Cel szkolenia:

This *Introduction to SQL/PLSQL Accelerated* course will teach you SQL and PL/SQL programming language concepts. Learn how to write SQL commands, develop stored PL/SQL procedures, functions, packages and database triggers. This accelerated course covers 10 days worth of content in only 5 days.

**Learn To:**

- Understand the fundamental and core concepts of relational databases.
- Create reports of sorted and restricted data.
- Run data manipulation statements (DML).
- Retrieve row and column data from tables.
- Control privileges at the object and system level.
- Create indexes and constraints; alter existing schema objects.
- Create and query external tables.
- Create anonymous PL/SQL blocks, functions and procedures.
- Conditionally control code flow (loops, control structures).
- Create stored procedures, functions and packages.
- Conditionally control code flow (loops, control structures).
- Use PL/SQL packages to group and contain related constructs.
- Create triggers to solve business challenges.
- Leverage the Oracle supplied PL/SQL packages for various programming tasks.
Plan szkolenia:

- Introduction to Oracle Database
  - List the features of Oracle Database 12c
  - Discuss the basic design, theoretical, and physical aspects of a relational database
  - Categorize the different types of SQL statements
  - Describe the data set used by the course
  - Log on to the database using SQL Developer environment
  - Save queries to files and use script files in SQL Developer

- 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
  - Select All Columns
  - Select Specific Columns
  - Use Column Heading Defaults
  - Use Arithmetic Operators
  - Understand Operator Precedence
  - Learn the DESCRIBE command to display the table structure

- Learn to Restrict and Sort Data
  - Write queries that contain a WHERE clause to limit the output retrieved
  - List the comparison operators and logical operators that are used in a WHERE clause
  - Describe the rules of precedence for comparison and logical operators
  - Use character string literals in the WHERE clause
  - Write queries that contain an ORDER BY clause to sort the output of a SELECT statement
  - Sort output in descending and ascending order

- Usage of Single-Row Functions to Customize Output
  - Describe the differences between single row and multiple row functions
  - Manipulate strings with character function in the SELECT and WHERE clauses
  - Manipulate numbers with the ROUND, TRUNC, and MOD functions
  - Perform arithmetic with date data
  - Manipulate dates with the DATE functions

- Invoke Conversion Functions and Conditional Expressions
  - Describe implicit and explicit data type conversion
  - Use the TO_CHAR, TO_NUMBER, and TO_DATE conversion functions
  - Nest multiple functions
  - Apply the NVL, NULLIF, and COALESCE functions to data
- Use conditional IF THEN ELSE logic in a SELECT statement

- **Aggregate Data Using the Group Functions**
  - Use the aggregation functions to produce meaningful reports
  - Divide the retrieved data in groups by using the GROUP BY clause
  - Exclude groups of data by using the HAVING clause

- **Display Data From Multiple Tables Using Joins**
  - Write SELECT statements to access data from more than one table
  - View data that generally does not meet a join condition by using outer joins
  - Join a table to itself by using a self join

- **Use Sub-queries to Solve Queries**
  - Describe the types of problem that sub-queries can solve
  - Define sub-queries
  - List the types of sub-queries
  - Write single-row and multiple-row sub-queries

- **The SET Operators**
  - Describe the SET operators
  - Use a SET operator to combine multiple queries into a single query
  - Control the order of rows returned

- **Data Manipulation Statements**
  - Describe each DML statement
  - Insert rows into a table
  - Change rows in a table by the UPDATE statement
  - Delete rows from a table with the DELETE statement
  - Save and discard changes with the COMMIT and ROLLBACK statements
  - Explain read consistency

- **Use of DDL Statements to Create and Manage Tables**
  - Categorize the main database objects
  - Review the table structure
  - List the data types available for columns
  - Create a simple table
  - Decipher how constraints can be created at table creation
  - Describe how schema objects work

- **Other Schema Object**
  - Create a simple and complex view
  - Retrieve data from views
  - Create, maintain, and use sequences
○ Create and maintain indexes
○ Create private and public synonyms

● Introduction to PL/SQL
  ○ Overview of PL/SQL
  ○ Identify the benefits of PL/SQL Subprograms
  ○ Overview of the types of PL/SQL blocks
  ○ Create a Simple Anonymous Block
  ○ How to generate output from a PL/SQL Block?

● Declare PL/SQL Identifiers
  ○ List the different Types of Identifiers in a PL/SQL subprogram
  ○ Usage of the Declarative Section to Define Identifiers
  ○ Use variables to store data
  ○ Identify Scalar Data Types
  ○ The %TYPE Attribute
  ○ What are Bind Variables?
  ○ Sequences in PL/SQL Expressions

● Write Executable Statements
  ○ Describe Basic PL/SQL Block Syntax Guidelines
  ○ Learn to Comment the Code
  ○ Deployment of SQL Functions in PL/SQL
  ○ How to convert Data Types?
  ○ Describe Nested Blocks
  ○ Identify the Operators in PL/SQL

● Interaction with the Oracle Server
  ○ Invoke SELECT Statements in PL/SQL
  ○ Retrieve Data in PL/SQL
  ○ SQL Cursor concept
  ○ Avoid Errors by using Naming Conventions when using Retrieval and DML Statements
  ○ Data Manipulation in the Server using PL/SQL
  ○ Understand the SQL Cursor concept
  ○ Use SQL Cursor Attributes to Obtain Feedback on DML
  ○ Save and Discard Transactions

● Control Structures
  ○ Conditional processing using IF Statements
  ○ Conditional processing using CASE Statements
  ○ Describe simple Loop Statement
- Describe While Loop Statement
- Describe For Loop Statement
- Use the Continue Statement

- Composite Data Types
  - Use PL/SQL Records
  - The %ROWTYPE Attribute
  - Insert and Update with PL/SQL Records
  - INDEX BY Tables
  - Examine INDEX BY Table Methods
  - Use INDEX BY Table of Records

- Explicit Cursors
  - What are Explicit Cursors?
  - Declare the Cursor
  - Open the Cursor
  - Fetch data from the Cursor
  - Close the Cursor
  - Cursor FOR loop
  - The %NOTFOUND and %ROWCOUNT Attributes
  - Describe the FOR UPDATE Clause and WHERE CURRENT Clause

- Exception Handling
  - Understand 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
  - Create a Modularized and Layered Subprogram Design
  - Modularize Development With PL/SQL Blocks
  - Understand the PL/SQL Execution Environment
  - List the benefits of using PL/SQL Subprograms
  - List the differences between Anonymous Blocks and Subprograms
  - Create, Call, and Remove Stored Procedures
  - Implement Procedures Parameters and Parameters Modes
  - View Procedure Information
Stored Functions and Debugging Subprograms
- Create, Call, and Remove a Stored Function
- Identify the advantages of using Stored Functions
- Identify the steps to create a stored function
- Invoke User-Defined Functions in SQL Statements
- Restrictions when calling Functions
- Control side effects when calling Functions
- View Functions Information
- How to debug Functions and Procedures?

Wymagania:

Recommended Related Training Courses:
- Using Java - for PL/SQL and Database Developers
- Oracle Database: SQL Tuning for Developers
- Oracle Database 12c: Analytic SQL for Data Warehousing

Poziom trudności

Certyfikaty:

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

Prowadzący:

Autoryzowany wykładowca Oracle.