

/**11G SQL CONTENTS(fundamentals+advance)***/

1. Retrieving Data Using the SQL SELECT Statement

Objectives

Capabilities of SQL SELECT Statements

Basic SELECT Statement

Selecting All Columns

Selecting Specific Columns

Writing SQL Statements

Column Heading Defaults

Arithmetic Expressions

Using Arithmetic Operators

Operator Precedence

Defining a Null Value

Null Values in Arithmetic Expressions

Defining a Column Alias

Using Column Aliases

Concatenation Operator

Literal Character Strings

Using Literal Character Strings

Alternative Quote (q) Operator

Duplicate Rows

Displaying the Table Structure

Using the DESCRIBE Command

2. Restricting and Sorting Data

Objectives

Limiting Rows Using a Selection

Limiting the Rows That Are Selected

Using the WHERE Clause

Character Strings and Dates

Comparison Conditions

Using Comparison Conditions

Using the BETWEEN Condition

- Using the IN Condition
- Using the LIKE Condition
- Using the NULL Conditions
- Logical Conditions
- Using the AND Operator
- Using the OR Operator
- Using the NOT Operator
- Rules of Precedence
- Using the ORDER BY Clause
- Sorting
- Substitution Variables
- Using the & Substitution Variable
- Character and Date Values with Substitution Variables
- Specifying Column Names, Expressions, and Text
- Using the && Substitution Variable
- Using the DEFINE Command
- Using the VERIFY Command

3. Using Single-Row Functions to Customize Output

- SQL Functions
- Two Types of SQL Functions
- Single-Row Functions
- Character Functions
- Case-Manipulation Functions
- Using Case-Manipulation Functions
- Character-Manipulation Functions
- Using the Character-Manipulation Functions
- Number Functions
- Using the ROUND Function
- Using the TRUNC Function
- Using the MOD Function
- Working with Dates
- Arithmetic with Dates
- Using Arithmetic Operators with Dates
- Date Functions
- Using Date Functions
- Practice 3: Overview of Part

- Conversion Functions
 - Implicit Data Type Conversion
 - Explicit Data Type Conversion
 - Using the TO_CHAR Function with Dates
 - Elements of the Date Format Model
 - Using the TO_CHAR Function with Dates
 - Using the TO_CHAR Function with Numbers
 - Using the TO_NUMBER and TO_DATE Functions
- RR Date Format
- RR Date Format: Example
- Nesting Functions
- General Functions
- NVL Function
 - Using the NVL Function
 - Using the NVL2 Function
 - Using the NULLIF Function
 - Using the COALESCE Function
- Conditional Expressions
- CASE Expression
 - Using the CASE Expression
- DECODE Function
 - Using the DECODE Function

4. Reporting Aggregated Data Using the Group Functions

- What Are Group Functions?
- Types of Group Functions
- Group Functions: Syntax
- Using the AVG and SUM Functions
- Using the MIN and MAX Functions
- Using the COUNT Function
- Using the DISTINCT Keyword
- Group Functions and Null Values
- Creating Groups of Data
- Creating Groups of Data: GROUP BY Clause Syntax
- Using the GROUP BY Clause
- Grouping by More Than One Column
- Using the GROUP BY Clause on Multiple Columns
- Illegal Queries Using Group Functions
- Restricting Group Results
- Restricting Group Results with the HAVING Clause

Using the HAVING Clause
Nesting Group Functions

5. Displaying Data from Multiple Tables

Objectives

Obtaining Data from Multiple Tables

Types of Joins

Joining Tables Using SQL:1999 Syntax

Creating Natural Joins

Retrieving Records with Natural Joins

Creating Joins with the USING Clause

Joining Column Names

Retrieving Records with the USING Clause

Qualifying Ambiguous Column Names

Using Table Aliases

Creating Joins with the ON Clause

Retrieving Records with the ON Clause

Self-Joins Using the ON Clause

Applying Additional Conditions to a Join

Creating Three-Way Joins with the ON Clause

Nonequijoins

Retrieving Records with Nonequijoins

Outer Joins

INNER Versus OUTER Joins

LEFT OUTER JOIN

RIGHT OUTER JOIN

FULL OUTER JOIN

Cartesian Products

Generating a Cartesian Product

Creating Cross Joins

6. Using Subqueries to Solve Queries

Objectives

Using a Subquery to Solve a Problem

Subquery Syntax

Using a Subquery

Guidelines for Using Subqueries

Types of Subqueries

Single-Row Subqueries

Executing Single-Row Subqueries

Using Group Functions in a Subquery

The HAVING Clause with Subqueries

What Is Wrong with This Statement?

Will This Statement Return Rows?

Multiple-Row Subqueries

Using the ANY Operator in Multiple-Row Subqueries

Using the ALL Operator in Multiple-Row Subqueries

Null Values in a Subquery

7. Manipulating Data(DML,TCL)

Objectives

Data Manipulation Language

Adding a New Row to a Table

INSERT Statement Syntax

Inserting New Rows

Inserting Rows with Null Values

Inserting Special Values

Inserting Specific Date Values

Creating a Script

Copying Rows from Another Table

Changing Data in a Table

UPDATE Statement Syntax

Updating Rows in a Table

Updating Two Columns with a Subquery

Updating Rows Based on Another Table

Removing a Row from a Table

DELETE Statement

Deleting Rows from a Table

Deleting Rows Based on Another Table

TRUNCATE Statement

Using a Subquery in an INSERT Statement

Database Transactions

Advantages of COMMIT and ROLLBACK Statements

Controlling Transactions

Rolling Back Changes to a Marker

Implicit Transaction Processing

State of the Data Before COMMIT or ROLLBACK

State of the Data After COMMIT

- Committing Data
- State of the Data After ROLLBACK
- Statement-Level Rollback
- Read Consistency
- Implementation of Read Consistency

8. Using DDL Statements to Create and Manage Tables

- Database Objects
- Naming Rules
- CREATE TABLE Statement
- Referencing Another User's Tables
- DEFAULT Option
- Creating Tables
- Data Types
- Datetime Data Types
- Including Constraints
- Constraint Guidelines
- Defining Constraints
- NOT NULL Constraint
- UNIQUE Constraint
- PRIMARY KEY Constraint
- FOREIGN KEY Constraint
- CHECK Constraint
- Violating Constraints
- Creating a Table by Using a Subquery
- ALTER TABLE Statement
- Dropping a Table

9. Creating Other Schema Objects

- Database Objects
- What Is a View?
- Advantages of Views
- Simple Views and Complex Views
- Creating a View
- Retrieving Data from a View
- Modifying a View

- Creating a Complex View
- Rules for Performing DML Operations on a View
- Using the WITH CHECK OPTION Clause
- Denying DML Operations
- Removing a View
- Sequences
- CREATE SEQUENCE Statement: Syntax
- Creating a Sequence
- NEXTVAL and CURRVAL Pseudocolumns
- Using a Sequence
- Caching Sequence Values
- Modifying a Sequence
- Indexes
- How Are Indexes Created?
- Creating an Index
- Index Creation Guidelines
- Removing an Index
- Synonyms
- Creating and Removing Synonyms

10. Managing Objects with Data Dictionary Views

- The Data Dictionary
- Data Dictionary Structure
- How to Use the Dictionary Views
- USER_OBJECTS and ALL_OBJECTS Views
- USER_OBJECTS View
- Table Information
- Column Information
- Constraint Information
- View Information
- Sequence Information
- Synonym Information
- Adding Comments to a Table

11. Controlling User Access

- Privileges

- System Privileges
- Creating Users
- User System Privileges
- Granting System Privileges
- What Is a Role?
- Changing Your Password
- Object Privileges
- Granting Object Privileges
- Passing On Your Privileges
- Confirming Privileges Granted
- Revoking Object Privileges

12.Managing Schema Objects

- ALTER TABLE Statement
- Adding a Column
- Modifying a Column
- Dropping a Column
- SET UNUSED Option
- Adding a Constraint Syntax
- Adding a Constraint
- ON DELETE CASCADE
- Deferring Constraints
- Dropping a Constraint
- Disabling Constraints
- Enabling Constraints
- Cascading Constraints
- Overview of Indexes
- CREATE INDEX with the CREATE TABLE Statement
- Function-Based Indexes
- Removing an Index
- DROP TABLE ... PURGE
- FLASHBACK TABLE Statement
- External Tables
- Creating a Directory for the External Table
- Creating an External Table
- Creating an External Table by Using ORACLE_LOADER
- Querying External Tables

13. Manipulating Large Data Sets

Using Subqueries to Manipulate Data

Copying Rows from Another Table

Inserting Using a Subquery as a Target

Retrieving Data with a Subquery as Source

Updating Two Columns with a Subquery

Updating Rows Based on Another Table

Deleting Rows Based on Another Table

Using the WITH CHECK OPTION Keyword on DML Statements

Overview of the Explicit Default Feature

Using Explicit Default Values

Overview of Multitable INSERT Statements

Types of Multitable INSERT Statements

Multitable INSERT Statements

Unconditional INSERT ALL

Conditional INSERT ALL

Conditional INSERT FIRST

Pivoting INSERT

MERGE Statement

MERGE Statement Syntax

Merging Rows

Tracking Changes in Data

Example of the Flashback Version Query VERSIONS BETWEEN Clause

14. ROLLUP AND CUBES

Review of Group Functions

Review of the GROUP BY Clause

Review of the HAVING Clause

GROUP BY with ROLLUP and CUBE Operators

ROLLUP Operator

ROLLUP Operator: Example

CUBE Operator

CUBE Operator: Example

GROUPING Function

GROUPING Function: Example

GROUPING SETS

GROUPING SETS: Example

Composite Columns
Composite Columns: Example
Concatenated Groupings
Concatenated Groupings: Example

15. COSubqueries

Multiple-Column Subqueries
Column Comparisons
Pairwise Comparison Subquery
Nonpairwise Comparison Subquery
Scalar Subquery Expressions
Scalar Subqueries: Examples
Correlated Subqueries
Using Correlated Subqueries
Using the EXISTS Operator 6-14
Find Employees Who Have At Least One Person Reporting to Them
Find All Departments That Do Not Have Any Employees
Correlated UPDATE
Using Correlated UPDATE
Correlated DELETE
Using Correlated DELETE
WITH Clause
WITH Clause: Example

