# Oracle Database 12c: SQL and PL SQL Fundamentals

**Category:** AI, Data & Analytics | **Vendor:** Oracle

**Duration:** 40.00 hours (5 days) **32.5 CPD Hours** **Rating:** ⭐ 4.6 (5,878 reviews)

## Course Information

**Delivery Format:** Instructor Led - Online

## Course Overview

This Oracle Database: SQL and PL/SQL Fundamentals training delivers the fundamentals of SQL and PL/SQL along with the benefits of the programming languages using Oracle Database technology. You'll explore the concepts of relational databases.

## About This Course

- Write queries against single and multiple tables, manipulate data in tables and create database objects.
- Use single row functions to customize output.
- Invoke conversion functions and conditional expressions.
- Use group functions to report aggregated data.
- Create PL/SQL blocks of application code that can be shared by multiple forms, reports and data management applications.
- Develop anonymous PL/SQL blocks, stored procedures and functions.
- Declare identifiers and trap exceptions.
- Use DML statements to manage data.
- Use DDL statements to manage database objects.
- Declare PL/SQL Variables.
- Conditionally control code flow (loops, control structures).
- Describe stored procedures and functions.
- Retrieve row and column data from tables.

Demonstrations and hands-on practice reinforce the fundamental concepts that you'll learn in this course. By enrolling in this course, you'll begin using Oracle SQL Developer to develop these program units. SQL*Plus and JDeveloper are available as optional tools

## Who Should Attend

- PL/SQL Developer
- Forms Developer
- Application Developers
- Reports Developer
- Technical Consultant
- Portal Developer
- Functional Implementer

### Prerequisites & Entry Requirements

**General Prerequisites:**

- Familiarity with data processing concepts and techniques
- Familiarity with programming concepts

## Learning Outcomes

**Upon successful completion of this course, participants will be able to:**

Ensure fast, reliable, secure and easy to manage performance. Optimize database workloads, lower IT costs and deliver a higher quality of service by enabling consolidation onto database clouds.

At the end of this course you will be able to:

- Run data manipulation statements (DML) to update data in the Oracle Database.
- Design PL/SQL anonymous block that execute efficiently.
- Describe the features and syntax of PL/SQL.
- Handle runtime errors.
- Describe stored procedures and functions.
- Use PL/SQL programming constructs and conditionally control code flow (loops, control structures, and explicit cursors).
- Use cursors to process rows.
- Identify the major structural components of the Oracle Database 11g.
- Retrieve row and column data from tables with the SELECT statement.
- Create reports of sorted and restricted data.
- Employ SQL functions to generate and retrieve customized data.
- Display data from multiple tables using the ANSI SQL 99 JOIN syntax.
- Create reports of aggregated data.
- Run data definition language (DDL) statements to create and manage schema objects.

## Detailed Course Outline

Introduction

- Overview of Oracle Database 12c and related products
- Overview of relational database management concepts and terminologies
- Introduction to SQL and its development environments

- The HR schema and the tables used in this course

- Oracle Database documentation and additional resources

Retrieve Data using the SQL SELECT Statement

- List the capabilities of SQL SELECT statements

- Generate a report of data from the output of a basic SELECT statement

- Use arithmetic expressions and NULL values in the SELECT statement

- Invoke Column aliases

- Concatenation operator, literal character strings, alternative quote operator, and the DISTINCT keyword

- Display the table structure using the DESCRIBE command

Restricted and Sorted Data

- Write queries with a WHERE clause to limit the output retrieved

- Describe the comparison operators and logical operators

- Describe the rules of precedence for comparison and logical operators

- Usage of character string literals in the WHERE clause

- Write queries with an ORDER BY clause

- Sort the output in descending and ascending order

- Substitution Variables

Usage of Single-Row Functions to Customize Output

- List the differences between single row and multiple row functions

- Manipulate strings using character functions

- Manipulate numbers with the ROUND, TRUNC, and MOD functions

- Perform arithmetic with date data

- Manipulate dates with the DATE functions

Conversion Functions and Conditional Expressions

- Describe implicit and explicit data type conversion

- Describe the TO_CHAR, TO_NUMBER, and TO_DATE conversion functions

- Nesting multiple functions

- Apply the NVL, NULLIF, and COALESCE functions to data

- Usage of conditional IF THEN ELSE logic in a SELECT statement

Aggregated Data Using the Group Functions

- Usage of the aggregation functions in SELECT statements to produce meaningful reports

- Describe the AVG, SUM, MIN, and MAX function

- How to handle Null Values in a group function?

- Divide the data in groups by using the GROUP BY clause

- Exclude groups of date by using the HAVING clause

Display Data From Multiple Tables

- Write SELECT statements to access data from more than one table

- Join Tables Using SQL:1999 Syntax

- View data that does not meet a join condition by using outer joins

- Join a table to itself by using a self join

- Create Cross Joins

Usage of Subqueries to Solve Queries

- Use a Subquery to Solve a Problem

- Single-Row Subqueries

- Group Functions in a Subquery

- Multiple-Row Subqueries

- Use the ANY and ALL Operator in Multiple-Row Subqueries

- Use the EXISTS Operator

SET Operators

- Describe the SET operators

- Use a SET operator to combine multiple queries into a single query

- Describe the UNION, UNION ALL, INTERSECT, and MINUS Operators

- Use the ORDER BY Clause in Set Operations

Data Manipulation

- Add New Rows to a Table

- Change the Data in a Table

- Use the DELETE and TRUNCATE Statements

- How to save and discard changes with the COMMIT and ROLLBACK statements

- Implement Read Consistency

- Describe the FOR UPDATE Clause

DDL Statements to Create and Manage Tables

- Categorize Database Objects

- Create Tables

- Describe the data types

- Understand Constraints

- Create a table using a subquery

- How to alter a table?

- How to drop a table?

Other Schema Objects

- Create, modify, and retrieve data from a view

- Perform Data manipulation language (DML) operations on a view

- How to drop a view?

- Create, use, and modify a sequence

- Create and drop indexes

- Create and drop synonyms

Introduction to PL/SQL

- PL/SQL Overview
- List the benefits of PL/SQL Subprograms
- Overview of the Types of PL/SQL blocks
- Create a Simple Anonymous Block
- Generate the Output from a PL/SQL Block

PL/SQL Identifiers

- List the different Types of Identifiers in a PL/SQL subprogram
- Usage of the Declarative Section to Define Identifiers
- Use of variables to store data
- Scalar Data Types
- %TYPE Attribute
- Bind Variables
- Sequences in PL/SQL Expressions

Write Executable Statements

- Basic PL/SQL Block Syntax Guidelines
- How to comment code?
- SQL Functions in PL/SQL
- Data Type Conversion
- Nested Blocks
- Operators in PL/SQL

Interaction with the Oracle Server

- SELECT Statements in PL/SQL to Retrieve data
- Data Manipulation in the Server Using PL/SQL

- The SQL Cursor concept

- Learn to use SQL Cursor Attributes to Obtain Feedback on DML

- How to save and discard transactions?

Control Structures

- Conditional processing Using IF Statements

- Conditional processing Using CASE Statements

- Simple Loop Statement

- While Loop Statement

- For Loop Statement

- The Continue Statement

Usage of Composite Data Types

- PL/SQL Records

- The %ROWTYPE Attribute

- Insert and Update with PL/SQL Records

- Associative Arrays (INDEX BY Tables)

- INDEX BY Table Methods

- INDEX BY Table of Records

Explicit Cursors

- Understand Explicit Cursors

- Declare the Cursor

- How to open the Cursor?

- Fetching data from the Cursor

- How to close the Cursor?

- Cursor FOR loop

- Explicit Cursor Attributes

- FOR UPDATE Clause and WHERE CURRENT Clause

Exception Handling

- What are Exceptions?
- Handle Exceptions with PL/SQL
- Trap Predefined Oracle Server Errors
- Trap Non-Predefined Oracle Server Errors
- Trap User-Defined Exceptions
- Propagate Exceptions
- RAISE_APPLICATION_ERROR Procedure

Stored Procedures and Functions

- What are Stored Procedures and Functions?
- Differentiate between anonymous blocks and subprograms
- Create a Simple Procedure
- Create a Simple Procedure with IN parameter
- Create a Simple Function
- Execute a Simple Procedure
- Execute a Simple Function

**Skills You Will Learn:**

Ensure fast, reliable, secure and easy to manage performance. Optimize database workloads, lower IT costs and deliver a higher quality of service by enabling consolidation onto database clouds.<br><br>At the end of this course you will be able to:<br><br><br>- Run data manipulation statements (DML) to update data in the Oracle Database.<br>- Design PL/SQL anonymous block that execute efficiently.<br>- Describe the features and syntax of PL/SQL.<br>- Handle runtime errors.<br>- Describe stored procedures and functions.<br>- Use PL/SQL programming constructs and conditionally control code flow (loops, control structures, and explicit cursors).<br>- Use cursors to process rows.<br>- Identify the major structural components of the Oracle Database 11g.<br>- Retrieve row and column data from tables with the SELECT statement.<br>- Create reports of sorted and restricted data.<br>- Employ SQL functions to generate and retrieve customized data.<br>- Display data from multiple tables using the ANSI SQL 99 JOIN syntax.<br>- Create reports of aggregated data.<br>- Run data definition language (DDL) statements to create and manage schema objects.

# Frequently Asked Questions

### Q: What delivery options are available for Oracle Database 12c: SQL and PL SQL Fundamentals?

We offer multiple delivery formats:

- Live Instructor-Led Classroom Online (Virtual/Live Online)
- Traditional Instructor-Led Classroom Training (ILT)
- On-site delivery at your offices anywhere in United Kingdom
- Private dedicated courses customized for your team

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### Q: How many CPD hours does this course provide?

The 5-day Oracle Database 12c: SQL and PL SQL Fundamentals course provides up to 32.5 CPD hours of structured learning. CPD certificates can be provided upon request.

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### Q: What is the duration of the Oracle Database 12c: SQL and PL SQL Fundamentals training?

The training takes place over 5 day(s), with each day lasting approximately 40.00 hours including breaks for lunch and refreshments.

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### Q: Do you provide corporate training for Oracle Database 12c: SQL and PL SQL Fundamentals?

Yes, we provide corporate training, dedicated training, and closed classes for Oracle Database 12c: SQL and PL SQL Fundamentals. Training can take place anywhere in United Kingdom including London, Manchester, Birmingham, Edinburgh, or live online allowing teams from across United Kingdom or internationally to attend.

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### Q: What related terms do people search for?

Popular related searches include: Oracle Database 12c: SQL and PL SQL Fundamentals, Oracle Database Training, OC12CPLSQLF

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### Q: Why choose Nexus Human for Oracle Database 12c: SQL and PL SQL Fundamentals?

Nexus Human is recognized as one of the leading training providers. Our trainers have won multiple awards including:

- Small Firms Best Trainer Award
- National Training Partner of the Year (Ireland) - Multiple Years
- Global Top 30 Instructor Awards (2012, 2019, 2021)
- Tech Excellence Award Nominations
- Learning Performance Institute (LPI) External Training Provider Sponsor 2024

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### Q: Are there any discount codes available?

Yes! Use discount code **PENPAL5** when booking your Oracle Database 12c: SQL and PL SQL Fundamentals training. Please note that only one discount code can be used per booking and cannot be combined with other special offers.


## Nexus Human

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