Introduction to SQL Programming Basics (Oracle Edition) (TTSQL002) Training

Duration: **3 Day**

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Overview

Explore RDBMS Basics, SQL Language and Tools Essentials, Querying Basics, ASNI Joins, Functions & More

A company's success hinges on responsible, accurate database management. Organizations rely on highly available data to complete all sorts of tasks, from creating marketing reports and invoicing customers to setting financial goals. Data professionals like analysts, developers and architects are tasked with creating, optimizing, managing and analyzing data from databases – with little room for error. When databases aren't built or maintained correctly, it's easy to mishandle or lose valuable data. Our SQL Programming and Database Training Series provides students with the skills they require to develop, analyze and maintain data and in correctly structured, modern and secure databases.

SQL Programming Basics is a hands-on, essentials-level course that provides you with basic practical experience with Relational Databases (Oracle), SQL essentials, basic querying, working with regular expressions and basic analytics. In order to be successful in the hands-on portion of the training, it would be helpful to have some prior scripting or exposure and a high-level understanding of databases. We can tailor this agenda to suit your incoming skill level and needs. Please inquire for details.

Who Should Attend?

Business Analysts, End Users, Developers, DBAs

Prerequisites

This is an introductory- level SQL course, appropriate for anyone needing to interface with an Oracle database or those needing a general understanding of Oracle database functionality. That would include end users, business analysts, application developers and database administrators. Basic computer and IT skills are required, as well as basic knowledge of databases.

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What You Will Learn

Working in a hands-on learning environment led by our expert practitioner, attendees will explore:

- Basic RDBMS Principles
- The SQL Language and Tools
- Using SQL Developer
- SQL Query Basics
- WHERE and ORDER BY
- Functions
- ANSI 92 Joins
- ANSI 99 Joins
- GROUP BY and HAVING
- Subqueries
- Regular Expressions
- Analytics

Outline

1. **Basic RDBMS Principles**

- Relational design principles
- Accessing data through a structured query language
- Entity relationship diagrams
- Data Domains
- Null values
- Indexes
- Views
- Denormalization
- Data Model Review

2. **The SQL Language and Tools**

- Using SQL*Plus
- Why Use SQL*Plus When Other Tools Are Available?
- Starting SQL*Plus
- EZConnect
- SQL Commands
- PL/SQL Commands
- SQL*Plus Commands
- The COLUMN Command
- The HEADING Clause
- The FORMAT Clause
- The NOPRINT Clause
- The NULL Clause
- The CLEAR Clause
- Predefined define variables
- SQL
- Command history
- Copy and paste in SQL*Plus

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- Entering SQL commands
- Entering PL/SQL commands
- Entering SQL*Plus commands
- Default output from SQL*Plus
- Entering Queries
- What about PL/SQL?

3. **Using SQL Developer**

- Choosing a SQL Developer version
- Configuring connections
- Creating A Basic Connection
- Creating A TNS Connection
- Connecting
- Configuring preferences
- Using SQL Developer
- The Columns Tab
- The Data Tab
- The Constraints Tab
- The Grants Tab
- The Statistics Tab
- Other Tabs
- Queries In SQL Developer
- Query Builder
- Accessing Objects Owned By Other Users
- The Actions Pulldown Menu
- Differences between SQL Developer and SQL*Plus
- Reporting Commands Missing In SQL Developer
- General Commands Missing In SQL Developer
- Data Dictionary report
- User Defined reports
- Using scripts in SQL Developer

4. **SQL Query Basics**

- Understanding the data dictionary
- Exporting Key Data Dictionary Information
- The Dictionary View
- Components of a SELECT Statement
- The SELECT Clause
- The FROM Clause
- The WHERE Clause
- The GROUP BY Clause
- The HAVING Clause
- The ORDER BY Clause
- The START WITH And CONNECT BY Clauses
- The FOR UPDATE Clause
- Set Operators
- Column Aliases
- Fully Qualifying Tables and Columns
- Table Aliases
- Using DISTINCT and ALL in SELECT statements

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5. **WHERE and ORDER BY**

- WHERE clause basics
- Comparison operators
- Literals and Constants in SQL
- Simple pattern matching
- Logical operations
- The DUAL table
- Arithmetic operations
- Expressions in SQL
- Character operators
- Pseudo columns
- Order by clause basics
- Ordering Nulls
- Accent and case sensitive sorts
- Sampling data
- WHERE and ORDER BY in SQL Developer
- All, Any, Some

6. **Functions**

- The basics of Oracle functions
- Number functions
- Character functions
- Date functions
- Conversion functions
- Other functions
- Large object functions
- Error functions
- The RR format mode;
- Leveraging your knowledge

7. **ANSI 92 JOINS**

- Basics of ANSI 92 Joins
- Using Query Builder with multiple tables
- Table Aliases
- Outer joins
- Outer Joins In Query Builder
- Set operators
- Self-referential joins
- Non-Equijoins

8. **ANSI 99 Joins**

- Changes with ANSI99
- CROSS Join
- NATURAL Join
- JOIN USING
- JOIN ON
- LEFT / RIGHT OUTER JOIN
- FULL OUTER JOIN

9. **GROUP BY and HAVING**

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- Introduction to GROUP functions Limiting Rows
- Including NULL
- Using DISTINCT With Group Functions
- GROUP function requirements
- The HAVING clause
- Other GROUP function rules
- Using Query Builder with GROUP clauses
- ROLLUP and CUBE
- The Grouping function
- Grouping Sets

10. **Subqueries**

- Why use subqueries?
- WHERE clause subqueries
- FROM clause subqueries
- HAVING clause subqueries
- CORRELATED subqueries
- SCALAR subqueries
- DML and subqueries
- EXISTS subqueries
- Hierarchical queries
- TOP N AND BOTTOM N queries
- Creating subqueries using Query Builder
- Lab: Subqueries

11. **Regular Expressions**

- Available Regular Expressions
- Regular Expression Operators
- Character Classes
- Pattern matching options
- REGEX_LIKE
- REGEXP_SUBSTR
- REGEXP_INSTR
- REGEXP_REPLACE
- REGEXP_COUNT

12. **Analytics**

- The WITH clause
- Reporting aggregate functions
- Analytical functions
- User-Defined bucket histograms
- The MODEL clause
- PIVOT and UNPIVOT
- Temporal validity

13. **More Analytics**

- RANKING functions
- RANK
- DENSE_RANK
- CUME_DIST

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- PERCENT_RANK
- ROW_NUMBER
- Windowing aggregate functions
- RATIO_TO_REPORT
- LAG / LEAD
- Linear Regression functions
- Inverse Percentile functions
- Hypothetical ranking functions
- Pattern Matching