



## SQL/PL-SQL

### SQL

- SQL Using MySQL
  - ◆ Introduction to RDBMS
  - ◆ What is Relational Database Package
  - ◆ Difference between SQL & Database
  - ◆ Installing MySQL Server database
- SQL Basic
  - ◆ DDL: Create, Alter, Drop, etc.
  - ◆ DML: Insert, Update, Delete, etc.
  - ◆ DQL : Select
  - ◆ Auto\_increment field
  - ◆ SQL Comments
  - ◆ SQL Aliases
  - ◆ Savepoint & rollback
- SQL Constraints
  - ◆ Not NULL, Unique key
  - ◆ Primary key, Check
  - ◆ Default, Foreign key
  - ◆ SQL Operators
  - ◆ Arithmetic operators
  - ◆ Logical operators
  - ◆ Conditional operators
  - ◆ Like, between, in operators
- SQL Clauses
  - ◆ Order by
  - ◆ Where
  - ◆ Limit/top
  - ◆ Group by
  - ◆ having
- SQL Joins
  - ◆ Inner Join
  - ◆ Left Join
  - ◆ Right Join

- ◆ Full Join
- SQL View
  - ◆ creating view
  - ◆ updating view
  - ◆ fetching data from view
- SQL Functions
  - ◆ String functions
  - ◆ Aggregate functions
  - ◆ Date & time functions

## PL/SQL

- Introduction to PL/SQL
  - ◆ Overview of PL/SQL
  - ◆ Advantages of PL/SQL over SQL
  - ◆ PL/SQL Architecture
  - ◆ Block Structure (Anonymous, Named, Nested)
  - ◆ Datatypes in PL/SQL
  - ◆ PL/SQL Basics
- Declaring Variables and Constants
  - ◆ Operators in PL/SQL
  - ◆ Control Structures (IF, CASE)
  - ◆ Loops (FOR, WHILE, LOOP)
  - ◆ Nested Loop
- Cursors
  - ◆ Introduction to Cursors
  - ◆ Implicit Cursors
  - ◆ Explicit Cursors
  - ◆ Cursor Attributes
  - ◆ Cursor FOR Loops
- Procedures and Functions
  - ◆ Creating Procedures
  - ◆ Creating Functions
  - ◆ Parameter Modes (IN, OUT, IN OUT)
  - ◆ Calling Procedures and Functions
  - ◆ Stored Procedures vs Anonymous Blocks
- Packages
  - ◆ Introduction to Packages
  - ◆ Package Specification
  - ◆ Creating Package Body
  - ◆ Advantage of Packages
  - ◆ Using Predefined Oracle Packages
- Triggers
  - ◆ Introduction to Triggers
  - ◆ Row-level vs Statement-level Triggers
  - ◆ BEFORE and AFTER Triggers

- ◆ INSTEAD OF Triggers
- ◆ Mutating Table Problem
- Exception Handling
  - ◆ Types of Exceptions
  - ◆ Predefined Exceptions
  - ◆ User-defined Exceptions
  - ◆ RAISE and RAISE\_APPLICATION\_ERROR
  - ◆ Exception Propagation
- Advanced PL/SQL
  - ◆ Collections (Associative Arrays, Nested Tables, VARRAYs)
  - ◆ Bulk Collect and FORALL
  - ◆ Dynamic SQL (EXECUTE IMMEDIATE)
  - ◆ Ref Cursors
  - ◆ PL/SQL Records
- Performance and Security
  - ◆ Optimizing PL/SQL Code
  - ◆ Using Bind Variables
  - ◆ Privileges in PL/SQL
  - ◆ Granting and Revoking Access
  - ◆ Code Profiling and Debugging

