Oracle 12C OCA/OCP Certification (DBA)

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Oracle Database 12c: Introduction to SQL

Course Topics

Introduction

Course Objectives, Course Agenda and Appendixes Used in this Course, Overview of Oracle Database 12c and Related Products. Overview of relational database management concepts and terminologies

Introduction to SQL and its development environments. What is Oracle SQL Developer?Starting SQL*Plus from Oracle SQL Developer. The Human Resource (HR) Schema.Tables used in the Course

Retrieving Data using the SQL SELECT Statement

Capabilities of the SELECT statement.Arithmetic expressions and NULL values in the SELECT statement. Column aliases.Use of concatenation operator, literal character strings, alternative quote operator, and the DISTINCT keyword. Use of the DESCRIBE command

Restricting and Sorting Data

Limiting the Rows.Rules of precedence for operators in an expression.Substitution Variables

Using the DEFINE and VERIFY command

Using 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

Using 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

Reporting Aggregated Data Using the Group Functions

Group Functions.Creating Groups of Data.Restricting Group Results

Displaying Data from Multiple Tables Using Joins

Introduction to JOINS.Types of Joins.Natural join .Self-join. Non equijoins.OUTER join

Using Subqueries to Solve Queries

Introduction to Subqueries.Single Row Subqueries.Multiple Row Subqueries

Using the SET Operators

Set Operators.UNION and UNION ALL operator.INTERSECT operator. MINUS operator.Matching the SELECT statements.Using ORDER BY clause in set operations

Managing Tables using DML statements

Data Manipulation Language.Database Transactions

Introduction to Data Definition Language

Data Definition Language.

Introduction to Data Dictionary Views

Introduction to Data Dictionary.Describe the Data Dictionary Structure. Using the Data Dictionary views.Querying the Data Dictionary Views

Creating Sequences, Synonyms, Indexes

Overview of sequences.Overview of synonyms.Overview of indexes

Creating Views

Overview of views

Managing Schema Objects

Managing constraints.Creating and using temporary tables. Creating and using external tables

Retrieving Data by Using Subqueries

Retrieving Data by Using a Subquery as Source.Working with Multiple-Column subqueries. Using Scalar subqueries in SQL. Correlated Subqueries.Working with the WITH clause

Manipulating Data by Using Subqueries

Using Subqueries to Manipulate Data.Inserting by Using a Subquery as a Target.Using the WITH CHECK OPTION Keyword on DML Statements. Using Correlated Subqueries to Update and Delete rows

Controlling User Access

System privileges.Creating a role.Object privileges.Revoking object privileges

Manipulating Data

Overview of the Explicit Default Feature.Using multitable INSERTs. Using the MERGE statement.Performing flashback operations.Tracking Changes in Data

Managing Data in Different Time Zones

Working with CURRENT_DATE, CURRENT_TIMESTAMP,and LOCALTIMESTAMP. Working with INTERVAL data types

<u>Oracle Database 12c: Admin, Install and Upgrade Accelerated</u>

Introduction

Course Objectives.Course Schedule.Overview of Oracle Database 12c.Overview of Oracle Cloud

Overview of the HR Schema.Oracle Database 12c Introduction

Exploring the Oracle Database Architecture

Oracle Database Architecture: Overview. Oracle Database Instance Configurations.Connecting to the Oracle Database Instance.Oracle Database memory Structures (overview) .Process Architecture.Process Structures.Process Startup Sequence.Database Storage Architecture

Oracle Software Installation Basics

Planning Your Installation.Configuring Oracle Linux with Oracle RDBMS Pre-Install RPM. Operating System Groups and Users .Environment Variables.Configuring the Oracle Software Owner Environment

Using Oracle Universal Installer (OUI).Installation Option: Silent Mode

Installing Oracle Database Software

System Requirements for Oracle Database .Creating Operating System Groups and Users

Types of Installations

Creating an Oracle Database by Using DBCA

Planning the Database Storage Structure.Types of Databases (based on workload).Choosing the Appropriate Character Set.Understanding How Character Sets are Used. Setting the NLS_LANG Initialization Parameter.Using the Database Configuration Assistant (DBCA)

Oracle Database Management Tools

Introducing Oracle Database Management Tools.Using SQL*Plus. Using SQL Developer.Logging in to Oracle Enterprise Manager Database Express.Using the Enterprise Manager Database Express Home Page.Understanding the Enterprise Manager Cloud Control Framework.Using Enterprise Manager Cloud Control

Managing the Database Instance

Initialization Parameter Files. Starting an Oracle Database Instance .Shutting Down an Oracle Database Instance.Viewing Log Files.Using Trace Files.Using the Dynamic Performance Views .Data Dictionary

Configuring the Oracle Network Environment

Oracle Net Services Overview.Oracle Net Listener Overview.Establishing Oracle Network Connections

Connecting to a Server.Tools for Configuring and Managing the Oracle Network.Using the Listener .Control Utility. Using Oracle Net Configuration Assistant.Using Oracle Net Manager.

Administering User Security

Database User Accounts (overview).Predefined Administrative Accounts

Creating a User.Authentication.Unlocking a User Account and Resetting the Password. Privileges.Roles
Profiles

Managing Database Storage Structures

Understanding Storage of Data.Database Block contents. Exploring the Storage Structure.Creating a New Tablespace.Overview of Tablespaces Created by Default.Managing Tablespaces.Viewing Tablespace Information.Using Oracle Managed Files

Managing Space

Space Management Overview.Block Space Management. Row Chaining and Migration.Free Space Management Within Segments. Types of Segments.Allocating Extents .Allocating Space.Creating Tables Without Segments

Managing Undo Data

Undo Data Overview. Transactions and Undo Data.Storing Undo Information.Comparing Undo Data and Redo Data.Managing Undo.Configuring Undo Retention.Guaranteeing Undo Retention.Changing an Undo tablespace to a Fixed Size

Managing Data Concurrency

Overview of Locks.Locking Mechanism.Data Concurrency.DML Locks .Enqueue Mechanism .Lock Conflicts

Implementing Oracle Database Auditing

Separation of Responsibilities.Database Security.Monitoring for Compliance .Standard Database Auditing.Unified Audit Data Trail .Separation for Duties for Audit Administration (AUDIT_ADMIN and AUDIT_VIEWER roles).Configuring the Audit Trail.Specifying Audit Options

Backup and Recovery Concepts

Categories of Failures.Flashback Technology .Understanding Instance Recovery.Phases of Instance Recovery.Tuning Instance Recovery.Using the MTTR Advisor.Comparing Complete and Incomplete Recovery.Oracle Data Protection Solutions

Backup and Recovery Configuration

Configuring for Recoverability.Configuring the Fast Recovery Area.Multiplexing the Control File.Online Redo Log File. Multiplexing the Online Redo Log File.Archived Redo Log Files.Archiver Process

Archived Redo Log File Naming and Destinations

Performing Database Backups

Backup Solutions Overview.Oracle Secure Backup (overview). User Managed Backup (overview). Backup Terminology and Types of Backups.Using Recovery Manager (RMAN).Configuring Backup Settings.Oracle-Suggested Backup.Backing Up the Control File to a Trace File

Performing Database Recovery

Data Recovery Advisor.Loss of a Control File.Loss of a Redo Log File.Loss of a Datafilein .NOARCHIVELOG Mode.Loss of a Noncritical Datafile in ARCHIVELOG Mode.Loss of a System-Critical Datafile in ARCHIVELOG Mode

Moving Data

Moving Data: General Architecture.Oracle Data Pump. SQL*Loader.External Tables

Performing Database Maintenance

Database Maintenance (overview).Viewing the Alert History.Terminology.Automatic Workload Repository (AWR).Statistic Levels.Automatic Database Diagnostic Monitor (ADDM).Advisory Framework

Enterprise Manager and Advisors

Managing Performance

Performance Monitoring.Tuning Activities.Performance Planning.Instance Tuning.Performance Tuning Methodology.Performance Tuning Data .Monitoring Performance .Managing Memory

Managing Performance: SQL Tuning

SQL Tuning.Oracle Optimizer.SQL Plan Directives.Adaptive Execution Plans.SQL Advisors.Automatic SQL Tuning results.Implement Automatic Tuning Recommendations .SQL Tuning Advisor

Oracle Database 12c: Administration Workshop(1Z0-063)

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Statistic Levels.Automatic Database Diagnostic Monitor (ADDM).Advisory Framework.Enterprise Manager and Advisors

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Performance Monitoring.Tuning Activities.Performance Planning.Instance Tuning.Performance Tuning Methodology.Performance Tuning Data.Monitoring Performance.Managing Memory

Managing Performance: SQL Tuning

SQL Tuning.Oracle Optimizer.SQL Plan Directives.Adaptive Execution Plans.SQL Advisors.Automatic SQL Tuning Results.Implement Automatic Tuning Recommendations. SQL Tuning Advisor

Managing Resources by Using Database Resource Manager

Database Resource Manager Overview. Database Resource Manager Concepts. Using the Resource Manager.Default Maintenance Resource Manager Plan. Default Plan Example. Resource Manager Workflow. Specifying Resource Plan Directives.Resource Allocation Methods for Resource Plans

Automating Tasks by Using Oracle Scheduler

Simplifying Management Tasks.Understanding a Simple Job.Core Components.Basic Work Flow

Persistent Lightweight Jobs.Using a Time-Based or Event-Based Schedule.Creating a Time-Based Job

Creating an Event-Based Schedule

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Working with Oracle Support

Using the Support Workbench..Using Enterprise Manager .Working with Oracle Support .My Oracle Support Integration.Researching an Issue.Logging Service Requests ..Managing Patches

Applying a Patch Release