

Oracle Database Application Developer – The Complete Course
Available on: <https://www.sameerdehadrai.com>

Relational Database concepts

- Explaining the theoretical and physical aspects of a relational database
- Explaining the relationship between a database and SQL

Retrieving Data using the SQL SELECT Statement

- Using Column aliases
- Using The SQL SELECT statement
- Using concatenation operator, literal character strings, alternative quote operator, and the DISTINCT keyword
- Using Arithmetic expressions and NULL values in the SELECT statement

Restricting and Sorting Data

- Applying Rules of precedence for operators in an expression
- Limiting Rows Returned in a SQL Statement
- Using Substitution Variables
- Using the DEFINE and VERIFY commands
- Sorting Data

Using Single-Row Functions to Customize Output

- Manipulating strings with character functions in SQL SELECT and WHERE clauses
- Performing arithmetic with date data
- Manipulating numbers with the ROUND, TRUNC and MOD functions
- Manipulating dates with the date function

Using Conversion Functions and Conditional Expressions

- Applying the NVL, NULLIF, and COALESCE functions to data
- Understanding implicit and explicit data type conversion
- Using the TO_CHAR, TO_NUMBER, and TO_DATE conversion functions
- Nesting multiple functions

Reporting Aggregated Data Using Group Functions

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

Displaying Data from Multiple Tables

- Using Self-joins
- Using Various Types of Joins
- Using Non equijoins
- Using OUTER joins
- Understanding and Using Cartesian Products

Using Subqueries to Solve Queries

- Using Single Row Subqueries
- Using Multiple Row Subqueries
- Update and delete rows using correlated subqueries

Using SET Operators

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

Managing Tables using DML statements

- Managing Database Transactions
- Controlling transactions
- Perform Insert, Update and Delete operations

Managing Indexes, Synonyms and Sequences

- Managing Indexes
- Managing Synonyms
- Managing Sequences

Use DDL to manage tables and their relationships

- Describing and Working with Tables
- Describing and Working with Columns and Data Types
- Creating tables
- Dropping columns
- Truncating tables
- Managing Constraints

Managing Views

- Creating and Managing Views
- Performing DML operations in Views
- View WITH CHECK OPTION

Controlling User Access

- Differentiating system privileges from object privileges
- Granting privileges on tables
- Distinguishing between granting privileges and roles

Managing Objects with Data Dictionary Views

- Using data dictionary views

Declaring PL/SQL Variables

- Recognize valid and invalid identifiers
- List the uses of variables, declare and initialize variables
- List and describe various data types using the %TYPE and %ROWTYPE attributes

Writing Executable Statements

- Use built-in SQL functions in PL/SQL and sequences in PL/SQL expressions
- Describe when implicit conversions take place and when explicit conversions have to be dealt with
- Write nested blocks and qualify variables with labels
- Write readable code with appropriate indentation

Writing SQL in PL/SQL

- Create PL/SQL executable blocks using DML and transaction control statements
- Make use of the INTO clause to hold the values returned by a SQL statement

Writing Control Structures

- Identify the uses and types of control structures (IF, CASE statements and expressions)
- Construct and identify loop statements
- Use EXIT and CONTINUE statements inside loops

Working with Composite Data Types

- Create user-defined PL/SQL records
- Create a record with the %ROWTYPE attribute
- Arrays
- Describe the differences among records, collections, and collections of records
- Initialize collections and records

Using Explicit Cursors

- Distinguish between implicit and explicit cursors and use SQL cursor attributes
- Declare and control explicit cursors, use simple loops and cursor FOR loops to fetch data
- Declare and use cursors with parameters
- Lock rows with the FOR UPDATE clause and reference the current row with the WHERE CURRENT OF clause

Handling Exceptions

- Define PL/SQL exceptions
- Recognize unhandled exceptions
- Handle different types of exceptions (internally defined exceptions, predefined exceptions and user-defined exceptions)
- Propagate exceptions

Using PL/SQL Subprograms

- Differentiate between anonymous blocks and subprograms
- Create a simple procedure and invoke it from an anonymous block
- Identify benefits of subprograms

Creating Procedures and Using Parameters

- Create a procedure with parameters
- Use named notation
- Work with procedures (create, invoke and remove procedures)
- Handle exceptions in procedures and display a procedure's information

Creating Functions

- Differentiate between a procedure and a function
- Describe the uses of functions
- Work with functions (create, invoke and remove functions)

Creating Packages

- Identify the benefits and the components of packages
- Work with packages (create package specification and body, invoke package subprograms, remove a package and display package information)
- Overload package subprograms and use forward declarations

Creating Compound, DDL, and Event Database Triggers

- Create triggers on DDL statements
- Create triggers on system events
- Describe different types of triggers and their uses

Normalisation

- Various Normal Forms, e.g. 1st, 2nd, and 3rd Normal Form
- BCNF
- Need for De-Normalisation