



ORACLE®



### Corporate Trainer's Profile

Corporate Trainers are having the experience of 4 to 12 years in development , working with TOP CMM level 5 companies (Project Leader /Project Manager ) qualified from NIT/IIT/IIM and work exp in USA and UK.



### CMM (Capability Maturity Model) level Project Standard:-

The Capability Maturity Model (CMM) is a method for evaluating the maturity of organizations on a scale of 1 to 5. Get the Oppertunites to work on Client Projects Of US/UK, which follow the all standard of CMM level 5 Company.



## Oracle SQL — Basics – 12 hrs

### Table of Contents:

#### *Introduction Basic SELECT STATEMENT*

- Review The Basic SQL SELECT Statement Syntax
- Select All Columns Using A Wildcard Notation From A Table
- State Simple Rules And Guidelines For Writing SQL Statements
- Write A Query Containing The Arithmetic Operators
- Create A Character Expression With The Concatenation Operator
- Using The Oracle SQL Developer Environment

#### *Restricting And Sorting Data*

- Limit Rows Using A Selection
- Using The WHERE Clause To Retrieve Specific Rows
- Using The Comparison Conditions In The WHERE Clause
- Use The LIKE Condition To Compare Literal Values
- List The Logical Conditions AND, OR, NOT
- Describe The Rules Of Precedence For The Conditions
- Sort Rows With The ORDER BY Clause
- Use Ampersand Substitution To Restrict And Sort Output At Run Time

#### *Using Single-Row Functions To Customize Output*

- Show The Differences Between Single Row And Multiple Row SQL Functions
- Categorize The Character Functions Into Case Manipulation And Character Manipulation Types
- Use The Character Manipulation Functions In The SELECT And WHERE Clauses
- Explain And Use The DATE And Numeric Functions
- Use The SYSDATE Function To Retrieve The Current Date In The Default Format
- Introduce The DUAL Table As A Means To View Function Results
- List The Rules For Applying The Arithmetic Operators On Dates
- Use The Arithmetic Operators With Dates In The SELECT Clause

### ***Reporting Aggregated Data Using The Group Functions***

- Describe And Categorize The Group Functions
- Use The Group Functions
- Utilize The DISTINCT Keyword With The Group Functions
- Describe How Nulls Are Handled With The Group Functions
- Create Groups Of Data With The GROUP BY Clause
- Group Data By More Than One Column
- Avoid Illegal Queries With The Group Functions
- Exclude Groups Of Data With The HAVING Clause

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### ***Displaying Data From Multiple Tables***

- Identify Types Of Joins
- Retrieve Records With Natural Joins
- Use Table Aliases To Write Shorter Code And Explicitly Identify Columns From Multiple Tables
- Create A Join With The USING Clause To Identify Specific Columns Between Tables
- Use The ON Clause To Specify Arbitrary Conditions Or Specify Columns To Join
- Create A Three-Way Join With The ON Clause To Retrieve Information From 3 Tables
- List The Types Of Outer Joins LEFT, RIGHT, And FULL
- Generating A Cartesian Product

### ***Manipulating Data***

- Write INSERT Statements To Add Rows To A Table
- Copy Rows From Another Table
- Create UPDATE Statements To Change Data In A Table
- Generate DELETE Statements To Remove Rows From A Table
- Use A Script To Manipulate Data
- Save And Discard Changes To A Table Through Transaction Processing
- Show How Read Consistency Works
- Describe The TRUNCATE Statement

### *Using DDL Statements To Create And Manage Tables*

- List The Main Database Objects And Describe The Naming Rules For Database Objects
- Introduce The Schema Concept
- Display The Basic Syntax For Creating A Table And Show The DEFAULT Option
- Explain The Different Types Of Constraints
- Show Resulting Exceptions When Constraints Are Violated With DML Statements
- Create A Table With A Sub Query
- Describe The ALTER TABLE Functionality
- Remove A Table With The DROP Statement And Rename A Table

### *Creating Other Schema Objects*

- Categorize Simple And Complex Views And Compare Them
- Create A View
- Retrieve Data From A View
- Explain A Read-Only View
- List The Rules For Performing DML On Complex Views
- Create A Sequence
- List The Basic Rules For When To Create And Not Create An Index
- Create A Synonym

### *Controlling User Acces*

- Creating Users
- Creating Roles
- Grant and Revoke System privileges and Object privileges

## **Oracle SQL Advanced – 8 hrs**

### **Outline Course Contents**

#### ***Retrieve Data Using Subqueries***

- The Exists Operator
- The WITH Clause
- Insert and Update Using a Query
- Correlated Update and Delete

#### ***Hierarchical Queries***

- Hierarchical data
- The START WITH and CONNECT BY clauses
- The LEVEL pseudo-column
- Sequencing the output
- Eliminating nodes and branches

#### ***Enhanced Grouping Features***

- Review of basic grouping concepts
- The ROLLUP and CUBE extensions
- The GROUPING SETS extension
- Using the GROUPING and GROUPING\_ID functions

#### ***Manage Large Data Sets***

- Multi-table Inserts
- Conditional and Unconditional Inserts
- Merging Data into a Table
- Table and View Based Merge
- A Sub Query Based Merge

#### ***Flashback Technology***

- Flashback Query
- The DBMS\_FLASHBACK Package
- The AS Clause
- Flashback Table

- Flashback Drop
- Flashback Data Archive

### *Regular Expression Support*

- Regular Expression Notation
- Character matching
- Repetition operators
- Sub expression grouping
- Regular expression functions

### *Manage Schema Objects*

- Column Operations
- Constraint Operations
- Creating and Dropping Indexes
- B-Tree Indexes
- Function Based Indexes
- Descending Indexes
- Creating and Using External Tables

## Oracle PL/SQL — Basics

### Outline Course Contents

#### *PL/SQL Fundamentals*

- What is PL/SQL?
- Basic Elements
- Variables and Constants
- Data Types
- Initialising Variables and Assigning Values
- Using SQL Statements in Code
- Generating Output to SQL or SQL Developer

#### *Program Logic*

- IF THEN ELSIF ELSE Statements
- CASE Statements
- The Basic Loop Construct
- WHILE and FOR Loops
- Nested and Labeled Loops
- The GOTO Statement
- The CONTINUE Statement

#### *Using Cursors*

- What is a Cursor?
- Implicit and Explicit Cursors
- Cursor Operations
- Declaring, Opening and Closing Cursors
- Fetching Rows
- Status Checking
- Using Cursors FOR UPDATE
- The Cursor FOR Loop
- Parameterised Cursors

#### *Exceptions and Nested Blocks*

- The EXCEPTION Section
- Types of Exception
- Handling Named System-Raised Exceptions
- Handling Un-named System-Raised Exceptions
- User-Declared Exceptions and Application Errors
- WHEN OTHERS THEN NULL
- Nested and Labelled Blocks
- Propagation of Exceptions
- Scope of Variables and Cursors
- Scope of Goto Statements

### *PL/SQL Records and Index-By Tables*

- Declaring Record Types
- Handling PL/SQL Records
- Nested Records
- Declaring PL/SQL Index-By Tables or Associative Arrays
- PL/SQL Table Built-in Functions
- Manipulating PL/SQL Tables or Associative Arrays

### *Procedures*

- What is a Procedure?
- The CREATE PROCEDURE Statement
- Procedure Parameters
- Invoking Procedures
- Local Subprograms
- Named Association Parameter Passing
- Definer's Rights and Invoker's Rights
- Autonomous Transactions
- Managing Procedures
- Privileges Required for Procedures
- Dictionary Information Concerning Procedures
- The Call Statement

### *Functions*

- What is a Function?
- The CREATE FUNCTION Statement
- Executing Functions
- Invoker's Rights
- Autonomous Transactions



- DBMS\_OUTPUT
- Using Functions in SQL Statements
- Managing Functions
- Privileges Required for Functions
- Dictionary Information Concerning Functions

### ***Packages***

- What is a Package?
- Public and Private Components
- Creating a Package
- Example Package
- Persistent States
- One-time-only Procedures
- Overloading
- Purity Level Checking
- Wrapping Packages
- Managing Packages
- Privileges Required for Packages
- Dictionary Information Concerning Packages

### ***Triggers***

- DML Triggers
- The CREATE TRIGGER Statement
- Writing Trigger Code
- INSTEAD OF Triggers
- Calling Procedures from Triggers
- Coding Restrictions
- Compound Triggers
- Create Trigger Follows Clause
- Managing Triggers
- Privileges Required for Triggers
- Dictionary Information Concerning Triggers

## **Oracle PL/SQL — Advanced**

### **PL/SQL Programming Concepts Review**

- Identify PL/SQL block structure
- Create procedures
- Create functions
- List restrictions and guidelines on calling functions from SQL expressions
- Create packages
- Review of implicit and explicit cursors
- List exception syntax
- Identify the Oracle supplied packages

### **Designing PL/SQL Code**

- Describe the predefined data types
- Create subtypes based on existing types for an application
- List the different guidelines for cursor design
- Cursor variables

### **Using Collections**

- Overview of collections
- Use Associative arrays
- Use Nested tables
- Use VARRAYs
- Compare nested tables and VARRAYs
- Write PL/SQL programs that use collections
- Use Collections effectively

### **Manipulating Large Objects**

- Describe a LOB object
- Use BFILES
- Use DBMS\_LOB.READ and DBMS\_LOB.WRITE to manipulate LOBs
- Create a temporary LOB programmatically with the DBMS\_LOB package

### **Using Advanced Interface Methods**

- Calling External Procedures from PL/SQL
- Benefits of External Procedures
- C advanced interface methods

- Java advanced interface methods

### **Performance and Tuning**

- Understand and influence the compiler
- Tune PL/SQL code
- Identify and tune memory issues
- Recognize network issues

### **Implementing VPD with Fine-Grained Access Control**

- Understand how fine-grained access control works overall
- Describe the features of fine-grained access control
- Describe an application context
- Create an application context
- Set an application context
- List the DBMS\_RLS procedures
- Implement a policy
- Query the dictionary views holding information on fine-grained access

## **Oracle Forms & Reports – 16 Hrs**

### **Synopsis**

This course is designed to give delegates practical experience in using Oracle Forms to develop and deploy database applications. The main features and components of a Form are investigated and implemented, and Forms Services components and configuration files are customised for deployment.

### **Objectives**

On completion of this course, delegates will have gained knowledge in:

- Using the Form Builder productively
- Generating text items, buttons, radio groups and other interface items
- Creating toolbars, canvases and windows
- Writing triggers to enhance application functionality
- Calling standard built-in procedures and functions
- Developing program units and code libraries
- Generating objects for re-use in other projects
- Calling one form from another
- Using debug tools
- Testing forms using runform.htm
- Creating application-specific configurations
- Deploying custom images and icons
- Setting default environment variables
- Implementing techniques to improve performance

### **Suitable For**

This course is intended for:

- Programmers and other software development personnel who need to write applications which interface with an Oracle database and run on the web.

### **Prerequisites**

- A good understanding of Oracle's SQL\*Plus and practical experience in using the Oracle PL/SQL programming language with its procedures, functions and packages are required

## Outline Course Contents

### *Introduction*

- What is Oracle Forms?
- Form Builder Components
- Application Code Partitioning
- Exercise: Preparing to Work with Forms

### *Getting Started*

- Creating a Form
- Running a Form
- The Runtime Interface
- Performing Queries
- Updating Records
- Exercise: Creating and Running a Form

### *The Form Builder Interface*

- The Main Menu
- The Object Navigator
- Basic Components of a Form
- Property Palettes
- The PL/SQL Editor
- The Layout Editor
- Exercise: Using Form Builder Tools

### *Building a Form*

- Basic Steps in Development
- Creating a Data Block
- Customising the Layout
- Setting Properties For Data Blocks and Items
- Adding Trigger Code
- Running the Form
- Exercise: Building a Simple Form
- Exercise: Building a Master-Detail Form

### *Triggers*

- What is Navigation?
- Navigational Triggers
- Item and Block Validation
- Commit Form Triggers
- Query Triggers
- Trigger Types and Scope
- Trigger Code
- Global, System and Bind Variables
- Handling Errors
- Exercise: Implementing Navigational Triggers
- Exercise: Implementing Commit-time Triggers
- Exercise: Implementing Query Triggers

### ***Introducing Standard Built-ins***

- Unrestricted Built-in Procedures and Functions
- Restricted Built-in Procedures
- Calling Built-ins
- Getting and Setting Properties at Runtime
- Using Internal Object IDs
- Error Handling
- Exercises: Enhancing Applications using Built-ins

### ***More Interface Objects***

- Basic Controls - Text and Display Items
- Iconic Push-buttons
- Check Boxes and Radio Groups
- List Items
- Image Items
- Alerts
- Editors
- Record Groups and LOVs
- Hierarchical Trees
- Exercises: Creating Additional Interface Items

### ***Program Units***

- Form Module Program Units
- PL/SQL Libraries
- Database Procedures
- Exercise: Using PL/SQL Libraries

- Exercise: Using Database Procedures

### ***Canvases and Windows***

- Content Canvases
- Stacked Canvases
- Toolbar Canvases
- Tab Canvases
- Handling Windows
- Exercise: Generating Canvases and Toolbars
- Exercise: Handling Multi-Window Applications

### ***Re-Using Components***

- Visual Attributes
- Property Classes
- Copying Objects
- Subclassing
- Object Groups
- Object Libraries
- Exercise: Creating and Using a Property Class
- Exercise: Creating and Using an Object Library

### ***Introduction to Calling other Forms***

- Built-in Procedures
- Methods for Calling other Forms
- Exercise: Calling one Form from Another

### ***Introduction to Reports Builder***

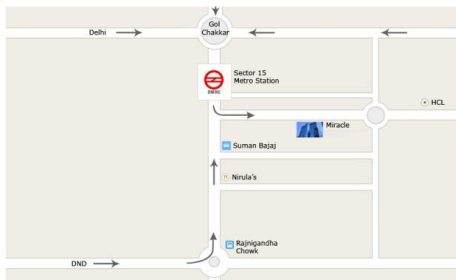
- Designing Basic reports using wizards
- Manually designing the reports
- Various Report Formats like : Form Like, Tabular, Group and Matrix Reports
- Embedding Charts and Graphs in reports
- Creating templates in reports
- Generating various formats in reports like PDF/HTML/XML etc.

## Features:-

- ✔ 1. Task-Oriented, Competency-Based Course Design
- ✔ 2. A Truly Hands On Learning Experience – At Least 50% Lab Time
- ✔ 3. Courseware Ownership & Control
- ✔ 4. Instructors With Extensive Experience of the corporate , having the Certifications.
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- ✔ 7. A Cost-Effective, Total Solution
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- ✔ 10.Placement tie with the companies.

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