Oracle Database 12c: Analytic SQL for Data Warehousing

This Oracle Database 12c: Analytic SQL for Data Warehousing training teaches you how to interpret the concept of a hierarchical query, create a tree-structured report, format hierarchical data and exclude branches from the tree structure. You'll also learn to use regular expressions and sub-expressions to search for, match, and replace strings. In this course, you will be introduced to Oracle Business Intelligence Cloud Service.

Learn To:

- Use SQL with aggregation operators, SQL for Analysis and Reporting functions.
- Group and aggregate data using the ROLLUP and CUBE operators, the GROUPING function, Composite Columns and the concatenated Groupings.
- Analyze and report data using Ranking functions, the LAG/LEAD Functions and the PIVOT and UNPIVOT clauses.
- Perform advanced pattern matching.
- Use regular expressions to search for, match and replace strings.
- Gain an understanding of the Oracle Business Intelligence Cloud Service.

Benefits to You

Enrolling in this course will help data warehouse builders and implementers, database administrators, system administrators and database application developers to better design, maintain and use data warehouses. Through working with expert Oracle University instructors in a hands-on classroom environment, you'll deepen your knowledge so you can perform better on the job.

Before Attending this Course

Before attending this course, you should be familiar with the following: relational database concepts, data warehouse theory and implementation, Oracle server concepts)including application and server tuning) and the operating system environment on which the Oracle Database Server is running. You'll use Oracle SQL Developer to develop program units. SQL*Plus is introduced as an optional tool.

Prerequisites

Suggested Prerequisite

- Oracle Database 11g: Administer a Data Warehouse Ed 2
- Oracle Database 12c: Introduction for Experienced SQL Users Ed 1
- Using Java - for PL/SQL and Database Developers Ed 1
- Conceptual experience designing data warehouses
- Practical experience implementing data warehouses
- Good understanding of relational technology

Required Prerequisite

- Oracle Database 11g: Data Warehousing Fundamentals Ed 1
- Familiarity with SQL
- Data Warehouse design, implementation, and maintenance experience
- Good working knowledge of the SQL language
- Familiarity with Oracle SQL Developer and SQL*Plus

Audience

- Administrator
- Analyst
- Architect
- Developer

Objectives

- Group and aggregate data using the ROLLUP and CUBE operators
- Analyze and report data using Ranking, LAG/LEAD, and FIRST/LAST functions
- Use the MODEL clause to create a multidimensional array from query results
- Use Analytic SQL to aggregation, Analyze and Reporting, and Model Data
- Interpret the concept of a hierarchical query, create a tree-structured report, format hierarchical data, and exclude branches from the tree structure
- Gain an understanding of the Oracle Business Intelligence Cloud Service
- Use regular expressions to search for, match, and replace strings
- Perform pattern matching using the MATCH_RECOGNIZE clause

Topics

- Introduction
  - Course Objectives, Course Agenda and Class Account Information
  - Describe the Schemas and Appendices used in the Lesson
  - Overview of SQL*Plus Environment
  - Overview of SQL Developer
  - Overview of Analytic SQL
  - Oracle Database SQL and Data Warehousing Documentation
- Grouping and Aggregating Data Using SQL
  - Generating Reports by Grouping Related Data
  - Review of Group Functions
  - Reviewing GROUP BY and HAVING Clause
  - Using the ROLLUP and CUBE Operators
  - Using the GROUPING Function
  - Working with GROUPING SET Operators and Composite Columns

- Using Concatenated Groupings with Example
- Hierarchical Retrieval
  - Using Hierarchical Queries
  - Sample Data from the EMPLOYEES Table
  - Natural Tree Structure
  - Hierarchical Queries: Syntax
  - Walking the Tree: Specifying the Starting Point
  - Walking the Tree: Specifying the Direction of the Query
  - Using the WITH Clause
  - Hierarchical Query Example: Using the CONNECT BY Clause
- Working with Regular Expressions
  - Introducing Regular Expressions
  - Using the Regular Expressions Functions and Conditions in SQL and PL/SQL
  - Introducing Metacharacters
  - Using Metacharacters with Regular Expressions
  - Regular Expressions Functions and Conditions: Syntax
  - Performing a Basic Search Using the REGEXP_LIKE Condition
  - Finding Patterns Using the REGEXP_INSTR Function
  - Extracting Substrings Using the REGEXP_SUBSTR Function
- Analyzing and Reporting Data Using SQL
  - Overview of SQL for Analysis and Reporting Functions
  - Using Analytic Functions
  - Using the Ranking Functions
  - Using Reporting Functions
- Performing Pivoting and Unpivoting Operations
  - Performing Pivoting Operations
  - Using the PIVOT and UNPIVOT Clauses
  - Pivoting on the QUARTER Column: Conceptual Example
  - Performing Unpivoting Operations
  - Using the UNPIVOT Clause Columns in an UNPIVOT Operation
  - Creating a New Pivot Table: Example
- Pattern Matching using SQL
  - Row Pattern Navigation Operations
  - Handling Empty Matches or Unmatched Rows
  - Excluding Portions of the Pattern from the Output
  - Expressing All Permutations
  - Rules and Restrictions in Pattern Matching
  - Examples of Pattern Matching
- Modeling Data Using SQL
  - Using the MODEL clause
  - Demonstrating Cell and Range References
  - Using the CV Function
  - Using FOR Construct with IN List Operator, incremental values and Subqueries
  - Using Analytic Functions in the SQL MODEL Clause
  - Distinguishing Missing Cells from NULLs
  - Using the UPDATE, UPSERT and UPSERT ALL Options
  - Reference Models
- Oracle Business Intelligence Cloud Service Overview
  - Oracle BI Cloud Service
  - Introducing Oracle Business Intelligence Cloud Service
  - Guidance Through Exploratory Analysis & Deep Discovery through Rich Feature Set
  - BICS Can Integrate Any Data Source Quickly
  - BICS Makes Any Time The Right Time For New Insights
  - Speed, Flexibility and Economy of Cloud

- Immediate Access to New Functionality
- Enterprise-Grade Service Reliability

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