

Oracle12c Release 2 SQL (3 Days)

Course Description

This course provides a complete, hands-on introduction to SQL including the use of both SQL Developer and SQL*Plus. This coverage is appropriate for both users of Oracle12c and Oracle11g. A full presentation of the basics of relational databases and their use are also covered.

Target Audience

This course is 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.

Prerequisites

Basic computer skills are needed. A basic knowledge of databases is desired but not required.

Course Content

CHAPTER 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

LAB 1: BASIC RDBMS PRINCIPLES

LAB 1 SOLUTIONS: BASIC RDBMS PRINCIPLES

CHAPTER 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

LOGIN.SQL

COMMAND HISTORY

COPY AND PASTE IN SQL*PLUS

ENTERING SQL COMMANDS

ENTERING PL/SQL COMMANDS

ENTERING SQL*PLUS COMMANDS

DEFAULT OUTPUT FROM SQL*PLUS

ENTERING QUERIES

WHAT ABOUT PL/SQL?

LAB 2: SQL LANGUAGE AND TOOLS

LAB 2 SOLUTIONS: SQL LANGUAGE AND TOOLS

CHAPTER 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
- Saving Typing
- Query Builder
- Modifying Your Query With The Drawer Pullout
- 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

SPOOLING IN SQL DEVELOPER

DATA DICTIONARY REPORTS

USER DEFINED REPORTS

USING SCRIPTS IN SQL DEVELOPER

INTRODUCING SQLCL: THE DEATH OF SQL*PLUS?

- Installation
- Editing / Autocomplete

- SQLFORMAT ANSICONSOLE
- NEW COMMANDS
 - ALIAS
 - APEX
 - BRIDGE
 - CD
 - CTAS
 - DDL
 - FIND
 - FORMAT
 - HISTORY
 - INFORMATION
 - LOAD
 - REPEAT
 - TNSPING
 - WHICH
- MISCELLANEOUS

LAB 3: USING SQL DEVELOPER

LAB 3 SOLUTIONS: USING SQL DEVELOPER

CHAPTER 4 – SQL QUERY BASICS

UNDERSTANDING THE DATA DICTIONARY

- Exporting Key Data Dictionary Information
- An Alternative Approach To A Quick ERD

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

A NEAT TRICK

USING DISTINCT AND ALL IN SELECT STATEMENTS

LAB 4: SQL QUERY BASICS

LAB 4 SOLUTIONS: SQL QUERY BASICS

CHAPTER 5 – WHERE AND ORDER BY

WHERE CLAUSE BASICS
COMPARISON OPERATORS
LITERALS AND CONSTANTS IN SQL
SIMPLE PATTERN MATCHING
LOGICAL OPERATORS
THE DUAL TABLE
ARITHMETIC OPERATORS
EXPRESSIONS IN SQL
CHARACTER OPERATORS
PSEUDO COLUMNS
ORDER BY CLAUSE BASICS
ORDERING NULLS
ACCENT AND CASE INSENSITIVE SORTS
DATA BOUND COLLATION
CASE-INSENSITIVE DATABASE
SAMPLING DATA
WHERE AND ORDER BY IN SQL DEVELOPER
ALL, ANY, SOME
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LAB 5 SOLUTIONS: WHERE AND ORDER BY

CHAPTER 6 – FUNCTIONS

THE BASICS OF ORACLE FUNCTIONS
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CHARACTER FUNCTIONS
DATE FUNCTIONS
CONVERSION FUNCTIONS
OTHER FUNCTIONS
LARGE OBJECT FUNCTIONS
ERROR FUNCTIONS
THE RR FORMAT MODEL
LEVERAGING YOUR KNOWLEDGE
LAB 6: FUNCTIONS
LAB 6 SOLUTIONS: FUNCTIONS

CHAPTER 7 – ANSI 92 JOINS

BASICS OF ANSI 92 JOINS
USING QUERY BUILDER WITH MULTIPLE TABLES
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OUTER JOINS

- Outer Joins In Query Builder

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LAB 7: SOLUTIONS: ANSI 92 JOINS

CHAPTER 8 – ANSI 99 JOINS

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LAB 8 SOLUTIONS: ANSI 99 JOINS

CHAPTER 9 – GROUP BY AND HAVING

INTRODUCTION TO GROUP FUNCTIONS

- Limiting Rows
- Including NULL
- Using DISTINCT With Group Functions

GROUP FUNCTION REQUIREMENTS
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USING QUERY BUILDER WITH GROUP CLAUSES
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THE GROUPING FUNCTION
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CHAPTER 10 – SUBQUERIES

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LAB 10: SUBQUERIES
LAB 10 SOLUTIONS: SUBQUERIES

CHAPTER 11– REGULAR EXPRESSIONS

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LAB 11 SOLUTIONS: REGULAR EXPRESSIONS

CHAPTER 12 – ANALYTICS

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REPORTING AGGREGATE FUNCTIONS
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LAB 12 SOLUTIONS: ANALYTICS

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LINEAR REGRESSION FUNCTIONS
INVERSE PERCENTILE FUNCTIONS
HYPOTHETICAL RANKING FUNCTIONS
PATTERN MATCHING