

SQL/PLSQL SYLLABUS

Introduction To DBMS

- File Management System And Its Drawbacks
- Database Management System (DBMS) and Data Models
 - Physical Data Models
 - Logical Data Models
 - Hierarchical Data Model (HDBMS)
 - Network Data Model (NDBMS)
 - Relational Data Model (RDBMS)
 - Object Data Model (ODBMS)
 - Object Relational Data Model (ORDBMS)
- Conceptual Data Models
 - Entity – Relationship (E-R) Model

Introduction To SQL Server

- Advantages and Drawbacks Of SQL Server Compared To Oracle And DB2
 - Connecting To Server
 - Server Type
 - Server Name
 - Authentication Modes
 - Sql Server Authentication Mode
 - Windows Authentication Mode
 - Login and Password
 - Sql Server Management Studio and Tools In Management Studio
 - Object Explorer
 - Object Explorer Details
 - Query Editor

TSQL (Transact-Structured Query Language)

Introduction To TSQL

- History and Features of TSQL
- Types Of TSQL Commands
 - Data Definition Language (DDL)
 - Data Manipulation Language (DML)
 - Data Query Language (DQL)
 - Data Control Language (DCL)
 - Transaction Control Language (TCL)
 - Database
 - Creating Database
 - Altering Database
 - Deleting Database
 - Constrains
 - Procedural Integrity Constraints
 - Declarative Integrity Constraints
 - Not Null, Unique, Default and Check constraints
 - Primary Key and Referential Integrity or foreign key constraints
 - Data Types In TSQL
 - Table
 - Creating Table
 - Altering Table

- Deleting Table

Data Manipulation Language

- Insert
 - Identity
 - Creating A Table From Another Table
 - Inserting Rows From One Table To Another
- Update
 - Computed Columns
 - Delete
 - Truncate
 - Differences Between Delete and Truncate

Data Query Language (DQL)

- Select
- Where clause
- Order By Clause
- Distinct Keyword
- Isnull() function
- Column aliases
- Predicates
 - Between ... And
 - In
 - Like
 - Is Null

Built In Functions

- Scalar Functions
 - Numeric Functions
 - Character Functions
 - Conversion Functions
 - Date Functions
 - Aggregate Functions
 - Convenient Aggregate Functions
 - Statistical Aggregate Functions
 - Group By and Having Clauses
 - Super Aggregates
 - Over(partition by ...) Clause
 - Ranking Functions
 - Common Table Expressions (CTE)

Top n Clause

Set Operators

- Union
- Intersect
- Except

Joins

- Inner Join
 - Equi Join
 - Natural Join
 - Non-Equi Join
 - Self Join
 - Outer Join
 - Left Outer Join
 - Right Outer Join
 - Full Outer Join
 - Cross Join

Sub Queries

- Single Row Sub Queries
- Multi Row Sub Queries
 - Any or Some
 - ALL
 - Nested Sub Queries
 - Co-Related Sub Queries
 - Exists and Not Exists

Indexes

- Clustered Index
- NonClustered Index
- Create , Alter and Drop Indexes
- Using Indexes

Security

- Login Creation
 - SQL Server Authenticated Login
 - Windows Authenticated Login
 - User Creation
 - Granting Permissions
 - Revoking Permissions
 - Roles

Views

- Purpose Of Views
- Creating , Altering and Dropping Indexes
- Simple and Complex Views
- Encryption and Schema Binding Options in creating views

Transaction Management

- Introduction
- Begin Transaction
- Commit Transaction
- Rollback Transaction
- Save Transaction
- Role Of Log File In Transaction Management

- Implicit Transactions

TSQL Programming

- Drawbacks Of TSQL that leads to TSQL Programming
- Introduction To TSQL Programming
- Control statements In TSQL Programming
 - Conditional Control Statements
 - If
 - Case
- Looping Control Statements
 - While

Cursors

- Working With Cursors
- Types Of Cursors
 - Forward_Only and Scroll Cursors
 - Static, Dynamic and Keyset Cursors
 - Local and Global Cursors

Stored Sub Programs

- Advantages Of Stored Sub Programs compared to Independent SQL Statements
- Stored Procedures
 - Creating , Altering and Dropping
 - Optional Parameters
 - Input and Output Parameters
 - Permissions on Stored Procedures
- User Defined Functions
 - Creating, Altering and Dropping
 - Types Of User Defined Functions
 - Scalar Functions
 - Table Valued Functions
 - Inline Table Valued Functions
 - Multi Statement Table Valued Functions
 - Permissions On User Defined Functions
- Triggers
 - Purpose of Triggers
 - Differences Between Stored Procedures and User Defined Functions and Triggers
 - Creating, Altering and Dropping Triggers
 - Magic Tables
 - Instead Of Triggers
- Exception Handling
 - Implementing Exception Handling
 - Adding and removing User Defined Error Messages To And From SQL Server Error Messages List
 - Raising Exceptions Manual