

Syllabus:

ORACLE 12c - (SQL & PL/SQL)

1. Fundamentals of Database

- What is Data Base and why is Data Base?
- DBMS Concepts
- RDBMS Concepts
- Oracle versions
- What is oracle 12c?
- What is MULTITENANT DATABASE?
- Features in Oracle 12c
- Advantages of Oracle 12c
- What is DATA MODEL for any OLTP RDBMS?

2. STRUCTURED QUERY LANGUAGE (SQL) AND CLIENT TOOLS

- What is SQL?
- Role of SQL in RDBMS
- Sub-languages in SQL
- CLIENT INTERFACE TOOLS
- SQL * PLUS
- SQL DEVELOPER
- PL SQL DEVELOPER
- TOAD
- Oracle data types

3. SQL LANGUAGES

Data Definition Language (DDL) Commands

- CREATE
- ALTER
- TRUNCATE
- DROP
- RENAME

Data Manipulation Languages(DML) Commands

- INSERT
- UPDATE
- DELETE

Data Query Language/Retrieval Language

- SELECT

Transaction Control Languages(TCL) Commands

- ROLLBACK
- COMMIT
- SAVEPOINT

Data Control Languages(DCL) Commands

- GRANT
- REVOKE

4. DATA INTEGRITY CONSTRAINTS

- KEY Constraints
- DOMAIN Constraints
- REFERENTIAL INTEGRITY Constraints

5. OPERATORS

- Arithmetic Operators
- Relational Operators
- Relation Negation Operators
- Logical Operators
- Set Operators (Union, Union All, Intersect, Minus)

6. JOINS

- Purpose Of JOINS
- Types of JOINS
 - Cross join
 - Equi join
 - Inner Join
 - Self Join
 - Outer joins

- left Outer join
- Right Outer join
- Full Outer join

7. SUB - QUERIES

- Single row sub-queries
- Multi-row sub-queries
- Correlated Sub-Queries
- Use of EXISTS/NOT EXISTS/ANY/ALL

8. SQL OBJECTS

8.1. VIEWS

- What is a view?
- Importance of View
- Types of Views
- Simple views
 - Simple views with WITH CHECK OPTION
 - Simple views with WITH READ ONLY option
- Composite views
- Inline views
- Materialized views
 - Read Only Materialized view
 - Updatable Materialized view
 - Complex Materialized view
- Force views

8.2. INDEXES

- What is a INDEX
- Necessity of Index
- Types of Indexes
 - Simple Index
 - Composite Index
 - Bitmap Index
 - Function based index

8.3. CLUSTERS

- Use of cluster
- Creation of cluster
- Advantages of clusters

8.4. SEQUENCES

- Creating sequence
- Uses of sequences
 - Inserting sequence values
 - Updating column with sequence values
 - Altering sequence
 - Using sequence value as DEFAULT value
 - [from oracle 12c]

8.5. SYNONYMS

- Use of Synonym
- Types of Synonyms(PUBLIC.PRIVATE)
- How and when to create synonyms?

9. PARTITIONS

- What is partition?
- Types of partitions
 - Range partition
 - List partition
 - Hash partition

10. SQL FUNCTIONS

Categories of Functions

- Group or Aggregate Functions
- Scalar or Single Row Functions

Types of Functions

- Numerical Functions
- String Functions
- Conversion Functions
- Date Functions
- Analytical functions

11.PL/SQL

- Introduction to PL/SQL
- What is a Program block?
- Advantages of PL/SQL.
- Architecture of PL/SQL Engine
- Features, Structure of Program Block
- Data types, Executable Stmts
- What are the blocks in the program structure?
- DECLARE Block
- BEGIN Block
- EXCEPTION Block
- END

11.1. TYPES OF PROGRAMS

- Static Programs
- Dynamic Programs
- Worked Examples and Assignments

11.2. Type Compatibility keywords

- Declaring variables Dynamically --%TYPED
- Declaring Table Type Record Variable--%ROWTYPE

11.3. SUB PROGRAMS

Stored Procedures

- What is a procedure?
- How to create it?
- What are the advantages of procedures?
- Types of stored procedures
- Static Procedures (without Arguments)
- Dynamic Procedures (with Arguments)
- Arguments or Parameters Mode
- IN OUT INOUT

CONTROL STRUCTURES/CONDITIONAL STATEMENTS

- Simple IF
- IF THEN ELSE
- COMPOUND IF

- ELSE IF Construct
- Worked Examples and Assignments

LOOPS

- Simple Loop
- While Loop
- For Loop

CURSORS

- Types: Implicit and Explicit cursors
- Cursor Variables
- FOR loop cursor
- Parameterized cursor
- REF CURSOR

What is BULK COLLECT?

What is FORALL?

What is BULK BIND?

EXCEPTION HANDLING AND THEIR TYPES

- Predefined Exceptions
- User defined Exceptions
- Pragma Exception_init
- RAISE APPLICATION ERROR

PL/SQL RECORDS AND TABLES

- Composite Data Types
- PL/SQL Records Tables
- Nested Records
- Using Record in a Table
- And Examples

FUNCTIONS

- What is a Function?
- When we have to create a function?

- How to call it?
- With and without arguments

PL/SQL Collections

- VARRAYS
- Associative Arrays
- Nested tables PL SQL TABLES

TRIGGERS

- What is a Trigger Program?
- When we need a Trigger?
- Parts of a Trigger
- Types of Triggers
- Database Triggers
- Row Level Triggers with Ex.
- Statement Level Triggers
- Instead-of Triggers-Views with Ex.

PACKAGES

- What is a PACKAGE?
- Structure of package
- Package Spec and Body
- Accessing procedures and functions from a package

1. What is Database?
2. What is Table?
3. What is Table (More Details)?
4. What is Data Definition Language (DDL)?
5. A quick recap of DDL?
6. What is Data Manipulation Language (DML)?
7. What is Data Control Language (DCL)?
8. What is Index?
9. What is View?
10. What is Foreign Key?
11. What is RDBMS?
12. What is Primary Key?
13. What is Unique Key?
14. Difference between Primary Key & Unique Key
15. Computers & Databases
16. What is data Concurrency?
17. What is data Consistency?
18. Oracle Database Architecture
19. How to Install up on Win 7 64 bit (part 1)
20. How to Install up on Win 7 64 bit (Part 2)
21. How to Install up on Win 7 64 bit (Part 3)
22. How to Install up on Win 7 64 bit (Part 4)
23. How to Install up on Win 7 64 bit (Part 5)
- 24.
25. Oracle logical Data Structure
26. Where can the Oracle Physical structure Files be stored?
27. What is Raw Device?
28. What is File System?
29. What is an Oracle ASM?
30. What is Cluster File System?
31. What is Para Meter File
32. What is SPFILE?
33. What is PFILE?
34. What is Oracle Instance?
35. What is Oracle Database?
36. Difference between Oracle Instance & Oracle Database
37. How to connect to an Oracle Database
38. How does an Oracle Database Start
39. Demo of various Starting Methods of an Oracle Database
40. How to Login to an Oracle Database?

41. Oracle Database Dictionary
- 42.
43. Basics of Oracle Internal Structure
44. What is Database Control?
45. How to Create a user in Oracle Database
46. Default Table Spaces and Temporary Table Spaces for a new Oracle Database user?
47. Oracle Roles and Privileges
48. Oracle System Privilege – Oracle DBA -----
49. How in install Oracle SQL Developer in Win 7?
50. How to use Oracle SQL developer
51. How to verify the Oracle Database Name?
52. How to find the version of the Oracle Database
53. How to view the user A/C within an Oracle Database
54. How to use DBA view in SQL Developer
55. How to find Table Spaces in Oracle Databases
56. Oracle Table Space – Oracle DBA Tutorial
57. What is an Oracle User?
58. What is an Oracle Schema
59. Difference between an Oracle User and Schema
60. General User Architecture of a Database
61. SQL – Structure Query Language
62. SQL CTAS Method
63. SQL Select Statement
64. SQL Insert Statement
65. SQL Delete Statement
- 66.
67. Oracle Background Processes
68. Dedicated Server and Shared Server
69. SGA System Global Area of an Oracle Database
70. UGA user Global Area of an Oracle Database
71. PGA Program Global Area of an Oracle Database
72. SGA DB Buffer (Part 1)
73. SGA DB Buffer (Part 2)
74. SGA DB Buffer (Part 3)
75. SGA DB Buffer (Part 4)
76. SGA DB Buffer (Part 5)
77. SGA DB Buffer (Part 6)
78. SGA DB Buffer (Part 7)
79. SGA DB Buffer (Part 8)
80. SGA DB Buffer (Part 9)

81. SGA DB Buffer (Part 10)
82. SGA DB Buffer (Part 11)
83. What is Oracle Package?
84. What is Oracle Procedure?
85. What is an Oracle Function?
86. What is an Oracle Trigger?
87. What is an Oracle Type?
88. Oracle Backup & Recovery (Part 1)
89. Oracle Backup & Recovery (Part 2)
90. Oracle Backup & Recovery (Part 3)