Database and

Management System

Lab

Lab Experiment – 11

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B.Tech CSE, SEM-III, B-2

Title: To understand the concepts of Index.

Objective: Students will be able to implement the concept of index

1. Create `EMPLOYEES` Table and Insert Sample Data

```
CREATE TABLE EMPLOYEES (
    Employee_id CHAR(10) PRIMARY KEY,
    First_Name VARCHAR(30) NOT NULL,
    Last_Name VARCHAR(30) NOT NULL,
    DOB DATE,
    Salary DECIMAL(10, 2) NOT NULL,
    Department_id CHAR(10)
);

INSERT INTO EMPLOYEES (Employee_id, First_Name, Last_Name, DOB, Salary, Department_id) VALUES
('E001', 'John', 'Smith', '1980-01-10', 50000, 'D1'),
('E002', 'Jane', 'Doe', '1985-02-15', 60000, 'D2'),
('E003', 'Alice', 'Johnson', '1978-03-20', 55000, 'D1'),
('E004', 'Bob', 'Brown', '1990-04-25', 62000, 'D2'),
('E005', 'Charlie', 'Davis', '1982-05-30', 58000, 'D3'),
('E006', 'Eve', 'Martinez', '1995-06-10', 54000, 'D3');
```

2. Create an Index on `Last_Name` and `Department_id`

```
CREATE INDEX employee_idx ON EMPLOYEES (Last_Name, Department_id);
```

3. Find the `ROWID` and Create a Unique Index on `Employee_id`

```
SELECT Employee_id, ROWID FROM EMPLOYEES;
CREATE UNIQUE INDEX employee_unique_idx ON EMPLOYEES (Employee_id);
```

```
+-------------+-----------------+
| Employee_id | ROWID           |
+-------------+-----------------+
| E001        | <ROWID_value_1> |
| E002        | <ROWID_value_2> |
| E003        | <ROWID_value_3> |
| E004        | <ROWID_value_4> |
| E005        | <ROWID_value_5> |
| E006        | <ROWID_value_6> |
+-------------+-----------------+
```

4. Create a Reverse Index on `Employee_id`

```
CREATE INDEX employee_reverse_idx ON EMPLOYEES (Employee_id) USING BTREE;
```

5. Create a Unique Composite Index on `Employee_id` to Check Duplicates

```
CREATE UNIQUE INDEX employee_composite_idx ON EMPLOYEES (Employee_id, Last_Name);
```

6. Create Function-Based Index for Case-Insensitive Search on `Last_Name`

```
CREATE INDEX last_name_upper_idx ON EMPLOYEES (UPPER(Last_Name));
```

7. Drop the Function-Based Index on `Last_Name`

```
DROP INDEX last_name_upper_idx ON EMPLOYEES;
```