



GETIN TECHNOLOGIES

KOVILPATTI (HEAD OFFICE) - 8925831826 | VIRUDHUNAGAR - 8925831828
| TIRUNELVELI- 8925831821 | TUTICORIN - 8925831824 | COIMBATORE -
8925831822 | BANGALORE - 8925831823 | CHENNAI - 8925831821

COURSE NAME: ORACLE TRAINING

Module 2

[Visit our website for Course Fees and Course Duration](#)

Placement Eligibility:

Eligible: Any Bachelor Degree, Any Master Degree, MBA

Not Eligible: Diploma

Class Mode:

Classroom | Online | Recorded Session | AI Session

If you have Completed Course, You want only Placements

+91 8925831829

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Head Office Address: Door No: 971G/6, 1st Floor, Kalki Street, Manthithoppu Road,
Krishna Nagar, Kovilpatti - 628502.

GST No: 33ABAFG2025J1ZV **Website:** www.getintech.in **Email:** enquiry@getintech.in

ORACLE COURSE 2 SYLLABUS

SQL:

Introduction to Databases and SQL

- Understanding the role of databases in information management
- Introduction to SQL and its importance in data querying
- Overview of popular relational database management systems (RDBMS)

SQL Basics

- SQL syntax and structure
- Data types and operators
- Creating, modifying, and deleting database objects (tables, views, indexes)
- Writing basic SQL statements (SELECT, INSERT, UPDATE, DELETE)

Querying Data

- Retrieving data with the SELECT statement
- Filtering data with the WHERE clause
- Sorting data with the ORDER BY clause
- Limiting and paging results with the LIMIT/OFFSET or FETCH/FIRST clauses

Data Filtering and Manipulation

- Using logical operators (AND, OR, NOT)
- Working with wildcards and pattern matching (LIKE)
- Performing calculations with expressions
- Using built-in SQL functions (e.g., string functions, date functions)

Aggregating Data

- Grouping data with the GROUP BY clause
- Applying aggregate functions (SUM, AVG, COUNT, MIN, MAX)
- Filtering grouped data with the HAVING clause
- Working with subqueries

Joining Tables

- Understanding relationships between tables
- Performing INNER, LEFT, RIGHT, and FULL JOINS
- Joining multiple tables in a single query
- Handling NULL values in joins

Modifying Data

- Updating records with the UPDATE statement
- Deleting records with the DELETE statement
- Inserting new data with the INSERT statement
- Transactions and data integrity

Creating and Managing Database Schema

- Designing a relational database schema
- Enforcing data constraints with keys (PRIMARY KEY, FOREIGN KEY)
- Normalization and denormalization concepts

Views and Indexes

- Creating and managing database views
- Utilizing indexes for performance optimization
- Understanding the benefits of indexing

Security and Access Control

- User roles and privileges
- Granting and revoking permissions
- SQL injection prevention

PLSQL:

Introduction to PL/SQL

- Understanding PL/SQL and its role in Oracle Database
- Advantages and use cases for PL/SQL
- PL/SQL vs. SQL: Key differences and similarities

PL/SQL Language Fundamentals

- PL/SQL block structure
- Variables and data types
- Constants and literals
- Operators and expressions

Control Structures

- Conditional control with IF-THEN-ELSE
- CASE statements
- Looping with WHILE and FOR loops
- EXIT and CONTINUE statements

Cursors in PL/SQL

- Implicit vs. explicit cursors
- Using cursors for data retrieval
- Cursor attributes (e.g., %NOTFOUND, %FOUND, %ROWCOUNT)
- Cursors FOR loops

Exception Handling

- Types of exceptions (system-defined and user-defined)
- Handling exceptions with EXCEPTION and WHEN
- Propagating exceptions
- Using PRAGMA EXCEPTION_INIT

Procedures and Functions

- Creating and executing procedures
- Parameters (IN, OUT, IN OUT)
- Functions vs. procedures
- Returning values from functions

Triggers

- What are triggers and their applications
- Trigger types (BEFORE, AFTER, INSTEAD OF)
- Trigger events (INSERT, UPDATE, DELETE)
- OLD and NEW values

PL/SQL Collections

- PL/SQL tables
- Varrays (variable-size arrays)
- Associative arrays (INDEX BY tables)
- Using collections for data manipulation

Dynamic SQL

- Building and executing dynamic SQL statements
- Using EXECUTE IMMEDIATE
- SQL injection prevention
- DBMS_SQL package

Error Handling and Logging

- Logging errors in PL/SQL
- Handling exceptions gracefully
- Writing to log tables
- Error codes and logging best practices

PL/SQL Security

- Security considerations and best practices
- Database privileges
- Granting execute privileges on PL/SQL objects
- Limiting SQL injection risks

Oracle Performance Tuning:

Introduction to Oracle Performance Tuning

- Understanding the importance of performance tuning
- Performance tuning methodologies and best practices
- Identifying and setting performance goals

Oracle Database Architecture

- Overview of Oracle database architecture
- Memory structures (SGA, PGA)
- Physical and logical storage structures
- Background processes and their roles

SQL Performance Tuning

- SQL statement execution life cycle
- Identifying poorly performing SQL
- SQL optimization techniques
- SQL tuning tools (e.g., SQL Developer, SQL*Plus)

Indexing and Query Optimization

- Understanding indexes and their types
- Creating and maintaining indexes
- Query optimization techniques
- Effective use of the Query Optimizer

Performance Monitoring and Tools

- Using Oracle Enterprise Manager
- Performance monitoring through Statspack and AWR reports
- Oracle Diagnostic and Tuning Packs
- Real-time performance monitoring tools

Resource Management

- Managing CPU and memory resources
- Managing I/O and storage resources
- Resource allocation and prioritization
- Database Resource Manager

Caching and Buffering

- Oracle buffer cache
- Result caching
- In-Memory column store
- Effective use of materialized views

Real Application Testing

- Database replay
- SQL Performance Analyzer
- Database Workload Capture and Replay

Tuning for Specific Workloads

- OLTP (Online Transaction Processing) tuning strategies

- Data warehouse performance tuning
- Reporting and batch processing optimization

Advanced Performance Topics

- Partitioning for performance
- Parallel execution and parallel processing
- In-Memory database options
- Database consolidation and multitenant architecture

Troubleshooting and Performance Diagnostics

- Identifying and resolving common performance issues
- Performance diagnostic tools and techniques
- Analyzing and interpreting performance metrics

UnixShell Scripting:

Introduction to Shell Scripting

- Understanding the role of shell scripts in Unix/Linux
- Basics of shell scripting and its applications
- Different Unix/Linux shells (e.g., bash, sh, ksh)

Shell Basics

- Shell environment and command-line interface
- Command-line syntax and structure
- Command-line shortcuts and navigation
- Shell prompts and customizations

Variables and Data Types

- Declaring and using variables
- Environment variables and special variables
- Data types (strings, numbers, arrays)

- Variable substitution and expansion

Input and Output

- Accepting user input with read
- Output to the screen (echo, printf)
- Redirecting input and output (stdin, stdout, stderr)
- Piping and command substitution

Control Structures

- Conditional statements (if, case)
- Looping (for, while, until)
- Breaking and continuing loops
- Using exit status and conditions

Functions and Scripts

- Writing and calling functions
- Passing arguments to functions
- Using return values
- Script organization and execution

File and Directory Operations

- File I/O (reading, writing, appending)
- File permissions and ownership
- File tests and conditionals
- Directory navigation and manipulation

Text Processing

- Working with text files
- Using grep, sed, and awk
- Regular expressions
- Text manipulation and transformation

Process Management

- Listing and controlling processes
- Signals and signal handling
- Background and foreground processes
- Job control and process monitoring

Error Handling and Logging

- Detecting and handling errors
- Logging and debugging techniques
- Custom error messages
- Troubleshooting common issues

Shell Scripting for Automation

- Task automation and job scheduling
- Creating system utilities and services
- Cron jobs and Cron expressions
- Building backup and maintenance scripts

