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SQL

Duration : 25 hrs.

Description:

This course offers students an extensive introduction to the powerful SQL programming language. Students are taught to create and maintain database objects and to store, retrieve, and manipulate data. Demonstrations and hands-on practice reinforce the fundamental concepts.

Introduction

Introduction to Database
Management Systems

Writing a Basic SQL Statement

Describing the SQL Select
Capabilities
Executing a Basic Select Statement
with the Mandatory Clauses

Restricting and Sorting Data

Limiting the Rows Retrieved by a
Query
Sorting the Rows Retrieved by a
Query

Single Row Functions

Describing Various Types of
Functions Available in SQL
Using a Variety of Character,

Number, and Date Functions in
SELECT Statements
Explaining What the Conversion
Functions Are and How They Are
Used
Using Control Statements

Displaying Data from Multiple Tables

Writing SELECT Statements to
Access Data from More Than One
Table
Describing the Cartesian Product
Describing and Using the Different
Types of Joins
Writing Joins Using the Tips
Provided
Aggregating Data by Using Group
Functions
Identifying the Different Group

Functions Available
Explaining the Use of Group
Functions
Grouping Data by Using the
GROUP BY Clause.

Writing Joins

Joining more than two tables
Non-equijoins
Self joins
Comparing SQL:1999 to Oracle
joins

Using Group Functions

Group BY clause
HAVING Function
Nesting group functions

Writing Sub queries

Describing the Types of Problems
That Sub queries Can Solve
Describing Subqueries
Listing the Types of Subqueries
Writing Single-Row and Multi-Row
Subqueries
Describing and Explaining the
Behavior of Subqueries When
NULL Values Are Retrieved

Manipulating Data

Describing Each Data Manipulation
Language (DML) Command
Inserting Rows into a Table
Updating Rows in a Table
Deleting Rows from a Table
Merging Rows into a Table
Controlling Transactions
Describing Transaction Processing
Describing Read Consistency and
Implicit and Explicit Locking

Creating and Managing Tables

Describing the Main Database
Objects
Creating Tables
Describing the Data Types
Altering Table Definitions
Dropping, Renaming, and
Truncating Tables

Including Constraints

Describing Constraints
Creating and Maintaining
Constraints

Creating Views

Describing Views and Their Uses
Creating a View
Retrieving Data by Means of a View
Inserting, Updating, and Deleting
Data Through Views
Dropping Views
Altering the Definition of a View

Other Database Objects

Creating and Maintaining Indexes
Timestamp Conversion

Writing Explicit Cursors

Explicit Cursor Functions
Controlling Explicit Cursor
Declaring, Opening and
Closing the Cursor
Fetching Data from the
cursor
Explicit Cursor Attributes
% ISOPEN, % NOT
FOUND and % ROW
COUNT Attributes

- Cursor and Records
- Cursor FOR Loops
- Cursor FOR Loops using Sub-Queries

- Creating Triggers on System Events

Advanced Explicit Cursor Concepts

- Cursors with Parameters
- The FOR UPDATE Clause
- The WHERE CURRENT OF Clause
- Cursors with Sub-Queries

Creating Functions

- Stored Functions
- Creating a Function
- Calling User Defined Functions
- Restrictions on Calling Functions
- Removing Functions

Manipulating LOBs

- Managing LOBs.
- Securing Bfiles.
- Directory Objects
- BFILENAME Function
- Migrating Long to LOB.
- DBMS_LOB Package.
- Adding, populating & Removing LOB Column to Tables
- Using LOBs in PL/SQL
- Temporary LOB.

Database Triggers

- Types of Triggers
- Creating Triggers on DDL Statements