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| --- | --- | --- | --- | --- |
| Course Name | Duration | Class Room Training | Virtual Training | Online Training |
| **Oracle Database** | **45 Sessions** | **Rs. 10800.00** | **-** | **Rs. 12000.00** |

Oracle Database Server

# Introduction

An Oracle database is a collection of data treated as a unit. The purpose of a database is to store and retrieve related information. A database server is the key to solving the problems of information management. In general, a server reliably manages a large amount of data in a multiuser environment so that many users can concurrently access the same data. All this is accomplished while delivering high performance. A database server also prevents unauthorized access and provides efficient solutions for failure recovery.

Training Objectives

* Create Database tables.
* Manage Database objects.
* Access and manipulate data in the Database using SQL statements.
* Control user access to data.
* Data Managing
* Working with Databases

# Software for Hands-on Learning:

* Oracle 13c

Couse Syllabus

# Chapter 1: Introduction to SQL

1. Introduction Database
2. Understanding DBMS vs RDBMS
3. Gone through SQL Standards
4. Sub languages of SQL
5. Difference between 10g vs 11g vs 12c
6. Installation of 12c
7. About SQL\*Plus and use of developer tool
8. Datatypes in Oracle
9. Operators in Oracle
10. Understanding Schema design and objects

# Chapter 2: Data Retrieval Techniques

1. How to use select statement in different ways to retrieve records?
2. Working with Column alias
3. Working with Table alias
4. Data filtering and sorting with in single table
5. Clauses and its types in oracle
   * Where clause
   * Having clause
   * From clause
   * Group by clause
   * Order by clause
   * Using clause
   * Constraint clause
   * For update clause

# Chapter 3: Working With DDL Commands

1. Table creation using CREATE statement
2. Creating table from another table
3. Dropping a table using DROP command
4. Altering the column of a table
5. Modifying the column datatype in a table
6. Renaming the column of a table
7. Renaming an entire table
8. Using truncate command
9. Difference between Delete and Truncate command

# Chapter 4: Working With DML Commands

1. How to copy data from one table to another table?
2. How to copy the structure alone from a table?
3. Different types of inserting row to an existing table
4. Updating any value of with in a record using UPDATE command
5. Deleting a particular record from a table
6. Using merge & insert all command [Implementation of Project 1 ]

# Chapter 5: Integrity Constraints

1. How to declare column level constraints?
2. How to declare row level constraints ?
3. How to add constraints to an existing table?
4. Types of integrity constraints
   * Not null
   * Unique key
   * Primary key
   * Referential integrity
   * Check integrity
5. How to enable and disable constraints?
6. How to get information about constraints?

# Chapter 6: Built In Functions

1. Understanding Single row functions
2. How to use single row functions using dummy table?
3. Types of single row functions
   * String functions
   * Date functions
   * Mathematical functions
   * Conversion functions
   * Special functions
   * Analytical functions
4. Working with multi row functions [Implementation of Project 2]

# Chapter 7: Data Aggregation

1. Working with aggregate function
   * Count()
   * Sum()
   * Max()
   * Min()
   * Avg()
2. Working with group by clause
3. Working with having clause
4. Difference between WHERE and HAVING clause

# Chapter 8: Importance Of JOIN

1. Understanding joins and its uses
2. Types of joins
   * Equi join
   * Non – equi join
   * Self-join
   * Outer join
   * Left & Right outer join
   * Full outer join
   * Cross join [Implementation of Project 3]

# Chapter 9: Set Operators and Pseudo Columns:

* How to use set operators in a single table content?
* Working with set operator types
  + UNION
  + UNION ALL
  + INTERSECT
  + MINUS
* Working with pseudo columns using the following
  + ROWID
  + ROWNUM

# Chapter 10: Sub Queries

1. Importance of sub queries
2. Using different types of sub queries
   * Single row sub queries
   * Multi row sub queries
   * Nested queries
   * Multi column sub queries
   * Correlated sub queries
3. Using inline views and scalar queries [ Implementation of Project 4]

# Chapter 11: Database Transaction And Security

1. Working with data query language using TCL
2. Working with data control language commands
3. Use of commit and rollback
4. Use of savepoint and set transaction
5. How to give system privileges to an user?
6. How to invoke and revoke object privileges?
7. How to create users and roles?

# Chapter 12: Design of Schema Objects

1. Creating and working with Views
2. Working with Synonyms
3. Creating Index and clusters
4. Working with in materialized view
5. Understanding sequences and its types [Implementation of Project 5]

# Chapter 13: Introduction to PL/SQL

1. Informal introduction to PL/SQL
2. Advantages of PL/SQL
3. Datatypes in PL/SQL
4. Program structure of PL/SQL
5. Embedding SQL statements
6. Using conditional statements and loops

# Chapter 14: Creating And Using Cursors

1. What is cursor?
2. How to create cursor?
3. Using cursors in PL/SQL
4. How to create explicit cursor?
5. Creation of for loop cursor
6. What are cursor parameters?
7. How to use for update clause?
8. What is ref cursors?
9. How to use implicit cursors?

# Chapter 15: Understanding Exception Handling

1. What is an Exception?
2. Describing Exception types
3. Handling system defined exceptions
4. Handling user defined exceptions?
5. Sql code vs Sql errm
6. Pragma exception\_init

# Chapter 16: Creation Of Stored Procedures

* Creating procedures in Pl/SQL
* Working with procedure parameters
  + IN parameter
  + OUT parameter
  + INOUT parameter
* How to create procedures with cursors
* How procedures return records?
* What is Pragma autonomous transaction?

# Chapter 17: Creating & Using Functions

1. Importance of function
2. How to create functions?
3. Difference between procedures and functions
4. How to use inline functions?

# Chapter 18: Creating & Using Packages

1. What is a Package?
2. Reasons to use packages
3. What is package specification?
4. What is package body?
5. How to instantiate package?
6. How to initialize instantiated package?
7. What are all the package state?

# Chapter 19: Triggers In PL/SQL

1. How to create triggers?
2. Benefits of trigger
3. How to trigger a trigger?
4. Using DML trigger & DDL trigger
5. How to audit database using triggers?
6. What are database level trigger?

# Chapter 20: Collections In PL/SQL

1. What is collection?
2. How to use arrays?
3. Using nested tables
4. How to use index by value?
5. Listing types of collection methods.
6. General overview and discussion about DBA Concepts