

1. Database Fundamentals

- What is a Database?
 - DBMS vs RDBMS
 - Advantages of RDBMS
 - Database Users & Roles
 - Data Models
 - Database Architecture
 - OLTP vs OLAP
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2. Oracle Database Overview

- What is Oracle Database?
 - Oracle Editions (EE, SE, XE)
 - Oracle Database Architecture
 - Instance
 - Database
 - Oracle Memory Structure
 - SGA
 - PGA
 - Oracle Background Processes
 - DBWn
 - LGWR
 - SMON
 - PMON
 - CKPT
 - ARCH
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3. Oracle Installation & Environment

- Oracle Installation (Windows/Linux)
 - Oracle Directory Structure
 - Listener & TNS
 - SQL*Plus
 - SQL Developer
 - Connecting to Oracle DB
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4. SQL Basics (VERY IMPORTANT)

Data Definition Language (DDL)

- CREATE

- ALTER
- DROP
- TRUNCATE
- RENAME

Data Manipulation Language (DML)

- INSERT
- UPDATE
- DELETE
- MERGE

Data Query Language (DQL)

- SELECT
- WHERE
- ORDER BY
- DISTINCT
- GROUP BY
- HAVING

Transaction Control Language (TCL)

- COMMIT
- ROLLBACK
- SAVEPOINT

5. Data Types in Oracle

- VARCHAR2
- CHAR
- NUMBER
- DATE
- TIMESTAMP
- CLOB
- BLOB

6. Constraints

- NOT NULL
- UNIQUE
- PRIMARY KEY
- FOREIGN KEY
- CHECK
- DEFAULT

7. Joins (VERY IMPORTANT)

- INNER JOIN
- LEFT OUTER JOIN
- RIGHT OUTER JOIN
- FULL OUTER JOIN
- SELF JOIN
- CROSS JOIN

8. Subqueries

- Single Row Subqueries
- Multi Row Subqueries
- Correlated Subqueries
- Nested Subqueries

9. Functions

Single Row Functions

- Character Functions
- Number Functions
- Date Functions
- Conversion Functions

Aggregate Functions

- COUNT
- SUM
- AVG
- MIN
- MAX

10. Views

- Creating Views
- Simple vs Complex Views
- Read-only Views
- Updatable Views

11. Indexes

- What is Index?
- B-Tree Index
- Bitmap Index
- Unique Index
- Function-Based Index
- Index vs Full Table Scan

12. Sequences & Synonyms

- Creating Sequences
- Using Sequences
- Public vs Private Synonyms

13. PL/SQL Basics

- PL/SQL Architecture
- PL/SQL Block Structure
- Variables & Constants
- Conditional Statements
- Loops

14. Cursors

- Implicit Cursors
- Explicit Cursors
- Cursor FOR Loop
- Parameterized Cursors

15. Stored Procedures

- Creating Procedures
- IN, OUT, IN OUT Parameters
- Calling Procedures
- Error Handling

16. Functions

- Creating Functions
- Return Types
- Difference between Procedure & Function

17. Packages

- Package Specification
- Package Body
- Advantages of Packages

18. Triggers

- Before Trigger
- After Trigger
- Row-Level Triggers
- Statement-Level Triggers
- Mutating Table Error

19. Exception Handling

- Predefined Exceptions
- User-Defined Exceptions
- RAISE
- RAISE_APPLICATION_ERROR

20. Transactions & Concurrency

- ACID Properties
- Locks & Deadlocks
- Isolation Levels
- Read Consistency

21. Performance Tuning (Basics)

- Explain Plan
 - Execution Plan
 - Index usage
 - Query optimization
 - Statistics
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22. Oracle Security

- Users
 - Roles
 - Privileges
 - GRANT & REVOKE
 - Profiles
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23. Backup & Recovery (Overview)

- Logical Backup
 - Physical Backup
 - RMAN Basics
 - Archive Logs
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24. Real-Time Oracle Concepts

- Normalization
 - Denormalization
 - Database Design
 - Handling Large Data
 - Partitioning (Intro)
 - Materialized Views
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25. Oracle in Real Projects

Example Modules

- Employee Management
 - Banking System
 - Insurance System
 - E-Commerce Database
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26. Oracle Interview Questions

- Difference between `DELETE`, `TRUNCATE`, `DROP`
 - Joins vs Subqueries
 - Cursor types
 - Trigger types
 - Index types
 - ACID properties
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27. Best Practices

- Use indexes wisely
 - Avoid `SELECT *`
 - Use bind variables
 - Proper exception handling
 - Regular backups
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28. Tools Used

- SQL*Plus
- SQL Developer
- TOAD