Cel szkolenia:

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.

Learn To:

- 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.

Plan szkolenia:

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

Wymagania:

Recommended Related Training Courses:

- Using Java - for PL/SQL and Database Developers
- Oracle Database: SQL Tuning for Developers

Poziom trudności

Certyfikaty:

Uczestnicy szkoleń otrzymają zaświadczenia o ukończeniu kursu sygnowane przez firmę Oracle.

Prowadzący:

Autoryzowany wykładowca Oracle.