

Oracle PL/SQL Training – Course Module

Module 1: Database & Oracle Fundamentals

- Database কী ও কেন ব্যবহার করা হয়
- DBMS ও RDBMS ধারণা
- Oracle Database Introduction
- Tables, Rows, Columns
- Primary Key & Foreign Key
- Data Types
- Oracle SQL Developer / Database Tools পরিচিতি

Module 2: SQL Fundamentals

- SQL Introduction
- **SELECT** Statement
- **WHERE, ORDER BY**
- **DISTINCT**
- Comparison & Logical Operators
- **LIKE, IN, BETWEEN**
- **NULL** Values
- **INSERT, UPDATE, DELETE**
- **COMMIT, ROLLBACK**

Module 3: SQL Functions

- Single Row Functions
- Character Functions
- Number Functions
- Date Functions
- Conversion Functions
- **NVL, NVL2, COALESCE**
- Aggregate Functions
- **GROUP BY**
- **HAVING**

Module 4: Joins & Advanced SQL

- **INNER JOIN**
- **LEFT / RIGHT OUTER JOIN**

- FULL OUTER JOIN
- SELF JOIN
- CROSS JOIN
- Subqueries
- Nested Subqueries
- Correlated Subqueries
- Set Operators
 - UNION
 - UNION ALL
 - INTERSECT
 - MINUS

Module 5: Database Objects

- Tables
- Views
- Sequences
- Synonyms
- Indexes
- Constraints
- Primary Key
- Foreign Key
- UNIQUE
- NOT NULL
- CHECK Constraints

Module 6: PL/SQL Fundamentals

- PL/SQL Introduction
- PL/SQL Block Structure
- Variables & Constants
- Data Types
- %TYPE
- %ROWTYPE
- Comments
- Operators
- Expressions

Module 7: Control Statements

- IF Statement
- IF-ELSE
- Nested IF
- CASE Statement

- Simple CASE
- Searched CASE
- LOOP
- WHILE LOOP
- FOR LOOP
- EXIT & CONTINUE

Module 8: Procedures & Functions

- Stored Procedures
- Creating Procedures
- Procedure Parameters
- IN / OUT / IN OUT Parameters
- Stored Functions
- Function Parameters
- Return Values
- Procedure vs Function
- Calling Procedures & Functions

Module 9: Cursors

- Cursor Concept
- Implicit Cursor
- Explicit Cursor
- Cursor Declaration
- OPEN / FETCH / CLOSE
- Cursor FOR LOOP
- Parameterized Cursor
- Cursor Attributes

Module 10: Exception Handling

- Exception Concept
- Predefined Exceptions
- User-Defined Exceptions
- **EXCEPTION** Block
- **WHEN OTHERS**
- **SQLCODE**
- **SQLERRM**
- Error Handling Best Practices

Module 11: Triggers

- Trigger Introduction

- BEFORE Trigger
- AFTER Trigger
- INSERT Trigger
- UPDATE Trigger
- DELETE Trigger
- Row-Level Trigger
- Statement-Level Trigger
- :OLD & :NEW
- Practical Trigger Examples

Module 12: Advanced PL/SQL

- Records
- Collections
- Associative Arrays
- Nested Tables
- VARRAY
- Dynamic SQL
- EXECUTE IMMEDIATE
- Bulk Processing
- BULK COLLECT
- FORALL

Module 13: Packages

- Package Introduction
- Package Specification
- Package Body
- Creating Packages
- Package Variables
- Package Procedures & Functions
- Practical Package Development

Module 14: Performance & Best Practices

- SQL Query Optimization Basics
- Indexing Concepts
- Execution Plan Introduction
- Efficient SQL Writing
- PL/SQL Performance Tips
- Transaction Management
- Error Logging