

WORKING WITH SQL

- Retrieving Data Using the SQL SELECT Statement
- List the capabilities of SQL SELECT statements
- Restricting and Sorting Data
- Limit the rows that are retrieved by a query
- Sort the rows that are retrieved by a query
- Use ampersand substitution to restrict and sort output at runtime
- Using Single-Row Functions to Customize Output
- Describe various types of functions available in SQL
- Use character, number, and date functions in SELECT statements
- Using Conversion Functions and Conditional Expressions
- Describe various types of conversion functions that are available in SQL
- Use the TO_CHAR, TO_NUMBER, and TO_DATE conversion functions
- Apply conditional expressions in a SELECT statement
- Reporting Aggregated Data Using the Group Functions
- Identify the available group functions
- Describe the use of group functions
- Group data by using the GROUP BY clause
- Include or exclude grouped rows by using the HAVING clause
- Displaying Data from Multiple Tables
- Write SELECT statements to access data from more than one table using equijoins and nonequijoins
- Join a table to itself by using a self-join
- View data that generally does not meet a join condition by using outer joins
- Generate a Cartesian product of all rows from two or more tables
- Using Subqueries to Solve Queries
- Define subqueries
- Describe the types of problems that the subqueries can solve
- List the types of subqueries Write single-row and multiple-row subqueries
- Using the Set Operators
- Describe set operators
- Use a set operator to combine multiple queries into a single query
- Control the order of rows returned
- Manipulating Data
- Describe each data manipulation language (DML) statement
- Control transactions
- Using DDL Statements to Create and Manage Tables
- Categorize the main database objects
- Review the table structure
- List the data types that are available for columns
- Create a simple table
- Explain how constraints are created at the time of table creation
- Describe how schema objects work
- Creating Other Schema Objects
- Create simple and complex views
- Retrieve data from views
- Create, maintain, and use sequences
- Create and maintain indexes
- Create private and public synonyms

Oracle Database 11g: PL/SQL

Fundamentals

- Introduction to PL/SQL
- Explain the need for PL/SQL
- Explain the benefits of PL/SQL
- Identify the different types of PL/SQL blocks
- Output messages in PL/SQL
- Declaring PL/SQL Variables
- List the uses of variables, declare and initialize variables, use bind variables
- List and describe various data types using the %TYPE attribute
- Writing Executable Statements
- Use built-in SQL functions in PL/SQL and sequences in PL/SQL expressions
- Write nested blocks and qualify variables with labels
- Create PL/SQL executable blocks using DML and transaction control statements
- Make use of the INTO clause to hold the values returned by a SQL statement
- Writing Control Structures
- Identify the uses and types of control structures (IF, CASE statements and expressions)
- Construct and identify loop statements
- Working with Composite Data Types
- Create user-defined PL/SQL records
- Create a record with the %ROWTYPE attribute
- Using Explicit Cursors
- Distinguish between usage of implicit and explicit cursors
- Handling Exceptions
- Define PL/SQL exceptions
- Recognize unhandled exceptions
- Handle different types of exceptions (pre-defined exceptions, non-predefined exceptions and user-defined exceptions)
- Creating Procedures
- Create a simple procedure and invoke it from an anonymous block
- Work with procedures
- Handle exceptions in procedures, remove a procedure, and display a procedure's information
- Creating Functions
- Differentiate between a procedure and a function
- Describe the uses of functions
- Work with functions (create, invoke and remove functions)
- Creating Packages
- Identify the benefits and the components of packages
- Work with packages (create package specification and body, invoke package subprograms, remove a package and display package information)
- Creating Triggers
- Describe different types of triggers and their uses