

*Dear Student,*

*Based upon your enquiry we are pleased to send you the course curriculum for Oracle 11g*

### **Retrieving Data Using the SQL SELECT Statement**

- \* List the capabilities of SQL SELECT statements
- \* Execute a basic SELECT statement

### **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 Expression**

- \* 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
- \* Insert rows into a table
- \* Update rows in a table
- \* Delete rows from a table
- \* 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: Administration Workshop I DBA Release 2

### Course Topics:

Exploring the Oracle Database Architecture

- Oracle Database Architecture Overview
- Oracle ASM Architecture Overview
- Process Architecture
- Memory structures
- Logical and physical storage structures
- ASM storage components

## Installing your Oracle Software

- Tasks of an Oracle Database Administrator
- Tools Used to Administer an Oracle Database
- Installation: System Requirements
- Oracle Universal Installer (OUI)
- Installing Oracle Grid Infrastructure
- Installing Oracle Database Software
- Silent Install

## Creating an Oracle Database

- Planning the Database
- Using the DBCA to Create a Database
- Password Management
- Creating a Database Design Template
- Using the DBCA to Delete a Database

## Managing the Oracle Database Instance

- Start and stop the Oracle database and components
- Use Oracle Enterprise Manager

- Access a database with SQLPlus
- Modify database installation parameters
- Describe the stages of database startup
- Describe database shutdown options
- View the alert log
- Access dynamic performance views

#### **Manage the ASM Instance**

- Set up initialization parameter files for ASM instance
- Start up and shut down ASM instances
- Administer ASM disk groups

#### **Configuring the Oracle Network Environment**

- Use Enterprise Manager to create and configure the Listener
- Enable Oracle Restart to monitor the listener
- Use tnsping to test Oracle Net connectivity
- Identify when to use shared servers and when to use dedicated servers

#### **Managing Database Storage Structures**

- Storage Structures
- How Table Data Is Stored
- Anatomy of a Database Block
- Space Management in Tablespaces
- Tablespaces in the Preconfigured Database
- Actions with Tablespaces
- Oracle Managed Files (OMF)

### **Administering User Security**

- Database User Accounts
- Predefined Administrative Accounts
- Benefits of Roles
- Predefined Roles
- Implementing Profiles

### **Managing Data Concurrency**

- Data Concurrency
- Enqueue Mechanism
- Resolving Lock Conflicts
- Deadlocks

### **Managing Undo Data**

- Data Manipulation
- Transactions and Undo Data
- Undo Data Versus Redo Data
- Configuring Undo Retention

### **Implementing Oracle Database Auditing**

- Describe DBA responsibilities for security
- Enable standard database auditing
- Specify audit options
- Review audit information
- Maintain the audit trail

### **Database Maintenance**

- Manage optimizer statistics
- Manage the Automatic Workload Repository (AWR)
- Use the Automatic Database Diagnostic Monitor (ADDM)
- Describe and use the advisory framework
- Set alert thresholds
- Use server-generated alerts
- Use automated tasks

#### **Performance Management**

- Performance Monitoring
- Managing Memory Components
- Enabling Automatic Memory Management (AMM)
- Automatic Shared Memory Advisor
- Using Memory Advisors
- Dynamic Performance Statistics
- Troubleshooting and Tuning Views
- Invalid and Unusable Objects

#### **Backup and Recovery Concepts**

- Part of Your Job
- Statement Failure
- User Error
- Understanding Instance Recovery
- Phases of Instance Recovery
- Using the MTTR Advisor

- Media Failure
- Archive Log Files

#### **Performing Database Backups**

- Backup Solutions: Overview
- Oracle Secure Backup
- User-Managed Backup
- Terminology
- Recovery Manager (RMAN)
- Configuring Backup Settings
- Backing Up the Control File to a Trace File
- Monitoring the Flash Recovery Area

#### **Performing Database Recovery**

- Opening a Database
- Data Recovery Advisor
- Loss of a Control File
- Loss of a Redo Log File
- Data Recovery Advisor
- Data Failures
- Listing Data Failures
- Data Recovery Advisor Views

#### **Moving Data**

- Describe ways to move data
- Create and use directory objects

- Use SQL\*Loader to move data
- Use external tables to move data
- General architecture of Oracle Data Pump
- Use Data Pump export and import to move data

## Oracle Database 11g: Administration Workshop II DBA Release 2

### Course Topics:

#### Core Concepts and Tools of the Oracle Database

- The Oracle Database Architecture: Overview
- ASM Storage Concepts
- Connecting to the Database and the ASM Instance
- DBA Tools Overview

#### Configuring for Recoverability

- Purpose of Backup and Recovery (B&R), Typical Tasks and Terminology
- Using the Recovery Manager (RMAN)
- Configuring your Database for B&R Operations
- Configuring Archivelog Mode
- Configuring Backup Retention
- Configuring and Using a Flash Recovery Area (FRA)

#### Using the RMAN Recovery Catalog

- Tracking and Storing Backup Information
- Setting up a Recovery Catalog
- Recording Backups



- Using RMAN Stored Scripts
- Managing the Recovery Catalog (Backup, Export, Import, Upgrade, Drop and Virtual Private Catalog)

### **Configuring Backup Settings**

- Configuring and Managing Persistent Settings for RMAN
- Configuring Autobackup of Control File
- Backup optimization
- Advanced Configuration Settings: Compressing Backups
- Configuring Backup and Restore for Very Large Files (Multisection)

### **Creating Backups with RMAN**

- RMAN backup types
- Creating and Using the following:
  - - Backup Sets and Image Copies
  - - Whole Database Backup
  - - Fast Incremental Backup
  - - Configure Backup Destinations
  - - Duplexed Backup Sets
  - - Archival Backups

### **Restore and Recovery Task**

- Restoring and Recovering
- Causes of File Loss
- Automatic Tempfile Recovery
- Recovering from the Loss of a Redo Log Group

- Recovering from a Lost Index Tablespace
- Re-creating a Password Authentication File
- Complete and Incomplete Recovery
- Other Recovery Operations

### Using RMAN to Perform Recovery

- Complete Recovery after Loss of a Critical or Noncritical Data File
- Recovering Image Copies and Switching Files
- Restore and Recovery of a Database in NOARCHIVELOG Mode
- Incomplete Recovery
- Performing Recovery with a Backup Control File
- Restoring from Autobackup: Server Parameter File and Control File
- Restoring and Recovering the Database on a New Host

### Monitoring and Tuning RMAN

- Monitoring RMAN Jobs
- Balance Between Speed of Backup Versus Speed of Recovery
- RMAN Multiplexing
- Synchronous and Asynchronous I/O
- Explaining Performance Impact of MAXPIECESIZE, FILESPERSET, MAXOPENFILES and BACKUP DURATION

### Diagnosing the Database

- Data Recovery Advisor (DRA)
- Block Corruption
- Automatic Diagnostic Repository (ADR)

- Health Monitor
- The ADR Command-Line Tool, ADRCI

### **Using Flashback Technology I**

- Flashback Technology: Overview and Setup
- Using Flashback Technology to Query Data
- Flashback Table
- Flashback Transaction Query
- Performing Flashback Transaction Backout

### **Using Flashback Technology II**

- Oracle Total Recall
- Flashback Drop and the Recycle Bin

### **Performing Flashback Database**

- Configuring Flashback Database
- Performing Flashback Database Operations
- Monitoring Flashback Database

### **Managing Memory**

- Oracle Memory Structures
- Oracle Database Memory Parameters
- Using Automatic Memory Management
- Automatic Shared Memory Management
- Using Memory Advisors
- Using Data Dictionary Views

### **Managing Database Performance**

- Tuning Activities
- Using Statistic Preferences
- Optimizer Statistics Collection
- Monitor the Performance of Sessions and Services
- Automatic Workload Repository (AWR)
- Describing the Benefits of Database Replay

### **Managing Performance by SQL Tuning**

- SQL Tuning and SQL Advisors
- Using SQL Tuning Advisor
- SQL Access Advisor
- SQL Performance Analyzer Overview

### **Managing Resources**

- Database Resource Manager: Overview and Concepts
- Accessing and Creating Resource Plans
- Creating Consumer Group
- Specifying Resource Plan Directives, including:
  - - Limiting CPU Utilization at the Database Level
  - - Instance Caging
- Activating a Resource Plan
- Monitoring the Resource Manager

### **Automating Tasks with the Scheduler**

- Simplifying Management Tasks
- Creating a Job, Program, and Schedule

- Using Time-Based, Event-Based, and Complex Schedules
- Describing the Use of Windows, Window Groups, Job Classes, and Consumer Groups
- Multi-Destination Jobs

### **Managing Space in Blocks**

- Free Space Management
- Monitoring Space
- Compressing Data

### **Managing Space in Segments**

- Segment Creation on Demand
- Additional Automatic Space-Saving Functionalit
- Shrinking Segments
- Segment Advisor
- Managing Resumable Space Allocation

### **Managing Space for the Database**

- Using 4 KB-Sector Disks
- Transporting Tablespaces
- Transporting Databases

### **Duplicating a Database**

- Purpose and Methods of Cloning a Database
- Using RMAN to Create a Duplicate Database
- Cloning a Database from a Backup
- Duplicate a Database Based on a Running Instance
- Targetless Duplicating a Database

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