



# ORACLE COURSE SYLLABUS



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## Oracle Course Syllabus

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### SQL(Structured Query Language)

- ❖ Introduction To SQL
- ❖ Data Retrieval Techniques
- ❖ Working with DDL Commands
- ❖ Working with DML Commands
- ❖ Integrity Constraints
- ❖ Built In Functions
- ❖ Data Aggregation
- ❖ Importance Of Join
- ❖ Set Operators & Pseudo Columns
- ❖ Sub Queries
- ❖ Database Transactions & Security
- ❖ Design Of Schema Objects

## PL/SQL (Procedural Language Extension To SQL)

- ❖ Introduction To PL/SQL
- ❖ Creating & Using Cursors
- ❖ Understanding Exception Handling
- ❖ Creation Of Stored Procedures
- ❖ Creating & Using Functions
- ❖ Creating & Using Packages
- ❖ Triggers In PL/SQL
- ❖ Collections In PL/SQL

## Structured Query Language (SQL)

### Introduction To SQL

- ❖ Introduction Database
- ❖ Understanding DBMS vs RDBMS
- ❖ Gone through SQL Standards
- ❖ Sub languages of SQL
- ❖ Difference between 10g vs 11g vs 12c
- ❖ Installation of 12c
- ❖ About SQL\*Plus and use of developer tool
- ❖ Datatypes in Oracle
- ❖ Operators in Oracle
- ❖ Understanding Schema design and objects

## Data Retrieval Techniques

- ❖ How to use select statement in different ways to retrieve records?
- ❖ Working with Column alias
- ❖ Working with Table alias
- ❖ Clauses and its types in oracle
  - a) Where clause
  - b) Having clause
  - c) From clause
  - d) Group by clause
  - e) Order by clause

- f) Using clause
- g) Constraint clause
- h) For update clause

### Working With DDL Commands

- ❖ Table creation using CREATE statement
- ❖ Creating table from another table
- ❖ Dropping a table using DROP command
- ❖ Altering the column of a table
- ❖ Modifying the column datatype in a table
- ❖ Renaming the column of a table
- ❖ Renaming an entire table
- ❖ Using truncate command
- ❖ Difference between Delete and Truncate command

### Working With DML Commands

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

### Integrity Constraints

- ❖ How to declare column level constraints?
- ❖ How to declare row level constraints ?
- ❖ How to add constraints to an existing table?
- ❖ Types of integrity constraints
- ❖ Not null
- ❖ Unique key
- ❖ Primary key
- ❖ Referential integrity
- ❖ Check integrity

- ❖ How to enable and disable constraints?
- ❖ How to get information about constraints?

### Built In Functions

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

### Data Aggregation

- ❖ Working with aggregate function
- ❖ Count()
- ❖ Sum()
- ❖ Max()
- ❖ Min()
- ❖ Avg()
- ❖ Working with group by clause
- ❖ Working with having clause
- ❖ Difference between WHERE and HAVING clause

### Importance Of JOIN

- ❖ Understanding joins and its uses
- ❖ 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]

### 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

### Sub Queries

- ❖ Importance of sub queries
- ❖ Using different types of sub queries
- ❖ Single row sub queries
- ❖ Multi row sub queries
- ❖ Nested queries
- ❖ Multi column sub queries
- ❖ Correlated sub queries
- ❖ Using inline views and scalar queries [ Implementation of Project 4]

### Database Transaction And Security

- ❖ Working with data query language using TCL
- ❖ Working with data control language commands
- ❖ Use of commit and rollback
- ❖ Use of savepoint and set transaction
- ❖ How to give system privileges to an user?
- ❖ How to invoke and revoke object privileges?
- ❖ How to create users and roles?

## Design Of Schema Objects

- ❖ Creating and working with Views
- ❖ Working with Synonyms
- ❖ Creating Index and clusters
- ❖ Working with in materialized view
- ❖ Understanding sequences and its types [Implementation of Project 5]

## PL/SQL (Procedural Language Extension to SQL)

### Introduction To PL/SQL

- ❖ Informal introduction to PL/SQL
- ❖ Advantages of PL/SQL
- ❖ Datatypes in PL/SQL
- ❖ Program structure of PL/SQL
- ❖ Embedding SQL statements
- ❖ Using conditional statements and loops

## Creating And Using Cursors

- ❖ What is cursor?
- ❖ How to create cursor?
- ❖ Using cursors in PL/SQL
- ❖ How to create explicit cursor?
- ❖ Creation of for loop cursor
- ❖ What are cursor parameters?
- ❖ How to use for update clause?
- ❖ What is ref cursors?
- ❖ How to use implicit cursors?

## Understanding Exception Handling

- ❖ What is an Exception?
- ❖ Describing Exception types
- ❖ Handling system defined exceptions
- ❖ Handling user defined exceptions?
- ❖ Sql code vs Sql errm
- ❖ Pragma exception\_init

## 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?

## Creating & Using Functions

- ❖ Importance of function
- ❖ How to create functions?
- ❖ Difference between procedures and functions
- ❖ How to use inline functions?

## Creating & Using Packages

- ❖ What is a Package?
- ❖ Reasons to use packages
- ❖ What is package specification?
- ❖ What is package body?
- ❖ How to instantiate package?
- ❖ How to initialize instantiated package?
- ❖ What are all the package state?



### Triggers In PL/SQL

- ❖ How to create triggers?
- ❖ Benefits of trigger
- ❖ How to trigger a trigger?
- ❖ Using DML trigger & DDL trigger
- ❖ How to audit database using triggers?
- ❖ What are database level trigger?

### Collections In PL/SQL

- ❖ What is collection?
- ❖ How to use Varrays?
- ❖ Using nested tables
- ❖ How to use index by value?
- ❖ Listing types of collection methods.
- ❖ General overview and discussion about DBA Concepts

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