9. Demonstrate Index, Sequence and Synonym.

INDEX

- Index is a database object used to retrieve data from the database more quickly.
- They are just used to improve performance of data retrieval.
- Index can be created on a single column(**simple index**) or multiple columns (**composite index**) of a table.

INDEX

- The CREATE INDEX statement is used to create indexes in tables.

Syntax:

- CREATE INDEX *index_name*
  ON *table_name* (*column1*, *column2*, ...);

Example:

1. create index i1 on emp(salary);

   Output: Index created

2. create index i2 on emp(deptno,job);

INDEX

Removing INDEX

- The DROP INDEX statement is used to delete an index in a table.
- **Example:**

  Drop index i1;

  Output: Index dropped.

Sequence

- A sequence is a user defined schema bound database object that generates a sequence of numerical values.
- Series of values generated is in either ascending or descending order with a predetermined interval.
- It can be used to automatically generate the values for primary key and unique key columns.

Sequence

CREATE SEQUENCE statement allows you to create a new sequence in the database.

Syntax:

```
CREATE SEQUENCE sequence_name
START WITH initial_value
INCREMENT BY interval
MINVALUE minimum value
MAXVALUE maximum value
CYCLE|NOCYCLE;
```

Sequence

Example:

```
CREATE SEQUENCE seq_1
START WITH 1
INCREMENT BY 1
MINVALUE 1
MAXVALUE 30
CYCLE;
```

Output: Sequence created.

Sequence

- To get the next value of the sequence, you use the NEXTVAL pseudo-column:

Syntax: SELECT seqname.NEXTVAL FROM dual;

- To get the current value of the sequence, you use the CURRVAL pseudo-column:

Syntax: SELECT id_seq.CURRVAL FROM dual;

Sequence

Using sequence in a table column:

- **CREATE TABLE student (Rollno NUMBER(10));**
- Now insert values into table column “Rollno”
- INSERT INTO student VALUES (seq_1.NEXTVAL);
- INSERT INTO student VALUES (seq_1.NEXTVAL);
- SELECT * FROM STUDENT;

ROLLNO
1
2

Sequence

Remove a sequence:

Example

- DROP SEQUENCE seq_1;

Output:

Sequence dropped

Synonym

- **Synonym** is an alias or alternative names given to any of the database objects like a table, view, stored procedure, user-defined function, and sequence.
- Whenever we create a Synonym in a database, the synonym is referenced to a particular database object and that database object is called base object.

Synonym

Creating a Synonym

Syntax:

CREATE SYNONYM *synonym_name*

FOR database object;

Example: CREATE SYNONYM s1 FOR emp;

Output: synonym created

Synonym

Select statement with synonym

- SELECT * FROM S1;

ENO	ENAME	SAL	MGR_NO
1	A	1000	
2	B	2000	1
3	C	1000	1
4	D	3000	5
5	E	2000	

Synonym

Dropping a synonym

- DROP SYNONYM is used to drop a synonym from the database.
- **Example**: DROP SYNONYM s1;

  OUTPUT: synonym dropped