

## **What is an index in Oracle SQL?**

An index is a database object that improves the performance of queries by reducing the number of rows Oracle scans. It works like a table of contents in a book, helping Oracle find data faster

## **How does an index improve query performance?**

When a query has a WHERE condition on an indexed column, Oracle does not scan the entire table. Instead, it uses the index to quickly locate the required rows, improving query speed.

## **How do you check all indexes on a table in Oracle?**

```
➤ SELECT INDEX_NAME
      FROM USER_INDEXES
      WHERE TABLE_NAME='EMP';
```

## **What is the purpose of the EXPLAIN PLAN in indexing?**

EXPLAIN PLAN shows how Oracle executes a query. Helps check if an index is being used. If the output shows TABLE ACCESS FULL, the index is NOT used

## **What is a Sequence?**

A Sequence in Oracle SQL is a database object that generates unique numbers in order. It is primarily used for auto-generating primary key values in tables.

## **What are NEXTVAL and CURRVAL in sequences?**

NEXTVAL: Returns the next sequence value.

CURRVAL: Returns the current sequence value (the last value generated in the session).

### **Can a sequence generate duplicate values? How to avoid it?**

If CYCLE is enabled, the sequence restarts after reaching its MAXVALUE, which may cause duplicate values.

To avoid duplicates, use NOCYCLE and ensure MAXVALUE is high enough.

### **What is the purpose of the CACHE and NOCACHE options in sequences?**

CACHE n: Stores n values in memory for better performance.

NOCACHE: No values are stored in memory, so each request goes to disk (slower).

### **What is a Synonym in Oracle?**

A Synonym in Oracle SQL is an alias or an alternative name for a database object (Table, View, Sequence, Procedure, Materialized View, etc.). It helps users access objects without knowing the schema or full object name.

### **What are the types of Synonyms in Oracle?**

Oracle supports two types of Synonyms:

Private Synonym – Created by a specific user and only accessible by that user unless granted.

Public Synonym – Created at the database level and is accessible to all users.

### **What happens if you drop a synonym? Does it delete the original object?**

No, dropping a synonym only removes the alias, but the original object remains unchanged.

### **What are the limitations of Synonyms in Oracle?**

Synonyms do not store data – They are just an alias.

They cannot have privileges – Privileges must be granted on the original object.

Cannot be created for temporary tables.

Cannot be used to define foreign keys.

Dropping an object does not automatically drop its synonyms.

**What is partitioning in Oracle SQL?**

Partitioning is a technique that divides a large table or index into smaller, more manageable pieces (partitions) while treating them as a single logical object. It improves query performance, manageability, and storage optimization.

**What are the benefits of partitioning in Oracle SQL?**

Performance Improvement: Queries can scan only relevant partitions.

Manageability: Each partition can be managed separately.

Storage Optimization: Partitions can be stored in different tablespaces.

Availability: Failure of one partition does not affect others.

**What are the different types of partitioning in Oracle?**

Range Partitioning – Divides data based on value ranges (e.g., date ranges).

List Partitioning – Groups specific values into partitions (e.g., departments).

Hash Partitioning – Distributes data evenly using a hash function.

Composite Partitioning – Combination of two partitioning methods (e.g., Range + Hash).