



COURSE :ORACLE DATABASE COURSE

Basic SQL :

Installation of oracle software

Installation of oracle tool like SQL Developer and SQL *PLUS.

Introduction

Listing the features of Oracle Database 10g/11G/12C

- Discussing the basic design, theoretical and physical aspects of a relational database
- Describing the development environments for SQL
- Describing Oracle SQL Developer, Describing the data set used by the course

Project:

SDLC(SOFTWARE DEVELOPMENT LIFE

CYCLE)ERD(ENTITY RELATIONSHIP DESIGN).

PROJECT ALLOCATION...

IMPLEMENTATION OF PROJECTS USING SQL PLSQL.

Retrieving Data Using the SQL SELECT Statement

- Listing the capabilities of SQL SELECT statements like projection selection and join.
- Generating a report of data from the output of a basic SELECT statement
- Using arithmetic expressions in the SELECT statement
- Using Column aliases and naming column in report.
- Using concatenation operator, literal, alternative quote operator, and the DISTINCT keyword
- Displaying the table structure using the DESCRIBE command

Restricting and Sorting Data

- Writing queries with a WHERE clause to limit the output retrieved Using the comparison operators and logical operators
- Describing the rules of precedence for comparison and logical AND Conditional operators
- Writing queries with an ORDER BY clause to sort the output
- Sorting output in descending and ascending order
- Using the Substitution Variables

Using Single-Row Functions to Customize Output

- Differentiating between single row and multiple row functions
- Manipulating strings using character functions like SUBSTR, INSTR, LENGTH, LOWER, UPPER, TRIM etc.
- Manipulating numbers with the ROUND, TRUNC and MOD functions
- Performing arithmetic with date data types
- Manipulating dates with the date functions

Using Conversion Functions and Conditional Expressions

- Describing implicit and explicit data type conversion
- Using the TO_CHAR, TO_NUMBER, and TO_DATE conversion functions
- Nesting multiple functions single row and multiple row functions
- Applying the NVL, NULLIF, and COALESCE functions to data
- Using conditional IF THEN ELSE logic in a SELECT statement
- Decode function.

Reporting Aggregated Data Using the Group Functions

- Using the aggregation functions in SELECT statements to produce meaningful reports
- Using AVG, SUM, MIN, and MAX function
- Handling Null Values in a group function
- Creating queries that divide the data in groups by using the GROUP BY clause
- Creating queries that exclude groups of data by using the HAVING clause
- Difference between HAVING clause and WHERE clause.

Displaying Data from Multiple Tables

- Writing SELECT statements to access data from more than one table
- Viewing data that does not meet a join condition by using outer joins
- Joining a table by using a self join
- Creating Cross Joins (Cartesian product)

Using Sub-queries to Solve Queries

- Using a Subquery to Solve a Problem
- Executing Single-Row and multiple row Sub-queries
- Using Group Functions in a Sub-query
- Using the IN, ANY and ALL Operator in Multiple-Row Sub-queries

Using the SET Operators

- Describing the SET operators.
- Using UNION, UNION ALL, INTERSECT, and MINUS Operator
- Using the ORDER BY Clause in Set Operations

Manipulating Data

- DML INSERT ,UPDATE DELETE Statement.
- Using DROP and TRUNCATE Statements
- Saving and discarding changes with the COMMIT and ROLLBACK statements
- Read Consistency.

Using DDL Statements to Create and Manage Tables

- Database Objects
- Creating Tables using the CREATE TABLE Statement and Describing the data types
- Types of Constraints
- Creating a table using a subquery
- Altering and Dropping a table
- Copying data using subquery.

Creating Other Schema Objects

- Creating, modifying, and retrieving data from a view object.
- Performing Data manipulation language (DML) operations on a view
- Dropping a view
- Creating, using, and modifying a sequence
- Creating indexes
- Creating synonyms

ADVANCED SQL:

- **Introduction**
 - Course Prerequisites
 - Human Resources (HR) Schema
 - Review of Using Oracle SQL Developer
 - SQL Statements in SQL*Plus
 - Review of some basic concepts of SQL Fundametal I
- **Control User Access**
 - Identify the System and Object Privileges
 - Create Users and altering user
 - Grant System and Objects Privileges
 - Create and Grant Privileges to a Role
 - Altering Your Password
 - Revoke Object and System Privileges

management of Schema Objects

- Add, Modify, and Drop,defer a Column and Constraints.
- Enable and Disable a Constraint
- Create and Remove Indexes
- Create a Function-Based Index
- Perform Flashback Operations using FLASHBACK Command.
- Create an External Table by Using ORACLE_LOADER and by Using ORACLE_DATAPUMP
- Manage Objects with Data Dictionary Views
 - What is the Data Dictionary views
 - USER_OBJECTS and ALL_OBJECTS Views
 - View Table and Column Information, constraint information
 - Query the dictionary views for view, sequence, index and synonym information
 - Add a comment to a table
- Manipulate Large Data Sets
 - Retrieve Data Using a Subquery.
 - Insert data Using a Subquery as a Target
 - Use the WITH CHECK OPTION Keyword on DML Statements for view
 - List the types of Multitable INSERT Statements
 - Identify Multitable INSERT Statements
 - Merge rows in a table using MERGE Command.
 - How to track Changes in database transactions.
- Data Management in Different Time Zones.
 - The CURRENT_DATE, CURRENT_TIMESTAMP, and LOCALTIMESTAMP functions
 - Describe DBTIMEZONE and SESSIONTIMEZONE in timestamp
 - List the differences between DATE and TIMESTAMP data types.
 - Identify the INTERVAL Data Types year to month and day to seconds.
 - Use TO_TIMESTAMP, TO_YMINTERVAL, and TO_DSINTERVAL,EXTRACT FUNCTIONS.
- Retrieve Data Using Subqueries
 - Multiple-Column Subqueries with types Pairwise and Nonpairwise.
 - Correlated Subqueries
 - Insert,Update and Delete Rows Using Correlated Subqueries
 - Use the EXISTS and NOT EXISTS operators
 - Use the WITH clause in SQL.
- Regular Expression Support
 - Meta Characters with Regular Expressions
 - Perform a Basic Search using the REGEXP_LIKE function with operator
 - Find patterns using the REGEXP_INSTR function with operator
 - Extract Substrings using the REGEXP_SUBSTR function with operator
 - Replace Patterns Using the REGEXP_REPLACE function with operator

Hierarchical Retrieval in SQL:

- Top down and Bottom up approach.
- Connect by clause
- Start with clause
- Difference between connect by and where clause.

Grouping Functions:

- ROLLUP AND CUBE grouping operator.
- GROUPING Function.
- Concatenated grouping with grouping sets.
- Composite grouping.

PLSQL BASIC +ADVANCED:

Prerequisite:SQL language.

Introduction to PL/SQL

- PL/SQL Environment with there compiler.
- Benefits of PL/SQL over SQL.
- Types of PL/SQL blocks
- Create and Execute a Simple Anonymous Block
- Generate Output from a PL/SQL Block

Declaring PL/SQL Identifiers

- Identify the Different Types of Identifiers in a PL/SQL subprograms
- Use the Declarative Section
- List the Uses for Variables in PLSQL.
- Writing Executable Statements(Begin)
- Basic Block Syntax Guidelines
- Use Literals in PL/SQL
- Customize Identifier Assignments with SQL Functions
- Use Nested Blocks as Statements in plsql

- Qualify an Identifier with a Label in PLSQL
- Operators in PL/SQL

Interacting with Oracle server

- SELECT Statements in PL/SQL Using INTO clause
- Fetch Data in PL/SQL with the SELECT Statement
- Manipulate Data in the Server Using PL/SQL block
- The SQL basic Cursor concept
- Save and Discard Transactions using commit and rollback commands.

Working with Composite Data Types:

- Learn the Composite Data Types of PL/SQL Records and Tables(collections)
- Use PL/SQL Records to Hold Multiple Values of Different Types using index by table.
- Inserting and Updating with PL/SQL Records data.
- Use INDEX BY Tables to Hold Multiple Values of the Same Data Type with different data.

Using Explicit Cursor:

- Cursor FOR Loops Using Sub-queries(un-named cursor)
- Cursors By Using Parameters
- Use the FOR UPDATE Clause to Lock Rows for update and delete statements.
- Use the WHERE CURRENT Clause for Current Row reference
- Use Explicit Cursors
- Explicit Cursor Attributes SQL%ROWCOUNT,SQL%FOUND,SQL%NOTFOUND.
- Cursors with Records.

Handling Exceptions with PL/SQL:

- Declared Exceptions
- Non-predefined Oracle Server Errors
- User-Defined Exceptions
- Propagating Exceptions

The RAISE_APPLICATION_ERROR Procedure

Creating Stored Procedures

- Stored procedure/functions
- Block structure for PL/SQL stored procedures.
- Invoke a stored procedure from an anonymous block or another stored procedureblocks
- SHOW ERRORS command

- View source code in the USER_SOURCE dictionary view using query.

Creating Stored Functions:

Stored functions

CREATE OR REPLACE FUNCTION

steps to create a stored function

- Execute a stored function
- Nested functions in PL/SQL.
- restrictions of calling functions from SQL statements
- drop a function

Creating Packages:

- advantages of packages
- Develop a package using subprograms.
- Create the package specification and package body
- Declare public and private constructs

Using More Package Concepts:

- List the benefits of function overloading
- overloading example
- forward declarations in packages
- limitation on package functions used in SQL
- Encapsulate code in a package .
- User-defined package function from a SQL statement
- persistent state of package variables

Utilizing Oracle Supplied Packages in Application Development

- List the various uses for the Oracle supplied packages
- Reuse pre-packaged code to complete various tasks from developer to DBA purposes
- Use the DESCRIBE command to view the package specifications and overloading
- Explain how DBMS_OUTPUT works (in conjunction with SET SERVEROUTPUT ON)
- File processing with UTL_FILE
- Review UTL_FILE exceptions
- UTL_FILE to generate a report to a file

Dynamic SQL and Metadata

- Describe using native dynamic SQL
- List the execution flow of SQL
- Show the syntax for the EXECUTE IMMEDIATE statement for native dynamic SQL
- Create a procedure to generate native dynamic SQL using EXECUTE IMMEDIATE to delete rows from a table
- DBMS_SQL package
- Advantages of using Native Dynamic SQL Over the DBMS_SQL package

Design Considerations for PL/SQL Code

- Constant package
- Exception handling packages
- local sub-programs
- Run time errors with an exception package

Describe the NOCOPY compiler

Creating Triggers:

- Different types of triggers.
- Triggers are executed with a basic database trigger examples.
- Create DML triggers, and list the DML trigger components
- Firing sequence of triggers.
- DML statement and row level triggers
- OLD and NEW qualifiers to reference column values
- Conditional When clause with triggers

Applications for Triggers:

- Create triggers for DDL events of CREATE, ALTER, and DROP
- Create triggers for system events of SERVERERROR, STARTUP, SHUTDOWN, LOGON and LOGOFF
- Define a mutating table
- Business application scenarios with triggers
- Privileges required to manage triggers
- Create triggers for DDL events of CREATE, ALTER, and DROP
- Create triggers for system events of SERVERERROR, STARTUP, SHUTDOWN, LOGON and LOGOFF

- Define a mutating table
- Business application scenarios with triggers
- Privileges required to manage triggers

Aptitude syllabus :

Quantitative Aptitude

- ▶ 1 Problems Based on Ages.
- ▶ 2 Test on Divisibility.
- ▶ 3. Addition and Subtraction.
- ▶ 4. Multiplication.
- ▶ 5. Division.
- ▶ 6. Square root and Cube root.
- ▶ 7. BODMAS Rule.
- ▶ 8. Indices
- ▶ 9. Quadratic Equation.
- ▶ 10. Word problems (Simplification with Profit Questions).
- ▶ 11. HCF and LCM.
- ▶ 12. Average and Percentage .
- ▶ 13. Ratio
- ▶ 14. Time and work.
- ▶ 15. Pipes and Cistern
- ▶ 16. Time and Distance.
- ▶ 17. Boat and Stream
- ▶ 18. Problems on Train.
- ▶ 19. Profit and loss.

- ▶ **20. Probability**

Reasoning Aptitude

- ▶ **1. Test on Alphabet**
- ▶ **2. Coding-Decoding**
- ▶ **3. Letter-Coding**
- ▶ **4. Number Symbol Coding**
- ▶ **5. Deciphering Message Code**
- ▶ **6. Pairs in English Alphabet**
- ▶ **7. Blood Relations**
- ▶ **8. Number Series.**
- ▶ **9. Direction and Distance.**
- ▶ **10. Ordering Test**
- ▶ **11. Sitting Arrangement**
- ▶ **12. Puzzle**
- ▶ **13. Input Output**

KDN INFOTECH PCT LTD

KDN INFOTECH PCT LTD

KDN INFOTECH PCT LTD

KDN INFOTECH PCT LTD

KDN INFOTECH PCT LTD

