. SQL Tuning Tools

-  Automated Statistics Gathering
-  The DBMS_STATS Package
-  SQL Access Advisor
-  Retrieving Execution Plans
-  EXPLAIN PLAN
-  Using DBMS_XPLAN
-  Interpreting Explain Plan Results
-  SQL Trace









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18. SQL Tuning

-  Tuning Goals
-  The Optimizer
-  Optimizer Statistics
-  Identifying SQL to Tune
-  Optimizer Hints
-  Optimizer Goal Hints
-  Additional Hints
-  Plan Stability

Lab Requirements

-  Windows XP, Windows 7 or above
-  Web Browser
-  Ram 4 Gb
-  Processor dual core above
-  Internet Connection
-  Red Hat Enterprise Linux 5.0/6.0