

Practical No. 13

Aim: Create a table and perform the search operation on table using indexing and non-indexing techniques.

Theory:

Create a table and perform the search operation on table using indexing and non-indexing techniques. Indexing is a database technique used to improve the speed of data retrieval operations on database tables. It involves creating data structures (indexes) that store a subset of the data in a more efficient format. Non-indexing techniques refer to methods of data retrieval that don't rely on traditional indexes. These techniques can include full table scans, sequential searches, and various data storage and access strategies, such as partitioning, materialized views, and data denormalization

Queries:

```

1 CREATE TABLE customer (
2   customer_id NUMBER GENERATED ALWAYS AS IDENTITY,
3   first_name VARCHAR2(50),
4   last_name VARCHAR2(50),
5   email VARCHAR2(100),
6   phone_number VARCHAR2(20),
7   PRIMARY KEY (customer_id)
8 );
9 INSERT INTO customer (first_name, last_name, email, phone_number) VALUES ('PEPPER', 'POTTS', 'pepperpotts@example.com', '111-222-3330');
10 INSERT INTO customer (first_name, last_name, email, phone_number) VALUES ('TONY', 'STARK', 'tonystark@example.com', '999-888-5550');
11 -- Search for Customer by ID (Using Indexing)
12 SELECT * FROM customer WHERE customer_id = 1;
13 -- Search for Customer by ID (Without Using Indexing)
14 SELECT * FROM customer WHERE first_name = 'TONY';
15 -- 202203103510097
16

```

Table created.

1 row(s) inserted.

1 row(s) inserted.

CUSTOMER_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER
1	PEPPER	POTTS	pepperpotts@example.com	111-222-3330

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CUSTOMER_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER
2	TONY	STARK	tonystark@example.com	999-888-5550

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Conclusion: In summary, indexing techniques improve data retrieval speed by creating structured data structures, while non-indexing techniques encompass various methods that can be employed when indexes may not be the best solution or when specific data access strategies are needed.