Cel szkolenia:

This **Oracle Database: Introduction to SQL** training helps you write subqueries, combine multiple queries into a single query using SET operators and report aggregated data using group functions. Learn this and more through hands-on exercises.

**Learn To:**

- Understand the basic concepts of relational databases ensure refined code by developers.
- Create reports of sorted and restricted data.
- Run data manipulation statements (DML).
- Control database access to specific objects.
- Manage schema objects.
- Manage objects with data dictionary views.
- 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.

**Plan szkolenia:**

- **Introduction to Oracle Database**
  - List the features of Oracle Database 11g
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 Objects
  - Create a simple and complex view
  - Retrieve data from views
  - Create, maintain, and use sequences
  - Create and maintain indexes
  - Create private and public synonyms
- Control User Access
  - Differentiate system privileges from object privileges
○ Create Users
○ Grant System Privileges
○ Create and Grant Privileges to a Role
○ Change Your Password
○ Grant Object Privileges
○ How to pass on privileges?
○ Revoke Object Privileges

○ Management of Schema Objects
  ○ Add, Modify, and Drop a Column
  ○ Add, Drop, and Defer a Constraint
  ○ How to enable and Disable a Constraint?
  ○ Create and Remove Indexes
  ○ Create a Function-Based Index
  ○ Perform Flashback Operations
  ○ Create an External Table by Using ORACLE_LOADER and by Using ORACLE_DATAPUMP
  ○ Query External Tables

○ Manage Objects with Data Dictionary Views
  ○ Explain the data dictionary
  ○ Use the Dictionary Views
  ○ USER_OBJECTS and ALL_OBJECTS Views
  ○ Table and Column Information
  ○ Query the dictionary views for constraint information
  ○ Query the dictionary views for view, sequence, index and synonym information
  ○ Add a comment to a table
  ○ Query the dictionary views for comment information

○ Manipulate Large Data Sets
  ○ Use Subqueries to Manipulate Data
  ○ Retrieve Data Using a Subquery as Source
  ○ Insert Using a Subquery as a Target
  ○ Usage of the WITH CHECK OPTION Keyword on DML Statements
  ○ List the types of Multitable INSERT Statements
  ○ Use Multitable INSERT Statements
  ○ Merge rows in a table
  ○ Track Changes in Data over a period of time

○ Data Management in different Time Zones
  ○ Time Zones
CURRENT_DATE, CURRENT_TIMESTAMP, and LOCALTIMESTAMP
- Compare Date and Time in a Session’s Time Zone
- DBTIMEZONE and SESSIONTIMEZONE
- Difference between DATE and TIMESTAMP
- INTERVAL Data Types
- Use EXTRACT, TZ_OFFSET and FROM_TZ
- Invoke TO_TIMESTAMP, TO_YMINTERVAL and TO_DSINTERVAL

Retrieve Data Using Sub-queries
- Multiple-Column Subqueries
- Pairwise and Nonpairwise Comparison
- Scalar Subquery Expressions
- Solve problems with Correlated Subqueries
- Update and Delete Rows Using Correlated Subqueries
- The EXISTS and NOT EXISTS operators
- Invoke the WITH clause
- The Recursive WITH clause

Regular Expression Support
- Use the Regular Expressions Functions and Conditions in SQL
- Use Meta Characters with Regular Expressions
- Perform a Basic Search using the REGEXP_LIKE function
- Find patterns using the REGEXP_INSTR function
- Extract Substrings using the REGEXP_SUBSTR function
- Replace Patterns Using the REGEXP_REPLACE function
- Usage of Sub-Expressions with Regular Expression Support
- Implement the REGEXP_COUNT function

Wymagania:

Recommended Related Training Courses:

- Oracle Database 11g: SQL Tuning Workshop Release 2
- Oracle Database 11g: Performance Tuning DBA Release 2
- Oracle SQL Tuning for Developers Workshop
- Oracle Database 11g: Data Mining Techniques
Poziom trudności

Certyfikaty:

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

Prowadzący:

Autoryzowany wykładowca Oracle.